Draft Environmental Impact Report
SCH No. 2013091023

Los Angeles Groundwater Replenishment Project

Technical Appendices

Prepared for:

Los Angeles Department of Water and Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, California 90012

Prepared by:

AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

May 2016

TABLE OF CONTENTS

TECHNICAL APPENDICES

APPENDIX A

Notice of Preparation, Initial Study, and Comments Received on the Notice of Preparation

Notice of Preparation

ORIGINAL FILED

SEP 0 5 2013

LOS ANGELES, COUNTY CLERK

NOTICE OF PREPARATION

DATE: **September 6, 2013**

TO: **State Clearinghouse, Affected Agencies, Organizations and Interested Persons**

SUBJECT: **Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Los Angeles Groundwater Replenishment Project**

LEAD AGENCY: **Los Angeles Department of Water and Power**

The City of Los Angeles Department of Water and Power (LADWP) will be the Lead Agency pursuant to the California Environmental Quality Act (CEQA) and will prepare an Environmental Impact Report (EIR) for the proposed Los Angeles Groundwater Replenishment Project (LAGWR, proposed project). The proposed project involves construction of an advanced water purification facility (AWPF) that would perform additional treatment of tertiary effluent (Title 22 treated recycled water) from the existing Donald C. Tillman Water Reclamation Plant (DCTWRP). Purified recycled water would be transported to the Hansen Spreading Grounds (HSG), Pacoima Spreading Grounds (PSG), and Hansen Tank at LADWP's Valley Generating Station (VGS) using existing and proposed new conveyance pipelines. Groundwater replenishment would be accomplished by spreading purified recycled water at the HSG and PSG, and by injecting purified recycled water using proposed new injection wells located along Canterbury Avenue near the PSG to increase groundwater recharge of the San Fernando Groundwater Basin (SFB). LADWP is requesting input from individuals, stakeholders, organizations, and agency representatives that may be interested in the proposed project as to the scope and content of the environmental information to be included in the project EIR.

PROJECT DESCRIPTION

Under the proposed project, an AWPF would be constructed within the DCTWRP to treat secondary or tertiary effluent produced by the DCTWRP using advanced treatment technology. AWPF purified recycled water would be conveyed to the spreading grounds using an existing pipeline that currently conveys Title 22 recycled water from DCTWRP and the Balboa Pump Station to the Hansen Tank at VGS. However, portions of the pipeline would need to be modified to reach the PSG. A new lateral transmission pipeline, approximately 10,000 linear feet in length, would be constructed and installed to tie in to an existing pipeline at Branford Street northwest along Canterbury Avenue to the PSG. The existing 7 million gallon (MG) recycled water storage tank (Hansen Tank) at VGS would also be connected to the purified recycled water distribution system.

LADWP could recharge up to 35,000 AFY of purified recycled water at the HSG, and up to 23,000 AFY of purified recycled water at the PSG, based on the availability of supply and the annual capacity of both spreading grounds. However, LADWP estimates that an average of 15,000 AFY of purified recycled water would be recharged at both the HSG and the PSG. To provide maximum operational flexibility, LADWP proposes to construct up to 13 injection wells along Canterbury Avenue to allow for direct injection of purified recycled water into the SFB for use when the Hansen and Pacoima spreading grounds are being used exclusively for stormwater management.

PROJECT LOCATION

The proposed project would be located in the eastern San Fernando Valley of the City of Los Angeles, in Los Angeles County, California. The DCTWRP is located at 6100 Woodley Avenue, in the Van Nuys community of the City of Los Angeles. The property is owned by the U.S. Army Corps of Engineers (USACE) and is operated by the City of Los Angeles Bureau of Sanitation (BOS). Groundwater recharge into the SFB is primarily achieved through existing spreading grounds in the San Fernando Valley operated by the County of Los Angeles Department of Public Works. The HSG is located in the Sun Valley community of the City of Los Angeles and is bordered by Branford Street to the northwest, Sheldon Street to the southeast, San Fernando Road to the southwest, and Glenoaks Street to the northeast. The PSG is located in the Pacoima community of the City of Los Angeles and is bordered by Arleta Avenue to the northwest, Filmore Street to the southeast, Woodman Avenue to the southwest, and San Jose Street to the northwest. Title 22 recycled water is stored at VGS, in the Hansen Tank, which is located at 11801 Sheldon Street in the Sun Valley community of the City of Los Angeles, adjacent to the HSG.

POTENTIAL ENVIRONMENTAL EFFECTS

The potential environmental effects of the proposed project to be addressed in the Draft EIR will include, but may not be limited to, the following:

- Aesthetics and Visual Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation and Traffic
- Utilities and Service Systems

PUBLIC COMMENT PERIOD

The 45-day public comment period for this NOP will commence on September 6, 2013, and conclude on October 21, 2013. Copies of the Initial Study will be available for review on the LADWP website at http://www.ladwp.com/envnotices and at the following locations:

LADWP, Environmental Affairs Division
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Encino-Tarzana Branch Library
18231 Ventura Boulevard
Tarzana, CA 91356

West Valley Regional Branch Public Library
19036 Vanowen Street
Reseda, CA 91335

Van Nuys Branch Public Library
6250 Sylmar Avenue
Van Nuys, CA 91401

Sherman Oaks Library
14245 Moorpark Street
Sherman Oaks, CA 91423

Panorama City Branch Public Library
14345 Roscoe Boulevard
Panorama City, CA 91402

Lake View Terrace Library
12002 Osborne Street
Sylmar, CA 91342

Valley Plaza Branch Public Library
12311 Vanowen Street
North Hollywood, CA 91605

Pacoima Branch Library
13605 Van Nuys Boulevard
Pacoima, CA 91331

Mid-Valley Regional Branch Library
16244 Nordhoff Street
North Hills, CA 91343

Sun Valley Library
7935 Vineland Avenue
Sun Valley, CA 91352

Please submit comments in writing, by fax or email, to the address provided below **no later than 5:00 p.m. on October 21, 2013**.

Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012
Attn.: Michael Mercado
Fax: (213) 367-4710
Email: Michael.Mercado@ladwp.com

The following information would be useful to include in your response:

- For all respondents, please provide contact information and identify the environmental information and issues that you believe should be addressed in the EIR, including any suggested alternatives to the proposed project.

- For agency respondents, please provide the name of the contact person for your agency, mailing address, e-mail, and telephone number. List any permit(s) or approval(s) under your agency's authority, as well as any reasonably foreseeable projects, programs, or plans that may have an overlapping influence with the proposed project.

For any questions regarding this NOP, please contact Mr. Michael Mercado at (213) 367-0395.

PUBLIC MEETINGS

Three public meetings will be held during the scoping period to solicit input from interested parties on the proposed content of the Draft EIR. The meetings will be held at the following locations and times:

Wednesday, September 25, 2013 at 7:00 pm
Sepulveda Garden Center, 16633 Magnolia Boulevard, Los Angeles, CA 91436

Thursday, October 3, 2013 at 7:00 pm
Canterbury Elementary School, 13670 Montague Street, Arleta, CA 91331

Saturday, October 12, 2013 at 10:00 am
LADWP, 111 North Hope Street, A-Level Cafeteria Conference Room, Los Angeles, CA 90012

Charles C. Holloway

Signature

Charles C. Holloway
Manager of Environmental Planning and Assessment
Los Angeles Department of Water and Power

Initial Study

Initial Study

Los Angeles Groundwater Replenishment Project

Los Angeles Department of Water and Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, California 90012

September 2013

CEQA Initial Study

Los Angeles Groundwater Replenishment Project

September 2013

General Manager
Ronald O. Nichols

Senior Assistant General Manager
Water System
James B. McDaniel

Director of Environmental Affairs
Mark J. Sedlacek

Manager of Environmental Affairs
Charles C. Holloway

Prepared by:
Los Angeles Department of Water and Power
111 North Hope Street
Los Angeles, CA 90012

Technical Assistance Provided by:
AECOM
515 S. Flower Street, 9th Floor
Los Angeles, CA 90071

Table of Contents

List of Figures

Acronyms and Abbreviations

AFY	Acre-feet per year
AOP	advanced oxidation processes
AQMP	Air Quality Management Plan
AVORS	Additional Valley Outfall Relief Sewer
AWPF	advanced water purification facility
bgs	below ground surface
BMPs	Best Management Practices
BOE	City of Los Angeles Bureau of Engineering
BOS	City of Los Angeles Bureau of Sanitation
CA 170	California Route 170
CARB	California Air Resources Board
CDFW	California Department of Fish and Wildlife
CDPH	California Department of Public Health
CEQA	California Environmental Quality Act
CFS	cubic feet per second
CH_4	methane
CNPS	California Native Plant Society
CO	carbon monoxide
CO_2	carbon dioxide
CO_2e	carbon dioxide equivalent
DCTWRP	Donald C. Tillman Water Reclamation Plant
EIR	Environmental Impact Report
FAT	Full Advanced Treatment
GHG	Greenhouse gas emissions
GPM	gallons per minute
hp	horsepower
HSG	Hansen Spreading Grounds
I-5	Interstate 5
I-405	Interstate 405
LACDPW	Los Angeles County Department of Public Works
LADOT	City of Los Angeles Department of Transportation
LADWP	Los Angeles Department of Water and Power
LAFD	City of Los Angeles Fire Department
LAPD	City of Los Angeles Police Department
MF	micro-filtration
MG	million gallons
mgd	million gallons per day
MOU	Memorandum of Understanding
MWD	Metropolitan Water District of Southern California
N_2O	nitrous oxide
NOP	Notice of Preparation
NO_x	nitrogen oxide
NPDES	National Pollution Discharge Elimination System
O_3	ozone
O_3/H_2O_2	ozone/hydrogen peroxide
Pb	lead
$PM_{2.5}$	Particulate matter 2.5 microns in diameter

PM_{10}	Particulate matter 10 microns in diameter or smaller
POTW	Publicly owned treatment works
PSG	Pacoima Spreading Grounds
RO	reverse osmosis
RWMP	Recycled Water Master Planning
SCAG	Southern California Association of Governments
SCAQMD	South Coast Air Quality Management District
SFB	San Fernando Groundwater Basin
SO_x	sulfur oxide
SWPPP	Storm Water Pollution Prevention Plan
TAC	toxic air contaminants
US 101	United States Route 101
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
UV	ultraviolet
UV/AOP	ultraviolet irradiation/advanced oxidation processes
UV/H_2O_2	ultraviolet irradiation/hydrogen peroxide
VGS	Valley Generating Station

Page intentionally left blank

SECTION 1
PROJECT DESCRIPTION

1.1 Overview of the Project

To maintain the reliability of the City's water supply and reduce dependence on imported sources of water, the Los Angeles Department of Water and Power (LADWP) proposes to use up to 30,000 acre-feet per year (AFY) of purified recycled water from the Donald C. Tillman Water Reclamation Plant (DCTWRP) for replenishment of the San Fernando Groundwater Basin (SFB). The Los Angeles Groundwater Replenishment Project (proposed project) consists of: 1) treatment – the construction of new advanced water purification facilities (AWPF) that would perform additional treatment of tertiary effluent (Title 22 treated recycled water) from the existing DCTWRP; 2) conveyance – the use of existing and newly constructed pipelines to transport the purified recycled water from the AWPF to spreading grounds and injection wells; and 3) replenishment – spreading of the purified recycled water at the Hansen Spreading Grounds (HSG) and the Pacoima Spreading Grounds (PSG) for percolation and would include installation of up to 13 new injection wells for direct injection into the SFB to increase groundwater supply by supplementing local potable water supplies.

1.2 California Environmental Quality Act

The California Environmental Quality Act (CEQA) applies to proposed projects initiated by, funded by, or requiring discretionary approvals from state or local government agencies. The proposed groundwater replenishment project constitutes a project as defined by CEQA (California Public Resources Code Section 21000 et seq.). The CEQA Guidelines Section 15367 states that a "Lead Agency" is "the public agency which has the principal responsibility for carrying out or approving a project." Therefore, LADWP is the lead agency responsible for compliance with CEQA for the proposed project.

As lead agency for the proposed project, LADWP must complete an environmental review to determine if implementation of the proposed project would result in significant adverse environmental impacts. To fulfill the purpose of CEQA, an Initial Study has been prepared to assist in making that determination. Based on the nature and scope of the proposed project, the evaluation contained in the Initial Study environmental checklist (contained herein), and the comments received from agencies and members of the public during review of the Notice of Preparation (NOP) of an Environmental Impact Report (EIR), factors that have potential to involve significant adverse environmental impacts will be determined. Such factors will become the focus of more detailed analysis in an EIR to determine the nature and extent of any potential environmental impacts and establish appropriate mitigations for those impacts determined to be significant. The EIR will also include an evaluation of alternatives to the proposed project that would reduce or avoid significant impacts, including a No Project Alternative and alternative sites for the AWPF and other facilities. Based on the Initial Study analysis and the NOP review, factors for which no significant adverse environmental impacts are expected to occur will be eliminated from further evaluation in the EIR. A preliminary evaluation of the potentially affected factors is included in the Initial Study checklist in Section 2.

1.3 Project Location

The proposed project is located in the eastern San Fernando Valley portion of the City of Los Angeles. It would consist of the SFB, DCTWRP, HSG and PSG, Valley Generating Station (VGS), and associated facilities.

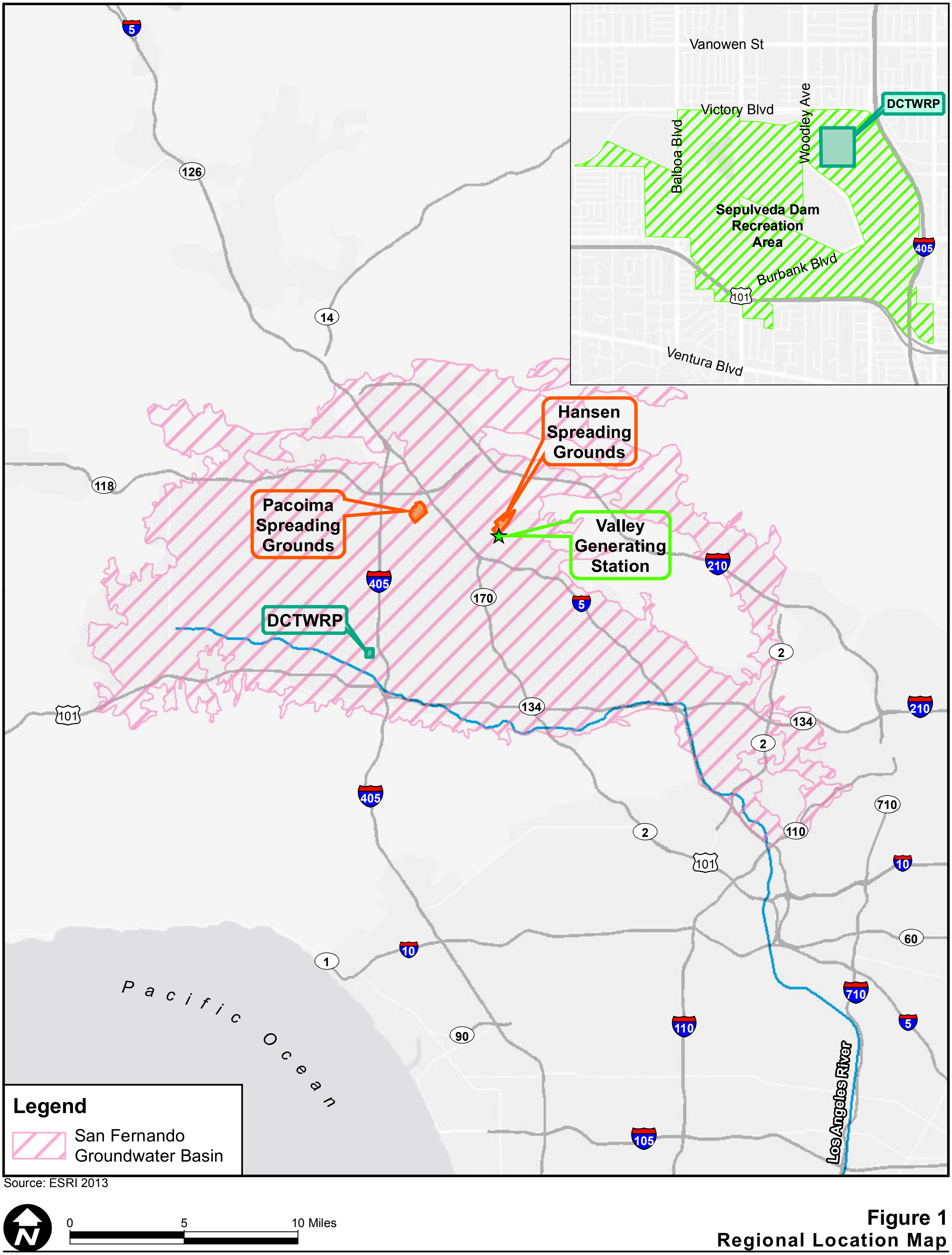
The 145,000-acre SFB includes the water-bearing sediments beneath the San Fernando Valley, Tujunga Valley, Browns Canyon, and the alluvial areas surrounding the Verdugo Mountains near La Crescenta and Eagle Rock in Los Angeles County, California. The SFB is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills. Figure 1 shows the boundaries of the SFB.

The DCTWRP is located at 6100 Woodley Avenue, in the Van Nuys community of the City of Los Angeles and is bordered by Densmore Avenue to the north, Woodley Avenue Park to the south, Woodley Avenue to the west, and the I-405 to the east. The property is owned by the U.S. Army Corps of Engineers (USACE) and the facilities are operated by the City of Los Angeles Bureau of Sanitation (BOS).

Groundwater recharge into the SFB is primarily achieved through existing spreading grounds in the San Fernando Valley operated by the County of Los Angeles Department of Public Works. The HSG is located in the Sun Valley community of the City of Los Angeles and is bordered by Branford Street to the northwest, Sheldon Street to the southeast, San Fernando Road to the southwest, and Glenoaks Street to the northeast. The PSG is located in the Pacoima community of the City of Los Angeles and is bordered by Arleta Avenue to the northwest, Filmore Street to the southeast, Woodman Avenue to the southwest, and San Jose Street to the northwest.

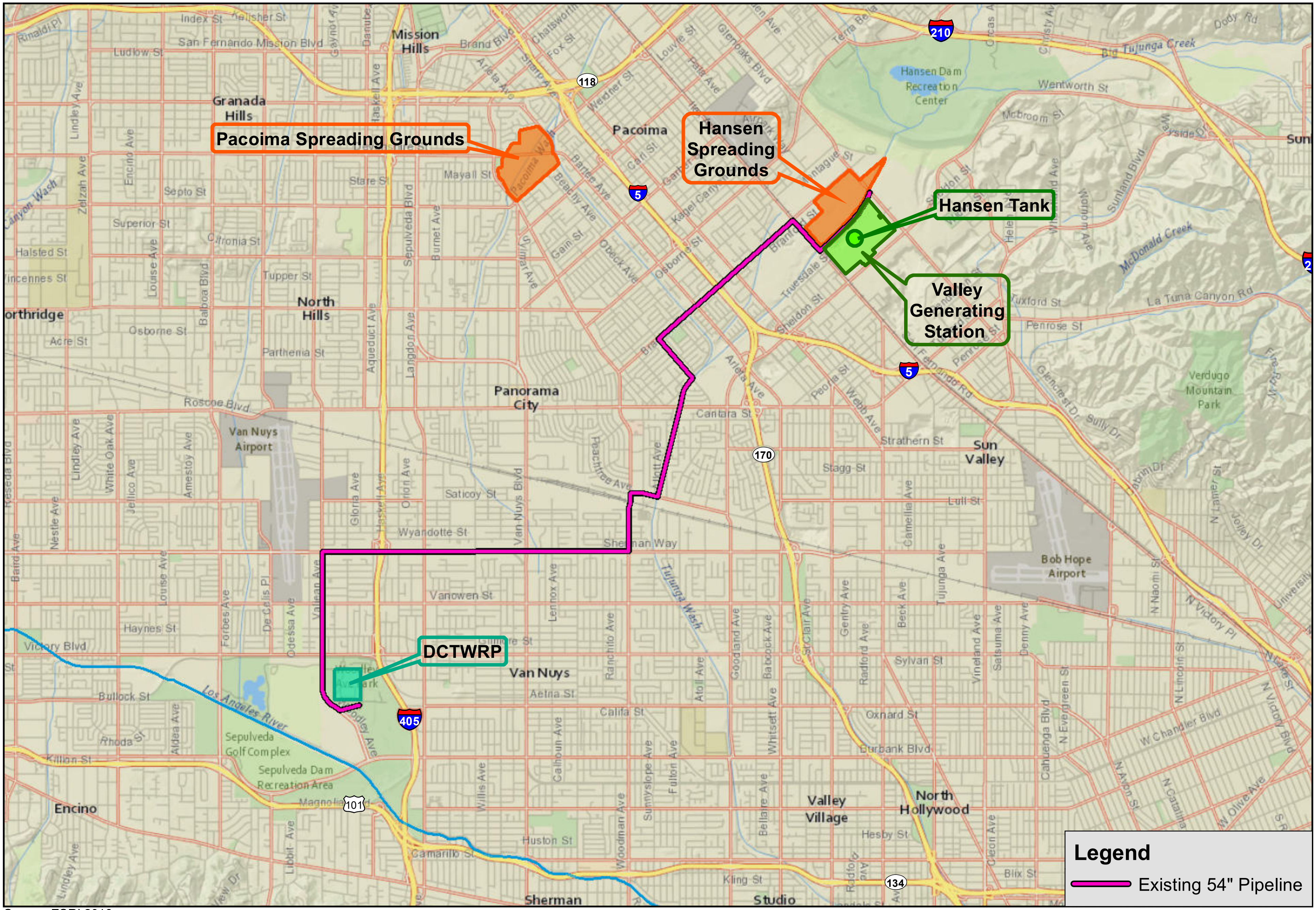
Title 22 recycled water is stored at VGS, in the Hansen Tank, which is also located in the Sun Valley community of the City of Los Angeles. It is bordered by Glenoaks Street to the northeast, San Fernando Road to the southwest, the HSG to the northwest, and Sheldon Street to the southeast.

Figure 2 shows the locations of the existing facilities to be used for the proposed project, including DCTWRP, the spreading grounds, and VGS.



Source: ESRI 2013

Figure 1
Regional Location Map



Source: ESRI 2013

0 0.75 1.5 Miles

Figure 2

Location of Project Facilities

1.4 Physical Setting

1.4.1 Donald C. Tillman Water Reclamation Plant

The 90-acre DCTWRP plant began operating in 1985 and was named after Mr. Donald C. Tillman, City Engineer from 1972 to 1980. The DCTWRP is configured as a biological nutrient (nitrogen) removal activated sludge treatment facility with 80 million gallons per day (mgd) dry weather flow capacity. The facility provides primary treatment, biological nutrient (nitrogen) removal, filtration and disinfection (chlorination). The existing tertiary treatment system consists of two phases, with 40 mgd average flow capacity each. For cost saving purposes, DCTWRP is presently in single phase operation. Incoming flow has been limited to 38 mgd (42,700 AFY), which is sufficient to meet current recycled water demands and maintain flows to the flow-through lakes and the Los Angeles River.

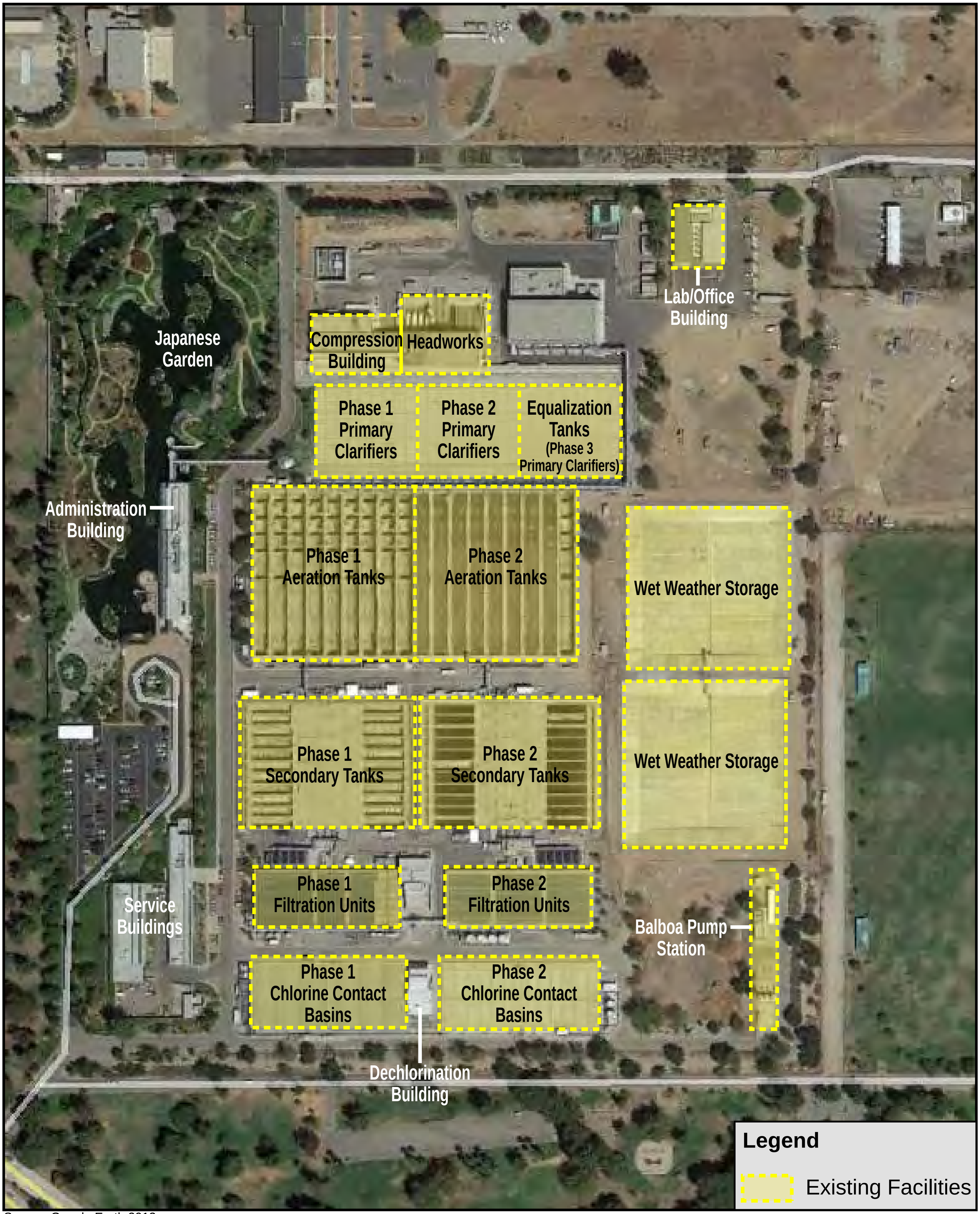
A 6.5-acre portion of the DCTWRP is comprised of the Japanese Garden, which was designed by Dr. Koichi Kawara and dedicated in 1984. Recycled water from DCTWRP irrigates the garden and fills the 2.75 acre lake. DCTWRP tertiary effluent is currently delivered to Lake Balboa, the Wildlife Lake, and Japanese Garden Lake and flow is managed to prevent fish kills, odor problems, and algal blooms. Outflow from these flow-through lakes is discharged as part of the flow to the Los Angeles River, which supports native habitat. Monitored over the most recent five-year period, flows from DCT to the lakes and the Los Angeles River vary daily and seasonally, and have ranged on a annual average between 27 mgd (30,300 AFY) and 32 mgd (25,900 AFY). Additionally, approximately 3 mgd (3,360 AFY) annual average flow of tertiary effluent is currently distributed for non-potable reuse customers in the San Fernando Valley and approximately 2 mgd (2,250 AFY) of effluent is used within the plant for maintenance activities. The balance of the treated flow is currently discharged to the Los Angeles River over the DCTWRP overflow weir.

The Balboa Pump Station is located on-site at DCTWRP and has three 18 cubic feet per second (cfs) pumps with 1,000 horsepower (hp) motors each. An existing 10-mile-long, 54-inch-diameter pipeline currently connects the DCTWRP to the Hansen storage tank, which is located southeast of the HSG at VGS. This pump station and pipeline are currently used to convey DCTWRP recycled water to irrigation and industrial cooling customers in the San Fernando Valley.

The DCTWRP is located within the Sepulveda Dam Recreation Area. It is generally bounded by the Orange Line Busway and Victory Boulevard on the north, the recreation area and Interstate 405 (I-405) on the east, the recreation area and Burbank Boulevard on the south, and Woodley Avenue Park and Woodley Avenue on the west. The surrounding land uses are recreation and commercial. The Los Angeles River flows south of DCTWRP.

The DCTWRP is designated as Public Facilities and Open Space in the City of Los Angeles General Plan. It is located within the Encino-Tarzana Community Plan area. The zoning designation for the DCTWRP is [Q]PF-1XL (Public Facilities) and OS-1XL (Open Space).

Figure 3 shows the existing DCTWRP site plan.



Source: Google Earth 2013

Figure 3
Existing DCTWRP Site Plan

1.4.2 Existing Groundwater Replenishment Facilities

The City of Los Angeles has three major sources of groundwater located within the Upper Los Angeles River Area: the SFB, the Sylmar Basin, and the Eagle Rock Basin. The proposed project would replenish groundwater in the SFB.

Groundwater recharge into the SFB is currently achieved primarily through existing spreading grounds in the San Fernando Valley. LACDPW owns and operates the HSG and the PSG. They are used, along with the Tujunga, Branford, and Lopez Spreading Grounds, to percolate stormwater into the SFB.

The HSG is located along the northwest side of the Tujunga Wash Channel immediately northeast of San Fernando Road. The HSG has 6 shallow spreading basins on 105 wetted acres with an estimated maximum storage volume of 1,420 acre-feet. The facility can receive a total maximum flow of 400 cfs. The average percolation rate is 150 cfs. The sources of water to the HSG are controlled flows from Hansen Dam and Big Tujunga Dam. The HSG is designated as Public Facilities in the City of Los Angeles General Plan. It is located within the Sun Valley-La Tuna Canyon Community Plan area. The zoning designation for the HSG is [Q]PF-1XL (Public Facilities). The Hansen Dam and Hansen Recreation Area are located to the northeast. The HSG is surrounded by open space and light manufacturing uses.

The PSG is located on both sides of old Pacoima Wash Channel from Arleta Avenue southwesterly to Woodman Avenue. The PSG has a gross area of 169 acres, of which the spreading basins wetted area occupies 107 acres. It is comprised of 12 shallow basins with a total intake capacity of 600 cfs and a storage volume of 440 acre-feet. The percolation rate is 65 cfs. The PSG receives controlled flows from Pacoima Dam, partially controlled flow from Lopez Flood Control Basin, and uncontrolled flow (storm flow) from East Canyon and Pacoima Wash. The PSG also receives imported water for groundwater replenishment. The PSG is designated as Open Space in the City of Los Angeles General Plan. It is located within the Arleta-Pacoima Community Plan area. The zoning designation for the HSG is OS-1XL-O (Open Space). It abuts Devonwood and Devonshire Arleta Parks and is surrounded by residential uses.

Groundwater levels in the area of the SFB vary seasonally and by locality, with the levels along the western sections of the Basin at approximately 50 feet below ground surface (bgs) to between 200 and 500 feet bgs in the eastern portions of the SFB. Groundwater contamination exists throughout the SFB due to improper handling and disposal primarily of solvents widely used since the 1940s. Under a separate initiative, LADWP is studying alternatives for the remediation, containment, removal and cleanup of the contaminants from easterly portions of the SFB where the City's major well fields are located.

1.4.3 Existing Water Storage

The VGS is located at 11801 Sheldon Street. It consists of a 150-acre electric power generating facility designed to supply power to the LADWP distribution grid. An existing 7 million gallon (MG) recycled water storage tank, Hansen Tank, is located at VGS. It is currently used to store Title 22 recycled water produced at DCTWRP for distribution to recycled water customers. VGS is designated as Public Facilities in the City of Los Angeles General Plan. It is located within the Sun Valley-La Tuna Canyon Community Plan area. The zoning designation for VGS is [Q]PF-1XL (Public Facilities). The Union Pacific Railroad parallels San Fernando Road to the southwest of VGS. The Tujunga Wash, a flood control channel, is located to the northwest. Land uses surrounding VGS are primarily commercial and industrial.

1.5 Project Objectives and Background

The purpose of the proposed project is to enhance the reliability of the City's drinking water supply by reducing dependence on imported water supplies and increasing local potable water supplies. With increasing development and installation of non-pervious land uses in the San Fernando Valley, surface runoff is increasing and natural recharge to the groundwater basin is decreasing. Therefore, opportunities to replenish the aquifer with additional sources of water, including purified recycled water, are considered beneficial to the SFB. The primary project objective related to this purpose is to beneficially reuse advanced purified recycled water to increase recharge in the SFB. Subsequent extraction of this groundwater from the SFB will offset the purchase of imported water supplies with local groundwater.

In normal years, the City relies on four sources to meet its water needs: (1) snow-melt runoff from the Eastern Sierra conveyed by the Los Angeles Aqueduct (36 percent); (2) local groundwater (11 percent); (3) purchases from the Metropolitan Water District of Southern California (MWD) conveyed from the Colorado River through the Colorado River Aqueduct and the State Water Project via the California Aqueduct (52 percent); (4) recycled water for non-potable uses and indirect potable reuse (1 percent).

Population growth in the area has added to the City's water needs. Although these water resources have served the City well for decades, several factors have converged that threaten the long-term reliability of these supplies. Climate conditions, such as consecutive years of below-normal snowfall, and environmental commitments have severely impacted historical water supply sources.

- Eastern Sierra Watershed: The City's right to export water from the Eastern Sierra is based on approximately 185 water right licenses from various rivers, lakes and creeks in the Mono Basin and Owens Valley. The City's water rights are on file with the California State Water Resources Control Board. The City also owns the majority of land (approximately 315,000 acres) and associated riparian water rights in the Owens Valley. The Los Angeles Aqueduct deliveries from the Eastern Sierra vary with rainfall and snowpack conditions. In addition, over the last two decades, the City's water deliveries from the Los Angeles Aqueduct have dropped significantly due to reallocation of water for environmental mitigation and enhancement activities. Among these environmental commitments are the State Water Resources Control Board's Mono Lake Decision, which reduced LADWP's ability to export water from the Mono Basin from 90,000 AFY to 16,000 AFY; implementation of the Owens Lake Dust Mitigation Program, to which the LADWP is currently delivering up to 95,000 AFY; implementation of the 1997 MOU between LADWP and the MOU Ad Hoc Group, which commits LADWP to supply 1,600 AFY for mitigation identified in the 1991 Water from the Owens Valley to Supply the Second Los Angeles Aqueduct Environmental Impact Report and rewatering of the Lower Owens River where losses are approximately 17,000 AFY.

- Purchased Water: MWD's sources of water – the Colorado River, State Water Project, local surface and groundwater storage, and stored/transferred water with Central Valley and Colorado River agencies – are subject to great uncertainty due to climate variability and environmental issues. The current environmental crisis in the Sacramento-San Joaquin Bay-Delta led to a Federal Court decision that resulted in MWD receiving up to 30 percent less of its anticipated State Water Project deliveries. Between April 2009 and April 2011, MWD implemented an allocation plan that limited supplies to member agencies and imposed penalties for exceeding water usage targets.

In response to the challenges facing the City's water supply, LADWP has embarked upon an aggressive effort to create reliable and sustainable sources of water for the future of Los Angeles.

LADWP's 2010 Urban Water Management Plan set a goal of 59,000 AFY of potable water demands to be met with recycled water by 2035 as a sustainable source of local water and to maximize reuse. To meet this goal, LADWP partnered with BOS and the City of Los Angeles Department of Public Works, Bureau of Engineering (BOE) to develop a Recycled Water Master Planning (RWMP) document. During development of the Recycled Water Master Planning process, the City recognized that in order to meet the water recycling goals in the Urban Water Management Plan, beneficial reuse of up to 30,000 AFY of purified recycled water from the DCTWRP for groundwater replenishment into the SFB would be required. Therefore, the Los Angeles Groundwater Replenishment Project (proposed project) is a major element of the RWMP.

LADWP, BOS and BOE completed the Groundwater Replenishment Master Planning Report in 2012 as one component of the RWMP documents. The Groundwater Replenishment Master Planning Report summarizes the process of evaluating facilities that are needed to purify recycled water from the DCTWRP and replenish the SFB. The outcome of the Groundwater Replenishment Master Planning Report is a recommendation to construct and operate an AWPF located in the southwest corner of the DCTWRP and replenish the SFB through spreading at the HSG and PSG, and injection wells on Canterbury Avenue (the proposed project). The Groundwater Replenishment Master Planning process considered alternative locations for the AWPF within DCTWRP and at VGS, some of which are feasible and may be considered as part of the EIR.

Purified recycled water is wastewater that has undergone multiple treatment steps, beyond standard wastewater treatment. Highly treated wastewater (known as tertiary water, and currently used for irrigation and industrial purposes, and to supply the Japanese Garden Lake and the Los Angeles River) is further treated through advanced water treatment processes, including multiple barrier filtration (microfiltration and reverse osmosis) and advanced oxidation. Purified recycled water is near-distilled water quality and meets the requirements of the California Department of Public Health and the Regional Water Quality Control Board to replenish the City's groundwater supplies.

1.6 Description of the Proposed Project

The proposed project consists of three components: treatment, conveyance, and replenishment.

1.6.1 Treatment

Proposed Facilities

Under the proposed project, an AWPF would be constructed to treat secondary or tertiary effluent produced by the DCTWRP using advanced treatment technology. The AWPF would be located in the southwest corner of the DCTWRP property where the DCTWRP maintenance and warehouse buildings are currently located. The AWPF would be bordered by a future multipurpose and office building to the north, the property line to the west, and access roads to the south and east. The space available for the AWPF at this location is approximately 106,000 square feet, or approximately 2.4 acres. The overall AWPF building footprint would be approximately 130 feet by 225 feet. A preliminary AWPF site plan is shown in Figure 4.

The proposed AWPF would require the construction of a new maintenance and warehouse buildings located in the northeast corner of the DCTWRP property and along the northern property boundary to accommodate the additional staff and equipment required to operate the AWPF.. The proposed AWPF would also displace some surface parking spaces. The existing parking lot will be modified to include additional parking spaces to replace parking spaces lost to AWPF construction. All parking lot modifications will occur within the DCTWRP.

Additional facilities to support the AWPF would be constructed along the northern DCTWRP property boundary, including a warehouse and expansion of the primary flow equalization tanks (Phase IV primary tanks). Due to increased electric power demand to operate the AWPF, the proposed project includes construction of a new substation. The substation would be constructed on a flat pad measuring approximately 30 feet by 90 feet and enclosed in a structure located adjacent to the proposed AWPF in the southwest corner of the DCTWRP property.

An additional 16 full-time staff would be required to operate and maintain the AWPF and associated facilities.

Treatment Process

The AWPF treatment process would include micro-filtration (MF), reverse osmosis (RO), and advanced oxidation processes (AOP) using either ultraviolet irradiation/hydrogen peroxide (UV/H_2O_2) or ozone/hydrogen peroxide (O_3/H_2O_2) and post-treatment including pH control. MF, RO, and ultraviolet irradiation/advanced oxidation process (UV/AOP) are Full Advanced Treatment (FAT) process recognized by the California Department of Public Health (CDPH) for groundwater replenishment reuse projects as currently outlined in the Groundwater Replenishment Reuse Draft Regulations.[1]

MF is a low-pressure membrane process used as RO pretreatment to provide particulate removal. While tertiary filtration at the DCTWRP would remove the majority of suspended solids, the micro-filtration membrane process would remove smaller suspended solids to ensure more efficient operation of the RO process. The MF process also provides an additional barrier to bacteria, protozoan cysts and viruses.

---

1 California Department of Public Health. Groundwater Replenishment Reuse DRAFT Regulation. March 18, 2013. Available at: http://www.cdph.ca.gov/certlic/drinkingwater/Documents/Recharge/DraftRechargeReg2013-03-28.pdf.

Source: ESRI 2013

Figure 4
Proposed DCTWRP Site Plan

RO is a high-pressure membrane process capable of removing bacteria, viruses, dissolved organic matter, and salts from liquids. Because of the low exclusion size, RO operates most effectively on water that has been subjected to MF/UF pretreatment. The RO membrane process, however, is based on the principle of overcoming the osmotic pressure of the feed water in order to remove its dissolved constituents and produce a clean effluent (permeate). The RO process operates on “cross-flow” filtration, where a fraction of the influent feed water passes through the membrane and becomes the permeate stream, while the remainder forms the waste stream (i.e., concentrate or brine). The flow ratio of permeate to feed water determines the system recovery, which is one of the main operational parameters of these systems.

AOP is a technology included in the FAT process used for the disinfection and inactivation of pathogenic microorganisms that are difficult to degrade biologically and for destruction of organic chemicals that may be present in the water. AOP includes the application of ozone or ultraviolet (UV) light in combination with hydrogen peroxide. AOP has the ability to target a series of complex organic compounds that are not affected by other treatment technologies such as oxidation with conventional oxidizing agents, ozone and/or UV irradiation individually. AOPs are based on the generation of hydroxyl radicals, which are extremely powerful oxidizing agents that are much more active than chlorine or ozone or UV irradiation individually. The process consists of injection of a hydrogen peroxide solution into the RO permeate followed by irradiation with UV light or ozone.

Treatment Capacity

The AWPF would treat up to 44 mgd (49,000 AFY) of tertiary water and generate up to 35 mgd (39,000 AFY) of purified recycled water.

Treatment Byproducts

Backwash and brine are byproducts of the AWPF treatment process. Backwash is water used to clean the MF strainers and MF membranes. Brine is generated from the RO filtration process.

MF backwash would be diverted from the AWPF into the DCTWRP in-plant sewer for treatment at DCTWRP or Hyperion Treatment Plant (HTP). A new 450-foot-long, 36-inch-diameter pipeline would be constructed to transfer the brine from the proposed AWPF to the existing Additional Valley Outfall Relief Sewer (AVORS) located within the DCTWRP property. Once discharged to the AVORS, the brine would combine with other DCTWRP biosolids and flow to the HTP via the La Cienega San Fernando Valley Relief Sewer for treatment.

1.6.2 Conveyance

Purified Recycled Water

AWPF product water would be conveyed to the spreading grounds using an existing 54-inch-diameter pipeline that currently conveys Title 22 recycled water from DCTWRP and the Balboa Pump Station to the Hansen Tank at VGS. However, portions of the pipeline would need to be extended to reach the PSG, as shown in Figure 5. A new 42-inch-diameter lateral transmission pipeline would be constructed from the existing 54-inch-diameter pipeline at Branford Street northwest along Canterbury Avenue to the PSG. The proposed new 42-inch-diameter lateral transmission pipeline would be approximately 10,000 linear feet. The existing 7 MG recycled water storage tank at VGS would be connected to the purified recycled water distribution system.

Existing non-potable Title 22 recycled water customers northeast of the DCTWRP outside of the Sepulveda Basin Area currently served by the existing 54-inch-diameter recycled water pipeline that would be used to convey purified water to the HSG and the PSG would also receive purified recycled water. The existing Balboa Pump Station at DCTWRP would also be expanded by adding one 800 hp pump to a previously constructed connection for additional pumps.

Title 22 Recycled Water

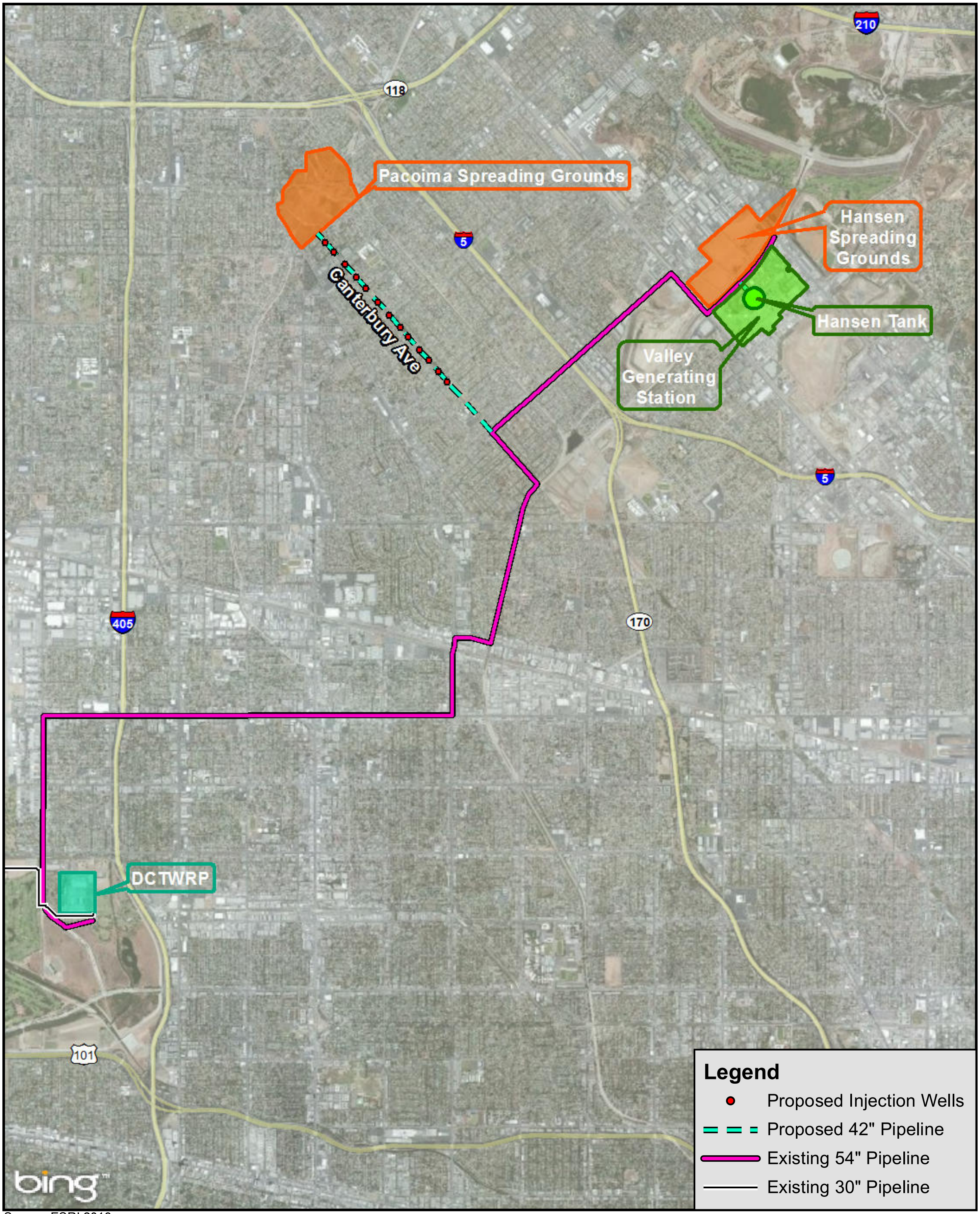
Sepulveda Basin customers, including golf courses and other irrigation users who are nearby and southwest of the DCTWRP would continue to be served by an existing 30-inch-diameter pipeline, as shown in Figure 5. Further, a new Title 22 recycled water pump station would need to be constructed in the southeast corner of the DCTWRP facility on a site 30 feet by 40 feet and would include three pumps, two duty and 1 backup, each with a 2,100 gallons per minute (gpm) flow rate (total of 265 hp).

1.6.3 Replenishment

Hansen Spreading Grounds

LADWP would recharge up to 35,000 AFY of highly purified recycled water at the HSG based on the availability of supply and the annual capacity of the spreading grounds. Based on available capacity, LADWP estimates an average of 15,000 AFY of purified recycled water would be recharged at HSG. Purified recycled water would be conveyed to the HSG through the existing 54-inch-diameter pipeline from DCTWRP and the Balboa Pump Station to the HSG.

An outlet structure currently exists at the north end of the 54-inch pipeline near Glenoaks Boulevard. To provide maximum flexibility in delivering purified recycled water to the HSG, several ancillary facilities would be constructed at the HSG, similar to the existing outlet structure, to allow the delivery of purified recycled water to each spreading basin individually or in combination. LADWP would also construct two new lateral pipelines within the HSG.



Source: ESRI 2013

0 0.75 1.5 Miles

Figure 5
Existing and Proposed Conveyance Pipelines and Replenishment Locations

Pacoima Spreading Grounds

Up to 23,000 AFY of purified recycled water would be recharged at the PSG based on the availability of supply and the annual capacity of the spreading grounds. Based on available capacity, LADWP estimates an average of 15,000 AFY of purified recycled water would be recharged at PSG. As discussed above, purified recycled water would be conveyed to the PSG through a new 42-inch-diameter pipeline extending from Branford Street northwest along Canterbury Avenue.

To provide maximum flexibility in providing purified recycled water to the PSG, several ancillary facilities would be constructed at the PSG to allow the delivery of purified recycled water to each spreading basin individually or in combination. LADWP would construct a new turn-out structure at the north end of the 42-inch-diameter transmission pipeline near Canterbury Avenue and Filmore Street. In addition, LADWP would construct two new lateral pipelines within the PSG.

Injection Wells

For maximum operational flexibility, LADWP would construct and operate up to 13 new injection wells for use when the HSG and PSG are being used exclusively for stormwater spreading. Each well is anticipated to have an operational capacity of 2.7 mgd, or 4.2 cfs, to allow for direct injection of up to approximately 4,000 AFY of purified recycled water in to the SFB. Each well would be approximately 16 to 20 inches in diameter and would be drilled to approximately 500 to 600 feet below ground surface.

A typical above ground injection well configuration would be located in a fenced area, while the below ground configuration would be in a vault. In general, a single above ground wellhead site would occupy an area of about 15 feet by 30 feet and would be less than one story tall. Where two or three wells would be clustered together, the wells would be spaced a minimum of 15 to 20 feet apart to minimize drilling interferences and allow enough room for well head facilities. A clustered injection well facility would also have a catch basin and connection to an existing storm drain for disposal of well development and test water.

Figure 5 shows the proposed locations for the injection wells in an approximately 7,000 foot corridor along Canterbury Avenue.

1.7 Project Construction

Construction of the proposed project would commence in summer 2016 and is expected to last up to 66 months, ending in late 2021. Operation of the AWPF would commence in early 2022. Construction activities would typically occur from 7:00 am to 3:00 pm, but construction on major city streets would occur between the hours of 9:00 am to 3:30 pm, in accordance with the City of Los Angeles Mayor’s Executive Directive No. 2 that prohibits construction on major roads from 6:00 am to 9:00 am and 3:30 pm to 7:00 pm (rush hours).

Construction at the DCTWRP would commence with construction of the new DCT service buildings in summer 2016. Construction of the service buildings is expected to take approximately 24 months to complete (ending summer 2018). Once the new service buildings have been constructed, the old service buildings would be demolished and the area graded to make room for the AWPF treatment facilities. Demolition and grading would commence in early 2019 and take approximately 6 months to complete. Construction of the

AWPF would then occur for approximately 30 months, beginning in summer 2019 with completion anticipated in late 2021.

Conveyance pipeline construction is expected to commence in spring 2018 and take approximately 18 months to complete, ending in fall 2019. Extension of the purified recycled water pipeline to PSG would occur within public roads and use a linear trenching technique. Once the pipeline has been installed within a segment, the trench would be backfilled and returned to its original condition. Pipeline construction would necessitate restrictions of on-street parking and closure of up to two lanes of the roadway depending on the location of construction. Materials and equipment staging and construction worker parking would use City facilities and public parking lots located along or near the proposed alignments.

1.8 Required Permits and Approvals

LADWP is the project lead agency pursuant to CEQA Guidelines Section 15367. Numerous approvals and/or permits would be required to implement the Los Angeles Groundwater Replenishment Project. The environmental documentation for the proposed project would be used to facilitate compliance with federal and state laws and the granting of permits by various state and local agencies having jurisdiction over one or more aspects of the proposed project. These approvals and permits may include the following:

City of Los Angeles Department of Water and Power

- Certification by the Board of Water and Power Commissioners that the EIR was prepared in accordance with CEQA and other applicable codes and guidelines
- Approval of the proposed project or an alternative to the proposed project, including a No Project alternative

United States Army Corps of Engineers

- Approval to construct on federal land
- Clean Water Act Section 404 Permit for regulated water features

State of California Water Resources Control Board

- Approval of California Water Code Section 1211 process
- Stormwater discharge permit

State of California Los Angeles Regional Water Quality Control Board

- Permit for groundwater recharge (waste discharge requirements)
- Clean Water Act Section 401 Water Quality Certification for water quality impacts of construction
- National Pollution Discharge Elimination System (NPDES) permit for construction dewatering
- NPDES permit for hydrostatic test water discharge

State of California Department of Water Resources

- Injection well permits

State of California Department of Transportation

- Permit for heavy equipment on state highways

Los Angeles County Department of Public Works

- Memorandum of Understanding and coordination for use of the HSG and PSG

City of Los Angeles Department of Public Works, Bureau of Engineering

- Excavation Permits

City of Los Angeles Department of Building and Safety

- Grading Permit
- Haul Route Permits

City of Los Angeles Department of Transportation

- Encroachment permits for pipeline construction in city streets

City of Los Angeles Board of Cultural Affairs Commissioners

- Design review and approval for buildings and structures

City of Los Angeles Department of City Planning

- Design review and approval for buildings and structures
- Approvals of variances (height of building or structure)

Page intentionally left blank

SECTION 2
INITIAL STUDY CHECKLIST

The following discussion of potential environmental effects was completed in accordance with Section 15063(d)(3) of the CEQA Guidelines (2013) to determine if the proposed project may have a significant effect on the environment.

A brief explanation is provided for all determinations in Section 3, Environmental Impact Assessment, of this document. A “No Impact” or “Less than Significant Impact” determination is made when the proposed project would not have any impact or would not have a significant effect on the existing environment for that issue area based on a project-specific analysis.

Project Title:
Los Angeles Groundwater Replenishment Project

Lead Agency Name and Address:
Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Contact Person and Phone Number:
Michael Mercado
Environmental Affairs
Los Angeles Department of Water and Power
(213) 367-0395

Project Sponsor's Name and Address:
Susan Rowghani
Los Angeles Department of Water and Power
Water Engineering & Technical Services Division
111 North Hope Street, Room 1336
Los Angeles, CA 90012

Ali Poosti
City of Los Angeles Department of Public Works, Bureau of Sanitation
Wastewater Engineering Services Division
2714 Media Center Drive
Los Angeles, CA 90065

Project Location:
The project area is located in the San Fernando Valley area of Los Angeles.

City Council District:
District 6

Neighborhood Council District:
Encino Neighborhood Council, Lake Balboa Neighborhood Council, Mission Hills Neighborhood Council, Arleta Neighborhood Council, and Sun Valley Neighborhood Council.

General Plan Designation:
The DCTWRP is designated as Public Facilities and Open Space in the City of Los Angeles General Plan. The HSG and VGS are designated as Public Facilities. The PSG is designated as Open Space. The conveyance pipelines would be located entirely within the existing road right-of-way. The properties adjacent to the proposed alignment include the following designations: Low Residential, Low Medium 1 Residential, Medium Residential, Public Facilities, and Neighborhood Office.

Zoning:
The zoning designation for the DCTWRP is [Q]PF-1XL (Public Facilities) and OS-1XL (Open Space). The zoning designation for the HSG and VGS are [Q]PF-1XL (Public Facilities). The zoning designation for the PSG is OS-1XL-O (Open Space). The properties along the proposed new conveyance pipeline alignment are zoned R1 (One Family Residential), RA (Suburban), PF (Public Facilities), RD3-1 (Restricted Density Multiple Dwelling), P-1 (Parking Zone), and C-2 (Commercial).

Description of Project:
Under the proposed project, an AWPF would be constructed within the DCTWRP to treat secondary or tertiary effluent produced by the DCTWRP using advanced treatment technology. On average, the AWPF would treat up to 44 mgd (49,000 AFY) and generate 35 mgd (39,000 AFY) of purified recycled water.

AWPF purified recycled water would be conveyed to the spreading grounds using an existing 54-inch-diameter pipeline that currently conveys Title 22 recycled water from DCTWRP and the Balboa Pump Station to the Hansen Tank at VGS. However, portions of the pipeline would need to be extended to reach the PSG. A new 42-inch-diameter lateral transmission pipeline would be constructed from the existing 54-inch-diameter pipeline at Branford Street northwest along Canterbury Avenue to the PSG. The proposed new 42-inch-diameter lateral transmission pipeline would be approximately 10,000 linear feet. The existing 7 million gallon (MG) recycled water storage tank at VGS would be connected to the purified recycled water distribution system.

LADWP would recharge up to 35,000 AFY of purified recycled water at the HSG based on the availability of supply and the annual capacity of the spreading grounds. LADWP estimates an average of 15,000 AFY of purified recycled water would recharged at HSG. LADWP would recharge up to 23,000 AFY of purified recycled water at the PSG based on the availability of supply and the annual capacity of the spreading grounds. LADWP estimates an average of 15,000 AFY of purified recycled water would be recharged at the PSG.

To provide maximum operational flexibility, LADWP would also construct up to 13 injection wells along Canterbury Avenue to allow for direct injection of purified recycled water into the SFB for use when the Hansen and Pacoima spreading grounds are being used exclusively for stormwater spreading.

Surrounding Land Uses and Setting:
The proposed project would be located in the eastern San Fernando Valley.

The DCTWRP is located at 6100 Woodley Avenue, in the Van Nuys community of the City of Los Angeles. The property is owned by USACE and operated by BOS. The DCTWRP is located within the Sepulveda Dam Recreation Area, through which the Los Angeles River runs. It is generally bordered by the Orange Line Busway and Victory Boulevard on the north, the recreation area and I-405 on the east, the recreation area and Burbank Boulevard on the south, and Woodley Avenue Park and Woodley Avenue on the west. The surrounding land uses are recreation and commercial.

The HSG are located in the Sun Valley community of the City of Los Angeles along the northwest side of the Tujunga Wash Channel immediately northeast of San Fernando Road. The Hansen Dam and Hansen Recreation Area are located to the northwest. The HSG is surrounded by open space and light manufacturing uses.

The PSG are located in the Pacoima community of the City of Los Angeles on both sides of old Pacoima Wash Channel from Arleta Avenue southwesterly to Woodman Avenue. It abuts Devonwood and Devonshire Arleta Parks and is surrounded by residential uses.

The VGS is located at 11801 Sheldon Street in the Sun Valley community of the City of Los Angeles and is located southeast of the HSG. The Union Pacific Railroad parallels San Fernando Road to the southwest of VGS. The Tujunga Wash, a flood control channel, is located to the northwest. Land use surrounding VGS are primarily commercial and industrial.

Responsible/Trustee Agencies:
- United States Army Corps of Engineers
- State of California Water Resources Control Board
- State of California Los Angeles Regional Water Quality Control Board
- State of California Department of Public Health
- State of California Department of Fish and Wildlife
- State of California Department of Water Resources
- State of California Department of Transportation
- Los Angeles County Department of Public Works, Flood Control District

Reviewing Agencies:
- City of Los Angeles Department of Transportation

ENVIRONMENTAL FACTORS POTENTIALLY AFFECTED

The environmental factors checked below would be potentially affected by this project, involving at least one impact that is a "Potentially Significant Impact" as indicated by the Environmental Impacts discussion in Section 3.

☐ Aesthetics	☐ Agriculture Resources	☒ Air Quality
☐ Biological Resources	☒ Cultural Resources	☒ Geology/Soils
☒ Hazards & Hazardous Materials	☒ Hydrology/Water Quality	☐ Land Use Planning
☐ Mineral Resources	☒ Noise	☐ Population/Housing
☐ Public Services	☐ Recreation	☒ Transportation/Traffic
☒ Utilities/Service Systems	☒ Mandatory Findings of Significance	

DETERMINATION

On the basis of this initial evaluation:

☐ I find that the proposed project COULD NOT have a significant effect on the environment, and a NEGATIVE DECLARATION will be prepared.

☐ I find that although the proposed project could have a significant effect on the environment, there will not be a significant effect in this case because revisions in the project have been made by or agreed to by the project proponent. A MITIGATED NEGATIVE DECLARATION will be prepared.

☒ I find that the proposed project MAY have a significant effect on the environment, and an environmental impact report is required.

☐ I find that the proposed project may have a "potentially significant impact" or "potentially significant unless mitigated" impact on the environment, but at least one effect 1) has been adequately analyzed in an earlier document pursuant to applicable legal standards, and 2) has been addressed by mitigation measures based on the earlier analysis as described on attached sheets. An ENVIRONMENTAL IMPACT REPORT is required, but it must analyze only the effects that remain to be addressed.

☐ I find that although the proposed project could have a significant effect on the environment, because all potentially significant effects (a) have been analyzed adequately in an earlier EIR pursuant to applicable standards, and (b) have been avoided or mitigated pursuant to that earlier EIR, including revisions or mitigation measures that are imposed upon the proposed project, nothing further is required.

Charles C. Holloway 9/6/2013

Signature Date

Charles C. Holloway
Manager of Environmental Assessment and Planning
Los Angeles Department of Water and Power

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
I.	**AESTHETICS**. Would the project:				
a.	Have a substantial adverse effect on a scenic vista?				X
b.	Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?				X
c.	Substantially degrade the existing visual character or quality of the site and its surroundings?			X	
d.	Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?			X	
II.	**AGRICULTURE AND FORESTRY RESOURCES**. In determining whether impacts to agricultural resources are significant environmental effects, lead agencies may refer to the California Agricultural Land Evaluation and Site Assessment Model (1997) prepared by the California Department of Conservation as an optional model to use in assessing impacts on agriculture and farmland. In determining whether impacts to forest resources, including timberland, are significant environmental effects, lead agencies may refer to information compiled by the California Department of Forestry and Fire Protection regarding the state's inventory of forest land, including the Forest and Range Assessment Project and the Forest Legacy Assessment project; and forest carbon measurement methodology provided in Forest Protocols adopted by the California Air Resources Board. Would the project:				
a.	Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?				X
b.	Conflict with existing zoning for agricultural use, or a Williamson act contract?				X
c.	Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?				X
d.	Result in the loss of forest land or conversion of forest land to non-forest use?				X
e.	Involve other changes in the existing environment that, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?				X

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
III.	**AIR QUALITY**. Where available, the significance criteria established by the applicable air quality management or air pollution control district may be relied upon to make the following determinations. Would the project:				
a.	Conflict with or obstruct implementation of the applicable air quality plan?	X			
b.	Violate any air quality standard or contribute substantially to an existing or projected air quality violation?	X			
c.	Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	X			
d.	Expose sensitive receptors to substantial pollutant concentrations?	X			
e.	Create objectionable odors affecting a substantial number of people?	X			
IV.	**BIOLOGICAL RESOURCES**. Would the project:				
a.	Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
b.	Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?			X	
c.	Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?			X	
d.	Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?			X	
e.	Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?			X	
f.	Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?				X

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
V.	**CULTURAL RESOURCES**. Would the project:				
a.	Cause a substantial adverse change in the significance of a historical resource as defined in CEQA Guidelines Section 15064.5?	X			
b.	Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?	X			
c.	Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?	X			
d.	Disturb any human remains, including those interred outside of formal cemeteries?	X			
VI.	**GEOLOGY AND SOILS**. Would the project:				
a.	Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:				
	i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.			X	
	ii) Strong seismic ground shaking?			X	
	iii) Seismic-related ground failure, including liquefaction?			X	
	iv) Landslides?				X
b.	Result in substantial soil erosion, loss of topsoil, or changes in topography or unstable soil conditions from excavation, grading, or fill?	X			
c.	Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on-or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?			X	
d.	Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?	X			
e.	Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?				X
VII.	**GREENHOUSE GAS EMISSIONS**: Would the project:				
a.	Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impacts on the environment?	X			
b.	Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	X			

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
VIII.	**HAZARDS AND HAZARDOUS MATERIALS**: Would the project:				
a.	Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?	X			
b.	Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?	X			
c.	Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within one-quarter mile of an existing or proposed school?			X	
d.	Be located on a site that is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?	X			
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?			X	
f.	For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?			X	
g.	Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?			X	
h.	Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?				X
IX.	**HYDROLOGY AND WATER QUALITY**. Would the project:				
a.	Violate any water quality standards or waste discharge requirements?	X			
b.	Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?			X	
c.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of stream or river, in a manner that would result in substantial erosion or siltation on- or off-site?			X	

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
d.	Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner that would result in flooding on- or off-site?			X	
e.	Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?			X	
f.	Otherwise substantially degrade water quality?	X			
g.	Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?				X
h.	Place within a 100-year flood hazard area structures that would impede or redirect flood flows?	X			
i.	Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?	X			
j.	Inundation by seiche, tsunami, or mudflow?			X	
X.	**LAND USE AND PLANNING**. Would the project:				
a.	Physically divide an established community?				X
b.	Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?	X			
c.	Conflict with any applicable habitat conservation plan or natural community conservation plan?				X
XI.	**MINERAL RESOURCES**. Would the project:				
a.	Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?				X
b.	Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?				X
XII.	**NOISE**. Would the project result in:				
a.	Exposure of persons to or generation of noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	X			
b.	Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?	X			
c.	A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	X			

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
d.	A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	X			
e.	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?			X	
f.	For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?			X	
XIII.	**POPULATION AND HOUSING**. Would the project:				
a.	Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?				X
b.	Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?				X
c.	Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?				X
XIV.	**PUBLIC SERVICES**.				
a.	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:				
	i) Fire protection?			X	
	ii) Police protection?			X	
	iii) Schools?				X
	iv) Parks?				X
	v) Other public facilities?				X
XV.	**RECREATION**.				
a.	Would the project increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?				X
b.	Does the project include recreational facilities or require the construction or expansion of recreational facilities that might have an adverse physical effect on the environment?				X

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
XVI.	**TRANSPORTATION/TRAFFIC**. Would the project:				
a.	Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?	X			
b.	Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?	X			
c.	Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?				X
d.	Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?				X
e.	Result in inadequate emergency access?			X	
f.	Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?	X			
XVII.	**UTILITIES AND SERVICE SYSTEMS**. Would the project:				
a.	Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?	X			
b.	Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?	X			
c.	Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?			X	
d.	Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?				X
e.	Result in a determination by the wastewater treatment provider that serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?	X			
f.	Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?			X	

		Potentially Significant Impact	Less Than Significant Impact After Mitigation Incorporated	Less Than Significant Impact	No Impact
g.	Comply with federal, state, and local statutes and regulations related to solid waste?			X	
XVIII.	**MANDATORY FINDINGS OF SIGNIFICANCE**.				
a.	Does the project have the potential to degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, reduce the number or restrict the range of a rare or endangered plant or animal or eliminate important examples of the major periods of California history or prehistory?	X			
b.	Does the project have impacts that are individually limited, but cumulatively considerable? “Cumulatively considerable” means that the incremental effects of a project are considerable when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.	X			
c.	Does the project have environmental effects that will cause substantial adverse effects on human beings, either directly or indirectly?	X			

SECTION 3
ENVIRONMENTAL IMPACT ASSESSMENT

INTRODUCTION

The following discussion addresses impacts to various environmental resources per the Initial Study checklist questions contained in Appendix G of the CEQA Guidelines.

I. AESTHETICS

Would the project:

a) Have a substantial adverse effect on a scenic vista?

No Impact. The proposed project would not have an adverse effect on a scenic vista. Scenic views or vistas are panoramic public views of various natural features, including the ocean, striking or unusual natural terrain, or unique urban or historic features. Public access to these views may be from park lands, private and publicly owned sites, and public right-of-way.[2] Construction of the AWPF would occur within the DCTWRP property amongst other water treatment facilities. Construction of the proposed AWPF, conveyance pipelines, and turnout structures associated with replenishment at the HSG and PSG would result in short-term impacts to aesthetics due to the presence of construction equipment and materials in the visual landscape. However, none of these project components are located within a scenic vista. Therefore, no impacts would occur to scenic vistas due to construction of these project components. The completed AWPF would be designed to appear similar in height, building architecture, massing, and finishes as the existing DCTWRP facilities. Additionally, these facilities would not be located within or block a scenic vista. Once constructed, the conveyance pipelines and turn-out structures would be located entirely below-ground and would have no impacts to scenic vistas. No impact to a scenic vista would occur, and no further analysis is required.

b) Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

No Impact. Implementation of the proposed project would not damage scenic resources within a state scenic highway. No sections of I-405, I-5, California Route 170 (CA 170) or United States Route 101 (US 101) within the project vicinity are designated as eligible California Scenic Highways.[3] Additionally, the proposed facilities would not be visible from these roadways. Further, none of the conveyance pipeline segments are Designated Scenic Highways in the Transportation Element of the City of Los Angeles General Plan.[4] Therefore, no scenic roadways would be altered as a result of the implementation of the proposed project. No impact would occur, and no further analysis is required.

---

[2] City of Los Angeles Department of City Planning, *City of Los Angeles General Plan, Conservation Element*, adopted September 26, 2001.

[3] State of California Department of Transportation. *State Scenic Highway Program*. Website: http://www.dot.ca.gov/hq/LandArch/scenic_highways/scenic_hwy.htm, accessed April 16, 2013.

[4] City of Los Angeles Department of City Planning, *City of Los Angeles General Plan, Transportation Element*, adopted September 8, 1999.

c) **Substantially degrade the existing visual character or quality of the site and its surroundings?**

Less Than Significant Impact. The proposed project is not expected to substantially degrade the existing visual character or quality of the project site and its surroundings. The conveyance pipelines and turnout structures would be constructed underground and would not be visible once completed. The AWPF and associated facilities would be visible above ground; however, construction of the AWPF would occur within the DCTWRP property amongst other water treatment facilities. Further, the completed AWPF would be designed to appear similar in height, building architecture, massing, and finishes as the existing DCTWRP facilities. Therefore, these facilities would not substantially contrast with the surrounding character of the DCTWRP. The impact would be less than significant, and no further analysis is required.

d) **Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?**

Less Than Significant Impact. Implementation of the proposed project would not create a new source of light or glare that would adversely affect day or nighttime views. The proposed project would be constructed primarily during daylight within existing City and County facilities, including within the DCTWRP and the HSG and PSG, as well as pipeline construction within public roadway rights-of-way. The conveyance pipelines and turnout structures would be constructed underground and would not be visible once completed. No permanent night lighting or reflective surfaces would be installed with the conveyance or replenishment components of the proposed project. Security lighting may be required for the AWPF. However, the AWPF would be constructed within the DCTWRP where there is existing building security and nighttime parking lot lighting. Additionally, the AWPF and associated facilities would be constructed of non-reflective building materials. Therefore, the visual impacts associated with nighttime security lighting and glare would be less than significant. No further analysis of this issue is required.

II. AGRICULTURE AND FORESTRY RESOURCES

Would the project:

a) **Convert Prime Farmland, Unique Farmland or Farmland of Statewide Importance (Farmland), as shown on the maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?**

No Impact. The project site is located in fully urbanized portions of the San Fernando Valley. The project areas are designated as Urban and Built-Up Land on the “Important Farmland in California” map prepared by the California Resources Agency pursuant to the Farmland Mapping and Monitoring Program. Thus, component of the proposed would be located on or near Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[5] Therefore, the proposed project

[5] State of California Department of Conservation, Division of Land Resource Protection, Farmland Mapping & Monitoring Program, *Important Farmland in California, 2008* map. Website: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2008/fmmp2008_08_11.pdf, accessed April 16, 2013.

would not convert farmland to a non-agricultural use, and no impact to farmland would occur, and no further analysis is required.

b) Conflict with existing zoning for agricultural use, or a Williamson Act contract?

No Impact. The proposed project would be located entirely within public roadway rights-of-way and existing City and County public facilities. Furthermore, the County of Los Angeles does not offer Williamson Act contracts.[6] Therefore, the proposed project would not conflict with existing zoning or a Williamson Act contract. No impact would occur, and no further analysis is required.

c) Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code section 12220(g)), timberland (as defined by Public Resources Code section 4526), or timberland zoned Timberland Production (as defined by Government Code section 51104(g))?

No Impact. The proposed project would be located entirely within existing public facilities and public roadway rights-of-way in a fully urbanized portion of the San Fernando Valley. No portion of the project site is zoned for or developed as forest land or timberland as defined in Public Resources Code Section 12220(g) and Government Code Section 4526, respectively.[7] Therefore, the proposed project would not conflict with existing zoning for or cause a rezoning of forest or timberland. No impact would occur, and no further analysis is required.

d) Result in the loss of forest land or conversion of forest land to non-forest use?

No Impact. The proposed project would be located entirely within existing public facilities or public roadway rights-of-way in a fully urbanized portion of the San Fernando Valley. No portion of the project site is zoned or developed for a forest land use or located within or adjacent to forest lands.[8] Therefore, the proposed project would not result in the loss of forest land or conversion of forest land to non-forest use. No impact would occur, and no further analysis is required.

e) Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland, to non-agricultural use or conversion of forest land to non-forest use?

No Impact. The project areas and adjacent properties are designated as "Urban and Built-Up Land;" no portion of the project site or surrounding area is identified as Prime Farmland, Unique Farmland, or Farmland of Statewide Importance.[9] Additionally, no forest lands exist on or adjacent to the project areas. Therefore, the proposed project would not change the existing environment in a way that

---

[6] State of California Department of Conservation, Division of Land Resource Protection, *Williamson Act Program – Basic Contract Provisions*. Website: http://www.conservation.ca.gov/dlrp/lca/basic_contract_provisions, accessed April 16, 2013.

[7] City of Los Angeles Zoning Information and Map Access System (ZIMAS). Website: http://zimas.lacity.org/, accessed April 16, 2013.

[8] Ibid.

[9] State of California Department of Conservation, Division of Land Resource Protection, Farmland Mapping & Monitoring Program. *Important Farmland in California. 2008*. Website: ftp://ftp.consrv.ca.gov/pub/dlrp/FMMP/pdf/statewide/2008/fmmp2008_08_11.pdf, accessed April 16, 2013.

would result in the conversion of Farmland to non-agricultural use or forest land to non-forest use. No impact would occur, and no further analysis is required.

III. AIR QUALITY

Would the project:

a) Conflict with or obstruct implementation of the applicable air quality plan (e.g., the SCAQMD Plan or Congestion Management Plan)?

Potentially Significant Impact. The South Coast Air Quality Management District (SCAQMD) and the Southern California Association of Governments (SCAG) are responsible for preparing an Air Quality Management Plan (AQMP), which implements federal Clean Air Act and California Clean Air Act requirements, and details goals, policies, and programs for improving air quality in the South Coast Air Basin. The 2007 AQMP was adopted by the SCAQMD Governing Board on June 1, 2007, and the California Air Resources Board (CARB) on September 27, 2007. The purpose of the 2007 Air Quality Management Plan for the South Coast Air Basin is to set forth a comprehensive program that will lead the region into compliance with federal air quality standards for 8-hour ozone (O_3) and particulate matter less than 2.5 microns in diameter ($PM_{2.5}$).

According to the SCAQMD, there are two key indicators of consistency with the AQMP: (1) whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and (2) whether the project will not exceed the assumptions in the AQMP based on the year of project buildout.[10] Equipment usage and activities during construction of the proposed project would result in emissions of $PM_{2.5}$ and ozone precursors, which could result in significant impacts to air quality in the area. The sources of emissions would include trucks, and on-road motor vehicles for equipment and material deliveries and workers commuting to and from the project site. This impact is potentially significant. Further analysis of air quality impacts is warranted to determine whether the project would conflict with or obstruct implementation of the applicable plans for attainment and, if so, to determine the reasonable and feasible mitigation measures that could be imposed. This issue will be further evaluated in the EIR.

b) Violate any air quality standard or contribute substantially to an existing or projected air quality violation?

Potentially Significant Impact. The proposed project has the potential to violate an air quality standard or contribute substantially to an existing or projected air quality violation. The project site is located within the Los Angeles County portion of the South Coast Air Basin, which is designated as a non-attainment area for O_3, particulate matter smaller than or equal to 10 microns in diameter (PM_{10}), and $PM_{2.5}$.

Construction of the proposed project would contribute air quality emissions through the use of heavy-duty construction equipment, truck delivery and haul trips, and

[10] SCAQMD, *The CEQA Air Quality Handbook,* 1993.

vehicle trips generated by construction workers traveling to and from the project site. Fugitive dust emissions would primarily result from trenching activities and site preparation or excavation activities at the DCTWRP. Nitrogen oxide (NO_X) emissions would primarily result from the use of construction equipment.

Operation of the proposed project would contribute air quality emissions through additional DCTWRP workers traveling to and from the project site and energy consumption associated with the AWPF. These issues will be further evaluated in the EIR.

c) Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?

Potentially Significant Impact. The proposed project has the potential to result in a cumulatively considerable net increase of a criteria pollutant for which the project region is non-attainment under an applicable federal or state ambient air quality standard. The proposed project and the whole of the Los Angeles metropolitan area are located within the South Coast Air Basin, which is characterized by relatively poor air quality. The South Coast Air Basin is currently classified as a federal and state non-attainment area for O_3, PM_{10}, and $PM_{2.5}$ and a federal attainment/maintenance area for carbon monoxide (CO). It is classified as a state attainment area for CO, and it currently meets the federal and state standards for nitrogen dioxide, sulfur oxide (SO_x), and lead (Pb).

As discussed in Section III(b) above, construction activities associated with implementation of the proposed project and long-term operation of the proposed facilities have the potential to result in increases in air pollutant emissions, which, individually or cumulatively, would exceed established thresholds. This issue will be further evaluated in the EIR.

d) Expose sensitive receptors to substantial pollutant concentrations?

Potentially Significant Impact. Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. CARB has identified the following groups who are most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes.

Sensitive receptors are located within the vicinity of the DCTWRP, along the conveyance pipeline alignments and injection well locations, and in the vicinity of the HSG and the PSG. Construction activity is expected to generate on-site pollutant emissions associated with equipment exhaust, toxic air contaminant (TAC) emissions, and fugitive dust, potentially exposing nearby sensitive receptors to substantial pollutant concentrations. This issue will be further evaluated in the EIR.

e) Create objectionable odors affecting a substantial number of people?

Potentially Significant Impact. Potential sources that may emit odors during construction activities include equipment exhaust. Odors from these sources would be localized and generally confined to the immediate area surrounding the construction site. The proposed project would utilize typical construction techniques, and the odors would be typical of most construction sites and temporary in nature. Therefore, the odor impact during construction would be less than significant.

Types of land uses that typically pose potential odor problems include agriculture, wastewater treatment plants, food processing and rendering facilities, chemical plants, composting facilities, landfills, waste transfer stations, and dairies. In addition, the occurrence and severity of odor impacts depend on numerous factors, including the nature, frequency, and intensity of the source; wind speed and direction; and the presence of sensitive receptors. Although offensive odors rarely cause any physical harm, they can still be very unpleasant, leading to considerable distress and often generating citizen complaints to local governments and regulatory agencies. Because the proposed project involves the operation of a water treatment plant, this issue will be further evaluated in the EIR.

IV. BIOLOGICAL RESOURCES

Would the project:

a) Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact. Sensitive plants include those listed as threatened or endangered, proposed for listing, or candidate for listing by the U.S. Fish and Wildlife Service (USFWS) and/or California Department of Fish and Wildlife (CDFW) or those listed by the California Native Plant Society (CNPS). Sensitive wildlife species are those species listed as threatened or endangered, proposed for listing, or candidate for listing by USFWS and/or CDFW, or considered special status by CDFW. Sensitive habitats are those that are regulated by USFWS, USACE, and/or those considered sensitive by the CDFW.

Because the proposed project would involve construction within existing City and County facilities and within public road rights-of-way in a fully urbanized portion of the San Fernando Valley, there would be no direct impacts to sensitive plants, wildlife, or vegetation communities. All construction staging would occur within the roadway or previously disturbed areas, such that no vegetation removal would be required. Therefore, there would be no indirect impacts to native vegetation, sensitive plants, sensitive wildlife species, or sensitive vegetation communities during construction. During project operations, direct and indirect impacts to nearby habitats and sensitive vegetation communities, such as the Japanese Gardens, are not expected to be significant. Additionally, post-construction flows from DCTWRP would not be modified in a way that is expected to have a substantial adverse affect on any sensitive species or vegetation communities. Nonetheless, a more detailed evaluation of direct and indirect impacts to sensitive species will be included in the EIR.

b) Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, and regulations or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?

Less Than Significant Impact. As discussed in Section IV(a) above, construction activities would occur entirely within existing City and County facilities and public roadway rights-of-way in a fully urbanized portion of the San Fernando Valley. No removal of riparian vegetation is anticipated during construction. Therefore, no direct or indirect impacts to riparian habitat or other sensitive natural community are expected to occur during construction. During project operations, direct and indirect impacts to nearby riparian habitats and sensitive vegetation communities, are not expected to be significant. Additionally, post-construction flows from DCTWRP would not be modified in a way that is expected to have a substantial adverse affect on any riparian habitat or sensitive natural community. Nonetheless, a more detailed evaluation of direct and indirect impacts to riparian habitat or other sensitive natural community will be included in the EIR.

c) Have a substantial adverse effect on federally protected wetlands as defined by Section 404 of the Clean Water Act (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Less Than Significant Impact. As discussed in Section IV(a) above, construction activities would occur entirely within existing City and County facilities and public roadway rights-of-way in a fully urbanized portion of the San Fernando Valley. Nonetheless, a more detailed evaluation of impacts to federally protected wetlands will be included in the EIR.

d) Interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery/breeding sites?

Less Than Significant Impact. In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two comparatively undisturbed habitat fragments, or between a habitat fragment and some vital resources, thereby encouraging population growth and diversity. A viable wildlife migration corridor consists of more than a path between fragmented habitats. A wildlife migration corridor must also include adequate vegetative cover and food sources for transient species, as well as resident populations of less mobile animals to survive. They must be extensive enough to allow for large animals to pass relatively undetected, be free of obstacles, and lack any other distraction that may hinder wildlife passage such as lights or noise.

As discussed in Section IV(a) above, construction activities would occur entirely within existing City and County facilities and public roadway rights-of-way in a fully urbanized portion of the San Fernando Valley. Therefore, the project areas do not constitute wildlife corridors. Nonetheless, a more detailed evaluation of impacts to wildlife migration will be included in the EIR.

e) Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance (e.g., oak trees or California walnut woodlands)?

Less Than Significant Impact. The proposed project would not conflict with local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance. Construction of the proposed project would not require removal of vegetation, including trees under the protection of the City of Los Angeles Tree Protection Ordinance.[11] Nonetheless, a more detailed evaluation of local policies and ordinances protecting biological resources will be included in the EIR.

f) Conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

No Impact. The proposed project would not conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. The proposed project is not located within any Significant Ecological Areas or designated Critical Habitat. No regional habitat conservation plans or Natural Community Conservation Plans have been adopted within the project area.[12] No impact would occur, and no further analysis is required.

V. CULTURAL RESOURCES

Would the project:

a) Cause a substantial adverse change in the significance of a historical resource as defined in California Code of Regulations Section 15064.5?

Potentially Significant Impact. A Cultural Resources report will be prepared and will include a discussion and analysis of project impacts on historical resources, if any. The results of the report will be summarized in the EIR.

b) Cause a substantial adverse change in the significance of an archaeological resource pursuant to California Code of Regulations Section 15064.5?

Potentially Significant Impact. Project construction would involve ground disturbing activities that have the potential to uncover unknown archaeological resources. A Cultural Resources report will be prepared and will include a discussion and analysis of project impacts on archaeological resources, if any. The results of the report will be summarized in the EIR.

---

[11] City of Los Angeles Municipal Code, Section 17.02.

[12] County of Los Angeles, *Draft General Plan, Conservation & Open Space, Proposed Significant Ecological Areas Map*, 2007.

c) Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Potentially Significant Impact. Project construction would involve ground disturbing activities that have the potential to uncover unknown paleontological resources. A Cultural Resources report will be prepared and will include a discussion and analysis of project impacts on unique paleontological resources or unique geologic features, if any. The results of the report will be summarized in the EIR.

d) Disturb any human remains, including those interred outside of formal cemeteries?

Potentially Significant Impact. The EIR will discuss the potential for uncovering unidentified human remains during project construction.

VI. GEOLOGY AND SOILS

Would the project:

a) Expose people or structures to potential substantial adverse effects, including the risk of loss, injury, or death involving:

i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault? Refer to Division of Mines and Geology Special Publication 42.

Less Than Significant Impact. The proposed project would not expose people or structures to new adverse effects associated with rupture of a known earthquake fault. There are numerous known earthquake faults in the vicinity of the project site and a portion of the project site is located within a City-designated fault rupture zone.[13] Therefore, the proposed project components would be designed and constructed in accordance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to seismic criteria. Compliance with existing regulations would ensure a less than significant impact related to fault rupture.

ii) Strong seismic ground shaking?

Less Than Significant Impact. The project site is located within the seismically active southern California region, and like all locations within the area, is subject to strong seismic ground shaking. However, as discussed in Section VI(a)(i) above, the proposed project components would be designed and constructed in accordance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to seismic criteria. Compliance with existing regulations would ensure a less than significant impact related to strong seismic ground shaking. No further analysis is required.

---

[13] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Alquist-Priolo Special Study Zones & Fault Rupture Study Areas* Map, September 1996.

iii) Seismic-related ground failure, including liquefaction?

Less Than Significant Impact. Portions of the project site are located within a City-designated liquefiable area.[14] However, the proposed project would be designed and constructed in compliance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to liquefaction criteria. Compliance with existing regulations would ensure a less than significant impact related to seismic-related ground failure, including liquefaction. No further analysis is required.

iv) Landslides?

No Impact. The project site is not located within or adjacent to a City-designated hillside area.[15] Therefore, construction and excavation activities would not be expected to increase the risk of landslides in the hillside areas. No impact related to landslides would occur, and no further analysis is required.

b) Result in substantial soil erosion or the loss of topsoil?

Potentially Significant Impact. Construction activities would expose soils for a limited time, allowing for possible erosion. However, excavation would comply with all applicable provisions of Chapter IX, Division 70 of the Los Angeles Municipal Code, which addresses grading, excavation, and fill. During construction, transport of sediments from the project site by storm water runoff and winds would be prevented through the use of appropriate Best Management Practices (BMPs). Rule 403 dust control measures would be implemented as required by the SCAQMD. Additionally, LADWP would develop and implement an erosion control plan and a Storm Water Pollution Prevention Plan (SWPPP) for construction activities, in compliance with the latest National Pollutant Discharge Elimination System (NPDES) permit requirements for storm water discharges. Nonetheless, this issue will be further evaluated in the EIR.

c) Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction or collapse?

Less Than Significant Impact. One of the major types of liquefaction induced ground failure is lateral spreading of mildly sloping ground. Lateral spreading involves primarily side-to-side movement of earth materials due to ground shaking, and is evidenced by near-vertical cracks to predominantly horizontal movement of the soil mass involved. As discussed in Sections VI(a)(iii) and VI(a)(iv) above, the project site is located in an area identified as being at risk for liquefaction, but is not located within or adjacent to a designated hillside area. All construction work would adhere to the latest version of the City of Los Angeles Building Code, and other applicable federal, state, and local codes relative to liquefaction criteria.

Subsidence is the lowering of surface elevation due to changes occurring underground, such as the extraction of large amounts of groundwater, oil, or gas.

---

[14] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Areas Susceptible to Liquefaction* Map, September 1996.

[15] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Landslide Inventory & Hillside Areas* Map, September 1996.

When groundwater is extracted from aquifers at a rate that exceeds the rate of replenishment, overdraft occurs, which can lead to subsidence. However, the proposed project does not anticipate the extraction of any groundwater, oil, or gas from the project site. Therefore, subsidence would not occur.

Collapsible soils consist of loose dry materials that collapse and compact under the addition of water or excessive loading. Collapsible soils are prevalent throughout the southwestern United States, specifically in areas of young alluvial fans. Soil collapse occurs when the land surface is saturated at depths greater than those reached by typical rain events. However, the proposed project would be constructed in accordance with the latest version of the City of Los Angeles Building Code and other applicable federal, state, and local codes relative to seismic criteria. These building codes are designed to ensure safe construction. Compliance with existing regulations would ensure a less than significant impact, and no further analysis is required.

d) Be located on expansive soil, as defined in Table 18-1-B of the Uniform Building Code (1994), creating substantial risks to life or property?

Potentially Significant Impact. Expansive soils are clay-based soils that tend to expand (increase in volume) as they absorb water and shrink (lessen in volume) as water is drawn away. If soils consist of expansive clays, foundation movement and/or damage can occur if wetting and drying of the clay does not occur uniformly across the entire area. The onsite geologic materials in the project area are yet to be determined and further analysis will be included as part of the EIR.

e) Have soils incapable of adequately supporting use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

No Impact. Construction activities would occur entirely within existing City and County facilities and public roadway rights-of-way in a fully urbanized portion of the San Fernando Valley that is currently served by sewers for the disposal of wastewater. No septic tanks or alternative wastewater disposal systems are proposed. Therefore, no impact associated with the use of such systems would occur, and no further analysis is required.

VII. GREENHOUSE GAS EMISSIONS

Would the project:

a) Generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?

Potentially Significant Impact. Greenhouse gas (GHG) emissions refer to a group of emissions that are generally believed to affect global climate conditions. The greenhouse effect compares the Earth and the atmosphere surrounding it to a greenhouse with glass panes. The glass panes in a greenhouse let heat from sunlight in and reduce the amount of heat that escapes. GHGs, such as carbon dioxide (CO_2), methane (CH_4), and nitrous oxide (N_2O), keep the average surface temperature of the Earth close to 60 degrees Fahrenheit. Of all the GHGs, CO_2 is the most abundant gas that contributes to climate change through fossil fuel combustion. The other GHGs are less abundant, but have higher global warming potential than CO_2. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent mass of CO_2, denoted as CO_2e.

GHG emissions would be generated by equipment exhaust, truck trips, and worker commute trips during construction and energy consumption and worker commute trips during operation. This issue will be further evaluated in the EIR.

b) Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of greenhouse gases?

Potentially Significant Impact. As discussed in Section VII(a) above, the proposed project has the potential to generate substantial sources of construction and operational emissions, which may conflict with a state or local climate change policy or regulation adopted for the purpose of reducing emissions of GHGs. This issue will be further evaluated in the EIR.

VIII. HAZARDS AND HAZARDOUS MATERIALS

Would the project:

a) Create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?

Potentially Significant Impact. Construction activities would be temporary in nature and would involve the limited transport, storage, use, and disposal of hazardous materials. Such hazardous materials could include on-site fueling/servicing of construction equipment, and the transport of fuels, lubricating fluids, and solvents. These types of materials are not acutely hazardous, and all storage, handling, and disposal of these materials are regulated by the California Department of Toxic Substances Control, the U.S. Environmental Protection Agency, the Occupational Safety & Health Administration, the Los Angeles County Fire Department, and the Los Angeles County Health Department. The transport, use, and disposal of construction-related hazardous materials would occur in conformance with applicable federal, state, and local regulations governing such activities. Therefore, the short-term construction impact would be less than significant.

Long-term operation of the proposed project would result in increased chemical deliveries to the DCTWRP, which has the potential to create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials. This issue will be further evaluated in the EIR.

b) Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Potentially Significant Impact. As discussed in Section VIII(a) above, construction activities may involve limited transport, storage, use, or disposal of some hazardous materials, such as on-site fueling/servicing of construction equipment, and the transport of fuels, lubricating fluids, and solvents. These types of materials are not acutely hazardous, and compliance with existing federal, state, and local regulations would ensure that construction impacts related to reasonably foreseeable upset and accident conditions involving the release of hazardous materials would be less than significant.

Long-term operation of the proposed project would result in increased chemical deliveries to the DCTWRP, which has the potential to pose a significant hazard to the public or the environment through reasonably foreseeable upset or accident conditions. This issue will be further evaluated in the EIR.

c) Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances or waste within one-quarter mile of an existing or proposed school?

Less Than Significant Impact. As discussed in Section VIII(a) above, construction activities would involve limited transport, storage, use, and disposal of hazardous materials. However, as discussed, these materials are not acutely hazardous and the transport, use, and disposal of construction-related hazardous materials would occur in conformance with all applicable federal, state, and local regulations governing such activities. Therefore, impacts related to hazardous materials within 0.25-mile of an existing or proposed school would be less than significant.

Long-term operation of the proposed project would involve the transport, storage, use, or disposal of hazardous materials associated with the AWPF. However, there are no schools located within 0.25-mile of the DCTWRP. Therefore, operational impacts related to hazardous materials within 0.25-mile of an existing or proposed school would be less than significant, and no further analysis is required.

d) Be located on a site which is included on a list of hazardous materials sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Potentially Significant Impact. Some hazardous materials sites have been identified on or near the proposed project. This issue will be evaluated further in the EIR.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project result in a safety hazard for people residing or working in the project area?

Less Than Significant Impact. The closest airport to the project site is Whiteman Airport, located less than a mile northwest of HSG and approximately 1.5-miles east of PSG. Additionally, San Fernando Airport is located less than a mile northeast of PSG and Van Nuys Airport is located less than one mile west north of the DCTWRP.[16] The only above ground structures would be permanently located at DCTWRP; however, the tallest structure would be similar to the existing facilities and would not pose a hazard to aircraft operations. Therefore, implementation of the proposed project would not result in a safety hazard for people residing or

[16] Airnav.com, Airports search. Website: http://www.airnav.com/airports/, accessed April 24, 2013.

working in the project area. The impact would be less than significant, and no further analysis is required.

f) For a project within the vicinity of a private airstrip, would the project result in a safety hazard for people residing or working in the project area?

Less Than Significant Impact. As discussed in Section VIII(e) above, the project site is located within the vicinity of private airstrips.[17] However, based on the location, height, and nature of the project components, the proposed project would not result in a safety hazard for people residing or working in the project area. The impact would be less than significant, and no further analysis is required.

g) Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Less Than Significant Impact. The proposed project involves extension of conveyance pipelines within public roadway rights-of-way. Construction of the conveyance pipelines would involve temporary lane closures, which could have an effect on designated disaster routes. However, full roadway closures are not anticipated and any open trenches would be covered with steel plates during non-work hours. Additionally, a Traffic Management Plan would be prepared in coordination with the City of Los Angeles Department of Transportation (LADOT) for the proposed project and would detail construction traffic control and detour methods. Implementation of the Traffic Management Plan during construction would ensure that impacts related to emergency response plans would be less than significant. Following installation of the conveyance pipelines, all roadways would be returned to their existing conditions. Therefore, no long-term impacts would result from operation of the proposed project. No further analysis is required.

h) Expose people or structures to a significant risk of loss, injury or death involving wildland fires, including where wildlands are adjacent to urbanized areas or where residences are intermixed with wildlands?

No Impact. The project site is not located within a City-designated Wildfire Hazard Area or Fire Buffer Zone.[18] Therefore, the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving wildland fires. No impact would occur, and no further analysis is required.

IX. HYDROLOGY AND WATER QUALITY

Would the project:

a) Violate any water quality standards or waste discharge requirements?

Potentially Significant Impact. Construction activities, such as excavation, would result in the disturbance of soil and temporarily increase the potential for soil erosion. Additionally, construction activities and equipment would require the on-site use and storage of fuels, lubricants, and other hydrocarbon fluids. Storm events occurring during the construction phase would have the potential to carry

---

17 Ibid.

18 City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Selected Wildfire Hazard Areas Map*, September 1996.

disturbed sediments and spilled substances from construction activities off-site to nearby receiving waters. LADWP would be required to obtain a General Construction Activity Storm Water Permit, issued by the State Water Resources Control Board. One of the conditions of the General Permit is the development and the implementation of a SWPPP, which would identify structural and nonstructural BMPs to be implemented during the construction phase. LADWP would also develop and implement an erosion control plan for the proposed project. This issue will be evaluated further in the EIR.

Upon completion of the proposed project, storm flows would be directed to the existing storm drain system, similar to existing conditions. There would be no exposed soil remaining at completion of construction activities; therefore, there would be no potential for soil erosion or contamination. However, the EIR will include an analysis of water quality associated with replenishment of purified recycled water into the SFB.

b) Substantially deplete groundwater supplies or interfere substantially with groundwater recharge such that there would be a net deficit in aquifer volume or a lowering of the local groundwater table level (e.g., the production rate of pre-existing nearby wells would drop to a level which would not support existing land uses or planned uses for which permits have been granted)?

Less Than Signfiicant Impact. The purpose of the proposed project is to increase groundwater replenishment in order to increase groundwater supplies within the SFB and reduce reliance on imported water. By its very nature, the proposed project would not substantially deplete groundwater supplies or interfere with groundwater recharge. However, the EIR will include analysis of the capacity of the spreading grounds and the SFB to accommodate additional supplies of replenished water.

c) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, in a manner, which would result in substantial erosion or siltation on- or off-site?

Less Than Significant Impact. The proposed project components would be located within previously developed areas and existing roadways, which have been previously disturbed. All drainage flows would be routed through existing storm water infrastructure. Construction activities would temporarily increase the potential for erosion due to excavation. However, compliance with the SWPPP and the erosion control plan developed for the proposed project would minimize impacts. Therefore, impacts related to erosion resulting from altered drainage patterns would be less than significant, and no further analysis is required.

d) Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river, or substantially increase the rate or amount of surface runoff in a manner, which would result in flooding on- or off-site?

Less Than Significant Impact. The proposed project involves previously developed areas. All drainage flows would be routed through existing storm water infrastructure serving the project site and surrounding areas. Additionally, following construction of the proposed project, all roadways would be returned to their original condition. As such, after construction, storm water flows would be similar to the current condition, and the proposed project does not have the potential to substantially increase the rate of surface runoff. As discussed in Section IX(a) above, BMPs would be implemented to control runoff from the project site during construction. Therefore, no flooding is expected to occur on- or off-site as a result of the proposed project construction. The impact would be less than significant, and no further analysis is required.

During project operation, long-term BMPs would be implemented to control runoff at the project site pursuant to the Standard Urban Storm Water Management Plan. Operating agreements would also be developed and implemented with LACDPW for groundwater replenishment at the HSG and the PSG, such that the capacity of the HSG and the PSG would not be exceeded and flooding would not be expected to occur on- or off-site. Further analysis of these issues will be included in the EIR. Additionally, the EIR will include analysis of the potential impact of project operation with regard to changes in flow levels within the Los Angeles River over those that are currently discharged through DCTWRP.

e) Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?

Less Than Significant Impact. As discussed above, implementation of the proposed project would result in a similar amount of permeable surfaces as under existing conditions. Thus, no substantial increase in the amount of runoff from the project site is anticipated. Construction would require water, as necessary, to control fugitive dust. Fugitive dust emissions at the construction site would be controlled by water trucks equipped with spray nozzles. Construction water needs would generate minimal quantities of discharge water, which would drain into existing storm drains located within or adjacent to the project site. BMPs would be identified in the SWPPP developed for the proposed project pursuant to the NPDES permit requirements to control runoff from the project sites during construction. Thus, the proposed project would not create or contribute runoff which would exceed drainage system capacity, nor would it provide substantial additional sources of polluted runoff. The impact would be less than significant, and no further analysis is required.

f) Otherwise substantially degrade water quality?

Potentially Significant Impact. As discussed in Section IX(a) above, the EIR will include an analysis of water quality issues during construction activities and long-term groundwater impacts associated with replenishment of purified recycled water during project operation.

g) Place housing within a 100-year flood hazard area as mapped on a federal Flood Hazard Boundary or Flood Insurance Rate Map or other flood hazard delineation map?

No Impact. A 100-year flood is a flood defined as having a 1.0 percent chance of occurring in any given year. Portions of the project site are located within areas designated as Special Flood Areas and Zone X on the Federal Emergency

Management Agency flood insurance rate maps. The Special Flood Areas designation indicates areas determined to have a less than 0.1 percent annual chance floodplain. The Zone X designation indicates areas determined to be outside the 0.2 percent annual chance floodplain.[19] Therefore, portions of the project site are known to experience flooding and are anticipated to flood in the future. However, the proposed project does not include a residential component; therefore, it would not place housing within a 100-year flood hazard area. No impact would occur, and no further analysis is required.

h) Place within a 100-year flood area structures to impede or redirect flood flows?

Potentially Significant Impact. As discussed above, portions of the project area are designated as Special Flood Areas, which means that portions of the project site are known to flood.[20] Therefore, the EIR will include an analysis of the project components on flood flows.

i) Expose people or structures to a significant risk of loss, injury or death involving flooding, including flooding as a result of the failure of a levee or dam?

Potentially Significant Impact. Portions of the project site would be located within City-designated inundation areas.[21] Therefore, implementation of the proposed project has the potential to expose people or structures to a significant risk of loss, injury or death involving flooding as a result of the failure of a levee or dam. This issue will be evaluated further in the EIR.

j) Inundation by seiche, tsunami, or mudflow?

Less Than Significant Impact. Seiches are oscillations generated in enclosed bodies of water usually as a result of earthquake-related ground shaking. A seiche wave has the potential to overflow the sides of a containing basin to inundate adjacent or downstream areas. Seiches primarily cause damage to properties that are located adjacent to a body of water. Due to the distance between the project site and nearby bodies of water, there would be a low risk of a seiche resulting in damage to the proposed project.

Tsunamis are large ocean waves caused by the sudden water displacement that results from an underwater earthquake, landslide, or volcanic eruption. Tsunamis affect low-lying areas along the coastline. The Santa Monica Mountains separate the project site from the Pacific Ocean. The project site is not located within a designated Tsunami Hazard Area.[22]

As discussed in Section VI(a)(iv) above, no portion of the project site is located within a City-designated hillside area. The project site would not be subject to a landslide.

[19] Federal Emergency Management Agency, Flood Insurance Rate Maps, Search by Street Address. Website: http://msc.fema.gov/webapp/wcs/stores/servlet/FemaWelcomeView?storeId=10001&catalogId=10001&langId=-1, accessed April 24, 2013.
[20] Ibid.
[21] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Inundation and Tsunami Hazard Areas* Map, September 1, 1996.
[22] Ibid.

Therefore, construction and operation of the proposed project would not expose people or structures to a significant risk of loss, injury, or death involving inundation by seiche, tsunami, or mudflow. The impact would be less than significant, and no further analysis is required.

X. LAND USE AND PLANNING

Would the project:

a) Physically divide an established community?

No Impact. The proposed project would not physically divide an established community. The proposed project would be constructed within the DCTWRP, the HSG and the PSG, and within existing roadways. No streets or sidewalks would be permanently closed as a result of the proposed project, and no separation of uses or disruption of access between land use types would occur. As such, the proposed project would not physically divide an established community, and no impact would occur. No further analysis is required.

b) Conflict with any applicable land use plan, policy, or regulation of an agency with jurisdiction over the project (including, but not limited to the general plan, specific plan, local coastal program, or zoning ordinance) adopted for the purpose of avoiding or mitigating an environmental effect?

Potentially Significant Impact. The proposed AWPF would be constructed within the DCTWRP, which is owned by the USACE and is part of the Sepulveda Basin Recreation Area. Additionally, the proposed project is subject to the goals and policies of the general plans and other planning documents developed by the City of Los Angeles. The EIR will summarize and analyze the project's consistency with regional plans and policies.

c) Conflict with any applicable habitat conservation plan or natural community conservation plan?

No Impact. The proposed project would be located entirely within an urbanized area of the San Fernando Valley. There are no adopted habitat conservation plans that apply to the project area, and the proposed project is not located in or near any natural community conservation plan areas (refer to Section IV[f] above). Therefore, the proposed project would not conflict with any such plan. No impact would occur, and no further analysis is required.

XI. MINERAL RESOURCES

Would the project:

a) Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?

No Impact. The proposed project does not involve City-designated Mineral Resource Zone Areas, which are areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.[23] Further, the proposed project involves previously developed areas. However, according to the State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, several wells are known to exist in the vicinity of the project site.[24] Should any future mineral resource be discovered on or near the project site, implementation of the proposed project would not preclude the mineral's extraction. Therefore, the proposed project would not result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state. No impact would occur, and no further analysis is required.

b) Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan or other land use plan?

No Impact. The project site is not delineated as a locally-important mineral resource recovery site on any City plans.[25] Further, as discussed in Section XI(a) above, no active oil wells exist on the project site. Therefore, implementation of the proposed project would not result in the loss of availability of a locally-important mineral resource recovery site, and no impact would occur. No further analysis is required.

XII. NOISE

Would the project result in:

a) Exposure of persons to or generation of noise levels in excess of applicable standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Potentially Significant Impact. A significant impact would occur if the proposed project would expose persons to or generate noise levels in excess of standards established in the local general plan, noise ordinance, or other applicable standards. Construction activity has the potential to generate noise levels in excess of City standards and in close proximity to sensitive noise receptors, such as residential uses. Operation of the proposed project would result in additional permanent water treatment facilities at the DCTWRP, located adjacent to the Sepulveda Basin Recreation Area. Therefore, the EIR will identify relevant noise standards and evaluate noise levels associated with project construction and operation.

b) Exposure of persons to or generation of excessive groundborne vibration or groundborne noise levels?

Potentially Significant Impact. A significant impact would occur if the proposed project would cause excessive vibration levels. Vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that may affect

[23] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Areas Containing Significant Mineral Deposits Map*, September 1996.

[24] State of California Department of Conservation, Division of Oil, Gas, and Geothermal Resources, DOGGR Online Mapping System. Website: http://maps.conservation.ca.gov/doms/doms-app.html, accessed April 24, 2013.

[25] City of Los Angeles Department of City Planning, Environmental and Public Facilities Maps, *Oil Field & Oil Drilling Areas Map*, September 1, 1996.

concentration or disturb sleep. In addition, high levels of vibration may damage fragile buildings. Heavy trucks can generate ground-borne vibrations that vary depending on vehicle type, weight, and pavement conditions. In addition, certain construction equipment and construction methods can also result in varying degrees of vibration. Therefore, the EIR will identify relevant vibration standards and evaluate vibration levels associated with project construction.

Following construction of the proposed facilities, the proposed project would not be expected to generate vibration. The proposed project facilities would be designed in accordance with applicable regulations and would not exceed vibration standards.

c) A substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. A significant impact would occur if the proposed project would cause a substantial permanent increase in noise levels above existing ambient levels. As discussed in Section XII(a) above, operation of the proposed project could create new permanent sources of noise. This issue will be evaluated further in the EIR.

d) A substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?

Potentially Significant Impact. A significant impact would occur if the proposed project would result in a substantial temporary or periodic increase in ambient noise levels. As discussed in Section XII(a) above, construction activities could result in temporary increases in noise levels at the project site. This issue will be evaluated further in the EIR.

e) For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact. A significant impact would occur if the proposed project would expose people residing or working in the project area to excessive noise levels from a public airport or public use airport. The closest airport to the project site is Whiteman Airport, located less than a mile northwest of HSG and approximately 1.5-miles east of PSG. Additionally, San Fernando Airport is located less than a mile northeast of PSG and Van Nuys Airport is located less than one mile west north of the DCTWRP.[26] However, the proposed project would involve construction and operation within existing City and County facilities and public roadway rights-of-way. Therefore, no new exposure would occur, and the impact would be less than significant. No further analysis is required.

f) For a project within the vicinity of a private airstrip, would the project expose people residing or working in the project area to excessive noise levels?

Less Than Significant Impact. A significant impact would occur if the proposed project would expose people residing or working in the project area to excessive

[26] Airnav.com, Airports search. Website: http://www.airnav.com/airports/, accessed April 24, 2013.

noise levels from a private airstrip. As discussed above, the proposed project would involve construction and operation within the vicinity of private airstrips. However, the proposed project would involve construction and operation within existing City and County facilities and public roadway rights-of-way. Therefore, no new exposure would occur, and the impact would be less than significant. No further analysis is required.

XIII. POPULATION AND HOUSING

Would the project:

a) Induce substantial population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

No Impact. The proposed project does not include construction or operation of any residential or commercial land uses, and therefore, would not result in a direct population increase from construction of new homes or businesses. The proposed project would increase groundwater replenishment and groundwater supplies in the SFB. However, the proposed project is intended to serve existing customers and would reduce reliance on imported water sources. Therefore, the proposed project would not result in indirect population growth. No impact to population growth would occur, and no further analysis is required.

b) Displace substantial numbers of existing housing, necessitating the construction of replacement housing elsewhere?

No Impact. All construction activity would occur in the existing road rights-of-way and the roadways would be restored to their original condition following installation of the pipeline. Therefore, the proposed project would not require the removal of existing housing. Implementation of the proposed project would not impact the number or availability of existing housing in the area, and would not necessitate the construction of replacement housing elsewhere. No impact to housing would occur.

c) Displace substantial numbers of people, necessitating the construction of replacement housing elsewhere?

No Impact. As discussed in Section XIII(b) above, construction would occur within existing roadways. Thus, there are currently no residential uses on the project site and no persons would be displaced as a result of implementation of the proposed project. Construction of replacement housing would not be necessary, and no impact would occur.

XIV. PUBLIC SERVICES

a) **Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:**

i) **Fire protection?**

Less Than Significant Impact. Fire protection services in the City are provided by the City of Los Angeles Fire Department (LAFD). There are several LAFD fire stations serving the project area. As the proposed project would serve existing customers, it would not generate population growth. Furthermore, no new habitable structures would be built as part of the proposed project. Therefore, construction and operation of the proposed project would not require the construction of additional fire protection services or facilities or expansion of existing facilities.

As discussed in Section VIII(h) above, the proposed project is not located within any lands designated as Wildfire Hazard Areas or a Fire Buffer Zone. Therefore, construction activities would not occur within an area designated with a substantial fire risk.

The majority of construction activities would occur within existing City and County facilities. Installation of the proposed conveyance pipeline would require temporary lane closures during the construction period, which could affect response times and emergency access. However, it is not anticipated that full roadway closures would be necessary and the operation of existing roadways would be preserved throughout construction. Vehicular access to intersecting streets would be limited during portions of the construction period. However, construction would occur in segments and no portion of the roadway would remain closed during the entire construction period. Additionally, it is anticipated that lane closures would be affected and access would be restricted during working hours only and would reopen at the end of each work day. Recessed steel plates would be used to cover any open trenches during non-work hours. Furthermore, LADWP would consult with LAFD regarding construction schedules and worksite traffic control and detour plans. Development of such plans and consultation with LAFD would ensure that impacts related to emergency response and access during construction would be less than significant. No further analysis is required.

ii) **Police protection?**

Less Than Significant Impact. The City of Los Angeles Police Department (LAPD) is the local law enforcement agency responsible for providing police protection services in the City. Several LAPD Community Police Stations serve the project areas. As previously stated, the proposed project would not generate population growth. Therefore, construction and operation of the proposed project would not require the construction of additional police protection services or facilities or expansion of existing police facilities.

As discussed in Section XIV(a)(i) above, the majority of construction activity would take place within existing City and County facilities. Installation of the proposed conveyance pipeline would require temporary lane closures during the construction period, which could have an impact on response times and emergency access. However, full roadway closures are not anticipated and any open trenches would be covered with steel plates during non-work hours. Furthermore, LADWP would consult with LAPD regarding construction schedules and worksite traffic control and detour plans. Development of such plans and consultation with LAPD would ensure that impacts related to emergency response and access during construction would be less than significant. No further analysis is required.

iii) Schools?

No Impact. As the proposed project does not include development of any residential uses, no increase in residential population would occur. Additionally, as the proposed project would serve existing customers and is intended to reduce reliance on imported water supplies. Therefore, no indirect population growth would occur. No new students would be generated, and no increase in demand for local schools would result. No impact to schools would occur, and no further analysis is required.

iv) Parks?

No Impact. Residential developments typically have the greatest potential to result in impacts to parks since these types of developments generate a permanent increase in residential population. As previously stated, the proposed project does not include development of any residential uses and would not generate any new permanent residences that would increase the demand for local and regional park facilities. Therefore, no impact to parks would occur, and no further analysis is required.

v) Other public facilities?

No Impact. The proposed project does not include development of residential or commercial uses and would not increase the demand for other public facilities. The proposed project would not result in indirect population growth, which could increase demand for other public facilities. No impact to other public facilities would occur, and no further analysis is required.

XV. RECREATION

Would the project:

a) Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?

No Impact. The proposed project would be constructed within existing City and County facilities and within public roadway rights-of-way. It involves increased groundwater replenishment in the SFB to reduce reliance on imported water supplies. Neither construction nor operation of the proposed project would generate new permanent residents that would increase the use of existing parks and recreational facilities. Therefore, substantial physical deterioration of these facilities would not occur or be accelerated with implementation of the proposed project. No impact would occur, and no further analysis is required.

b) Include recreational facilities or require construction or expansion of recreational facilities which might have an adverse physical effect on the environment?

No Impact. The proposed project does not include development of any residential uses and, thus, would not generate new permanent residents that would increase the demand for recreational facilities. Further, the proposed project would serve existing customers and would not promote or indirectly induce new development that would require the construction or expansion of recreational facilities. Therefore, no impact would occur, and no further analysis is required.

XVI. TRANSPORTATION/TRAFFIC

Would the project:

a) Conflict with an applicable plan, ordinance or policy establishing measures of effectiveness for the performance of the circulation system, taking into account all modes of transportation including mass transit and non-motorized travel and relevant components of the circulation system, including but not limited to intersections, streets, highways and freeways, pedestrian and bicycle paths, and mass transit?

Potentially Significant Impact. Construction of the proposed project is expected to temporarily increase vehicle trips within the vicinity of the project site related to construction worker travel to and from the sites, deliveries of equipment and materials, and removal of demolition debris and other materials. Additionally, construction of the proposed conveyance pipeline would occur within public roadways and involve temporary road closures. During project operations, some additional personnel may be required to operate the AWPF at the DCTWRP. The EIR will assess the potential for project-related traffic to affect local roadways and area freeways. The EIR will also discuss any conflict with applicable plans, ordinances, or policies regarding traffic performance in the local and regional circulation system.

b) Conflict with an applicable congestion management program, including, but not limited to level of service standards and travel demand measures, or other standards established by the county congestion management agency for designated roads or highways?

Potentially Significant Impact. Project-related traffic impacts could occur during construction and operation. Therefore, the EIR will include an analysis of the proposed project's effects on the County of Los Angeles Congestion Management Program.

c) Result in a change in air traffic patterns, including either an increase in traffic levels or a change in location that results in substantial safety risks?

No Impact. The proposed project would not result in a change in air traffic patterns. Construction and operation of the proposed project would not generate air traffic. Further, the proposed project would not include any high-rise structures that could act as a hazard to aircraft navigation. No impact would occur, and no further analysis is required.

d) Substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g., farm equipment)?

No Impact. The proposed project would be constructed within existing City and County facilities and public roadways. No design changes to the existing roadways or use of roadways would occur. Therefore, no impact related to an increase in hazards due to a design feature or incompatible uses would occur. No further analysis is required.

e) Result in inadequate emergency access?

Less Than Significant Impact. The majority of construction activities would occur within existing City and County facilities. Installation of the proposed conveyance pipeline would require temporary lane closures during the construction period, which could have an effect on emergency access. Additionally, emergency services may be needed at a location where access is temporarily blocked by the construction zone. However, it is not anticipated that full roadway closures would be necessary and the operation of existing roadways would be preserved throughout construction. Construction would occur in short segments such that no portion of the roadway would remain closed during the entire construction period. Additionally, it is anticipated that lane closures would be effective and access would be restricted during working hours only and would reopen at the end of each work day. Recessed steel plates would be used to cover any open trenches during non-work hours. Furthermore, LADWP would consult with emergency service providers (e.g., LAPD, LAFD, etc.) regarding construction schedules and worksite traffic control and detour plans. Development of such plans and consultation with emergency service providers would ensure that impacts related to emergency response and access during construction would be less than significant. No further analysis is required.

f) Conflict with adopted policies, plans, or programs regarding public transit, bicycle, or pedestrian facilities, or otherwise decrease the performance or safety of such facilities?

Potentially Significant Impact. The majority of construction activity would occur within existing City and County facilities. However, construction of the proposed conveyance pipeline would require the closure of traffic lanes and may result in temporary traffic restrictions. These construction activities are also anticipated to temporarily affect public transit, bicycle, or pedestrian facilities. Further analysis of potential construction impacts will be included in the EIR.

No long-term impacts to public transit, bicycle, or pedestrian facilities would occur during project operation.

XVII. UTILITIES AND SERVICE SYSTEMS

Would the project:

a) Exceed wastewater treatment requirements of the applicable Regional Water Quality Control Board?

Potentially Significant Impact. The proposed project involves increased groundwater replenishment within the SFB to reduce dependence on imported water supplies. As discussed above, a SWPPP and erosion control plan would be prepared for the proposed project that would specify appropriate BMPs to control runoff from the project site during construction. Additionally, any wastewater discharged by the proposed project must comply with National Pollutant Discharge Elimination System requirements. During project operation, purified recycled water would be conveyed to injection wells and spreading grounds for replenishment into the SFB. Waste discharge would be generated at the AWPF. Therefore, the EIR will include an analysis of the proposed project's impacts on the wastewater treatment requirements of the Los Angeles Regional Water Quality Control Board.

b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Potentially Significant Impact. The proposed project involves the construction of a new wastewater treatment facility, which has the potential to result in significant environmental impacts. Further analysis will be included in applicable sections of the EIR. The EIR will also evaluate the potential impacts to the City of Los Angeles' Hyperion Treatment Plant and the Publicly Owned Treatment Works (POTW) due to an increase in process byproducts from the AWPF.

c) Require or result in the construction of new stormwater drainage facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

Less Than Significant Impact. The proposed project would use existing City and County facilities and public roadway rights-of-way. As discussed in Section IX(e) above, all drainage flows would be routed through existing storm water infrastructure serving the project site and surrounding areas. Following construction, storm water flows would be similar to the current condition. Therefore, the proposed project would not require or result in the construction or expansion of storm water drainage facilities. The impact would be less than significant, and no further analysis is required.

d) Have sufficient water supplies available to serve the project from existing entitlements and resources, or are new or expanded entitlements needed?

No Impact. High water demand is typically associated with residences, hotels, and large offices.[27] The proposed project would increase groundwater replenishment in the SFB to reduce dependence on imported water supplies. Therefore, additional water supplies would not be needed. No impact would occur, and no further analysis is required.

27 City of Los Angeles Bureau of Sanitation, *Sewer Generation Rates Table*, March 2002.

e) Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Potentially Significant Impact. The proposed project involves construction and operation of an AWPF using secondary and tertiary wastewater that is currently and will be generated at the DCTWRP. The proposed project's demand for wastewater in relation to the BOS's existing commitments will be further evaluated in the EIR.

f) Be served by a landfill with sufficient permitted capacity to accommodate the project's solid waste disposal needs?

Less Than Significant Impact. Construction activities would generate construction waste, such as demolition debris. Proposed project construction would incorporate source reduction techniques and recycling measures and maintain a recycling program to divert waste in accordance with the Citywide Construction and Demolition Debris Recycling Ordinance. These measures would minimize the amount of construction debris generated by the proposed project that would need to be disposed of in an area landfill. Any non-recyclable construction waste generated would be disposed of at a landfill approved to accept such materials. Limited quantities of solid waste would be generated during project operation and would comply with state and local policies and ordinances to reduce solid waste. Compliance with existing regulations would ensure a less than significant impact.

g) Comply with federal, state, and local statutes and regulations related to solid waste?

Less Than Significant Impact. The proposed project would comply with federal, state, and local statutes and regulations related to solid waste. As discussed in Section XVII(f) above, construction debris would be recycled or disposed of according to local and regional standards. All materials would be handled and disposed of in accordance with existing local, state, and federal regulations. Compliance with existing regulations would ensure a less than significant impact, and no further analysis is required.

XVIII. MANDATORY FINDINGS OF SIGNIFICANCE

a) Does the project have the potential to substantially degrade the quality of the environment, substantially reduce the habitat of a fish or wildlife species, cause a fish or wildlife population to drop below self-sustaining levels, threaten to eliminate a plant or animal community, substantially reduce the number or restrict the range of a rare or endangered plant or animal, or eliminate important examples of the major periods of California history or prehistory?

Potentially Significant Impact. The project site is previously developed and located within urbanized areas of the San Fernando Valley. Nonetheless, a records search for State and/or federally listed species in the vicinity will be conducted as part of the EIR. Although the project area is extensively developed, there is a potential for special status species to occur in the project vicinity during both the construction and operational phases of the proposed project, including direct impacts due to vegetation removal and indirect impacts to nearby habitats and river flows. In addition, construction and operation of the proposed project has the potential to directly and indirectly impact riparian habitat and migratory fish and wildlife species. Impacts to biological resources will be further analyzed in the EIR.

The proposed project also has the potential to impact important examples of the major periods of California history or prehistory during the construction and operational phases of the proposed project. The project facilities will be assessed, and impacts to cultural resources will be analyzed further in the EIR.

b) Does the project have environmental effects that are individually limited, but cumulatively considerable? ("Cumulatively considerable" means that the incremental effects of a project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects.)

Potentially Significant Impact. As discussed in Section III(c) above, the proposed project is located within the Los Angeles County portion of the South Coast Air Basin, which is designated a non-attainment area for O_3, PM_{10}, and $PM_{2.5}$. Construction and operational activities have the potential to generate pollutant emissions in excess of the SCAQMD thresholds and contribute to a cumulatively considerable impact. Further analysis will be included in the EIR.

As discussed in Section VII(a) above, GHG emissions contribute to the global condition known as the greenhouse effect. Because this issue is cumulative by its very nature, CARB established a threshold of significance and climate reduction strategies. The proposed project would generate short-term emissions of GHGs during construction and long-term emissions during operations that may exceed CARB's thresholds of significance. Further analysis will be included in the EIR.

As discussed in Sections XII(c) and XII(d) above, the proposed project could result in permanent or temporary increases in ambient noise levels, and contribute to a a cumulatively considerable noise impact. Further analysis will be included in the EIR.

As discussed in Section XVI(a) above, the traffic analysis in the EIR will include cumulative traffic impact. Construction and operational activities have the potential to result in significant impacts on area roadways. Further analysis will be included in the EIR.

c) Does the project have environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?

Potentially Significant Impact. The proposed project could have potentially significant impacts to human beings, for example, due to hazardous materials release or air quality. The EIR will include a discussion of direct and indirect project impacts on human beings.

SECTION 4.0
LIST OF PREPARERS

LEAD AGENCY

Los Angeles Department of Water & Power
111 N. Hope Street, Room 1044
Los Angeles, CA 90012

PREPARED BY

Los Angeles Department of Water & Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Charles C. Holloway, Manager of Environmental Planning and Assessment
Michael Mercado, Environmental Project Manager

TECHNICAL ASSISTANCE PROVIDED BY

AECOM Technical Services, Inc.
515 South Flower Street, 9th Floor
Los Angeles, CA 90071

Melissa Hatcher, Project Director
Fareeha Kibriya, Project Manager
Tim Harris, GIS/Graphic Specialist

Page intentionally left blank

Comments Received on the Notice of Preparation

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT - SCOPING MEETING
SEPTEMBER 25, 2013

City of Los Angeles Department of Water and Power
City of Los Angeles Department of Public Works

Name B. Shllow
Representing STAKE HOLDER
Address 1757 Roscomare Rd
City LA Zip 90077
☒ Please add me to the mailing list

Name ELAINE Berg
Representing
Address 4914 ANDASOL
City ENCINO Zip 91316
☐ Please add me to the mailing list

Name Paul Berg
Representing
Address 4914 ANDASOL
City ENCINO Zip 91316
☐ Please add me to the mailing list

Name Judith Hirshberg
Representing Japanese Garden
Address 6521 Orion Ave
City Van Nuys Zip 91406
☐ Please add me to the mailing list

Name KEN MURRAY
Representing
Address 4511 CAMELLIA AVE
City N. Hollywood Zip 91602
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT - SCOPING MEETING
SEPTEMBER 25, 2013

City of Los Angeles Department of Water and Power
City of Los Angeles Department of Public Works

Name Dr Tom Williams
Representing SC-AC Water Comte
Address 4117 Barrett Rd
City LA Zip 90032-1712
☒ Please add me to the mailing list

Name Esther Levy
Representing Public
Address 5419 Murietta Ave
City S.O Zip 91401
☒ Please add me to the mailing list

Name GERALD A SILVER
Representing HOME
Address PO 260205
City Enc Zip 91426
☐ Please add me to the mailing list

Name Glenn Bailey
Representing Encino Neighborhood Council
Address PO Box 19172
City Encino Zip 91416
☒ Please add me to the mailing list

Name ARTHUR HIRSHBERG
Representing JAPANESE GARDEN
Address 6521 ORION AVE
City VAN NUYS Zip 91406
☒ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
☐ Please add me to the mailing list

Speaker Form

Name: Paul Berry
Organization:
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: GERALD A. SILVER
Organization: HOMEOWNERS OF ENCINO
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: Dr Tom Williams
Organization: SC-AC-Watercorde
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: BARBARA SHELLOW
Organization: STAKE HOLDER
(Please print clearly)

Comments will be limited to 3 minutes.

AECOM
515 South Flower Street
Los Angeles, CA 90071
www.aecom.com

213.593.7700 tel
213.593.7715 fax

Meeting Notes	
Project Name	Los Angeles Groundwater Replenishment Project (GWR)
Meeting Subject	Scoping Meeting Comments
Meeting Location	Sepulveda Garden Center, Encino
Meeting Date	September 25, 2013

These meeting minutes are the best recollection of the writer and will stand as is unless comments are received within five business days of issuance.

Commenter	Comment Received
Dr. Tom Williams Sierra Club	- Project being segmented between indirect and direct impacts. Where will the water go after it is put into the groundwater basin? Where will the water be taken out? If this is additional water, where does the unused water go? What is the indirect inducted growth? - Where will the brine discharge go and what will be the impact of the salt on the County's wastewater disposal facilities? - Suggest having more Spanish language materials at the other scoping meetings. - Please provide the scoping report prior to the release of the Draft EIR. - What are the project alternatives to be evaluated in the Draft EIR? - Please provide a draft of the Mitigation Monitoring and Reporting Program as part of the Draft EIR instead of making the public wait until the Final EIR. - Provide groundwater modeling as part of the Draft EIR. Why can't LADWP inject the water into the groundwater basin near the Donald C. Tillman Water Reclamation Plant and the proposed project site near the Sepulveda Basin Recreation Area instead of pumping the water up to the Pacoima and Hansen Spreading Grounds and injecting near the spreading grounds? - How much will the project cost? Who will pay for the project – existing or future ratepayers? How will these increase water rates? Will other LADWP facilities be decommissioned or neglected because funds will be allocated to this project?

Gerald Silver Encino Homeowners Association	- The project and the Draft EIR need to include a clearer description of purified recycled water. The public needs to understand that this is highly purified effluent or sewage water. The toilet to tap concept needs to be made clear. - Ratepayers should have the opportunity to vote on the project and be the group to decide if the City's wants this project. - How much does recycled water cost? An economic analysis of the cost of the project should be included in the Draft EIR. - Recycled water is a driving force behind growth and development in Los Angeles. Constraints on infrastructure are the only way to control unchecked growth. This project will allow further growth. - What is the cost per acre foot for advanced treated water? How does that compare per acre foot to Colorado River water or Aqueduct water? - If highly treated water is so good, why can't LADWP pump it directly into the drinking water system? - How were announcements made for this meeting? - Will specific outreach be conducted to every ratepayer to ask if it is acceptable to use purified recycled water as part of the local supply? I suggest using the mailer within the water bill to get the word out about the project.
Barbara Shellow	- The City desperately needs reclaimed water and the Japanese Gardens volunteers strongly in favor of the use of reclaimed water. - The Japanese Gardens volunteers have worked with LADWP and looked at five potential sites for the proposed facility so we are surprised that LADWP is only going to consider two of the five sites in the EIR. LADWP has already violated CEQA and gone back on a promise made to us over the summer. - The proposed project site is the worst site location within the Tillman property and will have the greatest impact on the Japanese Gardens. Putting an industrial facility next to children playing the Recreation Area is not a good idea. - The U.S. Army Corps of Engineers owns the Donald C. Tillman property and may not let any project occur on its property. - The Contractor Laydown Area would be the perfect location within the Tillman property. It is undeveloped, but previously disturbed, meets the elevation criteria, and would not require a relocation of existing facilities. - I invite everyone to see the Japanese Gardens and then they will understand why the volunteers prefer the site at the Valley Generating Station. - This is a hugely expensive project and will require a lot of approvals from different agencies before it can be built.

Paul Berg	- Table 7.3 in the water recycling packet shows that the Contractor Laydown site has 14 firsts, but the preferred site only have 4 firsts. - The proposed buildings will impinge upon the Japanese Gardens. - Site #2 will cost $338 million, which I believe underestimates the cost, but the cost drops to $316 million at the Contractor Laydown site. Why isn't there a higher emphasis on the Contractor Laydown site?

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT - SCOPING MEETING
OCTOBER 3, 2013

City of Los Angeles Department of Water and Power
City of Los Angeles Department of Public Works

Name Judy Motion
Representing UNSW
Address
City Sydney Zip
Email j.motion@unsw.edu.au.
☑ Please add me to the mailing list

Name Pamela Bonilla
Representing
Address 13160 Chase St.
City Arleta Zip 91331
Email
☐ Please add me to the mailing list

Name KEN MURRAY
Representing mysElf
Address 4511 Camellia Av
City N. Hollywood Zip 91602
Email
☐ Please add me to the mailing list

Name WAYNE GAUDET
Representing SRLF
Address 12884 SUNBURST ST
City PAC Zip 91331
Email WJGAUDET@ROADRUNNER.COM
☒ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name BOB PEPPERMULLER
Representing MIDTWN NoHo NC, DWP MOU
Address 10941 OTSEGO
City NO. HLY Zip 91601
Email FERTHALB741@YAHOO.COM
☒ Please add me to the mailing list

Name Mark Lopez
Representing Self ~~Arleta Neighborhood Council~~
Address 14131 Gorman St. n
City Arleta Zip 91331
Email mlopez@arletanc.org
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name JACK LINDBLAD
Representing ESFV CBEIGP
Address 8211 Shadyglade
City Zip 91605
Email jplindblad@gmail.com
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT - SCOPING MEETING
OCTOBER 3, 2013

City of Los Angeles Department of Water and Power
City of Los Angeles Department of Public Works

Name Matthew Kearnes
Representing UNSW
Address
City Sydney Zip
Email m.kearnes@unsw.edu.au
☐ Please add me to the mailing list

Name ERIC AGUILAR
Representing LADWP
Address 907 N. Ave. 51
City Los Angeles Zip 90042
Email eric.aguilar@ladwp.com
☑ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name GEOFF CARTHEW
Representing MWH
Address 813 NORUMBEGA DR
City MONROVIA Zip 91016
Email GCARTHEW@AOL.COM
☒ Please add me to the mailing list

Name Gary Aggas
Representing Sun Valley Area NC
Address 11211 Cohasset St.
City Sun Valley Zip 91352
Email Gary.Aggas@SVANC.org
☒ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Speaker Form

Name: KEN MURRAY
Organization: HOMEOWNER
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: BOB PEPPERMULLER
Organization: MID-TOWN NORTH HOLLYWOOD NEIGHBORHOOD COUNCIL
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: ERIC AGUILAR
Organization: LADWP
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: Mark Lopez
Organization: Arleta Neighborhood Council
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: JACK LINDBLAD
Organization: ESFV CBE Locally Grown Produce
(Please print clearly)

Comments will be limited to 3 minutes.

AECOM

AECOM
515 South Flower Street
Los Angeles, CA 90071
www.aecom.com

213.593.7700 tel
213.593.7715 fax

Meeting Notes	
Project Name	Los Angeles Groundwater Replenishment Project (GWR)
Meeting Subject	Scoping Meeting Comments
Meeting Location	Canterbury Elementary/Magnet School, Arleta
Meeting Date	October 3, 2013

These meeting minutes are the best recollection of the writer and will stand as is unless comments are received within five business days of issuance.

Commenter	Comment Received
Mark Lopez Arleta Neighborhood Council	- Thank the City for reducing dependence on imported water and for using recycled water. - Live at Gruen and Canterbury so will be directly affected by the project. - Project will be located directly adjacent to residences for the 18-month construction period. - Concerned about soil degradation, liquefaction, eruption, increased seismic activity or faulting, flooding and subsidence. - What would the injection wells and pipeline look like? Need to include plan and section views. - How will this project affect the East Valley Transit Corridor? Construction of this project will occur right as the East Valley Transit Corridor construction is ending. - What will happen to the tenants of the transmission line corridor? - Should look at other sites and use other existing City facilities that are not so close to residences. - Request that LADWP attend the Arleta Neighborhood Council meetings on a quarterly basis to provide project updates. - Project materials should be provided in English and Spanish. - Request that LADWP work with the community on mitigation measures to benefit the community. - Arleta is sick of being the City's utility corridor and deserves better.

Bob Peppermuller Mid-Town North Hollywood Neighborhood Council	- If we do not go through with this project, the environmental impact in the long-term will be much greater than the construction impacts. - Predict that water will become more valuable than oil as jurisdictions fight over supply. - Need to clean up the aquifer and build up a buffer supply for dry years. - LADWP should work with the local community to minimize impacts. - Want to see the implementation schedule pushed up.
Jack Lindblad East San Fernando Valley CBE	- There is a well on my property to track the plume so to see this project to fruition after decades is gratifying. - It is important to produce accurate reports. On page 3 of the summary, the MGD and AFY numbers appear to be transposed. Units need to be kept straight and easy for the public to understand. - Have to do cleanup [of the groundwater basin] before can drill any injection wells. - Use of injection wells during the rainy season could lead to a higher groundwater table level and localized flooding, especially in extreme weather events from climate change. - Uranium in the water is five times background now so need filtration of carcinogens and radioactive hot particles for extracted water.
Eric Aguilar LADWP employee	- Groundwater rights have established limits so would this lead to an expansion of LADWP's withdrawal rights? - Would this project uplift LADWP's environmental responsibility and will there be any negative effects on the community? - Would there be a re-establishment of LADWP's production wells? - Which source would dominate the recycled water stream – imported water or stormwater? - Which type of water model will be used to evaluate the effectiveness of the project? - What is the estimated net benefit of replenishment? - Will this project affect cultural resources? - Will this project affect the U.S. Army Corps of Engineers alternatives in the new study for the Los Angeles River?

Ken Murray	- Project is necessary to secure water supplies for the City. - Want to see the project go faster and be bigger. - Only two alternatives were presented tonight, but EIRs typically show a range of alternatives. Will the EIR include more alternatives?

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT - SCOPING MEETING
OCTOBER 12, 2013

City of Los Angeles Department of Water and Power
City of Los Angeles Department of Public Works

Name Ken Murray
Representing
Address 4511 Camellia
City N. Hollywood Zip 91602
Email K.Murray@DR.com
☐ Please add me to the mailing list

Name Ken Zimmer
Representing LACDPW
Address 900 S. Fremont Ave
City Alhambra Zip 91803
Email Kzimmer@ladpw.org
☒ Please add me to the mailing list

Name Barbara Shellow
Representing Japanese Garden
Address 1757 Roscomare Road
City LA Zip 90077
Email bshellow@yahoo.com
☒ Please add me to the mailing list

Name Patricia Rau
Representing
Address 13876 Tucker Ave
City Sylmar Zip 91342
Email getpatti@yahoo.com
☐ Please add me to the mailing list

Name Ann Job
Representing
Address 14047 Candlewood Dr.
City Sylmar Zip 91342
Email annjob@yahoo.com
☐ Please add me to the mailing list

Name Candace Burrow
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name Andrew Stanton
Representing
Address
City Zip
Email stantonam@bv.com
☐ Please add me to the mailing list

Name Denny Schneider
Representing
Address 7929 Breen Av
City LA Zip 90045
Email Denny@WeLiveFree.Com
☒ Please add me to the mailing list

Name Sergio Ibarra
Representing Arleta NC
Address 13883 Garber Av.
City Arleta Zip 91331
Email Sergio.Ibarra.94@my.csun.edu
☒ Please add me to the mailing list

Name Tony Wilkinson
Representing Neighborhood Councils-DWP MOU Oversight Committee
Address 8133 Hazeltine Avenue
City Panorama City CA Zip 91402
Email LAWILKINSON@ACM.ORG
☒ Please add me to the mailing list

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT - SCOPING MEETING
OCTOBER 12, 2013

City of Los Angeles Department of Water and Power
City of Los Angeles Department of Public Works

Name CATHERINE Schick
Representing MEX Japanese Garden.
Address 3556 GoodLAND AVE
City STUDIO-city Zip CA 91604
Email cm5schick@yahoo.com.
☐ Please add me to the mailing list

Name Stephanie Magnien Rockwell
Representing Councilmember Blumenfield
Address 200 N. Spring St ste 415
City LA Zip 90012
Email stephanie.magnien@lacity.org
☒ Please add me to the mailing list

Name JOYCE DILLARD + AUGUSTINE RIOS
Representing
Address PO Box 31377
City LA Zip 90031
Email dillardjoyce@yahoo.com
☒ Please add me to the mailing list

Name Jack Humphreville
Representing GWDC
Address
City Zip
Email
☐ Please add me to the mailing list

Name JOEY GUZMAN
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name MARK LOPEZ
Representing
Address 14131 GRUEN ST.
City ARLETA Zip 91331
Email
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Name
Representing
Address
City Zip
Email
☐ Please add me to the mailing list

Speaker Card

Name: Joey Guzman

Organization:

(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Card

Name: Joyce Dillard

Organization:

(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Card

Name: Jack Humphreville

Organization: GWNC

(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Card

Name: Candace Burrow

Organization:

(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Card

Name: Tony Wilkinson

Organization: NC-DWP MOU Oversight Committee

(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: CATHERINE Schick

Organization: JAPANESE GARDEN & I

(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Card

Name: KEN MURRAY

Organization: HOME OWNER

(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: BARBARA SHELLOW

Organization: RATE PAYOR / VOLUNTEER @ JAPANESE GARDEN

(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Form

Name: DENNY SCHNEIDER
Organization: RWAG COMMITTEE
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Card

Name: Sergio Ibarra
Organization: Arleta NC
(Please print clearly)

Comments will be limited to 3 minutes.

Speaker Card

Name: Stephanie Rockwell
Organization:
(Please print clearly)

Comments will be limited to 3 minutes.

passed

AECOM
515 South Flower Street
Los Angeles, CA 90071
www.aecom.com

213.593.7700 tel
213.593.7715 fax

Meeting Notes	
Project Name	Los Angeles Groundwater Replenishment Project (GWR)
Meeting Subject	Scoping Meeting Comments
Meeting Location	LADWP – Headquarters, Downtown
Meeting Date	October 12, 2013

These meeting minutes are the best recollection of the writer and will stand as is unless comments are received within five business days of issuance.

Commenter	Comment Received
Joyce Dillard	- Concerned about the placement of project documents. They need to be put in the Central Library and all regional libraries. - This project is creating supplies for future growth. - The Brown's Canyon project and its water demand need to be considered. - CRA [Community Redevelopment Agency] is selling air rights to allow more density, but the City does not have the capacity for future growth. - Have not looked at Flood Control District [Los Angeles County Flood Control District, Los Angeles County Department of Public Works] and the potential for flooding to occur. - This project needs to be considered an alternative use. - Are we going to get our [water] supplies from the [Sacramento Bay] Delta? - Worried about fracking and the potential for seismicity. - People do not understand what you are doing about discharge. - Where would this water service? Universal has to find wells outside of the City. - Where is the contamination? What does that have to do with the oil wells? Water quality issues need to be addressed. - Spend a lot of time looking at how this water would be used. - Planning Department needs to be in the room. - What are the costs and who will pay?
Joey Guzman	- All ratepayers of LADWP need to be individually informed through their billing that sewage water would be used to inject into the ground. - This affects the water supply of the City, not just the Valley, and we have no other alternatives. - The AWPF [Advanced Water Purification Facility] would be located at the southern end of the property so if there is a breach [of the levee], this plant would be inundated. - The contractor laydown area is at the elevation of the berm. - All five sites would be carried forward according to the handout, but you are only showing two sites. LADWP needs to consider

AECOM

	all sites. - DCT SW [proposed project location] only received four #1 ratings, but other locations received 14 #1 ratings. - Since all five sites are not included, the CEQA process is invalid. - All work should cease until a new CEQA process is put out.
Candace Burrow	- Page 2-4 of the Initial Study lists the environmental factors potentially affected. Two of the factors that are not checked were covered in the presentation. Aesthetics was not checked and was not covered in the presentation. - The project does affect aesthetics. - People will see this when they go into the [Japanese] Garden so aesthetics needs to be reviewed.
Jack Humphreyville, Greater Wilshire Neighborhood Council	- Nothing was mentioned about finances. How much will it cost and how will it affect water rates? - Nothing was mentioned about the purple pipe project through Elysian Park and Downtown Los Angeles. - Provide more information on the three eliminated sites.
Catherine Schick, Japanese Garden	- Agree with the previous commenters on points related to aesthetics. - I do not understand what happened to the three sites under consideration. - Seems that all the area will be LADWP or park. - There has been no consideration of migratory birds. - Building that will be removed are cement bunkers and there is no mention of emissions. - There is currently a problem with traffic on Woodley and construction would make this worse. - The area is like a park, but will have chemicals and industrial facilities in a park. - This project is like a done deal, but the Army Corps has yet to approve it. - LADWP is not taking into account objections to aesthetics. There is not one blade of grass so the garden will be choked by buildings. Going to make the area an LADWP compound. - The public at large has not been informed. LADWP needs to put a notice in the bill.
Tony Wilkinson, Neighborhood Council and LADWP MOU Oversight Committee	- Do not know why LADWP has long maintained that clean-up of the contamination is not part of the project. - Clearly going to change the flows in some ways and there is potential to push around existing contamination. - Large number of existing wells in the area of the injection wells that are already being treated with active charcoal. This may increase the clean-up costs. - Some clear relationship between groundwater recharge and clean-up. - Relationship to the Los Angeles River needs to be included. There are lots of plans for revitalization that will depend on water

	that comes from DCT [Donald C. Tillman Water Reclamation Plant]. The EIR flow should be existing flow. The EIR needs to show this water for beneficial use for drinking water not for parkland.
Barbara Shellow, Volunteer at Japanese Garden	- You are trying to reach the public but there were only 9 people at the Encino meeting and only the same number at the Canterbury Elementary School meeting and today 14 or so, for a total of only 31 people putting in public comment. The City knows nothing of this project and there has been no outreach. - Property under consideration is the jurisdiction of the U.S. Army Corps of Engineers and they are currently playing hardball. They are only allowing the barest minimum to occur. - Still need approval on state and federal levels. - Need to rethink this project. - I love the Japanese Garden and this project will impede on the garden. There are better places on this campus that would have less of an impact.
Ken Murray	- Congratulate the agencies involved in this forward thinking project. - Need an alternative to what happens if do not recycle water and continue to depend on water from other sources. What are the effects to the ratepayers and access to water in the future? - The safety of the water to be produced needs to be addressed. - Cost issues need to include long-term cost (20, 40, 60 years) to ratepayers and the impact to ratepayers going forward to pay for imported water.
Sergio Ibarra, Arleta Neighborhood Council	- Concerned about outreach for this project. - Issue of aesthetics to improve existing properties. - Issue of treating polluted water in vicinity of injection wells. - Injection wells located in a residential community, why not at the Pacoima Spreading Grounds or Tujunga Wellfield instead of in a residential community? - In full support of the purple pipe, but why does the purple pipe have to be installed on Canterbury Avenue? - LADWP should put recreational facilities at Pacoima and Hansen Spreading Grounds. - Explore the issue of traffic, including the Interstate 5 and Interstate 710 construction projects. - Add vegetation or parkland around the injection wells. - Are the chemicals that are being pumped out going airborne?
Dennis Schneider, Recycled Water Advisory Group Committee	- Critical that we do have a water supply if something interrupts it. - Seen almost a complete removal of smell around Hyperion [Water Treatment Plant]. - This is a backup system not to prepare for overdevelopment, which the City is not charging developers for.

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT/PROYECTO DE REABASTECIMIENTO DE AGUAS SUBTERRÁNEAS DE LOS ÁNGELES
INITIAL STUDY AND NOTICE OF PREPARATION/ESTUDIO INICIAL Y AVISO DE PREPARACIÓN
PUBLIC COMMENT CARD/TARJETA PARA COMENTARIOS DEL PUBLICO

(Please submit to Michael Mercado via fax (213) 367-4710, or email michael.mercado@ladwp.com by October 21, 2013/
Por favor regrese esta forma por fax a Michael Mercado al (213) 367-4710, o por correo electrónico a michael.mercado@ladwp.com a más tardar 21 de octubre del 2013)

Name/Nombre: ERIC AGUILAR
Organization/Organización (optional/opcional):
Address/Dirección: 907 N. Ave. 51 Los Angeles CA 90042
City, Zip/ Ciudad, Código Postal: 90042
Phone/Teléfono (optional/opcional): (818) 771-4344
E-mail (optional/opcional): eric.aguilar@ladwp.com

Would you like to remain on our mailing list to receive future project updates?
¿Le gustaría permanecer en nuestra lista postal para recibir información actualizada del proyecto?

Yes/Sí ☑ **No/No** ☐

Comments/Comentarios:

Groundwater rights in the SFV have established limits, would this lead to an increase withdrawl and thus expansion of those limits?

Conservation, preservation of natural resources in a responsible manner would uplift the perception of LADWP in the various communities of the valley. Are there any communities that would be negatively affected by the proposed project?

Are there existing lycimeter (lysimeter) stations to measure infiltration at different sites? How hydraulically conductive are the soils, geology of the proposed injection sites?

Will there be rehabilitation of water wells (production wells) as a result of this study?

Local surfacewater vs. imported allocated supplies; which will dominate recycled supply stream?

Comments continued/Continuación de comentarios:

Groundwater models are used, which type will be used to forecast effectiveness?
Which monitoring equipment will be used and who will be responsible for maintaining it?
Will evaporation/evapotranspiration dominate processes at the spreading grounds over replenishment?

What would be the estimated "net" replenishment benefit of this proposal given the existing rate of groundwater replenishment?

Will this project construction disturb any cultural resources in the study area?

Will constant observation of spreading pond levels be required? By Flood Control Public Works Agency or LADWP?

How will this aspect of the Urban Water Management Plan affect potential changes in the LA River Rehabilitation/Revitalization alternatives set forth by U.S. Army Cops. of Engineers?

Please fold in thirds (Por favor doble en tercios)

Tape it closed, affix a 45-cent stamp and mail by October 21, 2013. Thank you!

Cierre con cinta, ponga una estampilla de 45 centavos y envíe por correo a más tardar el 21 de octubre de 2013. ¡Gracias!

Affix $0.45
Stamp

Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, CA 90012
Attn: Michael Mercado

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT/PROYECTO DE REABASTECIMIENTO DE AGUAS SUBTERRÁNEAS DE LOS ÁNGELES
INITIAL STUDY AND NOTICE OF PREPARATION/ESTUDIO INICIAL Y AVISO DE PREPARACIÓN
PUBLIC COMMENT CARD/TARJETA PARA COMENTARIOS DEL PUBLICO

(Please submit to Michael Mercado via fax (213) 367-4710, or email michael.mercado@ladwp.com by October 21, 2013/
Por favor regrese esta forma por fax a Michael Mercado al (213) 367-4710, o por correo electrónico a michael.mercado@ladwp.com a más tardar 21 de octubre del 2013)

Name/Nombre: KEN MURRAY

Organization/Organización (optional/opcional): HOMEOWNER

Address/Dirección: 4511 CAMELLIA AVE ~~#~~

City, Zip/ Ciudad, Código Postal: N. Hollywood CA 91602

Phone/Teléfono (optional/opcional):

E-mail (optional/opcional):

	Yes/Sí	No/No
Would you like to remain on our mailing list to receive future project updates? **¿Le gustaría permanecer en nuestra lista postal para recibir información actualizada del proyecto?**	☐	☐

Comments/Comentarios:

MUCH CONCERN RE: INVOLVEMENT of public
these MEETINGS ENGAGE few people
STRONGLY, strongly strongly RECOMMEND
NOTIFY RATEPAYERS through MAILED NEWSLETTERS
E Bills & main LADWP website that this project
is being considered -
very impt! - with link to phased website
phase 1 - EXECUTIVE SUMMARY (like tonight!)
phase 2 - DISCUSSION of details
phase 3 - TECHNICAL information
perhaps using links as READERS DESIRE
there was insufficient information regarding
financials

2013.10.17

Meeting with the LA County DPW on the GWR Project Initial Study

County Comments for Scoping

- Analyze water chemistry and impacts on minerals: Purified water from AWPF could leach out minerals and degrade the binding structure of the soil

- Injection Wells
    - Mounding issues:
        - Mounding will drop recharge rates for stormwater. While useful as seawater intrusion barriers, at the proposed site, these wells could create a stormwater recharge barrier (slowing infiltration from the PSG).
        - Possibility of flooding, e.g. basements or underground storage. If this flooding occurs after the wells are installed, City may be blamed.
    - 4 cfs per well is extremely optimistic. At seawater barriers, water is injected at 0.01 to 0.5 cfs per well (with 0.5 cfs being a really good well)
    - Need to develop wells / create hydraulic conductivity after installation, by extracting water first
    - Yearly maintenance is critical, as wells will plug up
        - Causes: biogrowth from the aquifer itself; chemical fouling from additives in the water
        - Maintenance involves both mechanical maintenance and also extracting water and cleaning it (clearing out muck)
    - Expensive to install

- During summer, at each spreading ground, all the basins will be dried out at the same time. This could last up to 1 month. Vegetation will be striped.
    - During this maintenance, the other spreading ground can generally be utilized at times if capacity is available. (I.e. when HSG is undergoing maintenance, use PSG, and vice versa)
    - It's also critical to dry out the SGs to re-establish percolation rates.

- During the storm season, in normal to wet years, storm water will always take precedence.
    - Channel capacity will be used for flood control. If a flooding situation occurs and capacity has been used for GWR Project related volumes, we may face law suites.
        - I.e., during storm events, AWPF product water should not be diverted to channels.

- Potential for algae matts. Algae matts are becoming an issue at the San Gabriel SG, however, this project involves higher quality water that doesn't contain the high nutrients used at SGSG.

But nutrients already in the soil or from storm water, along with the constant feed of AWPF water, may cause growth. Algea matts cause odors. Algea grows strongly in July when it's hot.

- As there may be long periods where the SGs will be unavailable, City should consider creating a system to keep water circulating at DCT to keep the AWPF running.

- City should consider acquiring land and dedicating it to spreading AWPF product water, copying the OCWD model. Consider land from retired gravel pits.

June 7, 2013

Dear Commissioners,
I hope you can help with this issue.
Thank you,
Esther Levy
5419 Murietta Ave.
Sherman Oaks 91401
818 989 2867
estherkale@aol.com

A PLACE OF BEAUTY IN JEOPARDY

I have been a volunteer at the Japanese Garden for nearly 15 years. It has been a valuable part of my life. A place of beauty, for me to enjoy nature and share my pleasure and knowledge with guests. Also learning about the water reclamation process and the need for reclaimed water was very educational for me and this knowledge too I have shared with guests.

For some time the DWP and Department of Sanitation have been talking about expanding and adding a Reverse Osmosis water purification facility within the confines of the Donald C. Tillman property. I think that would be much needed improvement for our water supply. There are four possible sites to build a facility within the DCT property and a fifth one near Hansen Dam. DWP and Department of Sanitation have issued detailed assessments of the cost of each possible site, which I suspect could be easily manipulated. My understanding is that site 2 (or as I just heard is now called site 1) is the prefered site for the Reverse Osmosis plant. That is the closest to the garden. One problem that I see from that location is that it would be an eyesore to the entrance to the garden. It would also incur the added expense of tearing down four buildings which will have to be rebuilt else where. It is questionable how it would affect visitor parking. The more threatening possibility is that a few years after the new building is built, there would be a need to expand and in that site only, there is no room to expand but to the parking lot, which we need for guests, and into the garden itself.
In all their calculation of costs and benefits, there is no mention of the cost of the loss of this beautiful garden, which seems to me the direction is which they are heading. I wonder if it can be saved.

STATE OF CALIFORNIA

GOVERNOR'S OFFICE *of* PLANNING AND RESEARCH

STATE CLEARINGHOUSE AND PLANNING UNIT

EDMUND G. BROWN JR.
GOVERNOR

KEN ALEX
DIRECTOR

Notice of Preparation

September 6, 2013

To: Reviewing Agencies

Re: Los Angeles Groundwater Replenishment Project
SCH# 2013091023

Attached for your review and comment is the Notice of Preparation (NOP) for the Los Angeles Groundwater Replenishment Project draft Environmental Impact Report (EIR).

Responsible agencies must transmit their comments on the scope and content of the NOP, focusing on specific information related to their own statutory responsibility, within 30 days of receipt of the NOP from the Lead Agency. This is a courtesy notice provided by the State Clearinghouse with a reminder for you to comment in a timely manner. We encourage other agencies to also respond to this notice and express their concerns early in the environmental review process.

Please direct your comments to:

Michael Mercado
Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012

with a copy to the State Clearinghouse in the Office of Planning and Research. Please refer to the SCH number noted above in all correspondence concerning this project.

If you have any questions about the environmental document review process, please call the State Clearinghouse at (916) 445-0613.

Sincerely,

Scott Morgan
Director, State Clearinghouse

Attachments
cc: Lead Agency

Document Details Report
State Clearinghouse Data Base

SCH# 2013091023
Project Title Los Angeles Groundwater Replenishment Project
Lead Agency Los Angeles Department of Water and Power

Type NOP Notice of Preparation

Description An Advanced Water Purification Facility (AWPF) would be constructed within the Donald C. Tillman Water Reclamation Plant (DCTWRP) in Van Nuys, CA. The AWPF would treat up to 44 MGD of secondary or tertiary effluent produced at DCTWRP using advanced treatment technology. Purified recycled water would be conveyed to Hansen Spreading Grounds and Pacoima Spreading Grounds and new injection wells constructed within Canterbury Avenue near Pacoima Spreading Grounds to replenish the San Fernando Groundwater Basin. New conveyance pipelines would be required to transport purified recycled water from Hansen Spreading Grounds to Pacoima Spreading Grounds on Canterbury Avenue.

Lead Agency Contact

Name Michael Mercado
Agency Los Angeles Department of Water and Power
Phone 213 367 0395 **Fax**
email
Address 111 North Hope Street, Room 1044
City Los Angeles **State** CA **Zip** 90012

Project Location

County Los Angeles
City Los Angeles, City of, Van Nuys
Region
Cross Streets 6100 Woodley Avenue
Lat / Long 34° 10' 57.63" N / 118° 28' 50.9" W
Parcel No.
Township **Range** **Section** **Base**

Proximity to:

Highways I-405, US 101
Airports Van Nuys
Railways
Waterways Los Angeles River, Lake Balboa, Wildlife Lake
Schools Bassett ES, Sylvan Park
Land Use Water reclamation plant/PF and OS/Public Facilities and Open Space

Project Issues Aesthetic/Visual; Agricultural Land; Air Quality; Archaeologic-Historic; Biological Resources; Coastal Zone; Drainage/Absorption; Economics/Jobs; Flood Plain/Flooding; Forest Land/Fire Hazard; Geologic/Seismic; Minerals; Noise; Population/Housing Balance; Public Services; Recreation/Parks; Schools/Universities; Septic System; Sewer Capacity; Soil Erosion/Compaction/Grading; Solid Waste; Toxic/Hazardous; Traffic/Circulation; Vegetation; Water Quality; Water Supply; Wetland/Riparian; Growth Inducing; Landuse; Cumulative Effects

Reviewing Agencies Resources Agency; Office of Historic Preservation; Department of Parks and Recreation; Department of Water Resources; Department of Fish and Wildlife, Region 5; CA Department of Public Health; Native American Heritage Commission; Public Utilities Commission; California Highway Patrol; Caltrans, District 7; State Water Resources Control Board, Divison of Financial Assistance; Department of Toxic Substances Control; Regional Water Quality Control Board, Region 4

Date Received 09/06/2013 **Start of Review** 09/06/2013 **End of Review** 10/07/2013

Print Form

Appendix C

Notice of Completion & Environmental Document Transmittal

Mail to: State Clearinghouse, P.O. Box 3044, Sacramento, CA 95812-3044 (916) 445-0613
For Hand Delivery/Street Address: 1400 Tenth Street, Sacramento, CA 95814

SCH # 2013091023

Project Title: Los Angeles Groundwater Replenishment Project

Lead Agency: Los Angeles Department of Water and Power — Contact Person: Michael Mercado
Mailing Address: 111 North Hope St, Room 1044 — Phone: 213-367-0395
City: Los Angeles — Zip: 90012 — County: Los Angeles

Project Location: County: Los Angeles — City/Nearest Community: Los Angeles/Van Nuys
Cross Streets: 6100 Woodley Avenue — Zip Code: 91406
Longitude/Latitude (degrees, minutes and seconds): 118 ° 28 ′ 50.9″ N / 34 ° 10 ′ 57.63″ W Total Acres: 5
Assessor's Parcel No.: ____ Section: ____ Twp.: ____ Range: ____ Base: ____
Within 2 Miles: State Hwy #: I-405, US 101 — Waterways: Los Angeles River, Lake Balboa, Wildlife Lake
Airports: Van Nuys — Railways: N/A — Schools: Bassett ES, Sylvan Park

RECEIVED SEP 06 2013 STATE CLEARING HOUSE

Document Type:

CEQA: [x] NOP [ ] Early Cons [ ] Neg Dec [ ] Mit Neg Dec [ ] Draft EIR [ ] Supplement/Subsequent EIR (Prior SCH No.) ____ Other: ____
NEPA: [ ] NOI [ ] EA [ ] Draft EIS [ ] FONSI
Other: [ ] Joint Document [ ] Final Document [ ] Other: ____

Local Action Type:

[ ] General Plan Update [ ] General Plan Amendment [ ] General Plan Element [ ] Community Plan [ ] Specific Plan [ ] Master Plan [ ] Planned Unit Development [x] Site Plan [ ] Rezone [ ] Prezone [ ] Use Permit [ ] Land Division (Subdivision, etc.) [ ] Annexation [ ] Redevelopment [ ] Coastal Permit [ ] Other: ____

Development Type:

[ ] Residential: Units ____ Acres ____
[ ] Office: Sq.ft. ____ Acres ____ Employees ____
[ ] Commercial: Sq.ft. ____ Acres ____ Employees ____
[ ] Industrial: Sq.ft. ____ Acres ____ Employees ____
[ ] Educational: ____
[ ] Recreational: ____
[ ] Water Facilities: Type ____ MGD ____
[ ] Transportation: Type ____
[ ] Mining: Mineral ____
[ ] Power: Type ____ MW ____
[x] Waste Treatment: Type AWPF MGD 44
[ ] Hazardous Waste: Type ____
[ ] Other: ____

Project Issues Discussed in Document:

[x] Aesthetic/Visual [x] Agricultural Land [x] Air Quality [x] Archeological/Historical [x] Biological Resources [x] Coastal Zone [x] Drainage/Absorption [x] Economic/Jobs
[ ] Fiscal [x] Flood Plain/Flooding [x] Forest Land/Fire Hazard [x] Geologic/Seismic [x] Minerals [x] Noise [x] Population/Housing Balance [x] Public Services/Facilities
[x] Recreation/Parks [x] Schools/Universities [x] Septic Systems [x] Sewer Capacity [x] Soil Erosion/Compaction/Grading [x] Solid Waste [x] Toxic/Hazardous [x] Traffic/Circulation
[x] Vegetation [x] Water Quality [x] Water Supply/Groundwater [x] Wetland/Riparian [x] Growth Inducement [x] Land Use [x] Cumulative Effects [ ] Other: ____

Present Land Use/Zoning/General Plan Designation:

Water reclamation plant/PF and OS/Public Facilities and Open Space

Project Description: *(please use a separate page if necessary)*

An Advanced Water Purification Facility (AWPF) would be constructed within the Donald C. Tillman Water Reclamation Plant (DCTWRP) in Van Nuys, CA. The AWPF would treat up to 44 MGD of secondary or tertiary effluent produced at DCTWRP using advanced treatment technology. Purified recycled water would be conveyed to Hansen Spreading Grounds and Pacoima Spreading Grounds and new injection wells constructed within Canterbury Avenue near Pacoima Spreading Grounds to replenish the San Fernando Groundwater Basin. New conveyance pipelines would be required to transport purified recycled water from Hansen Spreading Grounds to Pacoima Spreading Grounds on Canterbury Avenue.

Note: The State Clearinghouse will assign identification numbers for all new projects. If a SCH number already exists for a project (e.g. Notice of Preparation or previous draft document) please fill in.

Revised 2010

NOP Distribution List

SL County: Los Angeles SCH# 2013091023

Resources Agency

- [x] **Resources Agency**
Nadell Gayou
- [ ] **Dept. of Boating & Waterways**
Nicole Wong
- [ ] **California Coastal Commission**
Elizabeth A. Fuchs
- [ ] **Colorado River Board**
Tamya M. Trujillo
- [ ] **Dept. of Conservation**
Elizabeth Carpenter
- [ ] **California Energy Commission**
Eric Knight
- [ ] **Cal Fire**
Dan Foster
- [ ] **Central Valley Flood Protection Board**
James Herota
- [x] **Office of Historic Preservation**
Ron Parsons
- [x] **Dept of Parks & Recreation**
Environmental Stewardship Section
- [ ] **California Department of Resources, Recycling & Recovery**
Sue O'Leary
- [ ] **S.F. Bay Conservation & Dev't. Comm.**
Steve McAdam
- [x] **Dept. of Water Resources** Resources Agency
Nadell Gayou

Fish and Game

- [ ] **Depart. of Fish & Wildlife**
Scott Flint
Environmental Services Division
- [ ] **Fish & Wildlife Region 1**
Donald Koch
- [ ] **Fish & Wildlife Region 1E**
Laurie Harnsberger
- [ ] **Fish & Wildlife Region 2**
Jeff Drongesen
- [ ] **Fish & Wildlife Region 3**
Charles Armor
- [ ] **Fish & Wildlife Region 4**
Julie Vance
- [x] **Fish & Wildlife Region 5**
Leslie Newton-Reed
Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6**
Gabrina Gatchel
Habitat Conservation Program
- [ ] **Fish & Wildlife Region 6 I/M**
Heidi Sickler
Inyo/Mono, Habitat Conservation Program
- [ ] **Dept. of Fish & Wildlife M**
George Isaac
Marine Region

Other Departments

- [ ] **Food & Agriculture**
Sandra Schubert
Dept. of Food and Agriculture
- [ ] **Depart. of General Services**
Public School Construction
- [ ] **Dept. of General Services**
Anna Garbeff
Environmental Services Section
- [x] **Dept. of Public Health**
Jeffery Worth
Dept. of Health/Drinking Water
- [ ] **Delta Stewardship Council**
Kevan Samsam

Independent Commissions,Boards

- [ ] **Delta Protection Commission**
Michael Machado
- [ ] **Cal EMA (Emergency Management Agency)**
Dennis Castrillo
- [x] **Native American Heritage Comm.**
Debbie Treadway
- [x] **Public Utilities Commission**
Leo Wong
- [ ] **Santa Monica Bay Restoration**
Guangyu Wang
- [ ] **State Lands Commission**
Jennifer Deleong
- [ ] **Tahoe Regional Planning Agency (TRPA)**
Cherry Jacques

Business, Trans & Housing

- [ ] **Caltrans - Division of Aeronautics**
Philip Crimmins
- [ ] **Caltrans - Planning**
Terri Pencovic
- [x] **California Highway Patrol**
Suzann Ikeuchi
Office of Special Projects
- [ ] **Housing & Community Development**
CEQA Coordinator
Housing Policy Division

Dept. of Transportation

- [ ] **Caltrans, District 1**
Rex Jackman
- [ ] **Caltrans, District 2**
Marcelino Gonzalez
- [ ] **Caltrans, District 3**
Gary Arnold
- [ ] **Caltrans, District 4**
Erik Alm
- [ ] **Caltrans, District 5**
David Murray
- [ ] **Caltrans, District 6**
Michael Navarro
- [x] **Caltrans, District 7**
Dianna Watson
- [ ] **Caltrans, District 8**
Dan Kopulsky
- [ ] **Caltrans, District 9**
Gayle Rosander
- [ ] **Caltrans, District 10**
Tom Dumas
- [ ] **Caltrans, District 11**
Jacob Armstrong
- [ ] **Caltrans, District 12**
Marlon Regisford

Cal EPA

Air Resources Board

- [ ] Airport/Energy Projects
Jim Lerner
- [ ] Transportation Projects
Douglas Ito
- [ ] Industrial Projects
Mike Tollstrup
- [x] **State Water Resources Control Board**
Regional Programs Unit
Division of Financial Assistance
- [ ] **State Water Resources Control Board**
Student Intern, 401 Water Quality Certification Unit
Division of Water Quality
- [ ] **State Water Resouces Control Board**
Phil Crader
Division of Water Rights
- [x] **Dept. of Toxic Substances Control**
CEQA Tracking Center
- [ ] **Department of Pesticide Regulation**
CEQA Coordinator

Regional Water Quality Control Board (RWQCB)

- [ ] **RWQCB 1**
Cathleen Hudson
North Coast Region (1)
- [ ] **RWQCB 2**
Environmental Document Coordinator
San Francisco Bay Region (2)
- [ ] **RWQCB 3**
Central Coast Region (3)
- [x] **RWQCB 4**
Teresa Rodgers
Los Angeles Region (4)
- [ ] **RWQCB 5S**
Central Valley Region (5)
- [ ] **RWQCB 5F**
Central Valley Region (5)
Fresno Branch Office
- [ ] **RWQCB 5R**
Central Valley Region (5)
Redding Branch Office
- [ ] **RWQCB 6**
Lahontan Region (6)
- [ ] **RWQCB 6V**
Lahontan Region (6)
Victorville Branch Office
- [ ] **RWQCB 7**
Colorado River Basin Region (7)
- [ ] **RWQCB 8**
Santa Ana Region (8)
- [ ] **RWQCB 9**
San Diego Region (9)

- [ ] **Other** ____________
____
____
- [ ] ____________
Conservancy

Last Updated 08/27/2013

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard
West Sacramento, CA 95691
(916) 373-3715
(916) 373-5471 – FAX
e-mail: ds_nahc@pacbell.net

September 10, 3013

Mr. Michael Mercado, Environmental Planner
Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012

RE: SCH#2013091023 CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the **"Los Angeles Groundwater Replenishment Project;"** located in the City of Los Angeles; Los Angeles County, California

Dear Mr. Mercado:

The Native American Heritage Commission (NAHC) has reviewed the CEQA Notice regarding the above referenced project. In the 1985 Appellate Court decision (170 Cal App 3rd 604), the court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

The California Environmental Quality Act (CEQA) states that any project which includes archeological resources, is a significant effect requiring the preparation of an EIR (CEQA guidelines 15064.5(b). To adequately comply with this provision and mitigate project-related impacts on archaeological resources, the Commission recommends the following actions be required:

Contact the appropriate Information Center for a record search to determine :If a part or all of the area of project effect (APE) has been previously surveyed for cultural places(s), The NAHC recommends that known traditional cultural resources recorded on or adjacent to the APE be listed in the draft Environmental Impact Report (DEIR).

If an additional archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey. We suggest that this be coordinated with the NAHC, if possible. This area is known to the NAHC to be very culturally sensitive. The final report containing site forms, site significance, and mitigation measurers should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure pursuant to California Government Code Section 6254.10.

A list of appropriate Native American Contacts for consultation concerning the project site has been provided and is attached to this letter to determine if the proposed active might impinge on any cultural resources. Lack of surface evidence of archeological resources does not preclude their subsurface existence.

Lead agencies should include in their mitigation plan provisions for the identification and evaluation of accidentally discovered archeological resources, pursuant to California Health & Safety Code Section 7050.5 and California Environmental Quality Act (CEQA) §15064.5(f). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American, with knowledge in cultural resources, should monitor all ground-disturbing activities. Also, California Public Resources Code Section 21083.2 require documentation and analysis of archaeological items that meet the standard in Section 15064.5 (a)(b)(f). Lead agencies should include in their mitigation plan provisions for the disposition of recovered artifacts, in consultation with culturally affiliated Native Americans. Lead agencies should include provisions for discovery of Native American human remains in their mitigation plan. Health and Safety Code §7050.5, CEQA §15064.5(e), and Public Resources Code §5097.98 mandates the process to be followed in the event of an accidental discovery of any human remains in a location other than a dedicated cemetery.

Sincerely,

Dave Singleton
Program Analyst

CC: State Clearinghouse

Attachment: Native American Contacts list

Native American Contacts
Los Angeles County
September 10, 2013

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362
folkes9@msn.com
805 492-7255
(805) 558-1154 - cell
folkes9@msn.com
Chumash
Tataviam
Ferrnandeño

Gabrieleno/Tongva San Gabriel Band of Mission
Anthony Morales, Chairperson
PO Box 693
San Gabriel, CA 91778
GTTribalcouncil@aol.com
(626) 286-1632
(626) 286-1758 - Home
(626) 286-1262 -FAX
Gabrielino Tongva

Fernandeno Tataviam Band of Mission Indians
Larry Ortega, Chairperson
1019 - 2nd Street, Suite #1
San Fernando CA 91340
(818) 837-0794 Office
(818) 837-0796 Fax
Fernandeno
Tataviam

Randy Guzman - Folkes
6471 Cornell Circle
Moorpark, CA 93021
ndnRandy@yahoo.com
(805) 905-1675 - cell
Chumash
Fernandeño
Tataviam
Shoshone Paiute
Yaqui

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th St, Rm. 403
Los Angeles, CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
P.O. Box 86908
Los Angeles, CA 90086
sgoad@gabrielino-tongva.com
951-845-0443
Gabrielino Tongva

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
115 Radio Street
Bakersfield, CA 93305
deedominguez@juno.com
(626) 339-6785
Yowlumne
Kitanemuk

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower, CA 90707
gtongva@verizon.net
562-761-6417 - voice
562-761-6417- fax
Gabrielino Tongva

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

his list s only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2013091023; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Los Angeles Groundwater REplenishment Project; located in the City of Los Angeles; Los Angeles County, california.

Native American Contacts
Los Angeles County
September 10, 2013

Gabrielino-Tongva Tribe
Bernie Acuna, Co-Chairperson
P.O. Box 180 Gabrielino
Bonsall , CA 92003
(619) 294-6660-work
(310) 428-5690 - cell
(760) 636-0854- FAX
bacuna1@gabrielinotribe.org

Gabrielino-Tongva Tribe
Linda Candelaria, Co-Chairperson
P.O. Box 180 Gabrielino
Bonsall , CA 92003
palmsprings9@yahoo.com
626-676-1184- cell
(760) 636-0854 - FAX

Gabrieleno Band of Mission Indians
Andrew Salas, Chairperson
P.O. Box 393 Gabrielino
Covina , CA 91723
gabrielenoindians@yahoo.
(626) 926-4131

Gabrielino-Tongva Tribe
Conrad Acuna,
P.O. Box 180 Gabrielino
Bonsall , CA 92003

760-636-0854 - FAX

Gabrielino /Tongva Nation
Sam Dunlap, Cultural Resorces Director
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net
909-262-9351

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

his list s only applicable for contacting local Native Americans with regard to cultural resources for the proposed SCH#2013091023; CEQA Notice of Preparation (NOP); draft Environmental Impact Report (DEIR) for the Los Angeles Groundwater REplenishment Project; located in the City of Los Angeles; Los Angeles County, california.

DEPARTMENT OF TRANSPORTATION
DISTRICT 7, REGIONAL PLANNING
IGR/CEQA BRANCH
100 MAIN STREET, MS # 16
LOS ANGELES, CA 90012-3606
PHONE: (213) 897-9140
FAX: (213) 897-1337

Flex your power!
Be energy efficient!

September 19, 2013

IGR/CEQA No. 130910JP-NOP
Los Angeles Groundwater Replenishment Project
Vic. LA-405, LA-101 / PM 40.081

Mr. Michael Mercado
City of Los Angeles
Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA, 90012

Dear Mr. Mercado:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced project. The project proposes an advanced water purification facility to be constructed with in the Donald C. Tillman Water Reclamation Plant in Van Nuys, CA.

The project is located near the I-405 Corridor, please be reminded that any work to be performed within the State Right-of-way will need an Encroachment Permit from the Caltrans. Any modifications to State facilities will need to meet all mandatory design standard and specifications.

Storm water run-off is a sensitive issue for Los Angeles and Ventura counties. Please be mindful that projects need to be designed to discharge clean run-off water. Additionally storm water run-off is not permitted to discharge onto State highway facilities.

Transportation of heavy construction equipment and/or materials, which requires the use of oversized-transport vehicles on State highways, will require a transportation permit from the Caltrans. It is recommended that large size truck trips be limited to off-peak commute periods. In addition, a truck/traffic construction management plan is needed for this project.

If you have any questions, please feel free to contact me at (213) 897-9140 or Jonathan Palacio the project coordinator at (213) 897-3747 and refer to IGR/CEQA No. 130910JP.

Sincerely,

Dianna Watson

DIANNA WATSON
IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

CALIFORNIA
Water Boards

State Water Resources Control Board

EDMUND G. BROWN JR.
GOVERNOR

MATTHEW RODRIQUEZ
SECRETARY FOR
ENVIRONMENTAL PROTECTION

SEP 25 2013

Michael Mercado
Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, California 90012

Dear Mr. Mercado:

INITIAL STUDY (IS) FOR LOS ANGELES DEPARTMENT OF WATER AND POWER (CITY); (PROJECT); LOS ANGELES COUNTY; STATE CLEARINGHOUSE NO. 2013091023

We understand that the City may be pursuing Clean Water State Revolving Fund (CWSRF) financing for this Project. As a funding agency and a state agency with jurisdiction by law to preserve, enhance, and restore the quality of California's water resources, the State Water Resources Control Board (State Water Board) is providing the following information and comments for the environmental document prepared for the Project.

Please provide us with the following documents applicable to the proposed Project if seeking CWSRF or other State Water Board funding: (1) one copy of the draft and final IS, (2) the resolution adopting the IS and a Mitigation Monitoring and Reporting Program (MMRP) making California Environmental Quality Act (CEQA) findings, (3) all comments received during the review period and the City's response to those comments, (4) the adopted MMRP, and (5) the Notice of Determination filed with the Los Angeles County Clerk and the Governor's Office of Planning and Research, State Clearinghouse. In addition, we would appreciate notices of any hearings or meetings held regarding environmental review of any projects to be funded by the State Water Board.

The CWSRF Program is partially funded by the United States Environmental Protection Agency and requires additional "CEQA-Plus" environmental documentation and review. Four enclosures are included that further explain the CWSRF Program environmental review process and the additional federal requirements. The State Water Board is required to consult directly with agencies responsible for implementing federal environmental laws and regulations. Any environmental issues raised by federal agencies or their representatives will need to be resolved prior to State Water Board approval of a CWSRF financing commitment for the proposed Project. For further information on the CWSRF Program, please contact Mr. Ahmad Kashkoli at (916) 341-5855.

It is important to note that prior to a CWSRF financing commitment, projects are subject to provisions of the Federal Endangered Species Act (ESA), and must obtain Section 7 clearance from the United States Department of the Interior, Fish and Wildlife Service (USFWS), and/or United States Department of Commerce National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NMFS) for any potential effects to special status species.

Please be advised that the State Water Board will consult with USFWS, and/or NMFS regarding all federal special-status species that the Project has the potential to impact if the Project is to be funded under the CWSRF Program. The City will need to identify whether the Project will involve any direct effects from construction activities, or indirect effects such as growth inducement, that may affect federally listed threatened, endangered, or candidate species that are known, or have a potential to occur, on-site, in the surrounding areas, or in the service area, and to identify applicable conservation measures to reduce such effects.

In addition, CWSRF projects must comply with federal laws pertaining to cultural resources, specifically Section 106 of the National Historic Preservation Act (Section 106). The State Water Board has responsibility for ensuring compliance with Section 106 and the State Water Board must consult directly with the California State Historic Preservation Officer (SHPO). SHPO consultation is initiated when sufficient information is provided by the CWSRF applicant. The City must retain a consultant that meets the Secretary of the Interior's Professional Qualifications Standards (www.cr.nps.gov/local-law/arch_stnds_9.htm) to prepare a Section 106 compliance report.

Note that the City will need to identify the Area of potential Effects (APE), including construction and staging areas, and the depth of any excavation. The APE is three-dimensional and includes all areas that may be affected by the Project. The APE includes the surface area and extends below ground to the depth of any Project excavations. The records search request should be made for an area larger than the APE. The appropriate area varies for different projects but should be drawn large enough to provide information on what types of sites may exist in the vicinity.

Other federal requirements pertinent to the Project under the CWSRF Program include the following:

A. Compliance with the Federal Clean Air Act: (a) Provide air quality studies that may have been done for the Project; and (b) if the Project is in a nonattainment area or attainment area subject to a maintenance plan; (i) provide a summary of the estimated emissions (in tons per year) that are expected from both the construction and operation of the Project for each federal criteria pollutant in a nonattainment or maintenance area, and indicate if the nonattainment designation is moderate, serious, or severe (if applicable); (ii) if emissions are above the federal de minimis levels, but the Project is sized to meet only the needs of current population projections that are used in the approved State Implementation Plan for air quality, quantitatively indicate how the proposed capacity increase was calculated using population projections.

B. Protection of Wetlands: Identify any portion of the proposed Project area that should be evaluated for wetlands or United States waters delineation by the United States Army Corps of Engineers (USACE), or requires a permit from the USACE, and identify the status of coordination with the USACE.

C. Compliance with the Migratory Bird Treaty Act: List any birds protected under this act that may be impacted by the Project and identify conservation measures to minimize impacts.

D. Compliance with the Flood Plain Management Act: Identify whether or not the Project is in a Flood Management Zone and include a copy of the Federal Emergency Management Agency flood zone maps for the area.

Following are specific comments on the City draft IS:

1. Air Quality, Page 3-4: Please include a detailed air quality projections model of the Project's lifespan in order to provide technical support for this resource section's impacts discussion.

2. Air Quality and Green House Gas Emissions, Page 3-4, 3-5 and 3-11: Please include the details of all vehicular and construction-related emissions that will be contributing to the Project's air pollution, as technical support for the resource sections' impacts discussions.

3. Biological Resources, Page 3-6: Please provide a complete list of all listed and special status state and federal species that have the potential to occur within the Project site and its surrounding area. Additionally, please include a construction schedule to ensure that construction will not interfere with listed or special status species' migratory patterns and/or lifespan.

4. Geology and Soils, Page 3-9: Please include a detailed description of the proposed Project's design and construction plans that will ensure there are no potentially significant impacts from earthquakes, ground shaking, ground failure (liquefaction) or landslides in the next draft of the Project's EIR.

5. Hazards and Hazardous Materials, Page 3-12: Please include a detailed discussion outlining how future chemical deliveries to the DCTWRP will be conducted with the utmost public safety in mind.

6. Hazards and Hazardous Materials, Section d, Page 3-13: Please include a list of all hazardous materials identified on or surrounding the Project site.

7. Transportation/Traffic, Page 3-24: Please include a detailed schedule of construction operations, in order to ensure that traffic would not be significantly affected. If significant traffic impacts cannot be avoided, please provide appropriate mitigation measures to lessen the magnitude of the impact(s).

Thank you for the opportunity to review the City's draft IS. If you have any questions or concerns, please feel free to contact me at (916) 341-5855, or by email at AKashkoli@waterboards.ca.gov, or contact David Werner at (916) 327-9117 or by email at DWerner@waterboards.ca.gov.

Sincerely,

Ahmad Kashkoli

Ahmad Kashkoli
Senior Environmental Scientist

Enclosures (4)

1. SRF & CEQA-Plus
2. Quick Reference Guide to CEQA Requirements for State Revolving Fund Loans
3. Instructions and Guidance for "Environmental Compliance Information"
4. Basic Criteria for Cultural Resources Reports

cc: State Clearinghouse
(Re: SCH# 2013091023)
P.O. Box 3044
Sacramento, CA 95812-3044

Date: October 18, 2013

TO: Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012
Attn: **Michael Mercado**

FROM: Catrina Schick
3654 Goodland Avenue
Studio City, CA 91406

SUBJECT: **PUBLIC COMMENT RESPONSE TO THE:**

Notice of Preparation (NOP) of a Draft Environmental Impact Report (EIR) for the Los Angeles Ground Water Replenishment Project, Initial Study and Notice of Preparation - dated September 6, 2013

The following comments are provided to be addressed and responded to in the preparation of the Draft and Final EIR to be prepared by the lead agency DWP.

1. **All** rate payers of DWP need to be individually informed (through their billing) that DWP/Sanitation are moving forward with reclaiming sewage water and injecting it into the ground water table, **in clear language**, that the rate payers can understand.

This proposed project affects the water supply for all the DWP rate payers, not just the construction areas in the Valley. Also the rate payers do not have any alternatives to obtain their water supply.

The Public outreach for this NOP was very poorly addressed and hurried as confirmed by the attendees at all three Public Meetings, which also had minimal attendance (less than 30 attendees at all three meetings).

2. In the brochure in your handout packet titled **Recycled Water Master Planning** dated October 2012 on page 8 it states "all five sites will be carried forward for environmental documentation". The current 45 day public review period only includes 2 of the 5 locations.

To get meaningful public awareness and input and appropriate environmental impact evaluation of the proposed AWPF, all five locations need to be evaluated to be able to select the best environmental location with minimal mitigations and impacts to adjacent areas such as Woodley Park and The Japanese Garden, which have lot of week and weekend public usage. (See attachment #1)

In the Draft Report dated 1/18/2010 the five sites were evaluated by experts and the Contractors Laydown Area received 14 number one rankings out of 18. The DCT SW site (the one proposed in the NOP) only received 4 #1 rankings. This needs to be reviewed by an independent entity (not DWP or Sanitation) as to why the proposed location of the AWPF facility was selected at the worst location. (See attachment #2)

At the July 23, 2013 meeting of the **Sepulveda Basin Wildlife Steering Committee**, Mr. Hinds, Mr. Haddad, Mr. Mercado and Mr. Poosti presented to committee members the 'Proposed Los Angeles Groundwater Replenishment Project' stating that the Notice to Proceed (NOP), which is the process currently out for public comment, will include Environmental assessments for **ALL FIVE** of the proposed AWPF sites. Only two were included. (See attachment #3)

Since only **TWO** sites were provided for the current public input and all **FIVE** were not included this would make the current EIR process **INVALID** and the NOP process needs to be redone and put out to the public again in order to obtain the public input that is required by the CEQA process. All work on the environmental documentation should **STOP** until a new NOP is released and there is PROPER NOTIFICATION to ALL DWP rate payers.

3. In the Initial Study dated September 13, 2013 on page 2-4 the Aesthetic box was not checked meaning there will be no Aesthetic impacts. On page 2-5 C the box was checked 'No Impact'. IN FACT; there will be significant impacts for The Japanese Garden and its visitors as the proposed industrial facility is sited at the south end of the Garden parking lot. Also the proposed project location deletes some of the necessary and required parking.

Placing the proposed additional parking along the service road next to process tanks, City vehicles and chemical delivery trucks is detrimental to the safety of the public and aesthetically poor.

4. The proposed location for the AWPF at DCT is located at the southern end of the site. If there is a breach in the Dike the proposed facility or internal site flooding the AWPF would be inundated with over 10 feet of water. The site at the north end (Contractors Laydown **OR** proposed relocation area of the Maintenance Facilities) are at an elevation equal to or close to the existing southern DCT Dike height, so there will be no danger of flooding if the facility is raised about two foot above the existing grade.

Also the Contractors Laydown area does not impact future expansion of DCT, as the proposed AWPF can be placed in the upper one half of the laydown area allowing for future DCT primary tank expansion.

5. The cost to construct the **new** warehouse and maintenance facilities in DWP's current cost spread sheet is **$14 million**. The Bureau of Sanitations' estimated cost, as the lead agency for the design and construction of the project, is **$39 million**. (See attachment #4)

The DWP spread sheet also shows the demolition cost of the existing maintenance facilities at **$219,000**. The cost to demolish roadways, underground utilities, concrete building, recycling of materials, hauling debris, etc., is realistically between **$5 to $6 million dollars**. Also, there is other demolition and infrastructure work that needs to be completed to construct the AWPF at the current location of the 'existing'34 maintenance facility area.

It is apparent that the costs to construct the AWPF and move and demolish the existing maintenance facilities are being manipulated to construct the AWPF at the existing maintenance facility area, with flagrant disregard for costs or environmental impacts.

The maintenance facility demolition would have significant environmental impacts and is unnecessary if the AWPF was placed at the north end of the DCT site or at a better location being the DWP Valley Generation Station (VGS) site, which will have minimal environmental impacts and not have any impacts on future DCT expansions.

There is an existing DWP Substation, just east of the Contractors Laydown area, where power for the AWPF can be utilized for the project. If the AWPF is sited at the existing maintenance area new duct banks would have to be run from the existing substation at the north end of the DCT location creating more negative environmental impacts.

6. Has the Regional Water Quality Control Board (RWQCB) given the City **written** or tentative approval that after spending up to **ONE BILLION** dollars for the intended scope of work, they will approve a permit for Ground Water recharge and distribution including injection wells, as well as other uses?

7. If the AWTP is placed at the VGS site, the DCT Title 22 reclaimed water currently being delivered to DWP customers along the pipe line to VGS, could continue, with no additional cost to purify the water, which would allow for cost savings and not wasting advanced treated water for industrial purposes.

The brine line that needs to be constructed if the AWPF is placed at VGS, when installed, could allow for an opportunity to add a pipe for reclaimed Title 22 water or an advanced water distribution pipe to service customers, providing additional reclaimed water availability and reduce the need to utilize potable water for industrial use that could be available for ground water recharge.

8. Has the cost savings shown on page 22 of the Executive Summary, dated October 2012, taken into consideration the evaporation (ET rate) of the water in the spreading grounds and percolation rates of each site including the fact that the DCT facility cannot operate at full capacity due to maintenance and repairs?

9. Has there been a comprehensive study on the effects of injecting the AWPF treated water into the ground water table that currently has several contaminated wells, as this injection of water may cause a spreading of the pollution to other areas? Please provide a copy to me of this report and if not it should be considered prior to moving forward with any of the proposed scope of

work as injection is the only way to reach the anticipated addition of recycled water to the water table. This is a major environmental consideration.

Attachment #1

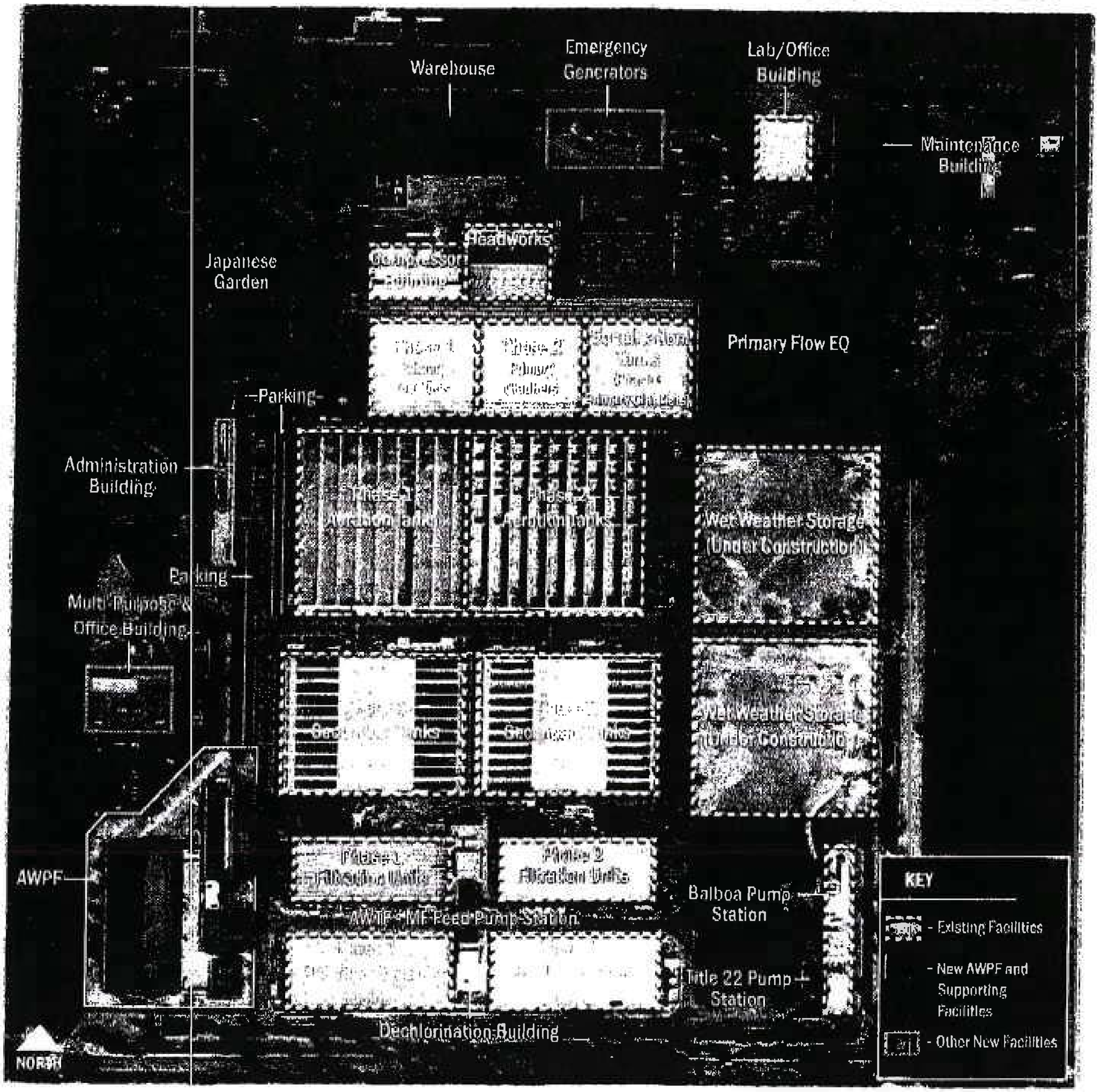


Figure ES-7: Aerial View of DCTWRP Preliminary Site Plan

Five viable sites were identified as candidate locations for the AWPF at the City's DCTWRP and Valley Generating Station (VGS). Although all five sites will be carried forward for environmental documentation, the City's preferred site location for the AWPF is located at the southwest corner of the existing DCTWRP based on analysis of proximity to existing facilities and staff for economics of operation, proximity to flood control facilities, and location of other future treatment process expansion opportunities. Figure ES-7 shows an aerial view of the DCTWRP with proposed AWPF improvements shown in blue.

SANITATION
Los Angeles Department of Water & Power

Attachment #2

Table 7-3: Summary of CDP Results (Revised 01/18/10)
(Forcemain and pump station for AWTP backwash and concentrate for Site 3 VGS)

Condition		Sensitivity Run Number & Description	Site 1 DCT SE	Site 2 DCT SW	Site 3 VGS	Site 4 Cricket Fields	Site 5 Contractor Lay Down Area
Base Condition		Base Condition	[illegible]	3	2	[illegible]	[illegible]
	1	RWAG Average Weights	[illegible]	2	[illegible]	3	1
	2	RWAG Environment Emphasis	[illegible]	[illegible]	[illegible]	2	2
	3	RWAG Social Emphasis	4	[illegible]	[illegible]	3	2
	4	Cost Emphasis	3	2	[illegible]	[illegible]	[illegible]
	5	Equal Weights	[illegible]	2	4	3	[illegible]
	6	Modified Cost Scale	[illegible]	3	2	[illegible]	[illegible]
	7	Modified Institutional Complexity Score	[illegible]	3	2	[illegible]	[illegible]
	8	Modified Weighting for Maximize Implementation Evaluation Criteria	[illegible]	2	3	[illegible]	[illegible]
Scenario 1		Scenario 1	[illegible]	2	3	[illegible]	[illegible]
	1	RWAG Average Weights	[illegible]	2	4	3	[illegible]
	2	RWAG Environment Emphasis	[illegible]	[illegible]	[illegible]	2	2
	3	RWAG Social Emphasis	4	[illegible]	[illegible]	3	2
	4	Cost Emphasis	3	2	[illegible]	[illegible]	[illegible]
	5	Equal Weights	[illegible]	2	4	3	[illegible]
	6	Modified Cost Scale	[illegible]	3	2	[illegible]	[illegible]
	7	Modified Institutional Complexity Score	[illegible]	3	2	[illegible]	[illegible]
	8	Modified Weighting for Maximize Implementation Evaluation Criteria	[illegible]	2	3	[illegible]	[illegible]
Number of Times Ranked First			0	4	0	0	14

Attachment #3, page 1

Sepulveda Basin Wildlife Areas Steering Committee
Meeting July 23, 2013 - Draft Minutes

Chair Glenn Bailey called the meeting to order at 6:38 PM. Self introductions were made.

Voting status of Canada Goose Project: This is their 4th meeting attended out of the most 8 recent, so they are now again a voting member of this committee. Glenn requested a letter on letterhead appointing a representative and alternate.

A quorum was established: 7 voting members present out of 8. Present were voting members Glenn Bailey, Terrie Brady, Glen Dake, Steve Hartman, Muriel Kotin, Robert Munsey and Rosemarie White. (Joe Phillips, alternate for Jan Kidwell arrived late and did not sit at the table.) Non-voting members, alternates and guests were John Alford, Robert Baker, K. Flores, Debra George, Serge Haddad, John Hinds, Hongjoo Kim, Rose Leibowitz, Michael Mercado, Ann Ohlenkamp, Kris Ohlenkamp, Ali Poosti and Louise Rishoff.

Minutes of 5/28/13: These were approved by consensus after addition on page 4 that ground nesting birds should be protected at the proposed cricket field. Minutes of 3/26/13 deferred to later in the meeting.

Announcements: Pedlow Skate Park will have a large event in mid August with about 3,000 participants.

John Alford for Brad Sherman's office: John is trying to reach out to the new Army Corps Colonel. He does not know what plans they have for the South Reserve. He requested committee members to keep him apprised of any communications we have with the Corps. Kris O has been trying to set up a meeting with the Corps about the South Reserve.

Presentation by DWP of Proposed Recycled Water and Groundwater Replenishment Project: An overview focusing on elements involving Tillman and Sepulveda Basin was presented by John Hinds (DWP) with assistance from Serge Haddad (DWP), Michael Mercado (DWP) and Ali Poosti (Sanitation). They are currently preparing a draft Notice of Preparation (NOP) and doing preliminary design. They expect to release the NOP in mid August. They expect to begin construction in 2018-2019.

An advanced treatment facility will be able to take secondary or tertiary effluent and clean it, prior to the water being piped to the Pacoima and Hansen Spreading Grounds. The environmental documentation will assess 4 possible sites at Tillman (DCT), 2 inside the berm, 2 outside, and a 5th at the Valley Power Generating Station near San Fernando Road, south of Hansen Dam. Outside the Tillman berm is much more complicated than in. One site, their #2 in the SW corner within the berm meets all of their criteria.

The 54" pipeline to Hansen Spreading Ground is in place. For piping the reclaimed water to the north valley, they need 80 MGD (Million Gallons/Day) of untreated water going into DCT to have enough for reclaimed water for Lake Balboa and Wildlife Lake. Each of the 2 phases of DCT can handle 40 MGD (80 total) coming in, producing about 32 MGD effluent per phase. Right now 40 MGD total is going into the plant and 32 MGD total is produced of tertiary. The 3 lakes, (1) Wildlife, (2) Lake Balboa (and Bull Creek?), and (3) Japanese Garden need 20 MGD. LAR will continue to get flow through from the Wildlife Lake and Lake Balboa, and perhaps lose the effluent that is piped directly to the river. Would they have enough water given today's amts? No. They need to reroute from existing sewage pipes the flows that now bypass Tillman, which is a matter of adjusting valves.

Minutes of Meeting 3/26/13: Approved without objection.

Commemorative Grove Plan: Hongjoo Kim presented his landscape plan. He would add more valley and live oaks to the existing ones and would add sycamores along the existing DG pathway that forms the east edge of the area. 52 rocks like those in the amphitheater would be added, representing the length of the LA River and

Attachment #4, page 1

Site Assessment TM
City of Los Angeles Recycled Water Master Planning

Site No. / Site Name	1 DCT SE			2 DCT SW			
	Item	Notes	Cost	Item	Notes	Cost	Item
	AWPF Capacity		32.4	AWPF Capacity		32.4	AWPF Capa
	Capacity Cost of Structures	a	$62,300,000	Capacity Cost of Structures	a	$62,300,000	Capacity Co
	Capacity Cost of Equipment	a	$110,400,000	Capacity Cost of Equipment	a	$110,400,000	Capacity Co
	Two-story MF/RO Building (Incremental Cost)	b	$515,000	Two-story MF/RO Building	b	$515,000	
			$0	New parking and fence	c	$65,000	New fence, administrati
	Use eastern half of Phase II CCB for MF/RO Break Tank and UV Building (Incremental Cost)	f	$765,000			$0	
			$0			$0	Additional L Cost)
			$0	Demo existing maintenance and warehouse bldgs and relocate to north	h	$219,000	
			$0	Add new maintenance and warehouse bldgs	i	$14,000,000	
			$0			$0	
			$0			$0	
			$0			$0	
	Add new pumps at existing Balboa PS for AWPF product water pumping	o	$762,000	Add new pumps at existing Balboa PS for AWPF product water pumping	o	$762,000	Add new pu AWPF influe
Scenario 1			$0			$0	Add new AW Station at VC
			$0	New 48" (500 ft) pipeline to convey Secondary/Tertiary effluent from DCT to AWPF influent	r	$397,000	
			$0	New 42" (1500 ft) pipeline to convey AWPF product water to Balboa Pump Station	t	$1,040,000	New 42" (50 pipeline
	New 27" PVC (450 ft) AWPF backwash and concentrate pipeline	w	$459,000	New 27" PVC (450 ft) AWPF backwash and concentrate pipeline	w	$459,000	New 18" PVC backwash an
			$0			$0	Add new AW Concentrate
			$0			$0	New Wet We backwash an
	New Phase 4 Equalization Basin	ab	$9,540,000	New Phase 4 Equalization Basin	ab	$9,540,000	New Phase 4
	Subtotal		$184,700,000	Subtotal		$199,700,000	Subtotal
	Contingency (30%)		*$55,400,000*	*Contingency (30%)*		*$59,900,000*	*Contingency*
	Construction Total		$240,100,000	Construction Total		$259,600,000	Construction
	Implementation Costs (30%)		*$72,000,000*	*Implementation Costs (30%)*		*$77,900,000*	*Implementat*
	TOTAL CAPITAL COST		$312,000,000	TOTAL CAPITAL COST		$338,000,000	TOTAL CAPIT

COST DIFF BTWN SITE 2 & LAYDOWN IS ~22 mil [illegible]

RMC CDM

Attachment #4, page 2

DCT

(New Project This FY)

DCT MAINTENANCE FACIL RELOC

DCT Maintenance Facilities Relocation

FMD ID:	1211	WO:	NEW
In Yr1 Rpt:	Yes	Archivd:	No
FMD Rep:	Tony Li	Phone #:	(213) 485-2312
Client Rep:	Hiddo Netto	Phone #:	(310) 732-4705
PM:	Al Bazzi	Phone #:	(310) 648-6112
Des Div.:	45	CM Div.:	45
Proj No:	6195	UPRS ID:	4983
Proj Type:	DCT	AUTOM:	No
Source:			

Srce Date: Risk Score 25.1875

Cost Estimate Data

Estimate on File			Request Data	
Date	Class	Amount	Class	Due By
5/11/2011	O	$30,000,000		

Project Approvals WO ☑ Budget $0

Date	Type	Budget Amt	WO	ClsCs	Cost Est
5/11/2011	PRC Mtg	$0	X		$30,000,000
approved for work order					

Notes/Actions

☐ 9/19/2011 EED
Per 9/19/11 prioritization meeting, project is below the cutline and needs to be deferred one year (cc)

☐ 7/22/2011 EED
Rick Mayer needs to delay construction until 2017-2018

☑ 5/16/2011 General Note
Approved for work order at 5/11/11 PRC.

For this project, per the preliminary agreement between BOS and DWP it was decided that BOS would initialy pay for the building and DWP would reimburse BOS. While a MOU has not be signed, this is what has been verbally agreed upon at meetings with BOS and DWP. Traci Minamide is the primary at these meetings for BOS and she should already be aware of the situation

2012/2013 Draft Wastewater CIP (Workshop 1)

DCT

	PRIOR YEARS			1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	6TH YEAR	7TH YEAR	8TH YEAR	9TH YEAR	10TH YEAR	
	<11/12	11/12	Total <12/13	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	Totals
FAP	$0	$292,000	$292,000	$726,400	$356,800	$27,200	$0	$0	$0	$0	$0	$0	$0	$1,402,400
CTP	$0	$150,000	$150,000	$290,000	$180,000	$10,000	$0	$0	$0	$0	$0	$0	$0	$630,000
RW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CONS	$0	$0	$0	$0	$0	$7,552,225	$15,271,350	$7,176,425	$0	$0	$0	$0	$0	$30,000,000
FACM	$0	$0	$0	$0	$0	$1,118,000	$1,118,000	$212,800	$0	$0	$0	$0	$0	$2,448,800
CTCM	$0	$0	$0	$0	$0	$225,000	$225,000	$88,000	$0	$0	$0	$0	$0	$538,000
Totals	$0	$442,000	$442,000	$1,016,400	$536,800	$8,932,425	$16,614,350	$7,477,225	$0	$0	$0	$0	$0	$35,019,200

Cash Flow Last Revision Date: 8/15/2011. Update per Aug 2011 workshop

This project will relocate the current Maintenance Facilities at Donald C. Tillman (DCT) Water Reclamation Plant in order to accommodate the new AWTF MF-RO-UV/H2O2 facility which is to be built. The new location of the Maintenance Facilities must be at a minimum 30,000 sq ft of building plus parking areas to replicate the current location. Only City staff will be working on this project in fiscal years 10/11 and 11/12.

UPRS Data / Cash Flow ProjectTitle: DCT- Maintenance Facilities Relocation
PM: Al Bazzi Lead Div: EED

PreDesign: 10% (7/1/2014 - 6/30/2015)
B&A: 0% (3/3/2017 - 9/1/2017)
Design: 0% (6/30/2015 - 3/3/2017)
Const: 0% (9/1/2017 - 8/20/2019)
RW:
PostConst: 0% (8/20/2019 - 2/19/2020)

	PRIOR YEARS			1ST YEAR	2ND YEAR	3RD YEAR	4TH YEAR	5TH YEAR	6TH YEAR	7TH YEAR	8TH YEAR	9TH YEAR	10TH YEAR	
	<11/12	11/12	Total <12/13	12/13	13/14	14/15	15/16	16/17	17/18	18/19	19/20	20/21	21/22	Totals
FAP	$0	$0	$0	$0	$0	$204,000	$470,400	$316,800	$27,200	$0	$0	$0	$0	$1,018,400
CTP	$0	$0	$0	$0	$0	$120,000	$260,000	$180,000	$10,000	$0	$0	$0	$0	$570,000
RW	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0	$0
CONS	$0	$0	$0	$0	$0	$0	$0	$0	$8,684,923	$17,513,795	$8,301,282	$0	$0	$34,500,000
FACM	$0	$0	$0	$0	$0	$0	$0	$0	$1,118,000	$1,118,000	$212,800	$0	$0	$2,448,800
CTCM	$0	$0	$0	$0	$0	$0	$0	$0	$225,000	$225,000	$88,000	$0	$0	$538,000
Totals	$0	$0	$0	$0	$0	$324,000	$730,400	$496,800	$10,065,123	$18,856,795	$8,602,082	$0	$0	$39,075,200

UPRS Type: DCT UPRS WO SZD11242 UPRS Date Last Visited: 9/21/2011

UPRS Scope:

This project is to move the current maintenance facilities at DCT in order to make room for the new AWTF project which is go into operation 2020

UPRS Status:

July/11 - The project is currently in the predesign phase. Scoping meeting will be conducted September 15, 2011.

Jun/11 - The project is currently in the predesign phase and information is being gathered

STUDIO CITY NEIGHBORHOOD COUNCIL

4024 Radford Ave.
Edit. Bldg. 2, Suite 6
Studio City, CA 91604
(818) 655-5400

October 18, 2013

Los Angeles Department of Water & Power Environmental Affairs
111 N. Hope Street, Room 1044
Los Angeles, A 90012

Sent by Email

Attention: Charles C. Holloway, Manager Environmental Planning & Assessment
Michael Merado, Environmental Project Manager

Gentlemen:

At its regular board meeting on October 16, 2013, the Board of the Studio City Neighborhood Council passed the following motion:

MOTION 10.16.2013.SP6: The Board of the Studio City Neighborhood Council supports the proposed Los Angeles Groundwater Replenishment Project, which consists of: (1) treatment, (2) conveyance, (3) replenishment.

We request that the Environmental Impact Report that is being prepared fully address all the significant impacts identified in the initial study and that appropriate mitigations be proposed.

If you have any questions, please do not hesitate to contact us.

Sincerely Yours,

Lisa Sarkin

Lisa Sarkin, Vice President
Studio City Neighborhood Council

Cc: Los Angeles City Councilmembers, Matt Hale, Karo Torossian

LS/ls

On Sunday, October 20, 2013 8:45 AM, Barbara Shellow <bshellow@yahoo.com> wrote:

Statement - I am a DWP rate payer and a long time docent/volunteer at the Japanese Garden adjacent to the DCTWRP and 100% in favor of cleansing our waste water to be recycled as potable. I am only concerned that this planned project if constructed on the Tillman site in the maintenance area will adversely impact the function of the Japanese Garden, both environmentally and by decreasing its accessibility. to the public. Therefore...I am,

Concerned - CEQU invalid. It was publicly announced by DWP and Sanitation and appears in the minutes of the July 23rd meeting of the Sepulveda Basin Wildlife Steering Committee that all of the potential 5 sites would be developed for inclusion in the EIR. This has not been done as you are only developing the Tillman maintenance site and the VGS. Therefore your CEQU document is invalid. This document will form the basis for all considerations that will be put forward in the eventual EIR, thus making the whole process flawed. You are skewing the options and further eroding the public trust.

Concerned - Of the final five sites that are all supposedly under consideration , site 5 (contractors lay-down area) on the Tillman site met 14 of the 18 critical criteria far outnumbering the other four sites. Again misguiding the public with skewed so called facts. How can we make an informed decision with such biased information.

Concerned - The projected costs of the project at the Tillman Maintenance site seem to be quit illusive and non-conclusive. There seems to be false estimates of the actual cost of the destruction/ reconstruction of the maintenance facilities phase and no mention of the cost of maintaining the infrastructure for this project.

Concerned - public outreach for input seems to be negligible and sneaky. Again negating the validity of the process. Notification in the legal notice section of the Times and perhaps a more widely read Spanish language paper is not sufficient. Plus, scoping meetings were only scheduled at sites close to the two chosen by DWP, i.e., Tillman maintenance site and the VGS. This project will be paid by all of the city rate payers, shouldn't they have some input also?

Concerned - Environmentally, you have addressed this project as being in an industrial area. In fact, it is in the middle of the Sepulveda Recreational area, a popular and widely used venue. The main site you are proposing (Tillman maintenance area) is within feet of a densely used public park. The public will potentially be exposed to toxic materials and the delivery route for said materials will be Woodley Avenue. None of this would be a problem if site 5 (contractors lay down area at the NE corner of the Tillman campus) were used.

Concerned - Environmentally, pumping the finished product of this project would mean that you would essentially be transferring potable water to the Hanson Dam spreading grounds and losing most of it through evaporation before it would even be able to percolate through to the aquifer. This would be during the summer months, i.e., summer=heat=evaporation. In the winter months you would be using the injection wells with the potential of increasing the contamination of the aquifer.

Concerned - If you used all of the proposed output from Tillman, a situation that will not happen, environmentally, what will happen to the flow of the LA river?

Concerned - You are planning this project that will probably cost the rate payers, ME, almost a Billion dollars, (only a slight exaggeration) without the written approval from (RWQCB) that they will approve a permit for ground water recharge.

Concerned - Not wanting to be a NIMBY, but the VGS seems to be a more appropriate site. Already in an industrial area, No need to pretty it up, it's form would speak for itself in respects to public education, and it is in closer proximity to the spreading grounds. I realize that a brine discharge line would have to be run, but still costs would not be as astronomical.

Concerned - That the most appropriate site on the Tillman campus, the contractors lay down area is being ignored only because DWP has deemed the maintenance area a better public relations opportunity. The lay down area has the advantages of being away from impacting public safety, not subjected to threats from flooding with just a few feet elevation in height, and far less expensive in the long run.

Concerned - That my passion for maintaining the integrity of the Japanese Garden and its mission to educate the public on the beauty of reclaiming water will be undermined by my rambling concerns.

Yes, I would like to remain on your mailing list and receive further project updates.

Barbara I Shellow
1757 Roscomare Road
Los Angeles, CA. 90077-2212
310)472-6522

DATE: 4pm 10/21/13

TO: Los Angeles Department of Water and Power
Los Angeles, CA 90012
Attn.: Michael Mercado, 213-367-0395
"Michael Mercado" <michael.mercado@ladwp.com>

cc: CM/CD2, Paul Krekorian, councilmember.krekorian@lacity.org
CM/CD4, Tom Labonge, councilmember.labonge@lacity.org
CM/CD6, Nury Martinez, councilmember.martinez@lacity.org
CM/CD7, Felipe Fuentes, councilmember.fuentes@lacity.org
AM/39 Raul Bocanegra, Raul.Bocanegra@asm.ca.gov
AM/43 Mike Gatto, Mike.Gatto@asm.ca.gov
AM/46 Adrin Nazarian Adrian.Nazarian@asm.ca.gov
Staff - Mariana.Sabeniano@asm.ca.gov

FROM: Dr. Tom Williams, Citizens Coalition for Safe Community
Sierra Club, Angeles Chapter, Water Committee

SUBJECT: Notice of Preparation (NOP) of Environmental Impact Report (EIR)
Los Angeles Groundwater Replenish Project (LAGWR/LAGRP)
SCH-20130905??

RE: Comments on NOP, IS, and Project Description

Sources: NOP 5 pgs
IS / Project Decription, Checklist, and Assessment 66 pgs
Sepulveda Garden Center Public Meeting
LACo Integrated Regional Water Management Strategic Plan (IRWMP)

We have reviewed various accessible documents regarding the proposed "Project" and have participated in one public meeting.

We request that a Scoping Report be circulated at a later date (i.e., Dec. 1, 2013) with a request for additional public comments, OR that DWP revise and recirculate the entire NOP for further comments by November 1, 2013.

Our request for revisions and extension of comment periods reflects our General Comments for inclusion in the DEIR as follows (along with the many detailed comments thereafter, attached):

Definitions/Terms - Use of terms and acronyms is confusing for the public without considerable background in several subjects. A section of Definitions, Glossary, and Acronyms and their consistent and comprehensive application throughout all documents would comply with CEQA requirements for publicly accessible discussion, for example "development" for water resources is different from land use "development" and water resources development refers to an industrial sector including sourcing, reuse, recycling and retailing. Others include: Reliability, Risk, Contingency, Flexibility, etc.

Project Description - The Project Description is incomplete and inadequate for review and comment and requires all elements of supply and resources from source (treatment facility) to use (tap) and for recharge to discharge and does not include any info regarding the groundwater basin or the HTP;

Regional/State Level Water Resources Management - One apparent goal for the project relates to statewide and regional context which is not provided, e.g., 2015-2040 Import Conditions and Physical Capacity Limits, Import Reliability and Local Contingencies, physical limited/maximum achievable operational service capacities, and Inter-/Intra-Agency coordination and cooperation agreements (ie.e, 40,000AFY of "Transfers".

Issues - Goals/Objectives-Purposes/Needs - Although a specific CEQA EIR section is not provided and various other terms are used without connections with the issues and goals for the Department and for the Project and how this one particular project connects with others in the Department, City, County, region, Delta and Sacramento basin, and California, and even beyond (Colorado River basin).

Reliability and Replacement of Imported Water - Reliability is commonly defined in relationship to the costs to customers of the unreliability or risks realized and losses incurred vs the costs to augment the supply/transmission/delivery and therefore provide contingencies against the risks. Costs, revenues, financial, and fiscal aspects of all project components are specifically avoided in the project description and in the assessments of socioeconomic and fiscal/financial issues and in the development of reasonable alternatives.

Other Agencies / Programs Context - This Project is not borne or evolving in isolation and when included as a reliability or contingency issue, the relationships of this east end of SFB Project must be related in Purposes and needs and Project Description to its position with other programs and their agencies, e.g.:
- Department of Health Services (1970-2013) Direct/Indirect Reuse Requirements
- Bay-Delta Emergency Plans - Delta Levee Breaches (DWR, WR Board, CWP, etc.)
- CWP Emergency Plans - Canals/Tunnels Breaches (MWD, DWR,...)
- Global-Warming/Climate-Changes, Good Water Stewardship
- Improved locally available supplies (LACounty and Watermaster)
- Reuse of previously imported freshwater (Bureau of Sanitation)
- USACOE/LACity - LA River Plan

Alternatives - The word "Alternatives" has been mentioned three times in 80+pages, although one purpose of Scoping is to promote public submission of reasonable alternatives. This is a serious issue and reflects upon the objectivity of the DWP Scoping process and documents and presumes that there are no other feasible alternatives (i.e., Project = Locally Preferred/Environmentally Superior Alternative).

Economics and Financials - Rates/Available Funds-Financing Plan are not adequately and completely provided, have low levels of reliability, and especially do not relfelct life-cycle costs/ability-to-pay in a planning period to 2040. As the population/employment-based models (SCAG, 2016-2040) may influence allocations of population, employment, and various fiscal/financial aspects for LA County and City, the potential source of water supply for >250,000 population would seems significant for the EIR to consider.

Secondary/Indirect Impacts - All infrastructure projects may have relatively small direct impacts but have major significant impacts in their service areas, or in the source and supply areas herein. Indirect impacts must be addressed and cannot be simply dismissed.

Growth Inducements - Land Conversion, Public/Infrastructure Services, and Utilities may be influenced by the supply of water for say >250,000 residents and would have considerable potential for growth inducements.

Environmental Justice CD2, 6, 7 vs CD1, 9, 10, 13 - "Purified Wastewater" will be sourced from the San Fernando Valley and supplied to LA areas downflow of SR-134/SR-2, and the sources and users reflect widely different socioeconomic/ethnic communities which is avoided and renders the Project description is incomplete.

Programmatic vs Project EIR - As for most water resources and infrastructure projects, the Project is only a part of the SoCal-MWD/LACo/LACity water supply system and also herein the sewerage and drainage system. A programmatic EIR would be more appropriate and should deal with all recharging of surface waters to all LACounty groundwater basins, with the east-end of the SFB as only as one project within the greater program context.

Studies - Availability/Accessibility/Search-Ability - As briefly mentioned in the IS/NOP, the current Project represents only one element of a long and multi-agency development. All documents related to groundwater, advanced sewage treatment, and agencies must be hyper-linked to this, preevious, and subsequent projects, and all documents must be searchable to assure public access to and knowledge of relevant contents.

We deeply appreciate the opportunities to assist in these important developing efforts on the part of DWP to assure consistent and comprehensive review of major department programs for the State of California. Again, based on comments herein and summarized above, a comprehensive Scoping Report or Scoping recirculation should be considered and implemented.

Dr. Tom Williams, Senior Technical Advisor
Sierra Club, Angeles Chapter, Water Committee
Citizens Coalition for a Safe Community
4117 Barrett Road, Los Angeles, CA 90032-1712
323-528-9682, ctwilliams2012@yahoo.com

Format for Comments - General description of what is believed to be the DWP's issue of concern with ***CCSC Comments: Bolded*** and ***Italics***

GENERAL COMMENTS - Request for consideration/inclusion in later CEQA documents (PEIR or EIR)

Definitions/Terms - ***Provide section of Definitions, Glossary, and Acronyms to be consistently and comprehensively applied throughout all documents, for example "development" for water resources is different from land use "development" and water resources development refers to an industrial sector including sourcing, reuse, recycling and retailing, such as those below:***

Reliability, Contingency, Back-up, Excess Supply

"Purified" - pure H2O cannot be used in cement coated pipe, therefore actual water supplied is NOT PURE WATER.

"Transfer" can be water transferred from non-local sources and imported and can be stored recycled or locally sourced water conveyed to another jurisdiction.

"GW Recharge or Replenishment"

"GW exfiltration/discharge" occurs in basin

"Chemicals of Emerging Concerns" - CECs

"Product Water" (not = produced water)

"Reject/Brine/Waste Water" for "purification and other treatment processes"

ISSUES- Goals/Objectives - Purposes/Needs

Issues

Bay-Delta Emergency Plans - Delta Levee Breaches
CWP Emergency Plans - Canals/Tunnels Breaches
Global-Warming/Climate-Changes
Good Water Stewardship

Goals/Objectives-Purposes/Needs

Improve locally available supplies
Reuse of previously imported freshwater
Objective, Quantitative, and Sources

Provide industry definitions and processes for establishing "reliability" in California from the sources through delivery of water to the end-users ("The Tap").

Provide quantitative/numerical purposes and needs so that development and comparisons of alternatives can be quantitative.

Provide comparisons with total imported supplies (including Owens Valley/LA Aqueduct and any transfers from supplies north of Castaic).

Project Description must include:

All elements/components of water supply vs resources from source (treatment facility) to use (tap);

All relationships to other water resources and to other groundwater related agencies and their programs;

Source Areas for wastewater, Treatment/Recharge, and Service/Supply areas;

Rates/Available Funds-Financing Plans, including life-cycle costs and ability-to-pay.

Future Import Conditions and Physical Capacity Limits and their Reliability and Local Contingencies

Provide reliability estimates for all imported sources within the maximum capacities of existing importing facilities/systems.

Infrastructure Projects require specific physical limits or application of maximum achievable operational service - wells + spreading grounds - local water sources are additive to maximum physical service of overall physical system

Provide a complete Project Description of all existing, to be modified, and future facilities and systems, including those for various wastewaters discharged to surface waters.

Numerous other Inter-/Intra-Agency GW Projects and Programs in California, North LA Basins, and Overall LA Basins exist and are developing - CalFed, DWR/BDCP, MWD/SCAG, CWP Transfers and Pass-Throughs, Water Master - Stormwater and Adjudicated Water Rights, Orange County (MWD and Pass-Through Transfers), LA County - Sanitation and Public Works and local water districts, South and West Basin Water Districts, San Gabriel Valley Districts, and Water Departments and Companies, in addition to the LACity Dept. Public Works and Water and Power

Provide the programmatic context of this Project and opportunities for this system to be integrated with others - sources, disposition of wastewaters, groundwater storage and transfers, etc.

DETAILED COMMENTS

NOP1/1 (***=page 1/ paragraph 1 of Notice of Preparation)***

Los Angeles Ground Water Replenishment Project - LAGWR
Advanced Water Purification Facility - AWPF
Tertiary Effluent - Treated Recycled Water - TRW
Purified Recycled Water - PRW
AFY, cfs, etc.

DEIR must include definitions, consistent terminology, acronyms, and units (and conversions) and provide consistent application throughout documents.
Some use ground water and others use groundwater - pick one and use throughout.
Use of "purification" is confusing and must be changed.

NOP1/1 ***Provide graphical quantified Flowcharts and single table of all Project Components for the Project -***

a. ***DCTWRP >> AWPF/PRW >> BalboaPS >> Extg/New Ppls >> 10Kft lateral Ppls >> <u>SFB/HSG & PSG & HsTk7MG/VGS</u> >> SFB >> Well-Pumps >> LA Central service areas***
b. ***DCTWRP >> AWPF/PRW >> BalboaPS >> Extg/New Ppls >> 10Kft lateral Ppls >> <u>injection wells</u> >> SFB***
c. ***Reject/Backwash Water >> relief sewer >> Relief Sewer >> Hyperion Treatment Plant HTP >> Treatment Process >> Santa Monica Bay Outfall >> SM Bay***

NOP1/2 AWPF...to treat **<u>secondary or tertiary</u>** effluent by the DCTWRP...

Provide flowchart as to where all LACity/LACo secondary and tertiary effluents may be produced and whether/how both can be used for feed source for same AWPF process.
Provide additional requirements for treating secondary compared to tertiary or Title 22 effluents.

NOP1/2

...using an existing pipeline...to the Hansen Tank at VGS
...need to be modified to reach the PSG
...new lateral...pipeline...10,000 feet...to recharge the PSG.
...would also be connected to the...***[PRW]***...distribution system.

Provide a flowchart and uses of all existing facilities and pipeline/power supply lines to be used for PRW and what services/flows those provide at present and how such will be provided if PRW replaces current uses/fluids.
Provide a single-paged (8x11 or 11x17) process flow diagram (high level vs detailed).
Clearly state and identify modifications of existing facilities for project functions and reassignments of existing functions to other existing or future facilities.
Clearly define transmission vs distribution system involved in any PRW facilities and define on drawings/charts.

NOP1/3 ...up to 35,000 AFY at the HSG and up to 23,000 AFY...PSG...***[58,000AFY]*** 2/1 ...estimates that an average of 15,000 AFY of...***PRW...***would be recharged at both the HSG and the PSG ***[=30,000FY??; excludes any injection capacity]***.

Provide a single table with ranges if needed regarding the maximum, median, modal, and average rates for sources/supply and recharging volumes.
Unclear as to whether 15,000 at both together or separately (15K or 30K AFY); provide clear table as to the maximum and operational typical recharge (mean/mode/median) volumes per year, per month, and per day.
Based on the above, provide estimates of groundwater production from the Project-affected downflow groundwater basin and any further treatment or other processes required for direct potable service.

NOP-2/2 Project Location

Provide clear map and sections of the groundwater basins/subbasins for those Project recharge areas, storage areas, and production areas and the probable flow-lines for recharge>> storage>> producing.

Provide map of any existing recharge areas and production wells/fields which maybe replaced or altered by the Project.

Provide LA River and tributaries map showing where river channel is recharging of or receiving groundwater from the SFB.

NOP-2/3 Potential Environmental Effects ***[abbreviation of effect categories]***

Total-15: AVR, AQ, BR, CR, G&S, GHG, H&HM, H&WQ, LU&P, N, P&H, PS, R, T&T, U&SS

NOP 2/3 ...potential environmental effects of the proposed project **to be addressed in the Draft EIR**... ~~Aesthetic and Visual Resources~~, Air Quality, ~~Biological Resources~~, Cultural Resources, Geology and Soils, **Greenhouse Gas Emissions** ***(excluded as Factors)***, Hazards and Hazardous Materials, Hydrology and Water Quality, ~~Land Use and Planning~~, ~~(No Mineral Resources)~~, Noise, ~~Population and Housing~~, ~~Public Services~~, ~~Recreation~~, Transportation and Traffic, Utilities and Services Systems

IS2-4/1 IS-Factors included ~~NOP Effects Not Included as Factors~~ GHG included in NOP-Effects

IS2-4/1 Factors-Total 17: **A**, AG, **AQ, BR, CR, G/S, H&HM, H/WQ, LUP,** MR, **N, P/H, PS, R, T/T, U/SS,** ***MFS -*** IS2-5 - 2-22 Tables

Include all factors and effects - NOP and IS must be identical and based on an initial assessment.

Inconsistent effects and factors to be included in the DEIR are confusing and creates expectations of coverage which may be erroneous - Provide and use a single table of effects and factors and of DEIR inclusions, and those with at least one potentially significant impact.

Inconsistencies exist between summaries, tables, and texts for factors/issues/effects.

Many assessed conditions reflect only the direct effects of construction and physical operations of only the treatment and recharge elements and disregard the undefined storage, production, and services effects which could be considerable/significant and remain un-assessed or outright dismissed.

Such As - DEIR must include:

4.c No "impacts" on Biological Resources and Recreation

Effects on maintenance/raising base-flow of LA River/floodplain (100-year zones) from groundwater discharge/recharge to the river, floodplains, and wetlands must be assessed.

Potential growth inducement impacts must be assessed.

Population and Housing with water supplies cheaper/larger/reliable require conversion of existing habitats unless infilling is required as mitigation, which is not referenced.,

Potential growth inducement impacts must be assessed.

6aii/iii & 6c Geology

Effects on maintenance/raising groundwater base-flow on liquefaction and foundation stability) must be assessed.

8h Hazards - increased population/housing in SFV

Potential growth inducement impacts in fire and seismically affected areas must be assessed.

9 Hydrology/WaterQuality -

Effects on maintenance/raising base-flow of LA River/floodplain (100-year zones) must be assessed with computerized model results for the affected SFB.

9b/9g/9h ***Provide computerized numerical modeling results for any LARiver Baseflows changes.***

Water rights not mentioned - if basin is improved who benefits other than DWP.

Provide maps/charts of: 1) all water rights and subsurface properties ownerships/leases, 2) integration of groundwater recharge with Stormwater Programs, and 3) all suitable well/caisson injection sites east of I-405.

LU-10b - significant - "Potentially Significant Impact" but not indicated on Factor table - at least one - land use planning blank but 10b indicated as significant.

Provide maps of existing groundwater uses by commercial and industrial land uses and all suitable well/caisson production sites east of I-405.

11a/b Minerals - increased GW associated wth oil/gas fields in northeast SFV
Provide maps/description of all oil and gas fields, leases, and wells in LACity east of I-405.

13a Population and Housing - extension of infrastructure and supplies in SFV ***- Assessments and mitigation must consider indirect, induced growth by increased water supply.***

14a Public Services - increased housing in SFV - cited as little impact but would be significant.
15 Recreation - Raising baseflow and water table levels
Changing recreational irrigation and water supplies
Assessments and mitigation must consider indirect, induced growth by increased water supply.

18a Biol/Cult Res Potentially significant cultural impact BUT biol.res. not considered significant
Assessments must be consistent and must include induced development effects on cultural and biological resources.

NO Environmental Justice -
Provide initial study for Environmental Justice issues for recycled water source and service areas and potential for increased population and urban landuses in both higher and lower socioeconomic service areas, e.g., SFValley-North of SR134-US101 and LACity south of SR-110 - same issues as for LACoDPW sanitation plants.

Growth Induced and Cumulative Impacts not discussed or dismissed
NOP-3/3 ...any reasonably foreseeable projects, programs, or plans that may have overlapping influence with the proposed project.
No definition of reasonably foreseeable and dismissal as an issue does not reflect the interrelated nature of water supplies, uses, and discharges throughout the state and especially for Southern California. As the whole concept of reliability relates to all potential sources, users, and dispositions of water resources -
Growth Inducing Impacts for the SFValley
Cumulative Effects not mention
Provide a thorough review of utilities services, road, recreation and other sectors related to potential growth inducements of service for an additional >250,000 population.

IS - Initial Study
IS-0-1 Title Page Bureau of Sanitation is included on title page.
IS-0-2 Title Page excludes Bureau of Sanitation and removed thereafter.
IS 2-1/3 **Project Sponsor's *[sic, Sponsors']* Name*[s]* and Address*[es]*:**
Los Angeles Department of Water and Power ***AND***
Department of Public Works, Bureau of Sanitation, Wastewater Engineering Services Division
Correct and Clarify title authority and involved Lead/Responsible Agencies and compare to Sponsors. If BoS is included recognize in DEIR text and assure that the Board of Public Works shall review and jointly certified as appropriate in addition to the Board of Water and Power.

IS-ii - iii **Acronyms and Abbreviations -** CFS: cubic feet per second; MG: million gallons vs mgd: million gallons per day; $PM_{2.5}$: Particulate matter...
Provide consistent capitalization of acronyms and terms and converted values and apply consistently throughout all documents..

IS 1-1/1 1.1 Overview of the Project To **maintain the reliability** of the City's **water supply** and **reduce dependence** on imported sources of water, the Los Angeles Department of Water and Power (LADWP) proposes to **use up to 30,000 acre-feet per year (AFY)** of **purified recycled water**...for replenishment of the San Fernando Groundwater Basin (SFB).
IS 2/1 ...15,000 AFY recharged at HSG...PSG...
...Maximum Operational Flexibility...up to 13 injection wells along Canterbury Ave...
...for use when Hansen/Pacoima SG used for stormwater.
Generally poor Project Description - no flow charts, process flow diagrams, and comparisons
Provide clear definitions of reliability, dependence, contingency, and maximum operational flexibility and use consistently throughout the DEIR.
Clarify/provide in DEIR: process flow diagram(s) and flowcharts with maximum physical capacities and operational mean/mode/median annual, monthly, and daily flows.

Provide a full description of the overall SFB and the Project-affected portions of the SFB, including current recharge rates (top down) from stormwater, septic tanks, and network leakages, subsurface GW inflows, geological discharges to aquifers, artificial recharges, and private and public production withdrawals, and downstream outflow. Provide GW model for the overall SFB and the Project Affected Sub-Basins HSG, PSG, and injection wells-corridor.

Initial Study

IS1-1/1 To maintain the **reliability...and reduce dependence on imported sources** of water...use up to 30,000 acre-feet per year (AFY)...proposed project) consists of: 1) treatment...; 2) conveyance...; and 3) replenishment – spreading...at...(HSG) and...(PSG)...and would include installation of up to 13 new injection wells for direct injection into the SFB to **increase groundwater supply by supplementing local potable water supplies**.

Groundwater storage and production (4) & 5))are not mentioned but are vital to water supply Project.

Reliability and dependence are not defined in regard to actual physical capacity of existing facilities.

Reliability also relates to equipment and materials and their expected reliable service lifes, and given the water pipe replacement periods of >200 years (or even >300 years), increases in water supplies while not replacing pipes within existing conveyance/distribution systems appears to reflect inconsistent and/or conflicting concepts in service reliability and failures.

Provide text/numerical definitions of reliability and their applications to all parts of the water supply system (e.g., sources, transmission/general conveyance, storage, treatment/production, distribution/delivery, etc.) and then provide costs for the reliabilities achieved for each system component.

ALTERNATIVES

NOP3/3 The following information would be useful to include in your response:

...you believe should be **addressed in the EIR**, including **any suggested alternatives**...

This is one of three mentions of "Alternatives" in the NOP, along with three in the IS. The purpose of scoping has traditionally been to provide for identification of reasonable community-based proposal of alternatives which has not been done in these documents.

The DEIR must provide alternatives, e.g.:

- ***Do-Nothing/Future without Project***
- ***Locally Preferred/Environmentally Superior Alternatives,***
- ***Technically- and Financially-Feasible Alternatives,***
- ***GW Pump>Ultra-HiTreat.>Storage>Supply - Distributed/Concentrated, (T2T),***
- ***GW Pump>Treat>Supply>Recharge>Pump>Supply - Distributed/Concentrated - optimal cost sized units, say 3000AFY x 20 different sites with 60 day travel times, compared to the project, concentrated projects, 15,000AFY x 2 sites + 30 wells,***
- ***Tertiary Treat>Recharge and Pump>Treat>Supply Project without RO,***
- ***GW Recharge outside of LACity groundwater basins (GW Banking, Local/Distant "Transfers", etc.), and***
- ***Treated water source locations***
  - ***SFV/SFB - Eastern, Central, and Western***
  - ***LARiver - Central (SR-134 - I-10) and South (south of I-10)***
  - ***Ballona Creek and West Basin (west of I-405)***

Provide groundwater storage capacities with quantitative descriptions and comparisons, along with conceptual life-of-project pricing and ability-to-pay annual revenues and rates.

IS1-1/3 The EIR will also include an **evaluation of alternatives** to the proposed project that would reduce or avoid significant impacts, including a No Project Alternative and **alternative sites** for the AWPF and other facilities.

1-7/5 Groundwater contamination exists throughout the SFB...Under a separate initiative, LADWP is studying **alternatives for the remediation, containment, removal and cleanup** of the contaminants from easterly portions of the SFB where the City's major well fields are located.

1-16/3 Approval of the proposed project or an **alternative** to the proposed project, including

a **No Project alternative** ***[=Future without Project]***

Total of four uses of "alternatives" are included in the NOP and IS.

Only alternative sites for the AWPF and undesignated "other facilities" are to be considered.

EIR must include alternatives for:

- ***Maximum recharge/injection capacity of proposed facilities and of all SFB treated wastewater source facilities***

Recharge by injection in Central SFB areas between I-405 and SR-170 (e.g., SR-170 ROW, Burbank Airport, MTA-ROWs, LOSSAN ROWs,) and between Reseda Blvd. and I-405 (e.g., VanNuys Airport, I-405 ROW, etc.)

Provide for options (e.g., minor modificatins within each alternative) and their Mitigation-Compensation Measures within any alternative or the proposed Project by each project element: Sourcing, Conveyance, Final Treatment, Recharge/Injection, GWFlow Paths/Storage, Pumped Supplies and exfiltration/discharges, and PRW Service Areas - CD1, 2, 9, 10, 13, 14, 15

IS1-5/1 with 80 million gallons per day (mgd) ***[250AFD]*** dry weather flow capacity. The facility provides primary treatment, biological nutrient (nitrogen) removal, filtration and disinfection (chlorination). The existing tertiary treatment system consists of two phases, with 40 mgd average flow capacity each...in single phase operation. Incoming flow has been ***[administratively]*** **limited** to 38 mgd (**42,700 AFY)** ***[120AFD]***...

Project descriptions must use maximum physical capacity which cannot be changed with physical changes which in turn would be subject to CEQA considerations. If an additional 40MGD has been assessed through a certified CEQA document, then the full "unlimited" capacity must be used for subsequent or supplement or separate CEQA considerations.

Provide the basis for operational constraints of 80MGD down to 40MGD and indicate changes required to double production of potential sources to PRW operations.

1-5/2 ...flows from DCT to the lakes and the Los Angeles River vary daily and seasonally..., and have ranged on...30,300 AFY) and ...25,900 AFY)...3,360 AFY...2,250 AFY...balance of the treated flow is currently discharged to the Los Angeles River over the DCTWRP overflow weir.

Provide a single set of units (AFs or Gals or cuft...) and use of seconds, days, years, etc. and include conversion table. Best for all text references to cite a single table.

Provide in project descriptions all administrative, operational, regulatory, and legal limits, restrictions, or other non-physical constraints/controls on capacities, flows, and conditions.

1-5/3 This pump station and pipeline are currently used to **convey DCTWRP recycled water to irrigation and industrial cooling customers** in the San Fernando Valley.

As existing systems, facilities, and equipment are being used for existing recycled water, provide full description of diversion of facilities for PRW-use and any adverse effects/changes on Utilities and Services; provide for any losses of recycled water uses be balanced against Project's PRW uses.

Provide map of all treated water pipeline networks and maximum pipe and current pumping capacities

IS 1-7/1 The **City of Los Angeles** has **three major sources of groundwater** located within the Upper Los Angeles River Area: the SFB, the Sylmar Basin, and the Eagle Rock Basin. The proposed project would replenish groundwater in the SFB.

Provide definitions/delineations/descriptions of all groundwater resources, water rights, and recharge capabilities provided anywhere by DWP and/or are naturally occurring. Similarly provide map of groundwater contaminations and responsibilities assigned anywhere by DWP or other organizations having jurisdiction and authority to do so..

Provide a map of all groundwater basins and their storage and recharge capabilities and contaminations within or partially include in the City of Los Angeles.

Provide a map delineations and quantities of all water rights within and/or under the jurisdiction of the City of Los Angeles.

1-7/3 Groundwater recharge into the SFB is currently achieved **primarily through existing spreading grounds** in the San Fernando Valley. LACDPW...**HSG and the PSG...Tujunga, Branford, and Lopez** Spreading Grounds...

Define "primarily" or quantify and give maximum/mean/mode/median, standard errors, and standard deviations; provide efficiencies and receiving capacity of basins.

Provide existing or develop models of all centralized and distributed recharge for stormwater, water system leakage, and other existing sources and their influences of groundwater surfaces within the SFB-GW.

Provide description and relationships of Project spreading grounds and injection fields in relationship to all LA County related facilities in SFB. Provide SFB flow models for existing and future with/without Project flows from County facilities.

1-7/3 The HSG is located along the northwest side of the Tujunga Wash Channel...has 6 shallow spreading basins on 105 wetted acres with an estimated maximum storage volume of 1,420 acre-feet ***[14ft deep]***

...receive a total maximum flow of 400 cfs ***[800AFD, 290,000AFY; from where]***...average percolation rate is 150 cfs...from Hansen Dam and Big Tujunga Dam.

At 150cfs x105 acres (4.57Msf for 150cfs total = of 2.8ft/day; or 150 x 105ac = 12.96Mft/d x 4.57Msqft = 65MxMcfd, 13 x 105 = 1365Maf/d), Clarify/Provide the maximum recharging capacity of the facilities with supporting calculations compared to the total available seccondary and tertiary treated wastewater.

Provide equivalent units presumably af/d, af/sec, ac/hr, etc..

Provide permeability/transmissivity values for all recharging basins from ground surface to top of median groundwater table surface.

Provide typical annual inundation records for spreading grounds, including hours/depth of inundation and Maxima/Minima/Average/Median/Modes.

1-7/4 ...PSG is located on both sides of old Pacoima Wash Channel...gross area of 169 acres...basins wetted area occupies 107 acres...comprised of 12 shallow basins with a total intake capacity of 600 cfs...***[1200AFD, 434,000AFY]*** storage volume of 440 acre-feet...percolation rate is 65 cfs...from Pacoima Dam, partially controlled flow from Lopez Flood Control Basin, and uncontrolled flow (storm flow) from East Canyon and Pacoima Wash...receives imported water for groundwater replenishment...

At 600cfs x107 acres (51.8Mcuft / 4.66Msf total = 11.3ft/day x say 100ac x 365d = 410000+ acft/yr 12.96Mft/d x 4.57Msqft = 65MxMcfd, 13 x 105 = 1365Maf/d), clarify and provide the maximum recharging capacity of the facilities with supporting calculations compared to the total available seccondary and tertiary treated wastewater.

Provide equivalent/comparable units presumably af/d, af/sec, ac/hr, etc.. that do not require recalculations/conversions for comparisons by the public.

Provide permeability/transmissivity values for all recharging basins from ground surface to top of median groundwater table surface.

Provide typical annual inundation records for spreading grounds, including hours/depth of inundation and Maxima/Minima/Average/Median/Modes.

1-7/5 Groundwater levels in the area of the SFB vary...along the western sections of the Basin at approximately 50 feet below ground surface (bgs) to between 200 and 500 feet bgs in the eastern portions...

Use of depth below ground surface is confused and almost meaningless without knowing ground surface elevations.

Provide a ground surface and groundwater surface elevation map for the SFB and in detail for the spreading grounds and all areas downflow to the SR134 for the last ten years.

Provide groundwater piezometric surfaces for all aquifers beneath the free groundwater table for the last ten years.

IS 1.4.3 Existing Water Storage

1-7/6 ...VGS...existing 7 million gallon (MG) recycled water storage tank, Hansen Tank...

As cited elsewhere, provide flowcharts and numerical values for all existing facilities and systems and their existing uses and dependencies.

IS 1-8/2 1.5 Project **Objectives**...

The **purpose**...to **enhance the reliability**...supply by **reducing dependence on imported water supplies** and **increasing local potable water supplies**...opportunities to replenish the aquifer with additional sources of water, including **purified recycled water**, are **considered beneficial to the SFB**.

1-8/2 ...primary project **objective** related to this purpose is to **beneficially reuse advanced purified recycled water to increase recharge in the SFB**.

Define: purpose, objectives, and primary objective, then dependence/dependency, then beneficial/beneficially, etc.

Define advanced vs non-advanced purified recycled water.

Provide table of all explicit goals and objectives, quantitative/numerical equivalents, and of CEQA's purposes and needs.

Provide a quantified comparisons of all "recharging" in the SFB compared to the increase..

1-8/2 Subsequent **extraction** of this groundwater **from the SFB** will **offset**...**imported** water supplies with local groundwater.

One of few references to "extraction" (production), offset means replace. Provide/use single terms for the same function ratherr than introducing new terms, inconsistently.

Offset does not remove the system's imported capacity; system's supply capacity remains intact and actually increases by >30,000AFY, 3-5% of total imports. Therefore, increased local sources which were previously discharged to unused surface waters, e.g., HTP, represent additional supply and thereby induced growth of population, landuses, and infrastructures.

1-8/4 ...**City's right**...based on approximately **185 water right licenses**...also owns the **majority of land...and associated riparian water rights *[Owens Valley)***...dropped significantly due to reallocation of water for environmental mitigation and enhancement activities.
Provide water rights, licenses and riparian water rights within the SFB and City of LA downstream of SR-134 Bridge.

IS 1-9/2 ...LADWP...**aggressive effort** to create **reliable** and **sustainable** sources of water for the **future** of Los Angeles.
Define and quantify aggressive, reliable, and sustainable.
Provide definition of future and include the planning period of SoCalAssoc.Govts. through 2040.

1-9/3 LADWP's 2010 Urban Water Management Plan set a **goal of 59,000 AFY of potable water demands to be met with recycled water by 2035** as a sustainable source of local water and to maximize reuse.
1-9/3 ...City recognized that in order to meet the water recycling goals in the Urban Water Management Plan, **beneficial reuse of up to 30,000 AFY of purified recycled water**...for groundwater replenishment into the SFB would be required. ...(proposed project) is a major element of the **RWMP**.
Provide current and projected future productions of total wastewater, tertiary treated wastewater, recycled water, and purified recycled waters.

1-9/4 ...Groundwater Replenishment Master Planning ***[GRMP]*** Report in 2012 as one component of the **RWMP** documents...Report summarizes the process of evaluating facilities...needed to purify recycled water...replenish the SFB.
1-9/4 ...outcome of...***GRMP...***Report is a recommendation to construct and operate an AWPF located in the southwest corner of the DCTWRP and replenish the SFB through spreading at the HSG and PSG, and injection wells on Canterbury Avenue (the proposed project)....***GRMP...*****process considered alternative locations** for the AWPF within DCTWRP and at VGS, some of which are **feasible and may be considered as part of the EIR**.
Provide both documents, GRMP/RWMP, as appendices/links with highlighted/page/paragraph references between the EIR and PRWP Project description.
NOP/IS have not referred to any specific Alternatives or Options within an Alternative or the Project.
Provide alternatives of Do-Nothing, Maximum Capacity, All Treated Wasterwater for recharge via spreading grounds and injection wells.

1-9/4 **Purified recycled water**...wastewater...undergone multiple treatment steps, **beyond** **standard wastewater treatment**...tertiary water...further treated through advanced water treatment processes, including multiple barrier filtration (**microfiltration** and reverse osmosis) and **advanced oxidation**.
Provide detailed appendices of the Project's specifications, equipment, and facilities and when they were first used in operational facilities. Advanced filtration, reverse osmosis, and induced-oxidation (Cl+UV, H2O2+UV+O3) have been used for more than 30 years.

Purified recycled water is **near-distilled water quality** and meets the **requirements** of the California Department of Public Health and the Regional Water Quality Control Board to replenish the City's groundwater supplies.
Provide water quality comparison between a) PRW, b) Near-Distilled Water, c) Distilled Water, d) current groundwater quality, and e) expected production quality from groundwater.
Provide compilation table of ALL current "requirements", specifications, standards, conditions, ordinances, and laws by department and Board and how the Project facilities and specifications meets or exceeds the requirements.

1-9/5 **1.6 Description of the Proposed Project**
The Project Description is totally inadequate to establish the effects of the Project; assignment of virtually all factors/issues/sectors as potentially significant avoids many problems that would avoid recirculation of the NOP/IS but does not avoid a substantial improvement of the Project Description. A total and comprehensive revision of the Project Description is required for this Project, based on clear and concise "Purposes and Needs".

IS 1/9-5 The proposed project consists of **three components**: treatment, conveyance, and replenishment.
Actually five (5) components: 4) groundwater basin (SFB) represents the Project's storage facility, and 5) potable supply pumps and connections in order to make the Project work for water supply rather than groundwater resources. Revise and expand project description.
Provide a much more thorough description and process flow diagrams from sewage treatment through the tap.
Provide a full, documented, and comprehensive description of the physical and hydrodynamic conditions and features of the SFB and their relationships with existing production, water rights, water levels, and streambed discharges.

IS 1-10/5 MF, RO, and...(UV/AOP) are Full Advanced Treatment (FAT) process recognized by the California Department of Public Health (CDPH) for groundwater replenishment reuse projects as currently outlined in the **Groundwater Replenishment Reuse Draft Regulations.**
No referenced sources or web-links are provided.
FAT process is not compared to "Purified".
Provide definitions for all terms and/or references for industry's standard terminologies, definitions, glossaries, etc.

IS 1-10/6 The MF process also provides an **additional barrier** to bacteria, protozoan cysts and **viruses**.
Define "barrier", e.g., 100.000 or 99.999% reduction for viruses.
Prove the statement, no reference is given for the claim regarding cysts and viruses.

1-11/ Figure 4 Proposed DCTWRP Site Plan
Includes two Project parking lots, warehouse, and maintenance facility and new but not part of Project office building, in addition to an "EQ" tank and AWPF facilities.
Provide a complete Project description for all facilities related to the Project including those to be relocated or replaced or joined with and their current uses and any displaced uses.

1-12/1...an AWPF would be constructed to treat **secondary or tertiary** effluent produced by the DCTWRP using advanced treatment technology.
Here the AWPF is rated to take secondary or tertiary treated wastewater effluent while in other text it is referenced as Title 22 effluent without clarifications as to the differences between the three influents for the AWPF.
Provide clear simple definitions of the terms and consistent usage throughout the EIR.

1-12/1 The RO process operates...influent feed water...becomes the permeate stream...remainder...waste stream (i.e., concentrate or brine)...flow ratio of permeate to feed water...system recovery...one of the main operational parameters...
1-12/3 *Treatment Capacity* The AWPF would treat up to 44 mgd (49,000 AFY) of tertiary water and generate up to 35 mgd (39,000 AFY) of purified recycled water. ***[reject: 9mgd/10,000AFY] .***
1-12/4 *Treatment Byproducts* Backwash and brine are byproducts of the AWPF treatment process. Backwash is water used to clean the MF strainers and MF membranes. Brine is generated from the RO filtration process.
Provide flowchart and numerical tables with standardized terms consistent with those use in other studies and the industry for all streams
Provide clear simple definitions of the terms and consistent usage throughout the EIR.

1-12/5 MF backwash...diverted from the AWPF into the DCTWRP in-plant sewer for treatment at DCTWRP or Hyperion Treatment Plant (HTP).
Provide quantified, including median/mean/modal, values for Backwash and Reject waters flowing to a. the Sewer, b. the Relief Sewer, and c. Hyperion Treatment Plant (and presumably to the Santa Monica Bay outfall and estuary along with all existing capacities and flows, and percentages of use of existing facilities.
Provide complete description of disposition of all reject/waste byproducts from all filtration, RO, and disinfection processes.

A new 450-foot-long, 36-inch diameter pipeline would be constructed to transfer the brine from the **proposed AWPF to the existing Additional Valley Outfall Relief Sewer (AVORS)** located within the DCTWRP property.

Provide full description of capacities, flows, sources, and composition for the Sewer.
Provide current and project flows through 2040 with and without the Project discharges to Sewer.

Once discharged to the AVORS, the brine would combine with other DCTWRP biosolids and flow to the **HTP** via the **La Cienega San Fernando Valley Relief Sewer for treatment**.
Frequently define/spell-out "HTP" and provide in Glossary of Terms.
Provide map and profile for all sewers/conveyances to "HTP", Hyperion Treatment Plant, and its discharges, with and without further treatment.

1-15/3 *Injection Wells* For **maximum operational flexibility**...operate up to 13 new injection wells for use **when** the HSG and PSG are **being used exclusively for stormwater spreading**.
Define "maximum operational flexibility" and "maximum capacities" for simultaneous operations.
Provide projected/plan use of wells with maximum, modal, median, and mean uses and project schedule for their use, e.g., 120 days or less, 18 storms of 3+ days = 60 days]

Each well is anticipated to have an operational capacity of 2.7 mgd, or **4.2 cfs** ***[8.33AFD, 3041 AFY]***, to allow for direct injection of **up to** approximately **4,000 AFY** of purified recycled water in to the SFB.
Changes of units causes confusion, unless standard converted units are provided, Totals 39,530 AFY, 24/7/365 or 52,000AFY. Do not mix/use cfs or mgd without converted standards and consistently listed in acronyms/glossary. AFY does not calculate correctly from the cfs with tenths.

Each well...would be drilled to approximately **500 to 600 feet below ground surface**.
First indication of anything about the groundwater storage to be used.
Provide thorough and comprehensive geological supporting documents and studies for all geological context from 1000ft above recharge and injection areas at 800-900ft elevation to SR-134 bridges, 450ft elevation.

1-15/4 ...a single above ground wellhead site...two or three wells would be clustered together...to minimize drilling interferences...clustered injection well facility would also have a catch basin and connection to an existing storm drain for disposal of well development and test water.
Provide details and geological and groundwater context for clustering 2-3 wells compared to single well installations for 500-600ft depths.

1-15/5 ...proposed locations...in an approximately 7,000 foot corridor along Canterbury Avenue. ***[Reedley-Filmore is 12,000ft]***
Piping required unknown, but presumably >7000ft and <12,000ft and must be included in the Project description.
13 injection wells - 7000ft = 1/540ft with 8AFD injection. 270ft x 2 x 300ft = wetted section - 162,000sqft, 8.33 AFD/4.2 cfs = 363,000 cfd = 2ft/d-sqft. Provide well design and analyses for spacing and depths along the proposed corridor.

1-16/3 **1.8 Required Permits and Approvals** LADWP is the project lead agency...Numerous approvals and/or permits would be required to implement the Los Angeles Groundwater Replenishment Project ***[LAGWR Project]***.
1-18/1 **City...Department of Public Works, Bureau of Engineering** Excavation Permits
2-1/3 **Project Sponsor's** City of Los Angeles Department of Public Works, Bureau of Sanitation
Limited mention of LADPW/Bureau of Sanitation and any needs of approvals from the Project's co-sponsor, or Board of Public Works.
Clarify and provide position/authorities of LA-DPW-BOS in the Project and any approvals, and memoranda of agreements and understandings.

1-16/3 ***No references for applications, approvals, and permits by but included as a*** **Responsible/Trustee Agency**
2-3/6 **Responsible/Trustee Agencies:** State of California Department of Public Health
Is any approval required from DPH? Provide clear responsibilities of all federal, state, regional, and local agencies and relevant authorities for each related to the Project.

2-1/2 A “No Impact” or “Less than Significant Impact” determination is made when the proposed project...for that issue area based on a project specific analysis.

As indicated in the review of factors and issues to be included in the EIR, some "less than significant impact" factors/issues are to be included in the EIR even though not warranted by initial findings. Provide all project specific analysis for each issue and direct, indirect, and induced effects.

2-1/3 **Project Location:** **...**in the San Fernando Valley area of Los Angeles.

Elsewhere, projection location is more limited to the "Eastern San Fernando Valley", although the potential service area could extend well beyond the eastern portion of the SFB, when adding growth inducements for 250,000+ population, the new downflow service areas, and the lines and facilities connecting to and in HTP, and perhaps discharge outfall and zoning of mixing in Santa Monica Bay..

Provide clarification and/or refer to map or figure.

2-1/3 **City Council District:** District 6

2-2/1 **Neighborhood Council Districts:** Encino..., Lake Balboa..., Mission Hills..., Arleta..., and Sun Valley Neighborhood Council***s***.

If including groundwater in SFB and service areas of wells, provide map of additional LA City Council Districts to include 1, 2, and 7 etc. and add many NC districts. The Project Description must include a thorough description of the SFB and the influence of recharging at the proposed locations for flows up- and down-flow of the recharge sites.

2-2/2&3 **General Plan Designation and Zoning**

Discussion only applies to the direct facilities area, although not including the Canterbury Ave. corridor for injection wells.

The Project could provide sufficient water supply for an additional >250,000 residents and land development, but such growth inducements are not mentioned throughout the NOP/IS and thereby would not be included in the DEIR. The brief discussion herein and presumably in the DEIR must acknowledge the potential growth inducement and effects on the General Plan and Zoning outside of the immediate and direct impacts of a typical infrastructure project.

Provide thorough quantified presentation and assessment of growth inducement and any mitigative physical measures to control the maximum amounts of water supply services from the Project.

2-2/4 **Description of Project:** **...**an AWPF would be constructed...to treat secondary or tertiary effluent produced...using advanced treatment technology...the AWPF...treat up to...**<u>49,000 AFY</u>**...and generate...**<u>39,000 AFY</u>**...of purified recycled water.

Flows differ from those in other text, 49K vs 50K and 39K PRW rather than others and would also vary the reject/brine waters from up to 10,000AFY down to 6-7,500AFY.

See discussion below as to provide single and consistently used set of flows and use maximal Project capacities based on facilities and equipment, not on administrative "Operating" capacity.

2-2/5 ...water...conveyed to the spreading grounds using an **<u>existing</u>**...pipeline...from DCTWRP and the Balboa Pump Station to the Hansen Tank at VGS...**<u>portions of the pipeline</u>**...extended to reach the PSG. A **<u>new</u>**...transmission pipeline...constructed from the **<u>existing</u>** 54-inch-diameter pipeline...along Canterbury Avenue to the PSG...pipeline would be approximately 10,000 linear feet...**<u>existing</u>**...recycled water storage tank at VGS would be connected to the ***NEW*** purified recycled water distribution system.

Provide the maximum, mean, mode, and median conveyance, recharging, storage, and production values and use for related factor impact assessments.

2-2/6 ...recharge up to 35,000 AFY of purified recycled water at the HSG...average of 15,000 AFY of purified recycled water would be recharged at HSG

...recharge up to 23,000 AFY...at the PSG based on the availability of supply and the annual capacity of the spreading grounds...15,000 AFY of purified recycled water would be recharged at the PSG.

All flows need to be clarified and consistently applied. Here, a total of up to 58,000 AFY could be recharge and 30,000 AFT would be recharged. Impact assessments must be made against the "maximum" production, especially when the injection wells are available for an additional 300+days a year for injection in addition to spreading ground recharging. Provide the maximum treatment, conveyance, recharging, storage, and production values and use for related factor impact assessments.

Flows differ from those in other text, 49K vs 50K and 39K PRW rather than others and would also vary the reject/brine waters from up to 10,000AFY down to 6-7,500AFY.

2-2/7 ...**maximum operational flexibility**...also construct up to 13 injection wells along Canterbury Avenue...for use **when...spreading grounds are being used exclusively for stormwater...**

Define maximum, operational, and flexibility and durations of "exclusively"

Provide assessment of typical seasonal/annual stormwater spreading (e.g., 12 - 3/4in rains requiring 3 days of spreading for each rain storm = 36 days per year) and its impact up on the PRW spreading and injection.

Provide potential recharging effect of continuous (maximum) recharging via both grounds and continuous injection recharging and potential growth inducement of maximum operating recharging capacities.

2-3/1 **Surrounding Land Uses and Setting:** The proposed project would be located in the eastern San Fernando Valley.

As a critical utility supply project within the SFB, service populations of >250,000 could be supported by the new water supplies or replaced existing supplies if not operational restricted, therefore provide new service areas in the SFB for such support, e.g., 250,000/4 =62,500+ residences with say 7.5 residences/acre = 8,300 acres of new land development infilling of Verdugo/SanRafael Hills and surrounding northern SFB hills.

Provide currently planned infilling development within the existing DWP service areas and potential for expansion of existing services for >250,000 population, >62,000 residences, and >8000 ac of infilling and new service areas.

2-4/1 Environmental Factors Potentially Affected...

Only eight (8) factors are noted in graphic form and causes confusion as to what will be included in the DEIR, and the graphic form does not correspond with those identified in the NOP.

DEIR SUMMARY

# IS 2-5/-2/12	2-4	Significance >>>>>>>>>> Sign	Not Sign Mitigation	Not Sign.	No Impact	In DEIR - NOP 2/3**
*1. Aesthetic***	--	0	0	2	2	No
*2. Agricult...***	--	0	0	0	5	No
3. Air Quality*	**xx**	**5**	**0**	**0**	**0**	**Yes**
*4. Biol...Res...***	xx	0	0	5	1	Yes/Yes/Yes/Yes/Yes/No

Consistent comparisons are not made; items Less than Significant and No Impact, but still in EIR, while other Issues have been removed before comparisons - Fiscal and Employment.

5. Cult...*	**xx**	**4**	**0**	**0**	**0**	**Yes**
6. Geol..*	**xx**	**2**	**0**	**4**	**2**	**??/Not/Not/Not/Yes/??/Yes/No**

Some items not assigned in/out of EIR.

*7. GHG**... -- 00 2 0 0 0 Not Indicated in Graphic, Yes/Yes*

Not included in the graphical assignments of Factors

8. Haz...** -- xx 3 0 4 1 Yes/Yes/Not/Yes/Not/Not/Not/Not

9. Hydro...** xx 4 0 5 1 Yes/Yes/No/No-Yes/No/Yes/No/Yes/Yes/No

Only 4 items agreed for Yes, but 5 indicated in text for assignment to EIR.

*10. Land U...**. -- 1 0 0 2 No/Yes/No*

To be included in EIR but not indicated in p.2-4

11. Mineral...	--	0	0	0	2	No/No
12. Noise*	**xx**	**4**	**0**	**2**	**0**	**Yes/Yes/Yes/Yes/No/No**
*13. Popul...**	--	0	0	0	3	No/No/Nor

50,000afy = 2.2Bcf = 16.3Bgal = 44.6MGD = 223-357,000 pop @ 200-125gal/p-d

As existing facilities can continue to supply existing service populations, addition of about 10% of the total existing service population (estimated for 125 gal/person-day) can supply an additional population within the DWP service area, >250,000 population within the San Fernando Valley.

Population and Housing must be included the EIR primarily as secondary/indirect effects and their impacts.

*14. Pub...Ser..**-- 0 0 2 3 No/No/No/No/No*

As the Project can supply >250,000 population within the SFB, additional service areas can be added and are not prohibited, and thereby all public services - police, fire, and other services and facilities would be required and need financial support.

*15. Recr...******* -- 0 0 0 2 No/No*

As the Project can supply >250,000 population within the SFB, additional service areas can be added and are not prohibited, and thereby all public services - recreation, education, and other services and facilities would be required and need financial support.

Transport..**. xx 3 0 1 2 Yes/Yes/No/No/No/Yes

As the Project can supply >250,000 population within the SFB, additional services, facilities and roads area can be added and are not prohibited, and thereby transportation services and facilities would be required for the new population and their transportation needs.

Utilities...** xx 3 0 3 1 Yes/Yes/No/No/Yes/No??/No

As recharging is constrained by stormwater drainage, at least drainage must be included in the EIR.

As the Project can supply >250,000 population within the SFB, additional service areas can and would be added and is not prohibited and thereby Water Supply facilities would be required.

As the Project may compete with stormwater recharging and may be in conflict regarding the water quality within the groundwater reservoir, a thorough quantitative model and comparisons must be included in the EIR.

Mandatory... xx 3 0 0 0 Yes/Yes/Yes No mention in NOP

The Project NOP does not start with the basic CEQA document, NOC/EDT (Notice of Completion & Environmental Document Transmittal), including the issues listing, "Project Issues Discussed in Document", which includes a fuller ranges of issues than those provided in the current documents.

Current Scoping documents specifically exclude the following issues/sectors: Fiscal, Economic/Jobs, and Growth Inducement.

Provide review of ALL issues/factors and quantified assessment of significance and requirements for mitigation.

IS 3-4/2 - 3-6/2 **AIR QUALITY**

As indicated elsewhere, air quality is affected indirectly by existing populations which could not reside in the service areas without piped water supplies. Provide assessment of induced air emissions for >250,000 population and >8,000 ac of land development.

2-6 **IV. BIOLOGICAL RESOURCES**. Would the project:

IS 3-6/3 - 3-8/3 **IV. BIOLOGICAL RESOURCES**

a. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, **<u>sensitive, or special status species</u>** in local or regional plans, policies, or regulations...?

b. Have a substantial adverse effect on **<u>any riparian habitat or other sensitive natural community</u>** identified in local or regional plans, policies, regulations...?

c. Have a substantial adverse effect on **<u>federally protected wetlands</u>**...(including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, **<u>hydrological interruption, or other means</u>**?

d. Interfere substantially with the movement of any native resident or **<u>migratory fish or wildlife species</u>** or with established native resident or migratory wildlife corridors, or impede...**<u>use of native wildlife nursery sites</u>**? ***LA River Riparian Corridor (SR-134-Broadway Bridge)***

No information is provided regarding groundwater recharge impacts on groundwater levels south of SR-134 (or anywhere between the recharge/injection areas and the LA River) and on supported riparian vegetation and associated aquatic and wildlife species.

Provide setting on existing riparian/wetland habitats and associated groundwater resources and then assessment of groundwater changes and their effects on dependent biological resources.

Similarly, provide assessment of well pumping-induced groundwater changes and their effects on dependent biological resources, including expansion of wetlands and flooding of riparian trees.

e. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance? ***Raising groundwater may devastate California Sycamore and other protected trees in riparian woodlands of the LA River Riparian Corridor (I-5/SR-134 to Broadway Bridge).***

Provide assessment of induced groundwater changes in the LA riparian habitats downstream of the I-5 bridge over the LA River.

As indicated elsewhere, biological resources are affected indirectly by existing populations and land conversions which could not exist in the service areas without piped water supplies.

Provide assessment of induced air emissions for >250,000 population and >8,000 ac of land development.

f. Conflict with...adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan? ***LA River Riparian Corridor (SR-134-Broadway Bridge)***
No Impact or less than significant impacts

As indicated elsewhere, biological resources are affected indirectly by existing populations and land conversions which could not exist in the service areas without piped water supplies. Provide assessment of induced air emissions for >250,000 population and >8,000 ac of land development.

2-7 **VI. GEOLOGY AND SOILS**. Would the project:
3-9/3 - 3-11/4 **VI. GEOLOGY AND SOILS**
a. Expose people or structures to potential substantial adverse effects...involving:
i) Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map...for the area or based on other substantial evidence of a known fault?...
ii) Strong seismic ground shaking? iii) Seismic-related ground failure, including liquefaction?
iv) Landslides? ***No or less than significant***

As indicated elsewhere, geological resources and related seismic effects differ in ground conditions and dependent urban developments throughout the SFB and downstream, and they are affected indirectly by future induced land conversions which could not exist in the service areas without piped water supplies.

Provide setting on existing ground movement and liquefaction zones and related groundwater levels.

Provide assessment of induced exposure to existing seismic risks for >8,000 ac of land development and of changes in groundwater and liquefaction risks downflow of the recharge areas.

3-14/5 - 3-18/1 **IX. HYDROLOGY AND WATER QUALITY**
3-15/2 Upon completion of the proposed project...the EIR will include an **analysis of water quality associated with replenishment of purified recycled water into the SFB**.

Provide complete surface/subsurface hydrological setting and water quality conditions for stormwater, groundwater replenished by stormwater (5000ft downflow from recharge), other existing non-purified recharging sources/downflow conditions, and the Project's "purified" recharge/downflow conditions and comparisons for the same against existing groundwater conditions and compositions.

Provide assessment of changes in surface and subsurface flows for recharges and discharges of groundwater.

3-12/4 - 3-14/4 **VIII. HAZARDS AND HAZARDOUS MATERIALS**

Provide map and inventory of all hazardous materials/wastes sites downflow of recharge basins and those likely to be affected by raising groundwater levels along the LA River from I-5 bridge downstream to C.Chavez Bridge.

3-18/2 - 4 **X. LAND USE AND PLANNING**
3-21/2 - 3-21/4 **XIII. POPULATION AND HOUSING**
Would the project: a) Induce substantial population growth...directly...or indirectly...?
No Impact. ...The proposed project **would increase groundwater replenishment** and groundwater supplies in the SFB...project is intended to serve existing customers and would **reduce reliance on imported water sources.** Therefore, the proposed project would **not result in indirect population growth**. No impact to population growth would occur, and no further analysis is required. **No Impacts**

Strongly disagree as indicated elsewhere. Administrative/operational controls can be easily overridden and water supply system expanded to meet 2040 population growth through expansion of R-1 and other zonings in SFB.

Unless physical systems are bottlenecked, or downsized statement cannot be justified, and indirect population growth in the SFB must be included and mitigated in the EIR.

Provide assessment of a reasonable projection of land development (densities and areas) suitable for >250,000 within the SFB through 2040.

3-22/1 - 3-23/4 **XIV. PUBLIC SERVICES**

3-23/5 - 3-24/2 **XV. RECREATION No Impacts**

a) Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, need for new or physically altered...facilities,...in order to maintain acceptable service ratios, response times or other performance objectives...

i) Fire protection?... As the proposed project **would serve existing customers, it would not generate population growth**.

As indicated in Sec.s XII-XIII, indirect population growth can result in land development and needs for utilities expansion and increases through the plan period of 2040.

Provide assessment of indirect effects and impacts of/from induced land use, population and housing, and their typical utilities and services.

Provide assessment of indirect effects on stormwater drainage from induced runoff from >8,000 ac of land development.

3-22/5 **ii) Police protection? Less Than Significant Impact...**local law enforcement agency responsible for providing police protection services...**As previously stated, the proposed project would not generate population growth.**

As indicated in Sec.s XII-XIII, indirect population growth can result in land development and needs for utilities expansion and increases through the plan period of 2040.

Provide assessment of indirect effects and impacts of/from land use, population and housing, and utilities and services.

3-23/2 iii) Schools? No Impact. As the proposed project does not include development...no increase in residential population would occur...proposed project would serve existing customers and is intended to reduce reliance on imported water supplies. Therefore, no indirect population growth would occur. No new students would be generated...and no further analysis is required.

As indicated in Sec.s XII-XIII, indirect population growth can result in land development and needs for utilities expansion and increases through the plan period of 2040.

Provide assessment of indirect effects and impacts of/from land use, population and housing, and utilities and services.

3-24/3 - 3-25/5 **XVI. TRANSPORTATION/TRAFFIC**

As indicated in elsewhere, indirect population growth and resulting land development would induce additional roads and highways which would generate indirect impacts on other environmental sectors.

Provide assessment of indirect effects and impacts of/from land use conversions and road systems and their operations indirect effects on air quality (e.g., >60,000 residences generating 600,000 daily trips).

3-26/1 - 3-27/3 **XVII. UTILITIES AND SERVICE SYSTEMS**

IS 3-26/ **XVII. UTILITIES AND SERVICE SYSTEMS Would the project:**

3-26/1 **a) EXCEED wastewater treatment requirements of the applicable Regional Water Quality Control Board? (emphasis added)**

Potentially Significant Impact. The proposed project involves increased groundwater replenishment...to reduce dependence on imported water supplies.

Project does not eliminate imported supplies by 30-50,000AFY which remains within the capacity of the import conveyance systems.

As indicated in Sec.s XII-XIII, indirect population growth can result in land development and needs for utilities expansion and increases through the plan period of 2040.

Provide assessment of indirect effects and impacts of/from land use conversions and expansion of utilities and services in the San Fernando Valley.

3-26/1 ...**wastewater discharged by the proposed project** must comply with **National Pollutant Discharge Elimination System requirements**.

...purified recycled water would be conveyed to injection wells and spreading grounds for replenishment into the SFB. **Waste discharge would be generated at the AWPF**.

NPDES applies for local discharges to drainage system and would preclude any PRW/AWPF wastewaters (brine/reject waters) and if treated would incur significant costs and require disposal components

No discussion of disposal of reject/brine from the purification process.

Provide full analysis of discharge and eventual disposition of all wastewater from the AWPF and related facilities to the sea and indirectly for the conversion and operations of >60,000 new residential units.

3-26/1 Therefore, the EIR will include an analysis of the proposed project's impacts on the wastewater treatment requirements of the Los Angeles Regional Water Quality Control Board.

Provide full disclosure of the groundwater rights for the recharge areas and those subsurface areas receiving recharged groundwater.

In order to use stored PRW, wells must be drilled, operated, and connected to distribution networks which are not discussed.

Provide probable well sites and service areas zones for recovery of recharged PRW.

3-26/2 b) Require or result in the construction of new water or wastewater treatment facilities or expansion of existing facilities, the construction of which could cause significant environmental effects?

3-26/2 **Potentially Significant Impact. ...**project involves the construction of a new wastewater treatment facility, which has the potential to result in significant environmental impacts...in applicable sections of the EIR.

As an EIR, this section must focus on direct impacts of both the direct facilities required for the treatment-conveyance-recharge AND, indirectly, the locally increasing groundwater levels/pressure within the "managed" storage aquifers AND the supply production facilities (e.g., wells, caissons, etc.), both of which have been avoided in the Scoping for the Project.

Provide thorough assessment of direct effects of increasing strengths and flows of project generated wastes and for indirectly generated flows from >60,000 dwelling units.

3-26/2 The EIR will also evaluate the potential impacts to the City of Los Angeles' **Hyperion Treatment Plant** ***[HTP]*** and the **Publicly Owned Treatment Works (POTW)** due to an increase in process byproducts from the AWPF.

Inclusion of HTP and undefined POTW(s) greatly broadens the assessment of effects of this "flagship" project on all wastewater treatment facilities in LACity and LACo.

Provide a comprehensive flowchart of all materials from the generation of the feedstock to the production of PRW-from wells and to the final disposition of the filtrate/reject/brine wastewater from the AWPF.

Provide a comprehensive assessment of wastewater flows on HTP and other POTWs from induced wastewater flows within the San Fernando Valley.

3-26/3 **c) Require or result in the construction of new stormwater drainage facilities or** expansion of existing facilities**, the construction of which could cause significant environmental effects?**

Injection (not producer) wells are included and can/must be operated whenever stormwater is being recharged and beyond. They can be operated totally separate from the existing stormwater recharge on spreading grounds for maybe 30-45 days. So far, no information has been provided, and DEIR must include maximum stormwater recharge operational and physical components, and how the wells' production can be used year-around.

Purified recycled water recharges can occur throughout the year. However if the imported water supply remains constant and PRW is recharged and recovered, the total DWP water supply would increase to allow increase in users within the service area or in service areas.

No provision is made in the Project to assure that water imports would not increase even with the recharge and supply of 30-50,000 AFY of PRW. Similarly, DWP has reported that water transfers are assigned to local water even though they are largely transferred from holders in the San Joaquin Valley and delivered via imported water systems.

Unless DEIR includes PHYSICAL limitations on imported water rather than an "administrative statement", DEIR must include the PRW as additional supply and as definite inducement for increased development of the service areas and impervious land uses requiring major increases in stormwater systems and opportunities for stormwater recharge spreading grounds.

Provide assessment and appropriate mitigation to assure no inducement of future population growth and land use conversion occurs due to increasing water supply capacities in the San Fernando Valley, or elsewhere.

3-26/3 **Less Than Significant Impact. ...**use existing City and County facilities and public roadway rights-of-way...all drainage flows would be routed through existing storm water infrastructure serving the project site and surrounding areas. Following construction...flows would be similar to the current condition...would not require or result in the construction or expansion of storm water drainage facilities...less than significant, and no further analysis is required.

As indicated elsewhere, growth inducements and related impervious land use development would alter runoff.

XXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXXX

3-26/4 d) Have sufficient water supplies available to serve the project from <u>existing entitlements</u> and <u>resources</u>, or are <u>new or expanded entitlements needed</u>?

Provide entitlements and water rights for existing flows of less-than-purified recycle waters (presumably downstream along Los Angeles River)

Provide current groundwater entitlements/rights/assignments and how the recharge of additional treated waters and stormwater will alter groundwater levels in the SFB.

3-26/4 **No Impact.** **<u>High water demand</u>**...increase groundwater replenishment in the SFB **<u>to reduce dependence on imported water supplies</u>**.

3-26/4 ...**<u>additional water supplies</u>** would not be needed. No impact would occur, and no further analysis is required.

Dependence is not defined and in fact purified recycled water totally depends on the water supply which is largely imported water to the DWP service area. If the imported water supply remains constant and PRW is recharged and recovered, the total DWP water supply would increase to allow increase in users within the service area or in service areas.

No provision is made in the Project to assure that water imports would not increase even with the recharge and supply of 30-50,000 AFY of PRW. Similarly, DWP has reported that water transfers are assigned to local water even though they are largely transferred from holders in the San Joaquin Valley and delivered via imported water systems.

DEIR must include PHYSICAL limitations on imported water rather than an "administrative statement" which has no means of assuring "**reduced dependence on imported water supplies". *****Without real limits, DEIR must include the PRW as additional supply rather than replacement and as definite inducement for increased density or expansion of the service areas and demands which would be met through existing importation facilities***.

Provide assessment and appropriate mitigation to assure no inducement of future population growth and land use conversion occurs due to increasing water supply capacities in the San Fernando Valley, or elsewhere.

3-27/4 - 3-28/7 **XVIII. MANDATORY FINDINGS OF SIGNIFICANCE**

The pivotal issue for the EIR is cumulative effects of indirectly supported service area populations and their impact upon the SFB and western and northwestern LA County. As indicated elsewhere, the Project does not replace existing facilities and systems but would provide a contingency or reliability factor of 30,000+ AFY of water supply. No measures have been provided to assure that if administratively or operationally decided, the groundwater production could be increased while also importing at maximum capacity from the CWP or "Transfers".

The DEIR must assume that unless physically constrained the total physical capacity of sources and systems can be and will be used, especially as such use would be financially rewarding to the Project proponent as the same capital costs plus a minor increase in operating costs would generate higher "net surplus revenue" (=profit) for the Project proponents and the City of Los Angeles.

All comments, herein, assume that the increased recycling for potable uses will support larger populations especially in the San Fernando Valley, especially east of I-405 and north of SR-134.

a) ...potential to substantially degrade the <u>quality of the environment</u>,...or eliminate important examples of the major periods of California history or prehistory? Potentially Significant Impact...search for State and/or federally listed species in the vicinity...part of the EIR...potential for special status species...in the **<u>project vicinity</u>**...including direct impacts due to vegetation removal and **<u>indirect impacts to nearby habitats and river</u>** 3-28/1 flows...Impacts to **<u>biological resources</u>**...in the EIR.

3-28/2 ...potential to impact important examples...California history or prehistory...will be assessed, and impacts...in the EIR.

No discussion of the "Quality of the Environment" is provided; provide expanded assessment beyond that of only biological and cultural resources, especially those related to growth inducement and changing groundwater levels.

Without a clear description of the existing/changing groundwater basin (SFB), production wells, and elevations along the southeastern drainage channels from rising groundwater levels from the PRW and stormwater recharge, the Project may affect riparian habitats along the channels downstream/flows of the Project.

Biological resources must be assessed along affected downstream channels that may be affected by rising groundwater levels above the channel elevations.

3-28/3 b) Does the project have environmental effects that are individually limited, but cumulatively considerable...incremental effects of a project are significant when viewed in connection with the effects of **past...other current...**, and...**probable future projects**...

As indicated elsewhere, the Project will significantly affect the population, land uses, and related utilities, services, and transportation sector which may be each significantly adverse and taken together be significantly considerable.

Provide a thorough and comprehensive assessment of induced growth and mitigation required to constraint the growth and induced considerable impacts.

3-28/4 **Potentially Significant Impact...**a non-attainment area for O3, PM10, and PM2.5...potential to generate **pollutant emissions** in **excess of the SCAQMD thresholds** and contribute to a **cumulatively considerable** impact...included in the EIR.

Cumulative traffic impacts can arise from the direct conditions of arising from the Project, including pumping facilities and from the service area which could be expanded for the new water supplies along with the supply from existing facilities at the same reliability measures as those existing now.

Estimate vehicular exhaust emissions from potential service area expansion (for >250,000 population) and potential for increased traffic generation from such expansion (e.g., >60,000 dwellings x 4+ trips per dwelling per day = +-300,000ADT).

3-28/5 ...**GHG emissions**...cumulative by its very nature...threshold of significance and climate reduction strategies...would generate short-term emissions of GHGs...and long-term emissions...may exceed CARB's thresholds of significance...in the EIR.

No mention is made regarding the Project nor growth induced sources of GHGs from such cumulative sources and their impacts.

DEIR must include GHG sources of temporary/permanent and direct/indirect, and growth inducement of the land development, population growth, and traffic/transportation in the San Fernando Valley resulting from the Project and all of its components, including potential for 300,000+ population, 75,000 residences, 10,000 ac of land development, and 500,000+ Aver.DailyTrips.

3-28/6 ...permanent or temporary increases in ambient noise levels, and contribute to a cumulatively **considerable noise impact**...in the EIR.

Although noise is assigned as a cumulatively considerable impact, no discussion is provided for such determination nor inclusion as a stand-along factor/sector of the DEIR.

No mention is made regarding the Project nor growth induced sources for such cumulative impacts.

DEIR must include noise/vibration sources of temporary/permanent and direct/indirect, and growth inducement of the land development and population growth in the San Fernando Valley resulting from the Project and all of its components, including potential for 300,000+ population, 75,000 residences, and 10,000 ac of land development.

3-28/7 ...traffic analysis...include **cumulative traffic impact**...have the potential to result in significant impacts on area roadways...in the EIR.

Cumulative traffic impacts can arise from the direct conditions of arising from the Project, including pumping facilities and from the service area which could be expanded for the new water supplies along with the supply from existing facilities at the same reliability measures as those existing now. Estimate the potential service area expansion (for >250K population) and potential for increased traffic generation from such expansion (e.g., 60,000+ dwellings x 4+ trips per day = >250,000ADT).

3-28/8 **c) ...environmental effects, which will cause substantial adverse effects on human beings, either directly or indirectly?**

3-28/9 ...**Potentially Significant Impact...**could have potentially significant impacts to human beings...**hazardous materials release or air quality**...discussion of direct and indirect project impacts on human beings.

Chemicals of Emerging Concern and viruses have been hazards which have been restricting increased use of recycled water since 1970, provide a thorough discussion of the initiation, development, and current status of potable water quality issues related to "Toilet to Tap" (T2T) and Toilet-to-Aquifer-to-Tap (TAT) and responses to issues related both chemical and viral hazards and summaries/bibliographies/addresses of all relevant studies, reports, and documents.

As indicated elsewhere, various filtrates will be removed from the multi-barrier filtration/purification process to be used, provide a thorough description and assessment of the collection, conveyance, and disposition of the filtered reject waters and precautions used for controlling the hazard risk to humans and the environment.

Provide a comprehensive and indepth study of CECs and their level/risk of hazards for direcct and indirect (Project) recycling of purified sewage.

Metropolitan Transportation Authority
One Gateway Plaza
Los Angeles, CA 90012-2952
213.922.2000 Tel
metro.net

Metro

October 21, 2013

Michael Mercado
Los Angeles Department of Water and Power
111 North Hope Street, Room 1044
Los Angeles, CA 90012

RE: Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Los Angeles Groundwater Replenishment Project

Dear Mr. Mercado:

The Los Angeles County Metropolitan Transportation Authority (LACMTA) is in receipt of the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) for the Los Angeles Groundwater Replenishment Project. This letter conveys comments concerning issues that are germane to LACMTA's statutory responsibilities as well as LACMTA's facilities and operations in relation to the proposed project.

LACMTA, in coordination with the City of Los Angeles, is conducting an Alternatives Analysis on the East San Fernando Valley Transit Corridor project included in the Measure R Expenditure Plan approved by the voters of Los Angeles County in November, 2008. Among the transit alternatives being evaluated is bus rapid transit (BRT), light rail transit (LRT), or a street car that would operate along Van Nuys Boulevard. Should an alignment along Van Nuys Boulevard be selected, construction of the East San Fernando Valley Transit Corridor project may coincide with the proposed pipeline installation along Van Nuys Blvd at this location. Coordination between the project sponsor, LACMTA, and the City of Los Angeles will be needed to eliminate potential construction conflicts. For more information on the East San Fernando Valley Transit Corridor alternatives analysis please contact LACMTA Project Manager Walter Davis at 213-922-3079.

Several transit corridors with Metro bus service could be impacted by the proposed pipeline installation. Metro Bus Operations Control Special Events Coordinator should be contacted at 213-922-4632 regarding construction activities that may impact Metro bus lines, (e.g. Lines 166-364 on Osborne, Lines 233-761 on Van Nuys, and other pull-out routes that cross the Canterbury Avenue proposed pipeline). Other Municipal Bus Service Operators including LADOT may also be impacted and therefore should be included in construction outreach efforts.

If repair or replacement of existing pipeline is required that runs under the Metro Orange Line Busway or the Metrolink ROW, additional coordination and permits will be necessary from LACMTA.

Additionally, LACMTA is under statutory obligation to notify the project of their responsibilities to the State of California Congestion Management Program (CMP) statute. A Transportation Impact Analysis (TIA), with roadway and transit components, is required under the CMP statute. The CMP TIA Guidelines are published in the "2010 Congestion Management Program for Los Angeles County", Appendix D (attached). The geographic area examined in the TIA must include the following, at a minimum:

1. All CMP arterial monitoring intersections, including monitored freeway on/off-ramp intersections, where the proposed project will add 50 or more trips during either the a.m. or p.m. weekday peak hour (of adjacent street traffic).
2. If CMP arterial segments are being analyzed rather than intersections, the study area must include all segments where the proposed project will add 50 or more peak hour trips (total of both directions). Within the study area, the TIA must analyze at least one segment between monitored CMP intersections.
3. Mainline freeway-monitoring locations where the project will add 150 or more trips, in either direction, during either the a.m. or p.m. weekday peak hour.
4. Caltrans must also be consulted through the NOP process to identify other specific locations to be analyzed on the state highway system.

The CMP TIA requirement also contains two separate impact studies covering roadways and transit, as outlined in Sections D.8.1 – D.9.4. If the TIA identifies no facilities for study based on the criteria above, no further traffic analysis is required. However, projects must still consider transit impacts. For all CMP TIA requirements please see the attached guidelines.

We look forward to reviewing the Draft Environmental Impact Report. If you have any questions regarding this response, please contact Marie Sullivan at 213-922-5667 or by email at sullivanma@metro.net.

Sincerely,

Nick Saponara

Nick Saponara
Development Review Manager, Countywide Planning

Attachment: CMP Appendix D: Guidelines for CMP Transportation Impact Analysis

APPENDIX

D

GUIDELINES FOR CMP TRANSPORTATION IMPACT ANALYSIS

Important Notice to User: This section provides detailed travel statistics for the Los Angeles area which will be updated on an ongoing basis. Updates will be distributed to all local jurisdictions when available. In order to ensure that impact analyses reflect the best available information, lead agencies may also contact MTA at the time of study initiation. Please contact MTA staff to request the most recent release of "Baseline Travel Data for CMP TIAs."

D.1 OBJECTIVE OF GUIDELINES

The following guidelines are intended to assist local agencies in evaluating impacts of land use decisions on the Congestion Management Program (CMP) system, through preparation of a regional transportation impact analysis (TIA). The following are the basic objectives of these guidelines:

- Promote consistency in the studies conducted by different jurisdictions, while maintaining flexibility for the variety of project types which could be affected by these guidelines.
- Establish procedures which can be implemented within existing project review processes and without ongoing review by MTA.
- Provide guidelines which can be implemented immediately, with the full intention of subsequent review and possible revision.

These guidelines are based on specific requirements of the Congestion Management Program, and travel data sources available specifically for Los Angeles County. References are listed in Section D.10 which provide additional information on possible methodologies and available resources for conducting TIAs.

D.2 GENERAL PROVISIONS

Exhibit D-7 provides the model resolution that local jurisdictions adopted containing CMP TIA procedures in 1993. TIA requirements should be fulfilled within the existing environmental review process, extending local traffic impact studies to include impacts to the regional system. In order to monitor activities affected by these requirements, Notices of Preparation (NOPs) must be submitted to MTA as a responsible agency. Formal MTA approval of individual TIAs is not required.

The following sections describe CMP TIA requirements in detail. In general, the competing objectives of consistency & flexibility have been addressed by specifying standard, or minimum, requirements and requiring documentation when a TIA varies from these standards.

D.3 PROJECTS SUBJECT TO ANALYSIS

In general a CMP TIA is required for all projects required to prepare an Environmental Impact Report (EIR) based on local determination. A TIA is not required if the lead agency for the EIR finds that traffic is not a significant issue, and does not require local or regional traffic impact analysis in the EIR. Please refer to Chapter 5 for more detailed information.

CMP TIA guidelines, particularly intersection analyses, are largely geared toward analysis of projects where land use types and design details are known. Where likely land uses are not defined (such as where project descriptions are limited to zoning designation and parcel size with no information on access location), the level of detail in the TIA may be adjusted accordingly. This may apply, for example, to some redevelopment areas and citywide general plans, or community level specific plans. In such cases, where project definition is insufficient for meaningful intersection level of service analysis, CMP arterial segment analysis may substitute for intersection analysis.

D.4 STUDY AREA

The geographic area examined in the TIA must include the following, at a minimum:

- ❑ All CMP arterial monitoring intersections, including monitored freeway on- or off-ramp intersections, where the proposed project will add 50 or more trips during either the AM or PM weekday peak hours (of adjacent street traffic).
- ❑ If CMP arterial segments are being analyzed rather than intersections (see Section D.3), the study area must include all segments where the proposed project will add 50 or more peak hour trips (total of both directions). Within the study area, the TIA must analyze at least one segment between monitored CMP intersections.
- ❑ Mainline freeway monitoring locations where the project will add 150 or more trips, in either direction, during either the AM or PM weekday peak hours.
- ❑ Caltrans must also be consulted through the Notice of Preparation (NOP) process to identify other specific locations to be analyzed on the state highway system.

If the TIA identifies no facilities for study based on these criteria, no further traffic analysis is required. However, projects must still consider transit impacts (Section D.8.4).

D.5 BACKGROUND TRAFFIC CONDITIONS

The following sections describe the procedures for documenting and estimating background, or non-project related traffic conditions. Note that for the purpose of a TIA, these background estimates must include traffic from all sources without regard to the exemptions specified in CMP statute (e.g., traffic generated by the provision of low and very low income housing, or trips originating outside Los Angeles County. Refer to Chapter 5, Section 5.2.3 for a complete list of exempted projects).

D.5.1 Existing Traffic Conditions. Existing traffic volumes and levels of service (LOS) on the CMP highway system within the study area must be documented. Traffic counts must be less than one year old at the time the study is initiated, and collected in accordance with CMP highway monitoring requirements (see Appendix A). Section D.8.1 describes TIA LOS calculation requirements in greater detail. Freeway traffic volume and LOS data provided by Caltrans is also provided in Appendix A.

D.5.2 Selection of Horizon Year and **Background** Traffic **Growth.** Horizon year(s) selection is left to the lead agency, based on individual characteristics of the project being analyzed. In general, the horizon year should reflect a realistic estimate of the project completion date. For large developments phased over several years, review of intermediate milestones prior to buildout should also be considered.

At a minimum, horizon year background traffic growth estimates must use the generalized growth factors shown in Exhibit D-1. These growth factors are based on regional modeling efforts, and estimate the general effect of cumulative development and other socioeconomic changes on traffic throughout the region. Beyond this minimum, selection among the various methodologies available to estimate horizon year background traffic in greater detail is left to the lead agency. Suggested approaches include consultation with the jurisdiction in which the intersection under study is located, in order to obtain more detailed traffic estimates based on ongoing development in the vicinity.

D.6 PROPOSED PROJECT TRAFFIC GENERATION

Traffic generation estimates must conform to the procedures of the current edition of Trip Generation, by the Institute of Transportation Engineers (ITE). If an alternative methodology is used, the basis for this methodology must be fully documented.

Increases in site traffic generation may be reduced for existing land uses to be removed, if the existing use was operating during the year the traffic counts were collected. Current traffic generation should be substantiated by actual driveway counts; however, if infeasible, traffic may be estimated based on a methodology consistent with that used for the proposed use.

Regional transportation impact analysis also requires consideration of trip lengths. Total site traffic generation must therefore be divided into work and non-work-related trip purposes in order to reflect observed trip length differences. Exhibit D-2 provides factors which indicate trip purpose breakdowns for various land use types.

For lead agencies who also participate in CMP highway monitoring, it is recommended that any traffic counts on CMP facilities needed to prepare the TIA should be done in the manner outlined in Chapter 2 and Appendix A. If the TIA traffic counts are taken within one year of the deadline for submittal of CMP highway monitoring data, the local jurisdiction would save the cost of having to conduct the traffic counts twice.

D.7 TRIP DISTRIBUTION

For trip distribution by direct/manual assignment, generalized trip distribution factors are provided in Exhibit D-3, based on regional modeling efforts. These factors indicate Regional Statistical Area (RSA)-level tripmaking for work and non-work trip purposes.

(These RSAs are illustrated in Exhibit D-4.) For locations where it is difficult to determine the project site RSA, census tract/RSA correspondence tables are available from MTA.

Exhibit D-5 describes a general approach to applying the preceding factors. Project trip distribution must be consistent with these trip distribution and purpose factors; the basis for variation must be documented.

Local agency travel demand models disaggregated from the SCAG regional model are presumed to conform to this requirement, as long as the trip distribution functions are consistent with the regional distribution patterns. For retail commercial developments, alternative trip distribution factors may be appropriate based on the market area for the specific planned use. Such market area analysis must clearly identify the basis for the trip distribution pattern expected.

D.8 IMPACT ANALYSIS

CMP Transportation Impact Analyses contain two separate impact studies covering roadways and transit. Section Nos. D.8.1-D.8.3 cover required roadway analysis while Section No. D.8.4 covers the required transit impact analysis. Section Nos. D.9.1-D.9.4 define the requirement for discussion and evaluation of alternative mitigation measures.

D.8.1 Intersection Level of Service Analysis. The LA County CMP recognizes that individual jurisdictions have wide ranging experience with LOS analysis, reflecting the variety of community characteristics, traffic controls and street standards throughout the county. As a result, the CMP acknowledges the possibility that no single set of assumptions should be mandated for all TIAs within the county.

However, in order to promote consistency in the TIAs prepared by different jurisdictions, CMP TIAs must conduct intersection LOS calculations using either of the following methods:

- ❑ The Intersection Capacity Utilization (ICU) method as specified for CMP highway monitoring (see Appendix A); or
- ❑ The Critical Movement Analysis (CMA) / Circular 212 method.

Variation from the standard assumptions under either of these methods for circumstances at particular intersections must be fully documented.

TIAs using the 1985 or 1994 Highway Capacity Manual (HCM) operational analysis must provide converted volume-to-capacity based LOS values, as specified for CMP highway monitoring in Appendix A.

D.8.2 Arterial Segment Analysis. For TIAs involving arterial segment analysis, volume-to-capacity ratios must be calculated for each segment and LOS values assigned using the V/C-LOS equivalency specified for arterial intersections. A capacity of 800 vehicles per hour per through traffic lane must be used, unless localized conditions necessitate alternative values to approximate current intersection congestion levels.

D.8.3 Freeway Segment (Mainline) Analysis. For the purpose of CMP TIAs, a simplified analysis of freeway impacts is required. This analysis consists of a demand-to-capacity calculation for the affected segments, and is indicated in Exhibit D-6.

D.8.4 Transit Impact Review. CMP transit analysis requirements are met by completing and incorporating into an EIR the following transit impact analysis:

- ❑ Evidence that affected transit operators received the Notice of Preparation.
- ❑ A summary of existing transit services in the project area. Include local fixed-route services within a ¼ mile radius of the project; express bus routes within a 2 mile radius of the project, and; rail service within a 2 mile radius of the project.
- ❑ Information on trip generation and mode assignment for both AM and PM peak hour periods as well as for daily periods. Trips assigned to transit will also need to be calculated for the same peak hour and daily periods. Peak hours are defined as 7:30-8:30 AM and 4:30-5:30 PM. Both "peak hour" and "daily" refer to average weekdays, unless special seasonal variations are expected. If expected, seasonal variations should be described.
- ❑ Documentation of the assumption and analyses that were used to determine the number and percent of trips assigned to transit. Trips assigned to transit may be calculated along the following guidelines:
  - ➢ Multiply the total trips generated by 1.4 to convert vehicle trips to person trips;
  - ➢ For each time period, multiply the result by one of the following factors:

    3.5% of Total Person Trips Generated for most cases, except:

    10% primarily Residential within 1/4 mile of a CMP transit center
    15% primarily Commercial within 1/4 mile of a CMP transit center
    7% primarily Residential within 1/4 mile of a CMP multi-modal transportation center
    9% primarily Commercial within 1/4 mile of a CMP multi-modal transportation center
    5% primarily Residential within 1/4 mile of a CMP transit corridor
    7% primarily Commercial within 1/4 mile of a CMP transit corridor
    0% if no fixed route transit services operate within one mile of the project

  To determine whether a project is primarily residential or commercial in nature, please refer to the CMP land use categories listed and defined in Appendix E, *Guidelines for New Development Activity Tracking and Self Certification.* For projects that are only partially within the above one-quarter mile radius, the base rate (3.5% of total trips generated) should be applied to all of the project buildings that touch the radius perimeter.
- ❑ Information on facilities and/or programs that will be incorporated in the development plan that will encourage public transit use. Include not only the jurisdiction's TDM Ordinance measures, but other project specific measures.

- ❑ Analysis of expected project impacts on current and future transit services and proposed project mitigation measures, and;
- ❑ Selection of final mitigation measures remains at the discretion of the local jurisdiction/lead agency. Once a mitigation program is selected, the jurisdiction self-monitors implementation through the existing mitigation monitoring requirements of CEQA.

D.9 IDENTIFICATION AND EVALUATION OF MITIGATION

D.9.1 Criteria for Determining a Significant Impact. For purposes of the CMP, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity ($V/C \geq 0.02$), causing LOS F ($V/C > 1.00$); if the facility is already at LOS F, a significant impact occurs when the proposed project increases traffic demand on a CMP facility by 2% of capacity ($V/C \geq 0.02$). The lead agency may apply a more stringent criteria if desired.

D.9.2 Identification of Mitigation. Once the project has been determined to cause a significant impact, the lead agency must investigate measures which will mitigate the impact of the project. Mitigation measures proposed must clearly indicate the following:

- ❑ Cost estimates, indicating the fair share costs to mitigate the impact of the proposed project. If the improvement from a proposed mitigation measure will exceed the impact of the project, the TIA must indicate the proportion of total mitigation costs which is attributable to the project. This fulfills the statutory requirement to exclude the costs of mitigating inter-regional trips.
- ❑ Implementation responsibilities. Where the agency responsible for implementing mitigation is not the lead agency, the TIA must document consultation with the implementing agency regarding project impacts, mitigation feasibility and responsibility.

Final selection of mitigation measures remains at the discretion of the lead agency. The TIA must, however, provide a summary of impacts and mitigation measures. Once a mitigation program is selected, the jurisdiction self-monitors implementation through the mitigation monitoring requirements contained in CEQA.

D.9.3 Project Contribution to Planned Regional Improvements. If the TIA concludes that project impacts will be mitigated by anticipated regional transportation improvements, such as rail transit or high occupancy vehicle facilities, the TIA must document:

- ❑ Any project contribution to the improvement, and
- ❑ The means by which trips generated at the site will access the regional facility.

D.9.4 Transportation Demand Management (TDM). If the TIA concludes or assumes that project impacts will be reduced through the implementation of TDM measures, the TIA must document specific actions to be implemented by the project which substantiate these conclusions.

D.10 REFERENCES

1. *Traffic Access and Impact Studies for Site Development: A Recommended Practice*, Institute of Transportation Engineers, 1991.
2. *Trip Generation*, 5th Edition, Institute of Transportation Engineers, 1991.
3. *Travel Forecast Summary: 1987 Base Model - Los Angeles Regional Transportation Study (LARTS)*, California State Department of Transportation (Caltrans), February 1990.
4. *Traffic Study Guidelines*, City of Los Angeles Department of Transportation (LADOT), July 1991.
5. *Traffic/Access Guidelines*, County of Los Angeles Department of Public Works.
6. *Building Better Communities*, Sourcebook, Coordinating Land Use and Transit Planning, American Public Transit Association.
7. *Design Guidelines for Bus Facilities*, Orange County Transit District, 2nd Edition, November 1987.
8. *Coordination of Transit and Project Development*, Orange County Transit District, 1988.
9. *Encouraging Public Transportation Through Effective Land Use Actions*, Municipality of Metropolitan Seattle, May 1987.

Mercado, Michael

From: Joyce Dillard [dillardjoyce@yahoo.com]

Sent: Monday, October 21, 2013 3:52 PM

To: Mercado, Michael

Subject: Comments to LADWP NOP Los Angeles Groundwater Replenishment Project due 10.21.2013

This is a citywide project and availability of documents should be spread across the City including the Central Library and regional libraries.

You are under an illusion with this statement:

> *To maintain the reliability of the City's water supply and reduce dependence on imported sources of water*

This is a form of water supply necessary for the by-right density the Planning Department intends in their policies.

Delivery to areas of density need to be considered, as this is Valley-oriented in its discussion. Density will occur for Transit-Oriented Districts.

Also under consideration should be annexed areas, such as Hidden Creek Estates and development such as Universal City as well as the increased density around the LA River Restoration Plans. Hotels are planned around the Downtown area for economic development of the Convention Center. Purple pipe installation is not addressed thoroughly.

You need to clearly anticipate delivery of acre feet in normal weather and storm conditions and the available capacity under several conditions.

LA County Flood Control and its responsibilities need to be clear. They are not and their usage effects the amount of groundwater to be replenished.

Department of Planning should be at the table in this process as they do not regard water supply and water quality issues past your Water Supply Assessment approvals.

Brine disposal needs to be addressed with the transfer to the Additional Valley Outfall Relief Sewer (AVORS).

The transmission pipeline in the vicinity of Canterbury Avenue and Filmore Street for the injection wells needs analysis of the surrounding area-residential, schools, hospitals etc.

We are not clear on the environmental effects of this installation in relationship to Health Risk of the surrounding populations including sensitive populations. A Health Risk Assessment needs to be executed.

Vector control is not addressed.

Fire Response Times and any Emergency Services should be addressed.

Integrated Resource Plan (Bureau of Sanitation) is outdated and needs to be updated as the capacity at Tillman has changed.

We are not clear how Air Quality will be impacted on an ongoing basis. Please list the chemicals will affect that Air Quality. State Implementation Plan is not in compliance with Federal standards. Please address the effects.

You did not mark the checklist for Greenhouse Gas Emissions or Land Use Planning yet show them as a Potentially Significant Impacts.

It is not clear the anticipated impacts of the LA River Ecosystem Feasibility Study with the US Army Corps of Engineers.

What additional pollutants loads are expected for the TMDLs Total Daily Maximum Loads and what are the mitigation and monitoring plans.

Joyce Dillard
P.O. Box 31377
Los Angeles, CA 90031

ARLETA NEIGHBORHOOD COUNCIL

October 28, 2013

Project Title: Los Angeles Groundwater Replenishment Project

Lead Agency Name and Address:
Los Angeles Department of Water and Power
Environmental Planning and Assessment
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Contact Person:
Michael Mercado
Environmental Affairs
Los Angeles Department of Water and Power
michael.mercado@ladwp.com
(213) 367-0395 Fax: (213) 367-4710

Public Comments in Response to Notice of Preparation:

Of paramount concern to the well being and good health of Arleta residents is the disruption, noise and air pollution from construction activities along any route LADWP decides to chose for drilling injection wells and placing water piping - and the extent to which adverse impacts to our community will be ameliorated and mitigated.

We understand additional Public Comment periods will be provided by LADWP for this project as decisions are made for the piping route, means, methods, materials, operations and outcomes.

Item A: We urge LADWP study Alternative Routes the pipeline may run, including along the Pacoima Wash and to describe traffic impacts.

At this early project stage, no route is finalized, so LADWP has agreed to consider alternate routes to Canterbury Avenue such as Los Angeles County Department of Public Works Flood Control District Easement following the Pacoima Wash. A consideration studied will be the effort and expense involved to negotiate and secure an easement to be held by LADWP within the County easement. An advantage to trenching the 42 inch diameter cementitious water piping and vertical cleanout accesses within the Wash easement is the absence of traffic, residential or school activities, and access concerns to slow construction. So the project cost would be lower from the lack of interference with pre-existing activity and the related costs. Main ingress and egress access points to the Wash remain a Project consideration to mitigate any impact with pre-existing activity. Controlling access points to main ingress and egress points may require additional fencing or security.

Trenching along the Wash embankment offers an opportunity for the community to gain a jogging and non-motorized bike path from the necessity of covering the trench in any event. This way, the jogging path surfacing delineates the pipeline below. Its a clear win-win for both the community and LADWP.

Wherever the final route is scheduled, LADWP will provide noise abatement measures such as sound blanketing and electronic white noise offsets. Soil studies of each route considered will be undertaken to assess the cost factor in soil stabilization and compaction, and seismic measures.

LADWP will utilize open tranching to lay piping at the rate of about 60 to 70 linear feet per day.

Electric, LNG and or CNG Trucks to meet State regulations are recommended to ease health impacts on residents, in addition to all project materials, methods, means, and operations observing and complying with California's AB 32 Climate Mandate law to lower carbon emissions and transition to a renewable energy economy. Construction impacts from simultaneous ongoing projects such as Metro's proposed Light Rail on Van Nuys Boulevard and nearby LADWP Tujunga Spreading Grounds project.

Item B: How will LADWP lower dust and particulate matter during the construction phase?

LADWP will provide continuous water spray from trucks to maintain lower carcinogenic and allergens associated with air pollution particulate (dust).

Item C: How will construction affect traffic at the California DMV site located at Canterbury Avenue and Van Nuys Boulevard? And how will LADWP mitigate construction at and surrounding Canterbury Elementary School?

Activity centers such as California Department of Motor Vehicles, Canterbury Elementary School will involve open trenching techniques for laying pipe.

Construction activities are to be coordinated with Canterbury Elementary School Administration to occur at off-peak times, likewise, construction activities for the entire route are to be segmented over one block at a time, on weekends, during summer break, not at night or during commute times. Any segment under construction may be one-way traffic to ease detouring.

Canterbury Avenue was not originally built as a collector road feeding major arterials such as Filmore Street, Van Nuys Boulevard, Terra Bella Street, Osborne Street, Branford Street, but over time, residents came to rely on Canterbury Avenue as a main collector street more so than surrounding connectors to arterials. Adding seismic resistance required of the new piping to the existing capacity of Canterbury Avenue's designed street loading needs to be evaluated. Canterbury Avenue will be restored to the previous condition, at a minimum.

One advantage of Canterbury Avenue incurring less disruption to pre-existing human activity is that only one side has residential dwellings or school buildings while the other side is unpopulated, providing an easement for high voltage lines.

Item D: We are concerned about safety issues with the project for the children at Canterbury Elementary School.

To quell all safety concerns for children, barricading or fencing would keep children at a safe distance. LADWP will employ measures to keep noise level down mindful of not interfering with indoor and outdoor school activities. Steel plating will be placed over all open trenching.

Item E: What are Arleta Community impacts and mitigation of the project's various types of construction?

To minimize risks to public safety and to lower traffic disruptions at major Street arterials crossing Canterbury Avenue, Horizontal Sub-surface Drilling (jacking) will be employed for placement of piping. Vertically excavated double barreled cored tunnels either 100 feet, 200 feet, or 300 feet in length are terminated as north and south portals (jacking pits). Additional construction activity/disruption from jacking pits will be considered at either terminus.

All construction areas including jacking pit portals, trenching, and injection wells will have visual, audio and security screening.

Item F: How can LADWP address long-standing community deficiencies, such as awareness of the need to conserve water, enjoyment of close-by recreational parkland, community gardens, and contributions by LADWP to the affordability of staying connected to power and water utilities and alternatives such as solar photovoltaic panels and rainwater harvesting?

We urge LADWP Pacoima Spreading Grounds Project and Los Angeles Groundwater Replenishment Project, two adjacent, close-in-proximity projects be linked together and presented to the Public as an illustrative, educative pocket park-contained outreach of LADWP's effort to develop local water supply for human consumption, for irrigation, to recharge our aquifer, and to expand water conservation while providing much needed increases in active and passive recreational park areas.

Conceived at LADWP's Donald C. Tillman Water Reclamation Plant, not a part of this Los Angeles Groundwater Replenishment Project, south of Japanese Garden, is an existing educational demonstration display open to the Public, showing Public outreach illustrating the overall water conservation and filtration process.

Prepared and Submitted by:

J Paul Lindblad

Jack Lindblad, Architect and Urban Planner,
Arleta Neighborhood Council Community Improvement Committee Chair Emeritus

Sergio Ibarra, MPA,
Arleta Neighborhood Council President

State Water Resources Control Board

NOV 05 2013

In Reply Refer to:
MSM: 266.0

Los Angeles Department of Water and Power
c/o Mr. Michael Mercado
111 North Hope St, Room 1044
Los Angeles, CA 90012

Dear Mr. Mercado:

POTENTIAL REQUIREMENT FOR WASTE WATER CHANGE PETITION RELATED TO LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT (SCH # 2013091023) IN LOS ANGELES COUNTY

Staff from the State Water Resources Control Board (State Water Board), Division of Water Rights (Division) has determined that you may need to file a petition pursuant to Water Code section 1211.

Water Code section 1211 requires owners of waste water treatment facilities to file a petition and receive approval from the State Water Board before making any changes in the point of discharge, place of use, or purpose of use of treated waste water where the change in the discharge or use of treated waste water would result in a decrease in the flow in any portion of a watercourse.

Information on the waste water change petition process is available at the Division's web site at: http://www.waterboards.ca.gov/waterrights/

If a petition is needed, the State Water Board will act as a Responsible Agency for this project. Accordingly, the State Water Board may need to rely on the Lead Agency's California Environmental Quality Act (CEQA) document to support the Division's evaluation of the requested approval. The Lead Agency should therefore ensure that any CEQA document prepared for the project considers all potential direct and indirect environmental impacts associated with the change.

Unauthorized diversion or use of water is considered a trespass and subject to enforcement action under Water Code sections 1052 and 1831. Any trespass may be subject to Administrative Civil Liability of up to $500 per day without further notice. The State Water Board also may issue a Cease and Desist Order in response to an unauthorized diversion or use of water or threatened unauthorized diversion or use of water pursuant to Water Code section 1831.

Please contact me at (916) 341-5383 or mitchell.moody@waterboards.ca.gov if you have any questions or require additional information. Written correspondence or inquiries should be addressed as follows: State Water Resources Control Board, Division of Water Rights, Attn: Mitchell Moody, P.O. Box 2000, Sacramento, CA, 95812-2000.

Sincerely,

Mitchell Moody

Mitchell Moody, P.E.
Water Resource Control Engineer
Division of Water Rights

cc: California Department of Fish and Wildlife
c/o Ms. Betty Courtney
3883 Ruffin Rd
San Diego, CA 92123

ULARA
UPPER LOS ANGELES RIVER AREA WATERMASTER
Richard C. Slade - Watermaster

ularawatermaster.com

12750 Ventura Blvd, Suite 202
Studio City, CA 91604

818-506-0418 PHONE
818-506-1343 FAX

MEMORANDUM

November 11, 2013

To: Serge Haddad
(sent via Email: serge.haddad@ladwp.org)

From: Richard C. Slade
ULARA Watermaster

Job No. 500-LAS01

Re: Summary of Preliminary Comments to
"Initial Study, Los Angeles Groundwater Replenishment Project",
Prepared by LADWP & Others; September, 2013

As Watermaster for the Upper Los Angeles River Area (ULARA), I have prepared this Memorandum to provide the following summary of my preliminary comments regarding the Initial Study for the Los Angeles Groundwater Replenishment Project (GWR) proposed by LADWP:

a) I am very pleased that LADWP proposes to utilize ±30,000 acre feet per year (AFY) of advanced purified recycled water for forthcoming recharge purposes into the San Fernando Basin (SFB), the largest of the 4 groundwater basins within the Court-adjudicated ULARA region.

b) Such an annual recharge volume is vital to the continued sustainability of SFB.

c) Such an annual recharge volume is also particularly invaluable to SFB because of:

    - Possible climate change and possible reduced annual rainfall in the future, and the resulting reduced amounts of natural recharge and surface water available for use in the existing artificial recharge spreading basins in the northeastern portion of the San Fernando Valley;

    - The loss in the past few years of surface water available from the Los Angeles Aqueduct which, for many years, had been used as an additional source of imported water for artificial recharge in those same spreading basins.

d) I am confident that LADWP will be able to properly design and eventually construct its new advanced water purification treatment facility at its existing Tillman Plant in order to provide the quality of recycled water that would be acceptable to existing regulators for purposes of groundwater replenishment.

Memorandum

e) I am pleased to read that your plans include not only use of the existing facilities at the Hansen and Pacoima spreading grounds, but also the simultaneous use of new injection wells to further enhance your recharge operations in the SFB.

f) As we have discussed on numerous prior occasions, the Watermaster believes the additional use of injection wells will: allow more water to be recharged; permit the advanced purified recycled water to be recharged at different depths and into specific aquifer systems within the SFB; allow the recharge to occur throughout each year, including wet periods, when the spreading basins are being actively used to conserve & recharge rainfall/runoff (stormwater); and provide for increased sustainability of the local groundwater resources.

g) Figure 5 herein has been adapted directly from the subject LADWP document dated September 2013 to illustrate the locations of: the existing Hansen and Pacoima spreading grounds; the alignment of the existing 54-inch diameter pipeline that could deliver the advanced purified recycled water from the Tillman Plant to those existing spreading grounds; and the location and alignment of the 13 currently-proposed injection wells.

h) Upon reviewing Figure 5, I further note the following:

- The proposed injection wells are currently aligned in a north-south direction in a portion of SFB where groundwater flows approximately in the same north to south direction. Such an alignment of injection wells relative to the local groundwater flow direction is not advantageous for groundwater recharge.
- The injection wells are too close to the Pacoima spreading grounds. If injection were to occur in this area, coupled with recharge from these nearby Pacoima facilities, a sizeable groundwater mound would likely result.
- There are too many injection wells for this area and the proposed wells would be too closely spaced; one paragraph in the report text (p. 1-15) suggests that "where two or three wells would be clustered together, the wells would be spaced a minimum of 15 to 20 feet apart to minimize drilling interferences…" Such a configuration could also cause mounding issues, and decrease the efficacy of injection.
- There would likely be "interference" between the recharge taking place in the spreading grounds and in the nearby injection wells; local aquifer transmissivity may not be sufficient to allow continued downgradient flow of spreading basin recharge and recharge from the injection wells; again, mounding may occur in the current configuration.
- There is no justification provided in the report text to document why drilling depths would be to "approximately 500 to 600 feet below ground surface".
- The text does not discuss the need to site and construct a few groundwater monitoring wells to help monitor the movement of the injected advanced purified recycled water within the local groundwater basin.

Memorandum

i) Instead, I once again recommend constructing most, if not all, of the injection wells in a north-south direction along certain streets like Sepulveda, Kester, Van Nuys, Hazeltine, etc which all lie west of and directly upgradient from the City's existing wellfields, and where the groundwater flow is generally west to east. Perhaps 2 or 3 of the currently-proposed injection wells, i.e., those at the southern end of the proposed alignment (see Figure 5 herein) could be useful in the general locations suggested at this time, to further augment groundwater recharge in that area. This recharge, plus constructing the other injection wells farther to the west as discussed above, would help to further diversify the locations for, and the depths and amounts of recharge to SFB.

State of California—Health and Human Services Agency
California Department of Public Health

RON CHAPMAN, MD, MPH
Director & State Health Officer

EDMUND G. BROWN JR.
Governor

November 21, 2013

Mr. Charles C. Holloway
Manager of Environmental Planning and Assessment
Los Angeles Department of Water & Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Dear Mr. Holloway:

SYSTEM NO. 1990006 – CEQA INITIAL STUDY, LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT

We are in receipt of the CEQA Initial Study (IS) for Los Angeles Groundwater Replenishment Project dated September 2013. The IS was prepared by the Los Angeles Department of Water and Power (LADWP) as lead agency for the proposed project to assist in determination if implementation of the proposed project would result in significant adverse environmental impacts.

We have reviewed the IS and would like to offer the following comment:

- Under Section 1.8 of the IS titled "Required Permits and Approvals", the Department of Public Health - Drinking Water Program should be listed among the other state and local agencies responsible for approval of various aspects of the proposed project.

Should you have any questions regarding this letter, please contact Dmitriy Ginzburg, P.E. at (818) 551-2022 or me at (818) 551-2016.

Sincerely,

Chi Diep, P.E.
District Engineer
Metropolitan District

cc: Mr. Michael Mercado
Environmental Project Manager
Los Angeles Department of Water & Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Ms. Melissa Hatcher
Project Director
AECOM Technical Services, Inc.
515 South Flower Street, 9th Floor
Los Angeles, CA 90071

APPENDIX B

Compliance with Federal Laws

APPENDIX B
COMPLIANCE WITH FEDERAL LAWS

B.1 Compliance with Federal Laws

The Proposed Project would comply with the requirements of the laws and regulations discussed below.

B.1-1 United States Fish and Wildlife Coordination Act (16 USC 661)

This Act requires Federal agencies consult with the USFWS and the fish and wildlife agencies of States where the "waters of any stream or other body of water are proposed or authorized, permitted or licensed to be impounded, diverted… or otherwise controlled or modified" by any agency under a Federal permit or license. Consultation is to be undertaken for the purpose of "preventing loss of and damage to wildlife resources." The intent is to give fish and wildlife conservation equal consideration with other purposes of water resources development projects. The Proposed Project does not involve impoundment, diversion, or other modification to bodies of water; therefore, a Fish and Wildlife Coordination Act Report is not required.

B.1-2 Endangered Species Act, as amended (16 USC 1531 et seq.)

Enacted in 1973, the federal Endangered Species Act provides for the conservation of threatened and endangered species and their ecosystems. The Endangered Species Act prohibits the “take” of threatened and endangered species except under certain circumstances and only with authorization from the USFWS through a permit under Section 4(d), 7 or 10(a) of the act. Under the Endangered Species Act, “take” is defined as to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct.

Formal consultation under Section 7 of the Endangered Species Act would be required if the Proposed Project had the potential to affect a federally listed species that has been detected within or adjacent to the project site. With implementation of the avoidance and minimization measures outlined in Section 3.4 of this Draft EIR, temporary direct and indirect adverse effects to special status species would be minimized to a less than significant level.

B.1-3 Migratory Bird Treaty Act (16 USC 715-715s)

Congress passed the Migratory Bird Treaty Act in 1918 to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the Migratory Bird Treaty Act. The prohibition applies to birds included in the respective international conventions between the United States and Great Britain, the United States and Mexico, the United States and Japan, and the United States and Russia.

No permit is issued under the Migratory Bird Treaty Act; however, the Proposed Project would need to employ measures that would avoid or minimize effects on protected migratory birds. Section 3.4 of this Draft EIR includes avoidance and minimization measures to avoid temporary direct and indirect adverse effects to migratory birds, ensuring that the Proposed Project would comply with the Migratory Bird Treaty Act.

B.1-4 Clean Water Act (33 USC 1251 et seq.)

The Clean Water Act provides for the restoration and maintenance of the physical, chemical, and biological integrity of the nation's waters. The Clean Water Act sets up a system of water quality standards, discharge limitations, and permit requirements. Activities that have the potential to discharge dredge or fill materials into jurisdictional waters of the U.S., which include those waters listed in 33 CFR 328.3 (Definitions), are regulated under Section 404 of the Act, as administered by the USACE.

Section 401 of the Clean Water Act requires a water quality certification from the state for all permits issued by the USACE under Section 404 of the Clean Water Act. The RWQCB is the state agency in charge of issuing a Clean Water Act Section 401 water quality certification or waiver. Section 402 of the Act sets forth regulations for direct and indirect discharges and storm water discharges into waters of the United States pursuant to a NPDES permit. NPDES permits contain industry-specific, technology-based limits and may also include additional water quality-based limits, and establish pollutant-monitoring requirements. A NPDES permit may also include discharge limits based on Federal or State water quality criteria or standards. In 1987, the CWA was amended to include a program to address storm water discharges for industrial and construction activities. Storm water discharge is covered by an NPDES permit, either as an individual or general permit. The Los Angeles RWQCB administers the NPDES permit program under the CWA in the Proposed Project area.

Additionally, activities that result in an alteration, occupation, or use of a USACE civil works project, are regulated under Section 408 of the Clean Water Act. The District Engineer has authority to approve relatively minor, low impact alterations/modifications related to operation and maintenance responsibilities of a non-Federal sponsor. The types of alterations/modifications that can be approved include placement of structures such as pump houses, stairs, pipes, bike trails, sidewalks, fences, driveways, power poles, and instrumentation, provided these alterations/modifications do not adversely affect the function of the project and its flood protection properties.

As discussed in Section 3.4 of this Draft EIR, the Proposed Project would not discharge dredge or fill materials into jurisdictional waters of the U.S. In addition, the Proposed Project would comply with the Clean Water Act through adherence to the NPDES permit requirements administered by the RWQCB, including the implementation of construction BMPs.

B.1-5 Safe Drinking Water Act

The Safe Drinking Water Act allows the USEPA to promulgate national primary drinking water standards specifying maximum contaminant levels (MCLs) for each contaminant present in a public water system with an adverse effect on human health, taking into consideration cost and technical feasibility. The GWR Regulations include requirements for monitoring recycled water for Notification Levels (NLs) and response actions if concentrations exceed NLs. Therefore, the Proposed Project conforms with the Safe Drinking Water Act.

B.1-6 Clean Air Act (42 USC 7401 et seq.)

The USEPA, under the provisions of the Clean Air Act, requires each state with regions that have not attained the National Ambient Air Quality Standards to prepare a State Implementation Plan, detailing how these standards are to be met in each local area. The State Implementation Plan is a legal agreement between each state and the federal government to commit resources to improving air quality. It serves as the template for conducting regional and project-level air quality analysis. The State Implementation Plan is not a single document, but a compilation of new and previously submitted attainment plans, emissions reduction programs, district rules, state regulations, and federal controls.

The potential air quality impacts of the Proposed Project have been examined and compared to the significant levels identified by the SCAQMD, which is the agency with jurisdiction to enforce the Clean Air Act regulations and other relevant local air quality regulations. Based on the air quality analysis described in Section 3.3 of this Draft EIR, a conformity determination for a specific pollutant is not required because for each criteria pollutant or precursor the total of direct and indirect emissions of the criteria pollutant or precursor in the nonattainment area caused by the federal action would not equal or exceed any of the rates in 40 CFR 93.153(b)(1) or (2) upon implementation of avoidance and minimization measures during construction activities. As a result, the Proposed Project conforms to the Federal Clean Air Act, as amended.

B.1-7 National Historic Preservation Act (16 USC 460b, 4701-470n)

The Proposed Project would not result in direct or indirect adverse effects to historic resources, as discussed in Section 3.5 of this Draft EIR. Therefore, the Proposed Project would comply with Section 106 of the National Historic Preservation Act and its implementing regulations (36 CFR Part 800).

B.1-8 Comprehensive Environmental Response, Compensation, and Liability Act (42 USC 9601 et seq.)

There are a number of listed hazardous waste sites located in the vicinity of the Project site, but not including the Project site itself (see Section 3.9 of this Draft EIR). All project activities would occur under the oversight of the California DTSC, the California Occupational Health and Safety Administration, and LAFD in adherence to all applicable federal, state, and local standards, including the Comprehensive Environmental Response, Compensation, and Liability Act.

B.1-9 Noise Control Act of 1972, as amended (42 USC 4901 et seq.)

The Federal Noise Control Act of 1972 established programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, USEPA administrators determined that subjective issues such as noise would be better addressed at more local levels of government, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies. Consequently, in 1982 responsibilities for regulating noise control policies were transferred to specific federal agencies, and state and local governments. However, noise control guidelines and regulations contained in the USEPA rulings in prior years remain in place.

The Proposed Project would result in a temporary increase in noise levels during Project construction activities that would exceed local standards (City of Los Angeles) within the direct vicinity of the construction zone. With implementation of minimization and avoidance measures to reduce temporary adverse noise effects (see Section 3.13 of this Draft EIR), the Proposed Project would be in compliance with the Noise Control Act. Noise would continue to be regulated through federal, state, and local ordinances.

Although the Proposed Project is not related to transportation, the FTA published relevant guidance for assessing potential building damage associated with construction activity.

According to the FTA, non-engineered timber and masonry buildings can be exposed to groundborne vibration levels of 0.2 inches per second PPV without experiencing structural damage. Buildings extremely susceptible to vibration damage (e.g., historic buildings) can be exposed to goundborne vibration levels of 0.12 inches per second PPV without experiencing structural damage. Construction of the warehouse building at DCTWRP would exceed FTA guidance within the vicinity of the Japanese Gardens. With implementation of minimization and avoidance measures to reduce temporary adverse vibration effects (see Section 3.13 of this Draft EIR), the Proposed Project would be in compliance with the FTA guidance.

B.1-10 Archaeological Resources Protection Act, as amended (16 USC 470aa-mm)

As discussed in Section 3.5 of this Draft EIR, Proposed Project construction activities have the potential to uncover archaeological resources since the Project area is considered to be culturally sensitive for prehistoric and/or historic archaeological resources due to its location in the vicinity of Mission San Fernando and prehistoric villages have long been rumored to be, or are documented as having been, located in the vicinity of the Project area. The Project area's location relative to the nearby water sources would have provided access to important resources during all periods of prehistory. Avoidance and minimization measures would be implemented to reduce direct and indirect adverse effects to archaeological resources to a less than significant level. The Proposed Project would comply with the Archaeological Resources Protection Act.

B.1-11 Executive Order 11988 – Floodplain Management

Executive Order 11988 directs federal agencies to avoid, to the extent practicable and feasible, short- and long-term adverse impacts associated with the occupancy and modification of floodplains and to avoid direct and indirect support of floodplain development wherever there is a practicable alternative. Further, Executive Order 11988 requires the prevention of uneconomic, hazardous, or incompatible use of floodplains; protection and preservation of the natural and beneficial floodplain values; and consistency with the standards and criteria of the National Flood Insurance Program.

For projects that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source, and thus, result in the modification of the existing regulatory floodway, the effective Base Flood Elevations, a conditional letter of map revision would need to be prepared and approved by Los Angeles County and FEMA prior to any work occurring.

The Proposed Project would not result in floodplain impacts; therefore, the Proposed Project would comply with Executive Order 11988.

B.1-12 Executive Order 11514 – Protection and Enhancement of Environmental Quality, amended by Executive Order 11991, Re Protection and Enhancement of Environmental Quality

Executive Order 11514 mandates that the federal government provide leadership in protecting and enhancing the quality of the nation's environment to sustain and enrich human life. Federal agencies must initiate measures needed to direct their policies, plans, and programs so as to meet national environmental goals. These regulations include procedures for early EIS preparation and require impact statements to be concise, clear, and supported by evidence that agencies have made the necessary analyses.

This Draft EIR was prepared in compliance with the mandates of Executive Order 11514.

B.1-13 Executive Order 11990 – Protection of Wetlands

Executive Order 11990 requires federal agencies to take action to minimize the destruction, loss, or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands in carrying out the agencies responsibilities. Each agency, to the extent permitted by law, shall avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds 1) that there is no practicable alternative to such construction, and 2) that the proposed action includes all practicable measures to minimize harm to wetlands that may result from such use. In making this finding, the head of the agency may take into account economic, environmental, and other pertinent factors. Each agency shall also provide opportunity for early public review of any plans or proposals for new construction in wetlands.

As discussed in Section 3.4 of this Draft EIR, no direct impacts to federally or state-protected waters or wetlands are anticipated during Project construction. All construction activities would occur within the boundaries of the Project site and outside protected waters. Indirect impacts to protected water resources could occur during construction due to stormwater runoff from the Proposed Project site into Haskell Creek and the Tujunga Wash, resulting in decreases in water quality of the river, and increases in erosion and sedimentation. The Proposed Project includes BMPs and avoidance and minimization measures to avoid adverse impacts to protected wetlands; therefore, the Proposed Project complies with Executive Order 11990.

B.1-14 Executive Order 12088 – Federal Compliance with Pollution Control Standards

Federal agencies are responsible for ensuring that all necessary actions are taken for the prevention, control, and abatement of environmental pollution with respect to federal facilities and activities under control of the agency. Implementation of measures to minimize pollution impacts during Project implementation would meet the standards of this Executive Order. The Proposed Project would adhere to the NPDES permit requirements administered by the RWQCB, and would include the implementation of BMPs and avoidance and minimization measure to avoid adverse impacts of environmental pollution; therefore, the Proposed Project complies with Executive Order 12088.

B.1-15 Executive Order 12898 – Federal Actions to Address Environmental Justice in Minority Populations and Low-Income Populations, February 11, 1994

Executive Order 12898 is intended to direct each federal agency “to make achieving environmental justice part of its mission by identifying and addressing... disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low income populations in the [U.S.]...” In order to fully address Executive Order 12898, an environmental analysis section was prepared for environmental justice and is included in Appendix B.2 of this Draft EIR. In summary, operation of the Proposed Project would not adversely impact minority or low income communities. Construction impacts of the Proposed Project would be less than significant or mitigated to a less than significant level for all resource areas. Construction of some offsite components would require some temporary traffic impacts; however, only a small portion of the transportation system would be impacted at any one time and mitigation measures have been required to reduce all construction impacts to below a level significance. In addition, construction of the Proposed Project could expose sensitive receptors to substantial pollutant concentrations that would result in a health risk;

however, the implementation of avoidance and minimization measures would reduce health risks to a less than significant level. The Proposed Project would avoid adverse impacts on minority or low income communities; therefore, the Proposed Project complies with Executive Order 12898.

B.1-16 Executive Order 13112 – Invasive Species

Federal agencies are required to expand and coordinate efforts to prevent the introduction and spread of invasive plant species and to minimize the economic, ecological, and human health impacts that invasive species may cause. As discussed in Section 3.4 of this EIR, no adverse effects related to introduction or spread of invasive species would occur during Project construction or operation. Therefore, the Proposed Project would comply with Executive Order 13112.

B.1-17 Executive Order 13045 – Protection of Children from Environmental Health and Safety Risks

Executive Order 13045 requires that each federal agency "shall make it a high priority to identify and assess environmental health risks and safety risks that may disproportionately affect children; and shall ensure that its policies, programs, activities, and standards address disproportionate risks to children that result from environmental health risks or safety risks." Operation of the Proposed Project would not adversely impact children or other disadvantaged communities. Construction impacts of the Proposed Project would be less than significant or mitigated to a less than significant level for all resource areas. Construction of the Proposed Project could expose sensitive receptors, including children, to substantial pollutant concentrations that would result in a health risk; however, the implementation of avoidance and minimization measures would reduce health risks to a less than significant level (see Section 3.3 of this Draft EIR). The Proposed Project would avoid adverse impacts to children or other disadvantaged populations; therefore, the Proposed Project complies with Executive Order 12898.

B.1-18 Wild and Scenic Rivers Act (16 USC 1271-1287)

Approximately 2,000 miles (1 percent) of rivers in California are designated as Wild and Scenic by the National Wild and Scenic Rivers System. The Proposed Project is not located in proximity to any designated Wild and Scenic Rivers; therefore, the Proposed Project would not adversely affect any such rivers, and this act does not apply to the Proposed Project.

B.1-19 Executive Order 13148 – Greening the Government through Leadership in Environmental Management

Environmental management considerations are a fundamental and integral component of Federal Government policies, operations, planning, and management. The primary goal of Executive Order 13148 is for each agency to strive to promote the sustainable management of federal facility lands through the implementation of cost-effective, environmentally sound landscaping practices, and programs to reduce adverse impacts to the natural environment.

LADWP and LASAN jointly developed the Recycled Water Master Plan (RWMP) which established guidance to accomplish nearer-term recycled water planning goals through 2035 as well as longer-term goals for an additional 50 years beyond 2035. As part of the RWMP process, the Groundwater Replenishment Master Plan was prepared by the City to evaluate in greater detail factors related to the actual siting and development of the AWPF, which, as outlined in the RWMP, would be the primary new facility under the LAGWR Project. The Proposed Project is in compliance with the Recycled Water Master Plan and the Groundwater Replenishment Master Plan, and therefore, in compliance with this Executive Order.

B.1-20 Executive Order 13195 – Trails for America in the 21st Century

This Executive Order states that federal agencies will, to the extent permitted by law and where practicable and in cooperation with Tribes, states, local governments, and interested citizen groups, protect, connect, promote, and assist trails of all types throughout the United States. Construction of the AWPF and associated facilities at DCTWRP is in the vicinity of the Orange Line Bike Path. The Proposed Project would not impact the Orange Line Bike Path and therefore would comply with Executive Order 13195.

B.1-21 Farmland Protection Policy Act

The Proposed Project would not result in direct or indirect adverse effects to farmland resources, as discussed in Section 3.2 of this Draft EIR. Therefore, the Proposed Project would comply with the Farmland Protection Policy Act and its implementing regulations (7 USC 4201).

B.1-22 Coastal Barrier Resources Act

The Proposed Project is not located in proximity to any developed or undeveloped coastal barrier; therefore, the Proposed Project would not adversely affect any such resources. This act does not apply to the Proposed Project.

B.1-23 Coastal Zone Management Act

The Proposed Project is not located within or near a coastal zone; therefore, the Proposed Project would not adversely affect any such resources. This act does not apply to the Proposed Project.

B.1-24 Magnuson-Stevens Fishery Conservation and Management Act

The Proposed Project is not located in proximity to marine fishery resources; therefore, the Proposed Project would not adversely affect any such resources. This act does not apply to the Proposed Project.

B.2 Environmental Justice

The resource topic of Environmental Justice is not typically analyzed in an EIR. However, due to the possibility of federal funding and of approval by the Corps, the Proposed Project would be subject to federal environmental regulations, as applicable. Therefore, a CEQA-Plus Draft EIR is being prepared for the Proposed Project and additional required topics, such as Environmental Justice, are included as part of the analysis.

The analysis in this section uses demographic information to identify minority and low-income populations in the Project area and determines the potential for the Proposed Project to cause disproportionate public health and environmental impacts on minority and low-income populations. The terms “minority population” and “low-income population”, defined below, are consistent with federal environmental justice guidance and the race and ethnicity categories used by the U.S. Census Bureau.

B.2.1 Environmental Setting

The federal environmental justice guidance defines the term “minority” as persons from any of the following census categories for race: Black/African-American, Asian, Native Hawaiian or Other Pacific Islander, and American Indian or Alaska Native. Additionally, for purposes of this analysis, “minority” also includes all other nonwhite racial categories that are present in the census questionnaire, such as “some other race” and “two or more races.” Federal environmental justice guidance also mandates that persons identified through the census as ethnically Hispanic/Latino, regardless of race, should be included in minority counts (without double-counting persons of Hispanic or Latino origin who are also contained in the former groups).

Persons living with income below the poverty level are identified as “low-income,” utilizing the annual poverty thresholds established by the U.S. Census Bureau. As a point of reference, the weighted average poverty threshold for a family of four (i.e., two adults and two children) in 2013 was $23,624, according to the U.S. Census Bureau.

For this particular analysis, census data from the 2009-2013 5-Year Estimate American Community Survey were used due to the information being the most up-to-date, most detailed, most complete, and most customizable dataset currently available for the study area. The Interagency Federal Working Group on Environmental Justice guidance states that a minority and/or low-income population may be present in an area if the proportion of the populations in the area of interest is “meaningfully greater” than that of the general population, or where the proportion exceeds 50 percent of the total population. For the purposes of this analysis, minority and low-income populations of individual census block groups (a subunit of a census tract) were compared against the general population of the larger region of Los Angeles County. A meaningfully greater proportion was determined to be simply “greater” than the general population of Los Angeles County, providing for a conservative analysis.

Area of Analysis

The area of analysis for environmental justice includes those U.S. census block groups that fall within or intersect with a 0.5-mile buffer of the onsite and offsite components. Table B.2-1 shows the 50 different census block groups that are located within the area of analysis, separated out by the component with which they are associated.

Table B.2-1
Study Area Census Block Groups

DCTWRP Area Block Groups	Recycled Water Pipeline and PSG Area Block Groups				HSG Area Block Groups
1276.05.1	1044.03.1	1096.03.1	1190.02.2	1193.10.1	1047.03.1
1276.05.2	1044.03.2	1096.03.2	1190.02.3	1193.10.2	1047.03.2
1276.06.1	1048.22.1	1096.04.2	1190.02.4	1194.00.2	1048.10.2
1276.06.2	1094.00.1	1171.02.1	1190.02.5	1194.00.3	1048.10.3
1277.11.1	1095.00.2	1171.02.2	1192.01.2	1198.00.1	1211.02.1
1277.11.2	1096.01.1	1190.01.1	1192.02.1	1192.01.3	1212.10.1
1284.00.4	1096.01.2	1190.01.2	1192.02.2	1198.00.2	1212.10.2
9800.24.1	1096.01.3	1190.01.3	1192.02.3	--	9800.21.1
--	1096.01.4	1190.02.1	1192.02.4	--	--

Source: United States Census Bureau 2015

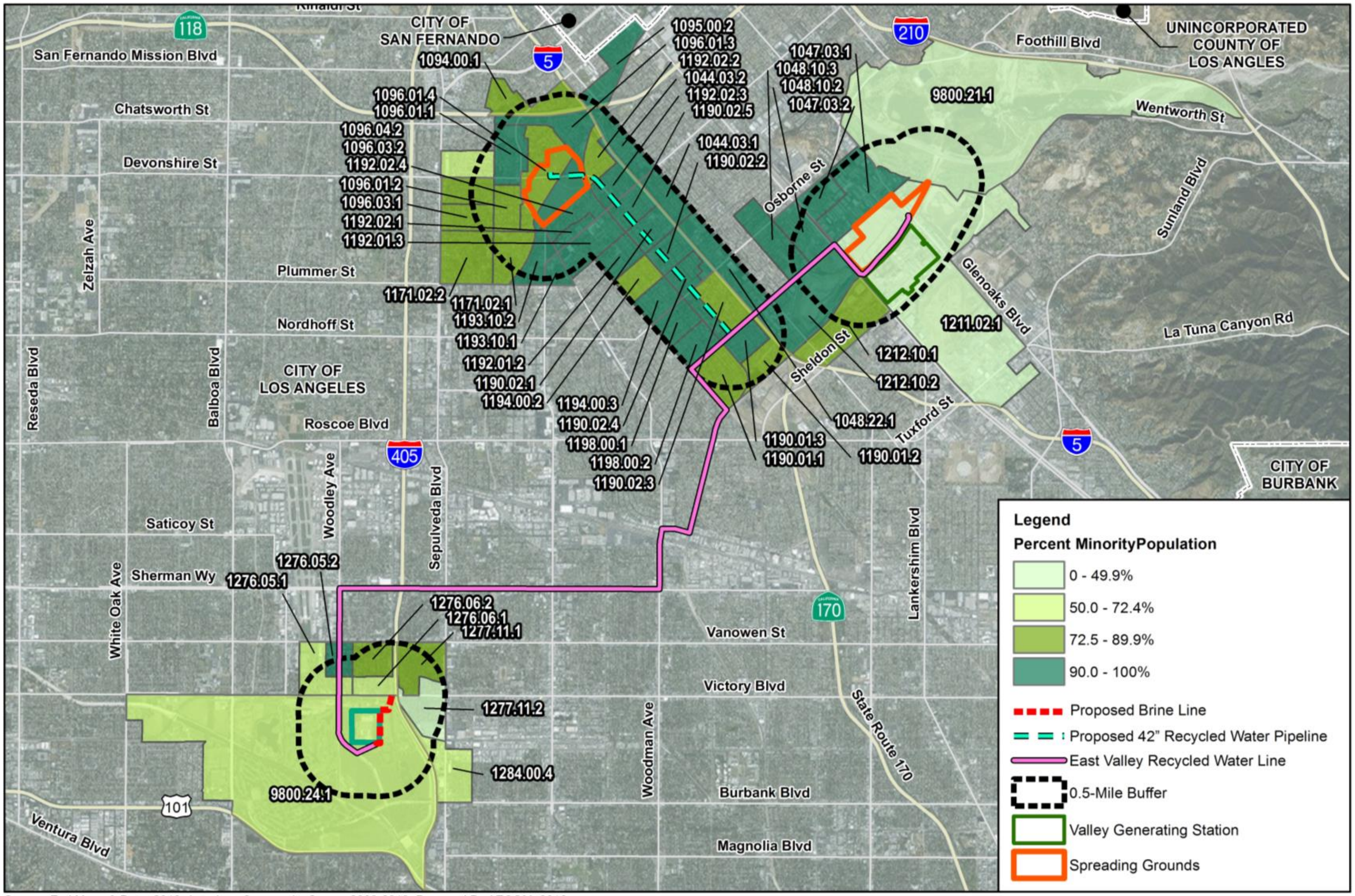
Minority and Low-Income Populations

Table B.2-2 shows the minority population within the City of Los Angeles and Los Angeles County as a whole. In 2013, Los Angeles County's population was 72.5 percent minority. This percentage is slightly higher than the City of Los Angeles, the population of which was 71.4 percent minority. Figure B.2-1 illustrates the minority populations within the census block groups that fall within a 0.5-mile radius of the onsite and offsite components. Figure B.2-1 shows that almost the entirety of the study area contains block groups with minority populations in excess of 50 percent; 42 block groups having a percentage of minority residents equal to or higher than 72.5 percent. Generally, block groups along Arleta Avenue, surrounding PSG, and west of HSG have the highest percentage of minority residents. Block group 1047.03.1, located north/northwest of HSG and northeast of Arleta Avenue has the largest proportion of minorities at 100.0 percent.

Table B.2-2
Minority Populations within Study Area

Location	Total Population	Percent Minority
City of Los Angeles	3,827,261	71.4%
County of Los Angeles	9,893,481	72.5%

Source: United States Census Bureau 2014a



Source: Esri Maps & Data, 2016; American Community Survey 2009-2013: Prepared By AECOM, 2016.

0 1 2 Miles

Figure B.2-1

Minority Populations within Study Area Census Block Groups

Table B.2-3 identifies the number of low-income individuals within the City of Los Angeles and within Los Angeles County as a whole. In 2013, an estimated 17.8 percent of the Los Angeles County population was considered low-income. Within the City of Los Angeles, an estimated 22.0 percent of residents were considered low-income. Figure B.2-2 shows the estimated low-income populations within the study area surrounding on-site and offsite components. Figure B.2-2 shows that most of the study area contains block groups with low-income populations less than 17.8 percent, with 15 block groups having a percentage of low-income residents equal to or higher than the county-wide average. Generally, block groups with the highest proportion of low-income residents are located southeast of PSG, east of Arleta Avenue, northwest and south of HSG, and north of DCTWRP. Block group 1048.10.2, located west of HSG, has the largest proportion of low-income residents at 55 percent.

Table B.2-3
Estimated Low-Income Populations within Study Area

Location	Total Population	Percent in Poverty
City of Los Angeles	3,758,144	22.0%
County of Los Angeles	9,738,370	17.8%

Source: United States Census Bureau 2014b

B.2.2 Regulatory Setting

Federal

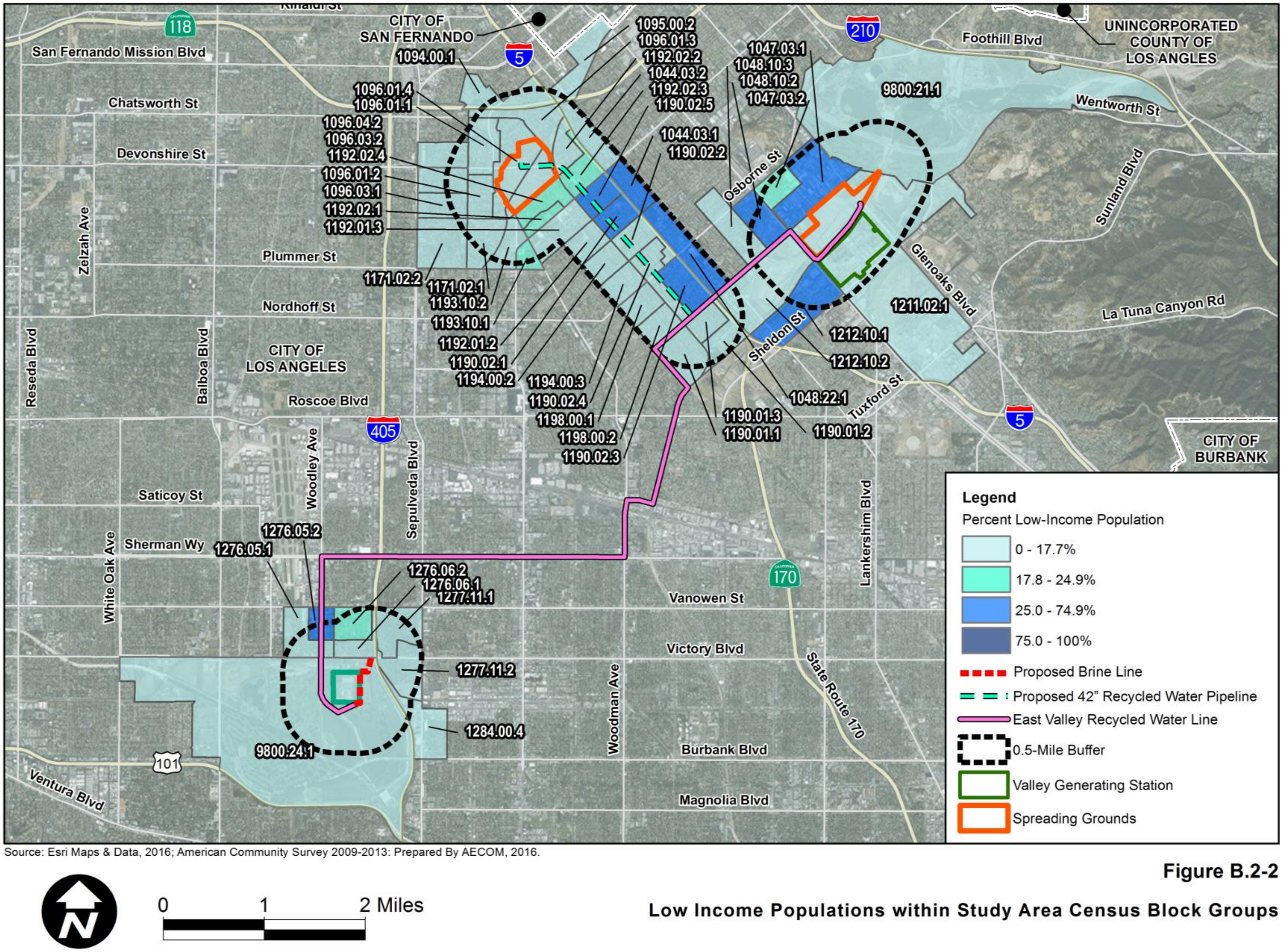
Executive Order 12898

In 1994, in response to growing concern that minority and/or low-income populations bear a disproportionate amount of adverse health and environmental effects, President Clinton issued Executive Order 12898 on Environmental Justice, formally focusing federal agency attention on these issues. The Executive Order contains a general directive that states that “each Federal agency shall make achieving environmental justice part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority populations and low-income populations.”

The order authorized the creation of an Interagency Working Group on Environmental Justice, overseen by the USEPA, to implement the Executive Order’s requirements. The Interagency Working Group on Environmental Justice includes representatives of a number of executive agencies and offices and has developed guidance for terms contained in the Executive Order. The USEPA provides the following definitions:

Environmental Justice: The fair treatment and meaningful involvement of all people regardless of race, color, national origin, or income with respect to the development, implementation, and enforcement of environmental laws, regulations, and policies.

Fair Treatment: No group of people, including a racial, ethnic, or a socioeconomic group, should bear a disproportionate share of the negative environmental consequences resulting from industrial, municipal, and commercial operations or the execution of federal, state, local, and tribal programs and policies.



Source: Esri Maps & Data, 2016; American Community Survey 2009-2013: Prepared By AECOM, 2016.

Figure B.2-2

Low Income Populations within Study Area Census Block Groups

Meaningful Involvement: Potentially affected community residents have an appropriate opportunity to participate in decisions about a proposed activity that will affect their environment and/or health.

1. The public's contribution can influence the regulatory agency's decision.

2. The concerns of all participants involved will be considered in the decision making process.

3. The decision makers seek out and facilitate the involvement of those potentially affected.

Disproportionately High and Adverse Effect: An adverse effect or impact that: (1) is predominately borne by any segment of the population, including, for example, a minority population and/or a low-income population; or (2) will be suffered by a minority population and/or low-income population and is appreciably more severe or greater in magnitude than the adverse effect or impact that will be suffered by a non-minority population and/or non-low-income population.

Council on Environmental Quality – Environmental Justice Guidance Under the National Environmental Policy Act

While the USEPA has lead responsibility for implementation of Executive Order 12898 as chair of the Interagency Working Group on Environmental Justice, the Council on Environmental Quality (CEQ) has oversight of the federal government's compliance with this Executive Order and the National Environmental Policy Act (NEPA). The CEQ, in consultation with the USEPA and other agencies, has prepared guidance to assist federal agencies in NEPA compliance in its Environmental Justice: Guidance under the National Environmental Policy Act (CEQ Guidance). The CEQ Guidance provides an overview of Executive Order 12898; summarizes its relationship to NEPA; recommends methods for the integration of environmental justice analysis into NEPA documents; and incorporates as an appendix the Interagency Working Group on Environmental Justice's definitions of key terms and concepts contained in the executive order.

Agencies are permitted to supplement the CEQ Guidance with their own, more specific guidance tailored to their programs or activities or departments, insofar as is permitted by law. Neither the executive order nor the CEQ Guidance prescribes a specific format for environmental justice assessments. However, the CEQ Guidance identifies the following six general principles intended to guide the integration of environmental justice assessments that are applicable to the Proposed Project:

- Agencies should consider the composition of the affected area to determine whether minority populations, low-income populations, or American Indian tribes are present in the area affected by the proposed action and, if so, whether there may be disproportionately high and adverse human health or environmental impacts on minority populations, low-income populations, or American Indian tribes.

- Agencies should consider relevant public health data and industry data concerning the potential for multiple or cumulative exposure to human health or environmental hazards in the affected population and historical patterns of exposure to environmental hazards, to the extent such information is reasonably available. For example, data may suggest there are disproportionately high, and adverse, human health or environmental impacts on a minority population, low-income population, or American Indian tribe. Agencies should consider these multiple, or cumulative impacts, even if certain effects are not within the control or subject to the discretion of the agency proposing the project.

- Agencies should recognize the interrelated cultural, social, occupational, historical, or economic factors that may amplify the natural and physical environmental impacts of the agency's proposed project. These factors should include the physical sensitivity of the community or population to particular impacts; the effect of any disruption on the community structure associated with the proposed project; and the nature and degree of impact on the physical and social structure of the community.

- Agencies should develop effective public participation strategies. Agencies should, as appropriate, acknowledge and seek to overcome linguistic, cultural, institutional, geographic, and other barriers to meaningful participation, and should incorporate active outreach to affected groups.

- Agencies should assure meaningful community representation in the process. Agencies should be aware of the diverse constituencies within any particular community when they seek community representation and should endeavor to have complete representation of the community as a whole. Agencies also should be aware that community participation must occur as early as possible if it is to be meaningful.

- Agencies should seek tribal representation in the process in a manner that is consistent with the government-to-government relationship between the United States and tribal governments, the federal government's trust responsibility to federally-recognized tribes, and any treaty rights.

The CEQ Guidance states that the identification of a disproportionately high and adverse human health or environmental impact on a low-income or minority population does not preclude a proposed project from going forward or compel a finding that a proposed project is environmentally unacceptable. Instead, the identification of such effects is expected to encourage agency consideration of alternatives, mitigation measures, and preferences expressed by the affected community or population.

State

Public Resource Codes Sections 71110–71116

Environmental justice is defined by California law as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." Public Resource Code Section 71113 states that the mission of the CalEPA includes ensuring that it conducts any activities that substantially impact human health or the environment in a manner that ensures the fair treatment of people of all races, cultures, and income levels, including minority and low-income populations of the state. As part of its mission, CalEPA is required to develop a model environmental justice mission statement for its boards, departments, and offices. CalEPA was tasked to develop a Working Group on Environmental Justice to assist it in identifying any policy gaps or obstacles impeding the achievement of environmental justice. An advisory committee including representatives of numerous state agencies was established to assist the Working Group pursuant to the development of a CalEPA intra-agency strategy for addressing environmental justice.

California Government Code Section 65040.12

California Government Code Section 65040.12 defines environmental justice as the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws and policies. While there is no requirement under CEQA to address environmental justice, a handful of state legislation addressing environmental justice issues has been signed into law since 1999. Legislative and executive actions relating to environmental justice in California have largely been procedural, including, but not limited to, formation of environmental justice advisory committees and assigning coordinating roles and responsibilities to the Governor's Office of Planning and Research and CalEPA.

Regional

SCAQMD Environmental Justice Policy

In 1997, the South Coast Air Quality Management District (SCAQMD) adopted a set of guiding principles on environmental justice, addressing the rights of area citizens to clean air, the expectation of government safeguards for public health, and access to scientific findings concerning public health. Subsequent follow-up plans and initiatives led to the SCAQMD Board's approval of the 2003-2004 Environmental Justice Workplan. The SCAQMD intends to update this as needed to reflect ongoing and new initiatives.

The SCAQMD's environmental justice program is intended to "ensure that everyone has the right to equal protection from air pollution and fair access to the decision making process that works to improve the quality of air within their communities." Environmental justice is defined by the SCAQMD as "...equitable environmental policymaking and enforcement to protect the health of all residents, regardless of age, culture, ethnicity, gender, race, socioeconomic status, or geographic location, from the health effects of air pollution."

B.2.3 Environmental Impacts

Significance Criteria

Pursuant to CEQ's Environmental Justice Guidance Under the National Environmental Policy Act and Executive Order 12898, the Proposed Project would have a significant impact on environmental justice if it would:

- Result in environmental impacts that are disproportionately high and adverse on minority and low-income populations.

Methodology

For this assessment, the area of potential effect was determined in accordance with the CEQ Guidance for identifying the affected community, which requires consideration of the nature of likely project impacts and identification of a corresponding unit of geographic analysis. The area of potential project effect for purposes of environmental justice corresponds to the areas of effect associated with the specific environmental issues analyzed in this Draft EIR. Areas of potential effect differ somewhat for each environmental issue. The aggregated affected communities correspond with the area of analysis. The County of Los Angeles is considered to be the reference community. The reference community is generally used to determine whether a disproportionately high and adverse human health or environmental impact would be borne by minority and/or low-income populations in and around the onsite and offsite Proposed Project components when compared to the general population in the reference community.

The methodology for conducting the impact analysis for environmental justice included reviewing impact conclusions for each of the resource sections (Sections 3.1 to 3.5 and 3.7 to 3.17) in Chapter 3 of this Draft EIR. An evaluation was then conducted to determine if any identified impacts would result in disproportionately high and adverse impacts on minority populations or low-income populations in the area of analysis.

Impact Analysis

EJ-1: *The Proposed Project would not result in environmental impacts that are disproportionately high and adverse on minority and low-income populations. The impact would be less than significant.*

Based on a review of the population and income characteristics of those geographies within the area of analysis, there is a presence of minority populations in proximity to DCTWRP, PSG, and west of HSG (see Figure B.2-1). A majority of census block groups within the area of analysis exhibited a total minority proportion of over 50 percent. In 2013, an estimated 17.8 percent of the County of Los Angeles population was low-income. Geographies with low-income populations are in proximity to each of the onsite and offsite component sites, including north of DCTWRP, southeast of PSG, east of Arleta Avenue, and northwest and south of HSG. A total of 15 census block groups within the area of analysis exhibited a proportion of low-income residents that is higher than the reference community of Los Angeles County. The study area has a greater presence of minority and low-income populations in comparison to the county as a whole, although the low-income populations are not as widespread as the minority populations.

As discussed in Sections 3.1 to 3.16 of this Draft EIR, construction activities resulting in human health, safety, and environmental impacts for the onsite and offsite components would be less than significant or mitigated to a less than significant level for all issue areas except for noise and traffic, which have significant and unavoidable impacts. Construction noise impacts would be temporary in nature, but equipment noise levels would exceed 75 dBA at the nearest sensitive receptors. Implementation of Mitigation Measures NOI-A through NOI-H would reduce temporary and periodic construction noise levels at the recycled water pipeline and PSG to less than significant. Implementation of Mitigation Measures NOI-A through NOI-I would reduce temporary and periodic construction noise levels at the Japanese Garden to the greatest extent feasible, but would result in a significant and unavoidable impact. Noise impacts would not result in disproportionately high and adverse impacts on minority and low-income populations; therefore, impacts related to environmental justice would be less than significant. Construction of the recycled water pipeline alignment along Arleta Avenue would result in some temporary traffic impacts and would worsen the level of service (LOS) along Arleta Avenue. Traffic conditions would be monitored, and a Traffic Management Plan, as outlined in Mitigation Measure TRA-A, would be implemented to reduce the construction traffic impacts to the greatest extent feasible along Arleta Avenue. However, construction of the recycled water pipeline along Arleta Avenue would result in a significant and unavoidable impact. Traffic impacts would not result in disproportionately high and adverse impacts on minority and low-income populations as impacts would not occur continuously along the entire recycled water pipeline alignment. Once segments are completed and work zones are removed and established in other areas, the designed roadway capacity within that segment would be restored and there would not be any long term impacts. Therefore, impacts related to environmental justice would be less than significant. Construction of the proposed onsite and offsite components could expose sensitive receptors to substantial pollutant concentrations that would result in a health risk; however, implementation of mitigation measures would reduce health risks to a less than significant level. Operational impacts of the Proposed Project would be less than significant for all resource topics.

B.2.4 Mitigation Measures

No significant impacts to environmental justice populations have been identified for the Proposed Project. Therefore, no mitigation measures are required.

B.2.5 Significance After Mitigation

The Proposed Project would result in less than significant impacts to environmental justice.

B.2.6 Cumulative Impacts

Development of the Proposed Project in conjunction with the related projects has the potential to result in human health, safety, and environmental impacts. Existing information from the USEPA indicates that those areas in proximity to DCTWRP, PSG, and HSG have an existing elevated exposure to many human health and environmental safety risks, compared to the state average. For example, for the census block groups in the area of analysis:

- The average PM2.5 score (PM2.5 in µg/m3) was 11.3, which was higher than the state average of 10.4.
- The average ozone score (ppm) was 58.0, which was higher than the state average of 48.4.
- The average USEPA's traffic proximity score (daily traffic count/distance to road) was 658, which was much higher than the state average of 210.
- The average USEPA's score related to proximity to facilities with potential chemical accident management plans (facility count/km distance) was 0.58, which was higher than the state average of 0.46.

However, the Proposed Project would not result in cumulatively considerable impacts to air quality, GHG emissions, or hazards and hazardous materials as each project, even if an environmental justice analysis was not legally mandated (i.e., a CEQA-only project), is required to evaluate the potential for hazards to human health and the environment. As these kinds of impacts are largely site- and component-specific, this would occur for each individual project effect, in conjunction with development proposals on these properties. Further, local municipalities are required to follow local, state, and federal laws regarding those human health and safety hazards that typically result in the most risk to the public. Therefore, the Proposed Project would not contribute to a cumulatively considerable impact to environmental justice.

B.2.7 VGS Alternative Analysis

Construction activities associated with the VGS Alternative resulting in human health, safety, and environmental impacts would be similar to the Proposed Project, with the exception of air quality and traffic impacts, which would be considerably more significant due to the increased length and construction activity related to installation of both the recycled water pipeline and brine line under this alternative. Regional construction emissions would be significant and unavoidable under the VGS Alternative. Although a significant and unavoidable impact has been identified for the VGS Alternative that was not identified for the Proposed Project, this impact would be regional, affecting all populations within the region, and would not disproportionately accrue to environmental justice populations. Operational impacts of the VGS Alternative would be less than significant. Thus, the environmental justice impact associated with the VGS Alternative would be less than significant and similar to the Proposed Project.

APPENDIX C

Air Quality and Greenhouse Gas Impact Study

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT

AIR QUALITY AND GREENHOUSE GAS IMPACT STUDY

Prepared for

AECOM

Prepared by

TERRY A. HAYES ASSOCIATES INC.

APRIL 2016

TABLE OF CONTENTS

Page No.

LIST OF TABLES

LIST OF FIGURES

TECHNICAL APPENDEX

1.0 SUMMARY OF FINDINGS

Terry A. Hayes Associates Inc. (TAHA) completed an air quality and greenhouse gas (GHG) impact analysis for the Los Angeles Groundwater Replenishment Project (proposed project). The analysis assessed construction and operational impacts associated with the proposed project. Impact conclusions associated with the California Environmental Quality Act (CEQA) are shown in **Table 1-1**. This analysis assessed emissions from Donald C. Tillman Water Reclamation Plant (DCTWRP) in accordance with the National Environmental Policy Act (NEPA). The CEQA significance thresholds were also used to assess potential adverse effects under NEPA. In addition, project-related emissions would not exceed the General Conformity *de minimis* limits, and a detailed conformity analysis is not required.

TABLE 1-1: SUMMARY OF IMPACT STATEMENTS

Impact Statement	Proposed Project Level of Significance	Applicable Mitigation Measures	VGS Alternative Level of Significance	Applicable Mitigation Measures
AIR QUALITY				
Would the project conflict with or obstruct implementation of the applicable air quality plan?	Less-than-Significant Impact	None	Less-than-Significant Impact	None
Would the project violate any air quality standard or contribute substantially to an existing or projected air quality violation?	Less-than-Significant Impact With Mitigation	**AQ1**	Significant and Unavoidable Impact Related to Regional Construction Emissions	**AQ1**
Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)?	Less-than-Significant Impact With Mitigation	**AQ1**	Significant and Unavoidable Impact Related to Regional Construction Emissions	**AQ1**
Would the project expose sensitive receptors to substantial pollutant concentrations?	Less-than-Significant Impact	None	Less-than-Significant Impact	None
Would the project create objectionable odors affecting a substantial number of people?	Less-than-Significant Impact	None	Less-than-Significant Impact	None
GREENHOUSE GASES				
Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment?	Less-than-Significant Impact	None	Less-than-Significant Impact	None
Would the proposed project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases?	Less-than-Significant Impact	None	Less-than-Significant Impact	None
Would the proposed project result in wasteful, inefficient, and unnecessary consumption of energy during construction and operation of the project?	Less-than-Significant Impact	None	Less-than-Significant Impact	None

SOURCE: TAHA, 2015.

Mitigation Measure

AQ1 Los Angeles Department of Water and Power (LADWP) shall ensure that diesel-powered construction equipment greater than 50 horsepower meets the United States Environmental Protection Agency Tier 3 emission standards.

2.0 INTRODUCTION

2.1 PURPOSE OF REPORT

The purpose of this report is to evaluate the potential air quality and GHG impacts associated with the proposed project. The analysis complies with CEQA and NEPA requirements.

2.2 PROJECT DESCRIPTION

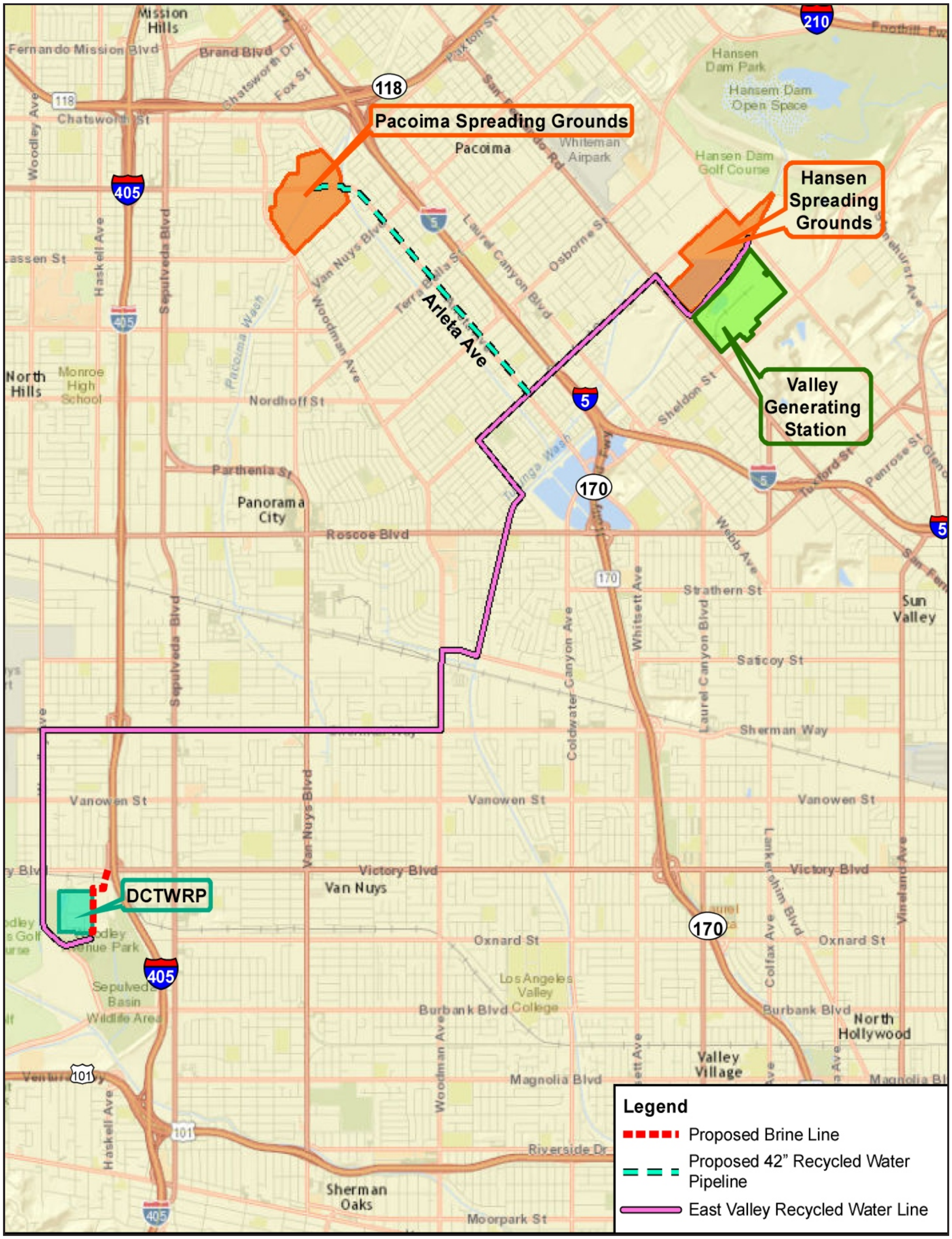
To maintain the reliability of the City of Los Angeles' potable water supply and reduce dependence on imported sources of water, the City, as represented by LADWP, the Los Angeles Sanitation (LASAN) and the Bureau of Engineering (BOE), proposes to implement the proposed project to replenish the San Fernando Basin (SFB) with up to 30,000 acre-feet per year (AFY) of purified recycled water from the DCTWRP.

The proposed project would consist of three basic elements: 1) treatment, that would entail the construction of a new advanced water purification facility (AWPF) that would provide additional levels of treatment for recycled water generated at the DCTWRP to produce purified water; 2) conveyance, that would entail the use of existing and newly constructed pipelines to transport the purified water from AWPF to existing spreading grounds; and 3) replenishment, that would entail the spreading of the purified water at the existing spreading grounds so that it would percolate into the SFB.

The proposed project includes modifications to DCTWRP, a purified water pipeline for conveyance along Arleta Avenue, from the intersection of Branford Street and Arleta Avenue to the Pacoima Spreading Grounds (PSG), and improvements to the PSG and Hansen Spreading Grounds (HSG) spreading basins. The locations of the project components are shown in **Figure 2-1**.

Construction of the proposed project would commence in the fourth quarter of 2018 and is expected to last over four years, ending in late 2022. Construction would be conducted in several phases, which may partially overlap, especially since construction would occur at several physically separated sites (i.e., DCTWRP, HSG, PSG, and within City streets). Construction activities would typically occur from 7:00 a.m. to 3:30 p.m., but construction in major City streets would generally occur before 9:00 a.m. in accordance with the City of Los Angeles Mayor's Executive Directive No. 2, which prohibits construction on selected roads between 6:00 a.m. and 9:00 a.m. and between 3:30 p.m. and 7:00 p.m. (i.e., during rush hours).

Refer to the Draft Environmental Impact Report for a detailed project description, including construction details.



Approx. Scale

0 1 2 Miles

N

Source: ESRI and AECOM 2016.

FIGURE 2-1

Project Component Locations

taha environmental planners

Los Angeles Groundwater Replenishment Project
Air Quality and Greenhouse Gas Impact Study

taha 2013-083

Los Angeles Department of Water and Power

3.0 AIR QUALITY

This section examines the degree to which the proposed project may result in significant and/or adverse changes to air quality. Short-term construction emissions occurring from activities, such as site grading and haul truck trips, and long-term effects related to the ongoing operation of the proposed project are discussed in this section. This analysis focuses on air pollution from two perspectives: daily emissions and pollutant concentrations. Emissions refer to the quantity of pollutant released into the air, measured in pounds per day. Concentrations refer to the amount of pollutant material per volumetric unit of air, measured in parts per million (ppm) or micrograms per cubic meter ($\mu g/m^3$).

3.1 POLLUTANTS & EFFECTS

State and Federal Criteria Pollutants

Air quality is defined by ambient air concentrations of seven specific pollutants identified by the United States Environmental Protection Agency (USEPA) to be of concern with respect to health and welfare of the general public. These specific pollutants, known as "criteria air pollutants," are defined as pollutants for which the federal and State governments have established ambient air quality standards, or criteria, for outdoor concentrations to protect public health. Criteria air pollutants include carbon monoxide (CO), ground-level ozone (O_3), nitrogen oxides (NO_X), sulfur oxides (SO_X), particulate matter 2.5 microns or less in diameter ($PM_{2.5}$), particulate matter ten microns or less in diameter (PM_{10}), and lead (Pb). The following descriptions of each criteria air pollutant and their health effects are based on information provided by the South Coast Air Quality Management District (SCAQMD).[1]

Carbon Monoxide (CO). CO is a colorless, odorless, relatively inert gas. It is a trace constituent in the unpolluted troposphere, and is produced by both natural processes and human activities. In remote areas far from human habitation, CO occurs in the atmosphere at an average background concentration of 0.04 ppm, primarily as a result of natural processes such as forest fires and the oxidation of methane. Global atmospheric mixing of CO from urban and industrial sources creates higher background concentrations (up to 0.20 ppm) near urban areas. The major source of CO in urban areas is incomplete combustion of carbon-containing fuels, mainly gasoline.

Individuals with a deficient blood supply to the heart are the most susceptible to the adverse effects of CO exposure. The effects observed include earlier onset of chest pain with exercise, and electrocardiograph changes indicative of worsening oxygen supply to the heart. Inhaled CO has no direct toxic effect on the lungs, but exerts its effect on tissues by interfering with oxygen transport by competing with oxygen to combine with hemoglobin present in the blood to form carboxyhemoglobin (COHb). Hence, conditions with an increased demand for oxygen supply can be adversely affected by exposure to CO. Individuals most at risk include patients with diseases involving heart and blood vessels, fetuses (unborn babies), and patients with chronic hypoxemia (oxygen deficiency) as seen in high altitudes. Reductions in birth weight and impaired neurobehavioral development have been observed in animals chronically exposed to CO, resulting in COHb levels similar to those observed in smokers. Studies have found increased risks for adverse birth outcomes with exposure to elevated CO levels. These include pre-term births and heart abnormalities.

Ozone (O_3). O_3, a colorless gas with a sharp odor, is a highly reactive form of oxygen. High O_3 concentrations exist naturally in the stratosphere. However, it is also formed in the atmosphere when reactive organic gases (ROG), which include volatile organic compounds (VOC) and nitrogen oxides (NO_X), react in the presence of ultraviolet sunlight (also known as smog). The primary sources of ROG and NO_X, the components of O_3, are automobile exhaust and industrial sources.

[1] SCAQMD, *Final Program Environmental Impact Report for the 2012 AQMP*, December 7, 2012.

Some mixing of stratospheric O_3 downward through the troposphere to the earth's surface does occur; however, the extent of O_3 transport is limited.

While O_3 is beneficial in the stratosphere because it filters out skin-cancer-causing ultraviolet radiation, it is a highly reactive oxidant. It is this reactivity which accounts for its damaging effects on materials, plants, and human health at the earth's surface. The propensity of O_3 for reacting with organic materials causes it to be damaging to living cells and cause health effects. O_3 enters the human body primarily through the respiratory tract and causes respiratory irritation and discomfort, makes breathing more difficult during exercise, and reduces the respiratory system's ability to remove inhaled particles and fight infection. Individuals exercising outdoors, children and people with preexisting lung disease, such as asthma and chronic pulmonary lung disease, are considered to be the most susceptible subgroups for O_3 effects. Short-term exposures (lasting for a few hours) to O_3 at levels typically observed in Southern California can result in breathing pattern changes, reduction of breathing capacity, increased susceptibility to infections, inflammation of the lung tissue, and some immunological changes. In recent years, a correlation between elevated ambient O_3 levels and increases in daily hospital admission rates, as well as mortality, has also been reported. An increased risk for asthma has been found in children who participate in multiple sports and live in communities with high O_3. Elevated O_3 levels are also associated with increased school absences.

O_3 exposure under exercising conditions is known to increase the severity of the above mentioned observed responses. Animal studies suggest that exposures to a combination of pollutants which include O_3 may be more toxic than exposure to O_3 alone. Although changes to lung volume and resistance observed after a single exposure diminish with repeated exposures, biochemical and cellular changes appear to persist, which can lead to subsequent lung structural changes.

Nitrogen Dioxide (NO_2). NO_2 is a reddish-brown gas with a bleach-like odor. Nitric oxide (NO) is a colorless gas, formed from nitrogen (N_2) and oxygen (O_2) under conditions of high temperature and pressure which are generally present during combustion of fuels (e.g., motor vehicles); NO reacts rapidly with the oxygen in air to form NO_2. NO_2 is responsible for the brownish tinge of polluted air. The two gases, NO and NO_2, are referred to collectively as NO_X. In the presence of sunlight, NO_2 reacts to form NO and an oxygen atom. The oxygen atom can react further to form O_3, via a complex series of chemical reactions involving hydrocarbons.

Population-based studies suggest that an increase in acute respiratory illness, including infections and respiratory symptoms in children (not infants), is associated with long-term exposures to NO_2 at levels found in homes with gas stoves, which are higher than ambient levels found in Southern California (fewer or no stoves). In healthy subjects, increase in resistance to air flow and airway contraction is observed after short-term exposure to NO_2. Larger decreases in lung functions are observed in individuals with asthma and/or chronic obstructive pulmonary disease (e.g., chronic bronchitis, emphysema) than in healthy individuals, indicating a greater susceptibility of these sub-groups. More recent studies have found associations between NO_2 exposures and cardiopulmonary mortality, decreased lung function, respiratory symptoms and emergency room asthma visits. In animals, exposure to levels of NO_2 considerably higher than ambient concentrations results in increased susceptibility to infections, possibly due to the observed changes in cells involved in maintaining immune functions. The severity of lung tissue damage associated with high levels of O_3 exposure increases when animals are exposed to a combination of O_3 and NO_2.

Sulfur Dioxide (SO_2). SO_2 is a colorless gas with a sharp odor. It reacts in air to form sulfuric acid, which contributes to acid precipitation, and sulfates, which are components of particulate matter. Main sources of SO_2 include coal and oil used in power plants and industries. Exposure of a few minutes to low levels of SO_2 can result in airway constriction in some asthmatics. All asthmatics are sensitive to the effects of SO_2. In asthmatics, increase in resistance to air flow, as well as reduction in breathing capacity leading to severe breathing difficulties, is observed after acute higher exposure to SO_2. In contrast, healthy individuals do not exhibit similar acute responses, even after exposure to higher concentrations of SO_2. Animal studies suggest that despite SO_2 being a respiratory irritant, it does not cause substantial lung injury at ambient concentrations. However, very high levels of exposure can cause lung edema (fluid accumulation), lung tissue damage, and sloughing off of cells lining the respiratory tract. Some population-based studies indicate that the mortality and morbidity effects associated with fine particles show a similar association with ambient SO_2 levels. In these studies, efforts to separate the effects of SO_2 from those of fine particles have not been successful. It is not clear whether the two pollutants act synergistically or one pollutant alone is the predominant factor.

Particulate Matter (PM). Particles small enough to be inhaled into the deepest parts of the lung of great concern to public health. Major sources of PM_{10} include crushing or grinding operations; dust stirred up by vehicles traveling on roads; wood burning stoves and fireplaces; dust from construction, landfills and agriculture; wildfires and brush/waste burning; industrial sources; windblown dust from open lands; and atmospheric chemical and photochemical reactions. $PM_{2.5}$ results from fuel combustion (e.g., motor vehicles, power generation and industrial facilities), residential fireplaces and wood stoves. In addition, $PM_{2.5}$ can be formed in the atmosphere from gases such as SO_2, NO_X, and VOC.

Respirable particles (PM_{10}) can accumulate in the respiratory system and aggravate health problems such as asthma, bronchitis and other lung diseases. Children, the elderly, exercising adults, and those suffering from asthma are especially vulnerable to adverse health effects of PM. A consistent correlation between elevated ambient fine particulate matter ($PM_{2.5}$) levels and an increase in mortality rates, respiratory infections, number and severity of asthma attacks and the number of hospital admissions has been observed in different parts of the United States and various areas around the world. Studies have reported an association between long-term exposure to air pollution dominated by $PM_{2.5}$ and increased mortality, reduction in life-span, and an increased mortality from lung cancer. Daily fluctuations in $PM_{2.5}$ concentration levels have also been related to hospital admissions for acute respiratory conditions, to school and kindergarten absences, to a decrease in respiratory function in normal children and to increased medication use in children and adults with asthma. Studies have also shown lung function growth in children is reduced with long-term exposure to PM. In addition to children, the elderly, and people with pre-existing respiratory and/or cardiovascular disease appear to be more susceptible to the effects of PM_{10} and $PM_{2.5}$.

Lead (Pb). Pb in the atmosphere is present as a mixture of a number of lead compounds. Leaded gasoline and lead smelters have been the main sources of lead emitted into the air. Due to the phasing out of leaded gasoline, there was a dramatic reduction in atmospheric Pb over the past three decades.

Exposure to low levels of Pb can adversely affect the development and function of the central nervous system, leading to learning disorders, distractibility, inability to follow simple commands, and lower intelligence quotient. Fetuses, infants, and children are more sensitive than others to the adverse effects of Pb exposure. In adults, increased Pb levels are associated with increased blood pressure. Pb poisoning can cause anemia, lethargy, seizures, and death. There is no evidence to suggest that there are direct effects of Pb on the respiratory system. Pb can be stored in the bone from early-age environmental exposure, and elevated blood Pb levels can occur due to breakdown of bone tissue during pregnancy, hyperthyroidism (increased secretion of hormones from the thyroid gland), and osteoporosis (breakdown of bone tissue). Fetuses and breast-fed babies can be exposed to higher levels of Pb because of previous environmental Pb exposure of their mothers.

State-Only Criteria Pollutants

Visibility-Reducing Particles. Deterioration of visibility is one of the most obvious manifestations of air pollution and plays a major role in the public's perception of air quality. Visibility reduction from air pollution is often due to the presence of sulfur and NO_X, as well as PM.

Sulfates (SO_X). SO_X are chemical compounds which contain the sulfate ion and are part of the mixture of solid materials which make up PM_{10}. Most of SO_X in the atmosphere are produced by oxidation of SO_2. Oxidation of sulfur dioxide yields sulfur trioxide, which reacts with water to form sulfuric acid, which contributes to acid deposition. The reaction of sulfuric acid with basic substances such as ammonia yields SO_X, a component of PM_{10} and $PM_{2.5}$.

Most of the health effects associated with $PM_{2.5}$ and SO_2 at ambient levels are also associated with SO_X. Thus, both mortality and morbidity effects have been observed with an increase in ambient SO_X concentrations. However, studies to separate the effects of SO_X from the effects of other pollutants have generally not been successful. Clinical studies of asthmatics exposed to sulfuric acid suggest that adolescent asthmatics are possibly a subgroup susceptible to acid aerosol exposure. Animal studies suggest that acidic particles such as gaseous sulfuric acid and ammonium bisulfate are more toxic than nonacidic particles like ammonium sulfate. Whether the effects are attributable to acidity or to particles, remains unresolved.

Hydrogen Sulfide (H_2S). H_2S is a colorless, flammable, poisonous compound having a characteristic rotten-egg odor. It is used as a reagent and as an intermediate in the preparation of other reduced sulfur compounds. It is also a by-product of the desulfurization processes in the oil and gas industries and rayon production, sewage treatment, and leather tanning. Geothermal power plants, petroleum production and refining, and sewer gas are specific sources of H_2S in California. H_2S exposure is a cause of sudden death in the workplace.

Vinyl Chloride. Vinyl chloride is a colorless, flammable gas at ambient temperature and pressure. It is also highly toxic and is classified as a known carcinogen by the American Conference of Governmental Industrial Hygienists and the International Agency for Research on Cancer. At room temperature, vinyl chloride is a gas with a sickly sweet odor that is easily condensed. However, it is stored at cooler temperatures as a liquid. Due to the hazardous nature of vinyl chloride to human health, there are no end products that use vinyl chloride in its monomer form. Vinyl chloride is a chemical intermediate, not a final product. It is an important industrial chemical chiefly used to produce polyvinyl chloride (PVC). The process involves vinyl chloride liquid fed to polymerization reactors where it is converted from a monomer to a polymer PVC. The final product of the polymerization process is PVC in either a flake or pellet form. Billions of pounds of PVC are sold on the global market each year. From its flake or pellet form, PVC is sold to companies that heat and mold the PVC into end products such as PVC pipe and bottles. Vinyl chloride emissions are historically associated primarily with landfills.

Air Toxics

Air toxics are generally defined as those contaminants that are known or suspected to cause serious health problems, but do not have a corresponding ambient air quality standard. Air toxics are also defined as an air pollutant that may increase a person's risk of developing cancer and/or other serious health effects; however, the emission of a toxic chemical does not automatically create a health hazard. Other factors, such as the amount of the chemical; its toxicity, and how it is released into the air, the weather, and the terrain, all influence whether the emission could be hazardous to human health.

Air toxics are emitted by a variety of industrial processes that include petroleum refining, electric utility and chrome plating operations, commercial operations, such as gasoline stations and dry cleaners, and motor vehicle exhaust and may exist as PM_{10} and $PM_{2.5}$ or as vapors (gases). Air toxics include metals, other particles, gases absorbed by particles, and certain vapors from fuels and other sources.

The emission of toxic substances into the air can be damaging to human health and to the environment. Human exposure to these pollutants at sufficient concentrations and durations can result in cancer, poisoning, and rapid onset of sickness, such as nausea or difficulty in breathing. Other less measurable effects include immunological, neurological, reproductive, developmental, and respiratory problems. Pollutants deposited onto soil or into lakes and streams affect ecological systems and eventually human health through consumption of contaminated food or water. The carcinogenic potential of air toxics is a particular public health concern because many scientists currently believe that there is no "safe" level of exposure to carcinogens. Any exposure to a carcinogen poses some risk of contracting cancer.

According to the 2006 California Almanac of Emissions and Air Quality, the majority of the estimated health risks from air toxics can be attributed to relatively few compounds, the most important being PM from the exhaust of diesel-fueled engines (diesel PM). Diesel PM differs from other air toxics in that it is a complex mixture of hundreds of substances rather than a single substance.

Diesel PM is composed of two phases, gas and particle, and both phases contribute to the health risk. The gas phase is composed of many of the urban hazardous air pollutants, such as acetaldehyde, acrolein, benzene, 1,3-butadiene, formaldehyde and polycyclic aromatic hydrocarbons. The particle phase is also composed of many different types of particles by size or composition. Fine and ultra-fine diesel PM are of the greatest health concern, and may be composed of elemental carbon with adsorbed compounds such as organic compounds, SO_x, nitrates, metals and other trace elements. Diesel PM is emitted from a broad range of diesel engines; the on-road diesel engines of trucks, buses and cars and the off-road diesel engines that include locomotives, marine vessels and heavy-duty equipment. Although diesel PM is emitted by diesel-fueled internal combustion engines, the composition of the emissions varies depending on engine type, operating conditions, fuel composition, lubricating oil, and whether an emission control system is present.

The most common exposure to diesel PM is breathing the air that contains diesel PM. The fine and ultra-fine particles are respirable (similar to $PM_{2.5}$), which means that they can avoid many of the human respiratory system defense mechanisms and enter deeply into the lung. Exposure to diesel PM comes from both on-road and off-road engine exhaust that is either directly emitted from the engines or lingering in the atmosphere.

Diesel PM causes health effects from both short-term or acute exposures, and long-term chronic exposures. The type and severity of health effects depends upon several factors including the amount of chemical exposure and the duration of exposure. Individuals also react differently to different levels of exposure. There is limited information on exposure to just diesel PM but there is enough evidence to indicate that inhalation exposure to diesel exhaust causes acute and chronic health effects.

Acute exposure to diesel exhaust may cause irritation to the eyes, nose, throat and lungs, and some neurological effects, such as lightheadedness. Acute exposure may also elicit a cough or nausea, as well as exacerbate asthma. Chronic exposure to diesel PM in experimental animal inhalation studies has shown a range of dose-dependent lung inflammation and cellular changes in the lung and immunological effects. Based upon human and laboratory studies, there is considerable evidence that diesel PM is a likely carcinogen. Human epidemiological studies have demonstrated an association between diesel PM exposure and increased lung cancer rates in occupational settings.

3.2 REGULATORY SETTING

Federal

National Ambient Air Quality Standards. The Clean Air Act (CAA) governs air quality in the United States, and is enforced by the USEPA. The USEPA is also responsible for establishing the National Ambient Air Quality Standards (NAAQS). The NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The USEPA has jurisdiction over emission sources outside State waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in States other than California. Automobiles sold in California must meet stricter emission standards established by the California Air Resource Board (CARB).

As required by the CAA, the NAAQS have been established for seven major air pollutants: CO, NO_2, O_3, $PM_{2.5}$, PM_{10}, SO_2, and Pb. Primary standards set limits to protect public health, including the health of at-risk populations such as people with pre-existing heart or lung disease (such as asthmatics), children, and older adults. Secondary standards set limits to protect public welfare, including protection against visibility impairment, damage to animals, crops, vegetation, and buildings. The CAA requires the USEPA to designate areas as attainment, nonattainment, or maintenance (previously nonattainment and currently attainment) for primary standards based on whether the NAAQS have been achieved. The primary federal standards are summarized in **Table 3-1**. The USEPA has classified the South Coast Air Basin (Basin) as a nonattainment area for O_3, $PM_{2.5}$, and Pb and a maintenance area for PM_{10}, CO, and NO_2.

Hazardous Air Pollutants. In addition to the criteria pollutants, the air toxics provisions of the CAA require the USEPA to develop and enforce regulations to protect the public from exposure to airborne contaminants that are known to be hazardous to human health. In accordance with Section 112 of the CAA, the USEPA establishes National Emission Standards for Hazardous Air Pollutants (HAP). The list of HAP or air toxics includes specific compounds that are known or suspected to cause cancer or other serious health effects.

General Conformity Rule. Section 176(c) of the CAA states that a federal agency cannot support an activity unless the agency determines that the activity will conform to the most recent USEPA-approved State Implementation Plan (SIP). Therefore, projects using federal funds or requiring federal approval must not: (1) cause or contribute to any new violation of a NAAQS; (2) increase the frequency or severity of any existing violation; or (3) delay the timely attainment of any standard, interim emission reduction, or other milestone.

On April 5, 2010, the USEPA revised the General Conformity Regulations (40 Code of Federal Regulations Parts 51 and 93.153). The revisions were intended to clarify, streamline, and improve conformity determination and review processes, and provide transition tools for making conformity determinations for new NAAQS standards.

Based on the current General Conformity rule and attainment status of the Basin, a federal action would conform to the State Implementation Plan (SIP) if its annual emissions remain below 100 tons of CO or $PM_{2.5}$ (or any of the $PM_{2.5}$ precursors: NO_X, SO_2, VOC or ammonia), 100 tons of PM_{10}, or 100 tons of NO_X or VOC. The thresholds are compared to the net change in emissions relative to the NEPA baseline. If the proposed action exceeds one or more of the *de minimis* thresholds, a more rigorous conformity determination is the next step in the conformity evaluation process.

TABLE 3-1: STATE AND NATIONAL AMBIENT AIR QUALITY STANDARDS AND ATTAINMENT STATUS FOR THE SOUTH COAST AIR BASIN

Pollutant	Averaging Period	California		Federal	
		Standards	Attainment Status	Standards	Attainment Status
Ozone (O_3)	1-hour	0.09 ppm (180 µg/m^3)	Nonattainment	--	--
	8-hour	0.070 ppm (137 µg/m^3)	N/A	0.075 ppm (147 µg/m^3)	Extreme Nonattainment
Respirable Particulate Matter (PM_{10})	24-hour	50 µg/m^3	Nonattainment	150 µg/m^3	Maintenance
	Annual Arithmetic Mean	20 µg/m^3	Nonattainment	--	--
Fine Particulate Matter ($PM_{2.5}$)	24-hour	--	--	35 µg/m^3	Moderate Nonattainment
	Annual Arithmetic Mean	12 µg/m^3	Nonattainment	12.0 µg/m^3	Moderate Nonattainment
Carbon Monoxide (CO)	8-hour	9.0 ppm (10 mg/m^3)	Attainment	9 ppm (10 mg/m^3)	Maintenance
	1-hour	20 ppm (23 mg/m^3)	Attainment	35 ppm (40 mg/m^3)	Maintenance
Nitrogen Dioxide (NO_2)	Annual Arithmetic Mean	30 ppb (57 µg/m^3)	Maintenance	53 ppb (100 µg/m^3)	Maintenance
	1-hour	0.18 ppm (338 µg/m^3)	Maintenance	100 ppb (188 µg/m^3	Maintenance
Sulfur Dioxide (SO_2)	Annual Arithmetic Mean	--	--	0.030 ppm (80 µg/m^3)	Attainment
	24-hour	0.04 ppm (105 µg/m^3)	Attainment	0.14 ppm (365 µg/m^3)	Attainment
	3-hour	--	--	75 ppb (196 µg/m^3)	--
	1-hour	0.25 ppm (655 µg/m^3)	Attainment	--	--
Lead (Pb)	30-day average	1.5 µg/m^3	Attainment	--	--
	Calendar Quarter	--	--	1.5 µg/m^3	Moderate Nonattainment
	Rolling 3-Month Average	--	--	0.15 µg/m^3	Moderate Nonattainment
Visibility Reducing Particles	8-hour	Extinction of 0.07 per kilometer	N/A	No Federal Standards	
Sulfates	24-hour	25 µg/m^3	Attainment		
Hydrogen Sulfide	1-hour	0.03 ppm (42 µg/m^3)	Unclassified		
Vinyl Chloride	24-hour	0.01 ppm (26 µg/m^3)	N/A		

N/A = not available
Ppb=Parts per billion
SOURCE: CARB, *Ambient Air Quality Standards*, July 23, 2015; CARB, State Standard Area Designations, http://www.arb.ca.gov/desig/statedesig.htm; USEPA, The Green Book Nonattainment Areas for Criteria Pollutants, http://www.epa.gov/air/oaqps/greenbk/index.html.

State

In addition to being subject to the requirements of the CAA, air quality in California is also governed by more stringent regulations under the California Clean Air Act (CCAA). In California, the CCAA is administered by CARB at the State level and by the air quality management districts and air pollution control districts at the regional and local levels. CARB, which became part of the California Environmental Protection Agency (Cal/EPA) Agency in 1991, is responsible for meeting the State requirements of the CAA, administering the CCAA, and establishing the California Ambient Air Quality Standards (CAAQS). The CCAA was amended in 1992, requires all air districts in the State to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride, and visibility-reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. CARB is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local air pollution control districts and air quality management districts, which, in turn, administer air quality activities at the regional and county levels. The State standards are summarized in **Table 3-1**.

The CCAA requires CARB to designate areas within California as either attainment or nonattainment for each criteria pollutant based on whether the CAAQS have been achieved. Under the CCAA, areas are designated as nonattainment for a pollutant if air quality data shows that a State standard for the pollutant was violated at least once during the previous three calendar years. Exceedances that are affected by highly irregular or infrequent events are not considered violations of a State standard and are not used as a basis for designating areas as nonattainment. Under the CCAA, the Los Angeles County portion of the Basin is designated as a nonattainment area for O_3, $PM_{2.5}$, and PM_{10}.[2]

The public's exposure to toxic air contaminants (TACs) is a significant public health issue in California. CARB's statewide comprehensive air toxics program was established in the early 1980s. The Toxic Air Contaminant Identification and Control Act created California's program to reduce exposure to air toxics. Under the Toxic Air Contaminant Identification and Control Act, CARB is required to use certain criteria in the prioritization for the identification and control of air toxics. In selecting substances for review, CARB must consider criteria relating to "the risk of harm to public health, amount or potential amount of emissions, manner of, and exposure to, usage of the substance in California, persistence in the atmosphere, and ambient concentrations in the community" [Health and Safety Code Section 39666(f)]. The Toxic Air Contaminant Identification and Control Act also requires CARB to use available information gathered from the Air Toxics "Hot Spots" Information and Assessment Act program to include in the prioritization of compounds.

California has established a two-step process of risk identification and risk management to address the potential health effects from air toxic substances and protect the public health of Californians. During the first step (identification), CARB and the Office of Environmental Health Hazard Assessment (OEHHA) determine if a substance should be formally identified as a TAC in California. During this process, CARB and the OEHHA staff draft a report that serves as the basis for this determination. CARB staff assesses the potential for human exposure to a substance and the OEHHA staff evaluates the health effects. After CARB and the OEHHA staff hold several comment periods and workshops, the report is then submitted to an independent, nine-member Scientific Review Panel (SRP), who reviews the report for its scientific accuracy. If the SRP approves the report, they develop specific scientific findings which are officially submitted to CARB. CARB staff then prepares a hearing notice and draft regulation to formally identify the substance as a TAC. Based on the input from the public and the information gathered from the report, the CARB Board decides whether to identify a substance as a TAC. In 1993, the California Legislature amended the Toxic Air Contaminant Identification and Control Act by requiring CARB to identify federal HAPs as State TACs.

In the second step (risk management), CARB reviews the emission sources of an identified TAC to determine if any regulatory action is necessary to reduce the risk. The analysis includes a review

[2] CARB, *Area Designation Maps*, available at http://www.arb.ca.gov/desig/adm/adm.htm, accessed July 23, 2015.

of controls already in place, the available technologies and associated costs for reducing emissions, and the associated risk.

The Air Toxics "Hot Spots" Information and Assessment Act (Health and Safety Code Section 44360) supplements the Toxic Air Contaminant Identification and Control Act by requiring a statewide air toxics inventory, notification of people exposed to a significant health risk, and facility plans to reduce these risks. The "Hot Spots" Act also requires facilities that pose a significant health risk to the community to reduce their risk through a risk management plan.

CARB identified particulate emissions from diesel-fueled engines (diesel PM) TACs in August 1998. Following the identification process, CARB was required by law to determine if there is a need for further control, which led to the risk management phase of the program.

For the risk management phase, CARB formed the Diesel Advisory Committee to assist in the development of a risk management guidance document and a risk reduction plan. With the assistance of the Diesel Advisory Committee and its subcommittees, CARB developed the Risk Reduction Plan to Reduce Particulate Matter Emissions from Diesel-Fueled Engines and Vehicles and the Risk Management Guidance for the Permitting of New Stationary Diesel-Fueled Engines. The Board approved these documents on September 28, 2000, paving the way for the next step in the regulatory process: the control measure phase.

During the control measure phase, specific Statewide regulations designed to further reduce diesel PM emissions from diesel-fueled engines and vehicles have and continue to be evaluated and developed. The goal of each regulation is to make diesel engines as clean as possible by establishing state-of-the-art technology requirements or emission standards to reduce diesel PM emissions.

Regarding odors, the H_2S standard has been established to protect public health and substantially reduce odor annoyance. The State does not regulate other odors.

Local

The 1977 Lewis Air Quality Management Act was created by the SCAQMD to coordinate air quality planning efforts throughout Southern California. This Act merged four county air pollution control agencies into one regional district to better address the issue of improving air quality in Southern California. Under the Act, renamed the Lewis-Presley Air Quality Management Act in 1988, the SCAQMD is the agency principally responsible for comprehensive air pollution control in the region. Specifically, the SCAQMD is responsible for monitoring air quality, as well as planning, implementing, and enforcing programs designed to attain and maintain State and federal ambient air quality standards in the district. Programs that were developed include air quality rules and regulations that regulate stationary sources, area sources, point sources, and certain mobile source emissions. The SCAQMD is also responsible for establishing stationary source permitting requirements and for ensuring that new, modified, or relocated stationary sources do not create net emission increases.

The SCAQMD monitors air quality within the Basin, including the project site. The SCAQMD has jurisdiction over an area of 10,743 square miles, consisting of Orange County; the non-desert portions of Los Angeles, Riverside, and San Bernardino counties; and the Riverside County portion of the Salton Sea and Mojave Desert Air Basins. The Basin is a subregion of the SCAQMD and covers an area of 6,745 square miles. The Basin is bounded by the Pacific Ocean to the west; the San Gabriel, San Bernardino and San Jacinto Mountains to the north and east; and the San Diego County line to the south (**Figure 3-1**).

LEGEND:

- Los Angeles Groundwater Replenishment Project Area
- South Coast Air Basin
- State of California

APPROX. SCALE

0 75 150 MILES

N

SOURCE: California Air Resources Board, State and Local Air Monitoring Network Plan, October 1998

taha environmental planners

taha 2013-083

Los Angeles Groundwater Replenishment Project
Air Quality and Greenhouse Gas Impact Study

Los Angeles Department of Water and Power

FIGURE 3-1

SOUTH COAST AIR BASIN

The 2012 AQMP was adopted in December 2012 and continues the progression toward clean air and compliance with State and federal requirements. It includes a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on- and off-road mobile sources and area sources. The 2012 AQMP includes demonstration of attainment of the federal 24-hour $PM_{2.5}$ in the Basin through adoption of all feasible measures while incorporating current scientific information and meteorological air quality models. It also updates the USEPA approved 8-hour O_3 Control Plan with new commitments for short-term NO_X and VOC reductions. The 2012 AQMP also addresses several State and federal planning requirements. The 2012 AQMP builds upon the approach taken in the 2007 AQMP, for the attainment of federal PM and O_3 standards, and highlights the significant amount of reductions needed and the urgent need to engage in interagency coordinated planning to identify additional strategies, especially in the area of mobile sources, to meet all federal criteria pollutant standards within the timeframes allowed under the CAA.

The SCAQMD has a long and successful history of reducing air toxics and criteria emissions in the Basin. The SCAQMD has an extensive control program, including traditional and innovative rules and policies. These policies can be viewed in the SCAQMD's *Air Toxics Control Plan for the Next Ten Years* (March 2000). To date, the most comprehensive study on air toxics in the Basin is the Multiple Air Toxics Exposure Study IV (MATES-IV), conducted by the SCAQMD. The monitoring program measured more than 30 air pollutants, including both gases and particulates. The monitoring study was accompanied by a computer modeling study in which the SCAQMD estimated the risk of cancer from breathing toxic air pollution throughout the region based on emissions and weather data. MATES-IV found that the cancer risk in the region from carcinogenic air pollutants ranges from about 320 to 480 in a million. About 90 percent of the risk is attributed to emissions associated with mobile sources, with the remainder attributed to toxics emitted from stationary sources, which include large industrial operations, such as refineries and metal processing facilities, as well as smaller businesses such as gas stations and chrome plating. The results indicate that diesel PM is the major contributor to air toxics risk, accounting on average for about 68 percent of the total risk.

The SCAQMD has established various rules to manage air quality in the Basin, including Rules 402 and 403. Rule 402 (Nuisance) states that a person should not emit air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property. Rule 403 (Fugitive Dust) controls fugitive dust through various requirements including, but not limited to, applying water in sufficient quantities to prevent the generation of visible dust plumes, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas.

SCAQMD Rule 1901 states that, "The provisions of Part 51, Subchapter C, Chapter I, Title 40, of the Code of Federal Regulations (CFR), in effect December 27, 1993, applicable to the subparts listed in this regulation were adopted by the SCAQMD and were made part of Rule 1901 - General Conformity in the Rules and Regulations of the South Coast Air Quality Management District."

3.3 EXISTING SETTING

3.3.1 Air Pollution Climatology[3]

The topography and climate of Southern California combine to make the Basin an area of high air pollution potential. During the summer months, a warm air mass frequently descends over the cool, moist marine layer produced by the interaction between the ocean's surface and the lowest layer of the atmosphere. The warm upper layer forms a cap over the cooler surface layer which inhibits the pollutants from dispersing upward. Light winds during the summer further limit ventilation. Additionally, abundant sunlight triggers photochemical reactions which produce O_3 and the majority of PM.

3.3.2 Local Climate

The mountains and hills within the Basin contribute to the variation of rainfall, temperature, and winds throughout the region. Within the project site and its vicinity, the average wind speed, as recorded at the Reseda Wind Monitoring Station, is approximately 1.3 miles per hour, with no calm winds. Wind in the vicinity of the project site predominately blows from the east-southeast.[4]

The annual average temperature in the project area is 63.4 degrees Fahrenheit (°F). The project site and vicinity experience an average winter temperature of approximately 54.8°F and an average summer temperature of approximately 72.3°F. Total precipitation on the project site and vicinity average approximately 17.7 inches annually. Precipitation occurs mostly during the winter and relatively infrequently during the summer. Precipitation averages approximately 10 inches during the winter, approximately five inches during the spring, approximately two inches during the fall, and less than one inch during the summer.[5]

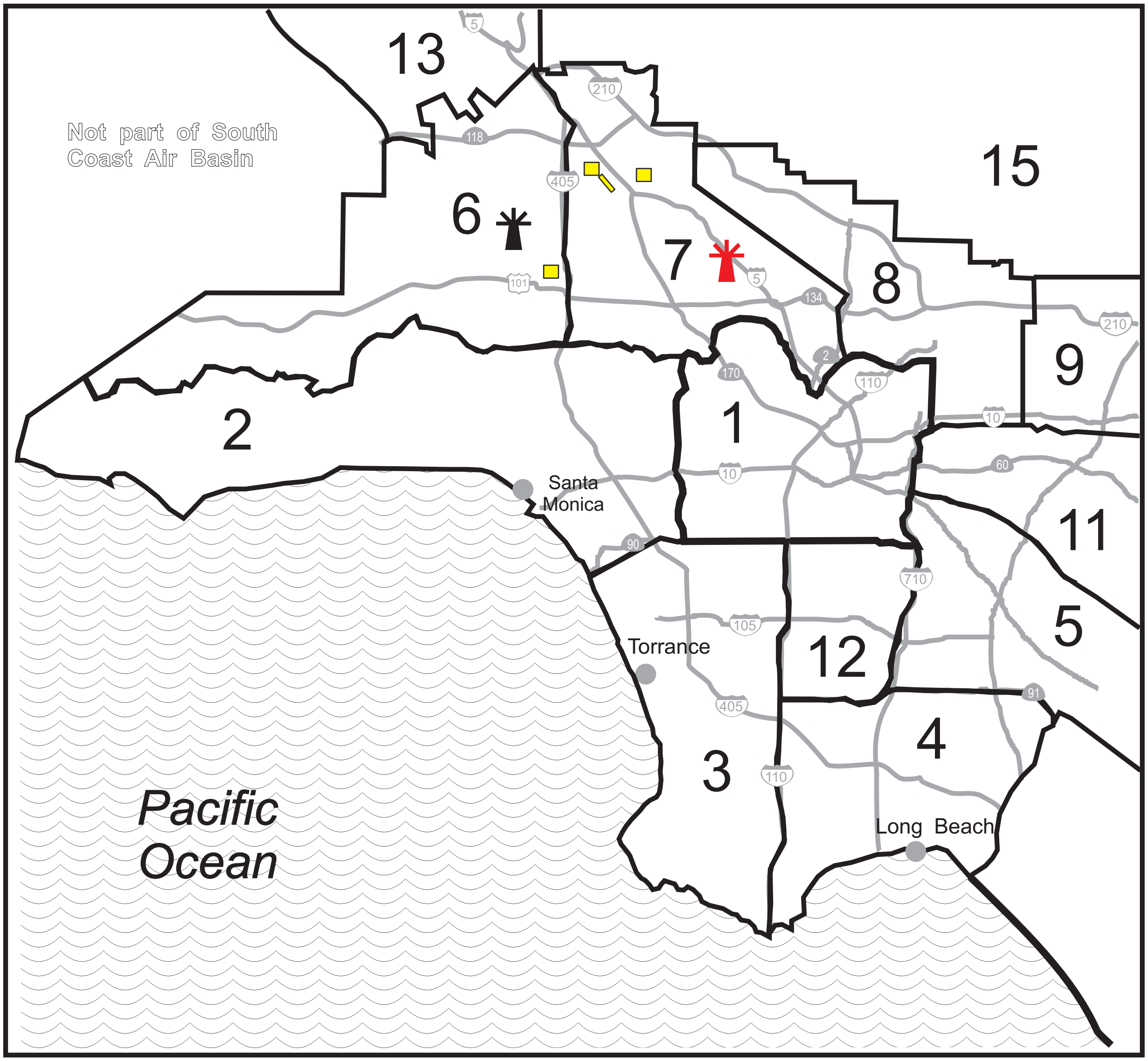
3.3.3 Air Monitoring Data

The SCAQMD monitors air quality conditions at 40 locations throughout the Basin. The project site is located in SCAQMD's West San Fernando Valley and East San Fernando Valley subregions, which are served by the Reseda Air Monitoring Station and the Burbank–West Palm Avenue Air Monitoring Station, respectively. The Reseda Air Monitoring Station is located approximately three miles northwest of the DCTWRP site at 18330 Gault Street (**Figure 3-2**). The Burbank–West Palm Avenue Air Monitoring Station is located approximately five miles to the southeast of the nearest project site at 228 West Palm Avenue. Historical data from the both stations were used to characterize existing conditions at the project sites and vicinities. Criteria pollutants monitored at the Reseda Air Monitoring Station include O_3, CO, NO_X, and $PM_{2.5}$. For PM_{10}, and NO_2, historical data were obtained from the next closest site, which is the Burbank-West Palms Avenue Air Monitoring Station. The Burbank-West Palm Avenue Air Monitoring Station was also used to measure O_3, CO, NO_X, SO_2, PM_{10} and $PM_{2.5}$ for project sites located to the east of the Interstate 405 (I-405) Freeway. Currently, the monitoring stations do not measure Pb concentrations.

Table 3-2 shows pollutant levels, the federal and State standards, and the number of exceedances recorded at the Reseda and Burbank-West Palm Avenue Air Monitoring Stations from 2012 to 2014. As **Table 3-2** indicates, criteria pollutants CO and NO_2 did not exceed the State standards from 2012 to 2014. However, the one-hour and eight-hour State standards for O_3 were exceeded from 2012 to 2014. In addition, the maximum 24-hour State standard for PM_{10} was exceeded from 2012 to 2014; the annual State standard for $PM_{2.5}$ was exceeded in 2012 and 2013 at Burbank-West Palm Avenue, but not at the Reseda Air Monitoring Station.

---

[3]SCAQMD, *Final Program Environmental Impact Report for the 2012 AQMP*, December 7, 2012.
[4]SCAQMD, *Meteorological Data*, available at http://www.aqmd.gov/home/library/air-quality-data-studies/meteorological-data/data-for-aermod, accessed August 6, 2015.
[5]Western Regional Climate Center, *Historical Climate Information,* available at http:// www.wrrc.dri.edu, accessed July 23, 2015.



LEGEND:

Project Site

Reseda Monitoring Station

Burbank - West Palms Avenue Monitoring Station

Air Monitoring Areas in Los Angeles County:

1. Central Los Angeles
2. Northwest Coastal
3. Southwest Coastal
4. South Coastal
5. Southeast Los Angeles County
6. **West San Fernando Valley**
7. **East San Fernando Valley**
8. West San Gabriel Valley
9. East San Gabriel Valley
10. Pomona/Walnut Valley (not shown)
11. South San Gabriel Valley
12. South Central Los Angeles
13. Santa Clarita Valley
15. San Gabriel Mountains

APPROX. SCALE

N

0 4.5 9 MILES

SOURCE: South Coast Air Quality Management District Air Monitoring Areas Map, 1999

Los Angeles Groundwater Replenishment Project
Air Quality and Greenhouse Gas Impact Study

taha 2013-083

Los Angeles Department of Water and Power

FIGURE 3-2

AIR QUALITY MONITORING LOCATIONS

TABLE 3-2: 2012-2014 AMBIENT AIR QUALITY DATA				
		Number of Days Above Standard		
Pollutant	**Pollutant Concentration & Standards**	**2012**	**2013**	**2014**
RESEDA AIR MONITORING STATION				
Ozone (O_3)	Maximum 1-hr Concentration (ppm) Days > 0.09 ppm (State 1-hr Standard) Maximum 8-hr Concentration (ppm) Days > 0.075 ppm (Federal 8-hr Standard) Maximum 8-hr Concentration (ppm) Days > 0.07 ppm (State 8-hr Standard)	0.129 18 0.098 23 0.099 39	0.124 7 0.092 11 0.092 21	0.116 6 0.092 11 0.093 31
Carbon Monoxide (CO)	Maximum 8-hr concentration (ppm) Days > 9.0 ppm (Federal 8-hr standard) Maximum 8-hr concentration (ppm) Days > 9.0 ppm (State 8-hr Standard)	2.70 0 2.85 0	N/A	N/A
Nitrogen Dioxide (NO_2)	Maximum 1-hr Concentration (ppm) Days > 0.10 ppm (Federal 1-hr Standard) Maximum 1-hr Concentration (ppm) Days > 0.18 ppm (State 1-hr Standard) Annual Arithmetic Means Conc. (ppm) Exceed State Standard (0.053 ppm) Exceed State Standard (0.030 ppm)	0.0709 0 0.070 0 N/A	0.0581 0 0.058 0 N/A	0.0589 0 0.058 0 N/A
Respirable Particulate Matter (PM_{10})	Maximum 24-hr concentration (µg/m^3) Days > 150 µg/m^3 (Federal 24-hr Standard) Maximum 24-hr concentration (µg/m^3) Days > 50 µg/m^3 (State 24-hr Standard) Annual Arithmetic Mean Concentration (µg/m^3) Exceeded Days > 20 µg/m^3 (State Standard)	N/A	N/A	N/A
Fine Particulate Matter ($PM_{2.5}$)	Maximum 24-hr Concentration (µg/m^3) Days > 35 µg/m^3 (Federal Standard) Annual Average Concentration (µg/m^3) Exceed State Standard (12 µg/m^3)	41.6 2 11.8 No	41.8 1 9.9 No	27.2 0 N/A
BURBANK-WEST PALM AVENUE AIR MONITORING STATION				
Ozone (O_3)	Maximum 1-hr Concentration (ppm) Days > 0.09 ppm (State 1-hr Standard) Maximum 8-hr Concentration (ppm) Days > 0.075 ppm (Federal 8-hr Standard) Maximum 8-hr Concentration (ppm) Days > 0.07 ppm (State 8-hr Standard)	0.117 8 0.088 8 0.089 17	0.110 4 0.083 6 0.083 17	0.91 0 0.079 1 0.079 2
Carbon Monoxide (CO)	Maximum 8-hr concentration (ppm) Days > 9.0 ppm (Federal 8-hr standard) Maximum 8-hr concentration (ppm) Days > 9.0 ppm (State 8-hr Standard)	2.35 0 2.35 0	N/A	N/A
Nitrogen Dioxide (NO_2)	Maximum 1-hr Concentration (ppm) Days > 0.10 ppm (Federal 1-hr Standard) Maximum 1-hr Concentration (ppm) Days > 0.18 ppm (State 1-hr Standard) Annual Arithmetic Means Conc. (ppm) Exceed State Standard (0.053 ppm) Exceed State Standard (0.030 ppm)	0.0795 0 0.079 0 N/A	0.0724 0 0.072 0 N/A	0.0732 0 0.073 0 N/A
Respirable Particulate Matter (PM_{10})	Maximum 24-hr concentration (µg/m^3) Days > 150 µg/m^3 (Federal 24-hr Standard) Maximum 24-hr concentration (µg/m^3) Days > 50 µg/m^3 (State 24-hr Standard) Annual Arithmetic Mean Concentration (µg/m^3) Exceeded Days > 20 µg/m^3 (State Standard)	55.0 0 54.0 1 25.8 Yes	53.3 0 51.0 1 28.0 Yes	68.6 0 58.0 1 N/A
Fine Particulate Matter ($PM_{2.5}$)	Maximum 24-hr Concentration (µg/m^3) Days > 35 µg/m^3 (Federal Standard) Annual Average Concentration (µg/m^3) Exceed State Standard (12 µg/m^3)	54.2 2 18.0 Yes	45.1 4 17.6 Yes	64.6 2 N/A
N/A: Data Not Available **SOURCE**: CARB, Air Quality Data Statistics, *Top 4 Summary*, http://www.arb.ca.gov/adam/topfour/topfour1.php, accessed August 6, 2015.				

3.3.4 Sensitive Receptors

Some land uses are considered more sensitive to changes in air quality than others, depending on the population groups and the activities involved. CARB has identified the following groups who are most likely to be affected by air pollution: children less than 14 years of age, the elderly over 65 years of age, athletes, and people with cardiovascular and chronic respiratory diseases. According to the SCAQMD, sensitive receptors include residences, schools, playgrounds, child care centers, athletic facilities, long-term health care facilities, rehabilitation centers, convalescent centers, and retirement homes. Sensitive receptors near the various project components include the Japanese Garden, residences, and community parks.

3.4 METHODOLOGY AND SIGNIFICANCE CRITERIA

3.4.1 Methodology

Construction

This air quality analysis is consistent with the methods described in the SCAQMD *CEQA Air Quality Handbook* (1993 edition), as well as the updates to the *CEQA Air Quality Handbook*, as provided on the SCAQMD website.

Regional and localized construction emissions were estimated using the emissions factors and rates obtained from Appendix D - the Data Tables used by CalEEMod (version 2013.2.2) for off-road construction equipment and CARB's EMFAC2014 model for on-road vehicles. CalEEMod is a Statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutants associated with both construction and operation from a variety of land use projects. The model quantifies direct emissions from construction and operation (including vehicle use), as well as indirect emissions. The complete list of proposed project components analyzed during construction and operation activities, phases, and equipment usage factors, including the assumptions used in CalEEMod, are provided in the appendix of this report. The construction analysis also includes fugitive dust emissions and architectural coating emissions for new buildings. These emissions were estimated using the methodology from CalEEMod.

Localized emissions were calculated using similar methodology to the regional emission calculations. The SCAQMD Localized Significance Threshold (LST) look-up tables were used to assess potential impacts for construction activity that would occur in one location and disturb less than five acres in one day. For construction areas with overlapping active construction areas (e.g., DCTWRP), localized construction concentrations were modeled using the USEPA American Meteorological Society/Environmental Protection Agency Regulatory Model (AERMOD) dispersion model. Concentrations were estimated for the worst-case construction scenario. The worst case construction scenario was considered to be a day during which the maximum amount of air pollutants would be emitted, factoring in the overlap between the components of the proposed project.

The LADWP provided detailed construction assumptions, including schedule, phasing, equipment, truck trips, and worker trips. The monthly assumptions for the 48-month construction period are included in the appendix.

Fugitive dust emissions from truck loading and earth moving are calculated based on guidelines provided in Appendix A of the CalEEMod User's Manual. Truck-loading fugitive dust is estimated by multiplying the following emission factor by the estimated amount of dirt loaded per day based on the daily number of daily truck trips:

$EF_D = k \times (0.0032) \times (U/5)^{1.3} / (M/2)^{1.4}$

Where:

EF: emission factor (pounds per ton)
K: particle size multiplier. The AP-42 default value for PM_{10} is 0.35 and that for $PM_{2.5}$ is 0.053
U: mean wind speed (miles per hour)
M: material moisture content (%) – default moisture content of cover (12%) was used.

The equations used to calculate per mile of grading dust for PM_{10} and $PM_{2.5}$ are presented below:

$EF_{PM10} = 0.051 \times (S)^{2.0} \times 0.6$

$EF_{PM10} = 0.04 \times (S)^{2.5} \times 0.031$

Where:

EF: emission factor (pounds per vehicle miles traveled)
S: mean vehicle speed (miles per hour). The AP-42 default value is 7.1 miles per hour.

The grading dust emissions for equipment are then calculated by multiplying the emission factors from the last step by the total vehicle miles traveled estimated based on equipment specific grading rates (acres per day), and then multiplying the result by the number of equipment0 The vehicle miles traveled was obtained using the following formula:

$VMT = N_{eq} \times A_S / W_b \times 43{,}560$ (square feet per acre) / 5,280 (feet per mile)

Where:

N_{eq}: Number of equipment
A_S: the acreage of the grading site (acre)
W_b: Blade width of the grading equipment. Default blade width of 12 feet is used.

The equipment specific grading rates are determined by SCAQMD for crawler tractors, graders, rubber tired dozers, and scrapers, and are 0.5, 0.5, 0.5, and 1.0 acres per 8 hour-day, respectively.

Operations

The proposed project would generate operational emissions associated with additional worker trips, delivery trips, and electricity use. Vehicle emissions were estimated using the EMFAC2014 model. EMFAC is the emission inventory model for motor vehicles operating on roads in California. This model reflects CARB's understanding of how vehicles travel and how much they pollute. Electricity emissions were estimated using emission rates obtained from CalEEMod.

3.4.2 CEQA Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to air quality if it would:

- Conflict with or obstruct implementation of the applicable air quality plan;
- Violate any air quality standard or contribute substantially to an existing or projected air quality violation;
- Result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors);
- Expose sensitive receptors to substantial pollutant concentrations; and/or
- Create objectionable odors affecting a substantial number of people.

Because of the SCAQMD's regulatory role in the Basin, the significance criteria and analysis methodologies in the SCAQMD's *CEQA Air Quality Guidance Handbook* are used in evaluating proposed project impacts. The SCAQMD LSTs for NO_2, CO, and PM_{10} were initially published in *Final Localized Significance Threshold Methodology* (June 2003) and revised in July 2008. The LSTs for $PM_{2.5}$ were established in the *Final–Methodology to Calculate Particulate Matter $PM_{2.5}$ and $PM_{2.5}$ Significance Thresholds* (October 2006). Updated LSTs were published on the SCAQMD website on October 21, 2009.[6] The following presents these significance criteria for both construction and operational emissions:

Construction. The proposed project would have a significant impact related to construction activity if:

- Daily emissions were to exceed the SCAQMD construction thresholds presented in **Table 3-3**;
- The proposed project would generate significant emissions of TACs; and/or
- The proposed project would create an odor nuisance.

TABLE 3-3: SCAQMD DAILY CONSTRUCTION EMISSIONS THRESHOLDS

Criteria Pollutant	Regional Emissions (Pounds Per Day)	Localized Emissions (Pounds Per Day) /a/ 25 Meter Receptor Distance 1-Acre Project Site	2-Acre Project Site	5-Acre Project Site
Volatile Organic Compounds (VOC)	75	--	--	--
Nitrogen Oxides (NO_X)	100	80	114	172
Carbon Monoxide (CO)	550	426	644	1,158
Sulfur Oxides (SO_X)	150	--	--	--
Fine Particulates ($PM_{2.5}$)	55	3	4	6
Particulates (PM_{10})	150	4	6	11

/a/ The project components are located in LST Source Receptors Areas (SRAs) 6 and 7. The lowest of the LSTs between SRAs 6 and 7 were used to identify potential impacts.
SOURCE: SCAQMD, 2015.

The localized construction emissions analysis is dependent on the size and location of the construction zone. Multiple methodologies were used to assess the proposed project based on SCAQMD Guidance. The LST look-up tables were used to assess potential impacts for project components that would disturb less than five acres per day. These significance thresholds are shown in **Table 3-3**, above. The DCTWRP site includes multiple overlapping construction

[6] SCAQMD, *2006-2008 LST,* http://www.aqmd.gov/docs/default-source/ceqa/handbook/localized-significance-thresholds/appendix-c-mass-rate-lst-look-up-tables.pdf?sfvrsn=2, October 21, 2009.

activities, and look-up table methodology was not practical. Instead, the level of significance was determined using dispersion modeling and the following standards:

- Localized concentrations of CO exceed the one-hour standard of 20 ppm or the eight-hour standard of 9.0 ppm;
- Localized concentrations of NO_2 exceed the one-hour standard of 0.18 ppm; and/or
- Localized concentrations of $PM_{2.5}$ or PM_{10} exceed 10.4 ug/m^3.

***Operations**.* The proposed project would have a significant impact related to operational activity if:

- Daily regional emissions were to exceed SCAQMD operational thresholds presented in **Table 3-4**;
- Project-related traffic causes CO concentrations to exceed the one- and eight-hour standards of 20 ppm and 9.0 ppm, respectively;
- The proposed project would generate significant emissions of TACs;
- The proposed project would not be consistent with the 2012 AQMP; and/or
- The proposed project would create an odor nuisance.

TABLE 3-4: SCAQMD DAILY REGIONAL OPERATIONAL EMISSIONS THRESHOLDS

Criteria Pollutant	Pounds Per Day
Volatile Organic Compounds (VOC)	55
Nitrogen Oxides (NO_X)	55
Carbon Monoxide (CO)	550
Sulfur Oxides (SO_X)	150
Fine Particulates ($PM_{2.5}$)	55
Particulates (PM_{10})	150

SOURCE: SCAQMD, 2015.

3.4.3 NEPA Impact Criteria

The NEPA determination of adverse effects is based on the local standards. The same methodology was used to determine the CEQA level of significance.

3.5 ENVIRONMENTAL IMPACTS

3.5-1 Would the proposed project conflict with or obstruct implementation of the applicable air quality plan? (*Less-Than-Significant Impact*)

Impact Analysis

The SCAQMD and SCAG have responsibility for preparing the AQMP, which details goals, policies, and programs for improving air quality in the Basin. The 2012 AQMP was adopted by the SCAQMD Board on December 7, 2012. It includes a comprehensive strategy aimed at controlling pollution from all sources, including stationary sources, on- and off-road mobile sources and area sources. The 2012 AQMP proposes attainment demonstration of the federal $PM_{2.5}$ standard through adoption of all feasible measures while incorporating current scientific information and meteorological air quality models. It also updates the O_3 Control Plan with new commitments for short-term NO_X and VOC reductions.

According to the SCAQMD, there are two key indicators of consistency with the AQMP: 1) whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and 2) whether the project will not exceed the assumptions in the AQMP based on the year of project buildout. The first consistency criterion refers to violations of the CAAQS. Construction emissions would be temporary and would not have a long-term impact on the region's ability to meet State and federal air quality standards. In addition, the proposed project would comply with State and local strategies designed to control air pollution, such as Rule 403 for the control of fugitive dust during construction. By meeting SCAQMD rules and regulations, project construction activities would be consistent with the goals and objectives of the AQMP to improve air quality in the Basin. Operational emissions (e.g., worker trips) would not exceed the SCAQMD significance thresholds, and would not interfere with attainment or maintenance of ambient air quality standards. Therefore, the proposed project would comply with Consistency Criterion No. 1.

The second consistency criterion requires that the proposed project not exceed the assumptions in the AQMP. A project is consistent with the AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The proposed project does not include a residential component, and, therefore, would not increase population or housing in the area. The 16 new employees generated by the proposed project would not significantly change employment projections in the City of Los Angeles. In addition, as discussed below, the proposed project would not result in significant operational emissions. The proposed project is considered to be consistent with growth assumptions included in the AQMP, and it would comply with Consistency Criterion No. 2.

Therefore, the proposed project would result in a less-than-significant impact related to consistency with the AQMP.

Mitigation Measure

Impacts would be less-than-significant and no mitigation measures are required.

3.5-2 Would the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation? (*Less-Than-Significant Impact With Mitigation*)

Impact Analysis

Construction

Regional Emissions. Construction of the proposed project has the potential to create air quality impacts through the use of heavy-duty construction equipment and through vehicle trips generated by construction workers traveling to and from the project site. Fugitive dust emissions would primarily result from site preparation (e.g., grading) activities. NO_X emissions would primarily result from the use of construction equipment and truck trips. The assessment of construction air quality impacts considers each of these potential sources. Construction emissions can vary substantially from day to day, depending on the level of activity, the specific type of operation and, for dust, the prevailing weather conditions.

It is mandatory for all construction projects in the Basin to comply with SCAQMD Rule 403 for Fugitive Dust. Rule 403 control requirements include measures to prevent the generation of visible dust plumes. Measures include, but are not limited to, applying soil binders to uncovered areas, reestablishing ground cover as quickly as possible, utilizing a wheel washing system or other control measures to remove bulk material from tires and vehicle undercarriages before vehicles exit the project site, and maintaining effective cover over exposed areas. Compliance with Rule 403 would reduce regional $PM_{2.5}$ and PM_{10} emissions associated with construction activities by approximately 61 percent.

Table 3-5 shows the unmitigated maximum daily regional emissions by year. Unmitigated maximum daily emissions would exceed the SCAQMD significance thresholds for NO_X in 2020. Therefore, without mitigation, the proposed project would result in a significant impact related to regional construction emissions.

TABLE 3-5: REGIONAL CONSTRUCTION EMISSIONS - UNMITIGATED

Construction Phase and Annual Maximum Emissions	Pounds Per Day					
	VOC	NO_X	CO	SO_X	$PM_{2.5}$	PM_{10}
2018 /a/	3	41	26	0.1	2	3
2019 /b/	4	78	35	0.2	2	6
2020 /c/	8	102	75	0.3	4	9
2021 /d/	7	78	77	0.2	4	7
2022 /e/	4	46	55	0.1	2	5
Regional Significance Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Exceed Threshold?	No	**Yes**	No	No	No	No

/a/ 2018 maximum emissions would occur during warehouse construction.
/b/ 2019 maximum emissions would when occur during construction of flow equalizer tank.
/c/ 2020 maximum emissions would when the following phases overlap: flow equalizer tank, advanced water purification facility, purified recycled water pipeline.
/d/ 2021 maximum emissions would when the following phases overlap: advanced water purification facility, brine line, and Pacoima spreading grounds.
/e/ 2022 maximum emissions would when the following phases overlap: advanced water purification facility, Balboa pump station expansion, and Pacoima spreading grounds.
SOURCE: TAHA, 2015.

Localized Emissions. An analysis has been completed to assess local exposure to construction emissions. Localized emissions include equipment exhaust and fugitive dust. Pipeline components were assessed using a one-acre project site and a 25-meter receptor distance. This is the most conservative LST threshold in the SCAQMD guidance. The LADWP indicated that PSG and HSG construction activity would require up to seven pieces of earth-moving equipment, which would disturb approximately 3.5 acres per day. There would be sensitive receptors adjacent to PSG activity, although the closest sensitive receptor to HSG would be a residence located approximately 1,175 feet to the southwest. **Table 3-6** includes maximum localized emissions associated with construction activity for the Purified Water Pipeline, PSG, and HSG. Localized emissions would not exceed the SCAQMD LSTs.

TABLE 3-6: LOCALIZED SIGNIFICANCE THRESHOLD ANALYSIS

	Pounds Per Day			
	NO_X	CO	$PM_{2.5}$	PM_{10}
Purified Water Pipeline	19	13	1	2
Localized Significance Threshold /a/	**80**	**426**	**3**	**4**
Exceed Threshold?	No	No	No	No
Pacoima Spreading Ground	28	29	1	2
Localized Significance Threshold /b/	**114**	**786**	**4**	**7**
Exceed Threshold?	No	No	No	No
Hansen Spreading Ground	24	29	1	2
Localized Significance Threshold /c/	**144**	**2,786**	**21**	**62**
Exceed Threshold?	No	No	No	No

/a/ The localized significance thresholds are based on a one-acre project site and a 25-meter receptor distance.
/b/ The localized significance thresholds are based on a 2-acre project site and a 25-meter receptor distance.
/c/ The localized significance thresholds are based on a 2-acre project site and a 200-meter receptor distance.
SOURCE: TAHA, 2015.

The LST look-up tables cannot be used for construction activity at the DCTWRP. The construction process would include overlapping activities at different locations. The look-up tables cannot be adjusted to account for overlapping emissions with multiple receptor distances. Localized concentrations were modeled using AERMOD and compared to the CAAQS. **Table 3-7** includes maximum localized concentrations associated with construction activity for the Purified Water Pipeline, PSG, and HSG. Localized concentrations for PM_{10} would exceed SCAQMD's threshold of 10.4 µg/m^3 for receptors located at Japanese Garden. Therefore, without mitigation, the proposed project would result in a significant impact related to localized construction emissions.

TABLE 3-7: LOCALIZED CONCENTRATIONS ASSOCIATED WITH DCTWRP CONSTRUCTION ACTIVITY

Pollutant	Concentration at Nearest Sensitive Receptor	Significance Threshold	Significant Impact?
JAPANESE GARDEN MAXIMUM CONCENTRATIONS			
$PM_{2.5}$ (µg/m^3)	5.74	10.4	No
PM_{10} (µg/m^3)	12.64	10.4	**Yes**
NO_2 (ppb)	19.1	180	No
CO (One-Hour) (ppm)	0.220	20	No
CO (Eight-Hour) (ppm)	0.062	9.0	No
WOODLEY PARK MAXIMUM CONCENTRATIONS			
$PM_{2.5}$ (µg/m^3)	1.83	10.4	No
PM_{10} (µg/m^3)	4.33	10.4	No
NO_2 (ppb)	5.6	180	No
CO (One-Hour) (ppm)	0.112	20	No
CO (Eight-Hour) (ppm)	0.032	9.0	No
RESIDENCES ON VICTORY BOULEVARD MAXIMUM CONCENTRATIONS			
$PM_{2.5}$ (µg/m^3)	0.27	10.4	No
PM_{10} (µg/m^3)	0.65	10.4	No
NO_2 (ppb)	1.8	180	No
CO (One-Hour) (ppm)	0.022	20	No
CO (Eight-Hour) (ppm)	0.006	9.0	No

SOURCE: TAHA, 2015.

Operations

The proposed project would generate regional emissions from worker vehicle trips and delivery trucks. Regarding mobile emissions, vehicle trips associated with 16 full-time staff and 7 chemical truck deliveries per month would generate less than one pound per day of each criteria pollutant. In addition, the proposed project would not include other sources of potentially significant emissions, such as landscape maintenance activity or natural gas consumption. Operational emissions would not exceed the SCAQMD significance thresholds. Therefore, the proposed project would result in a less-than-significant impact related to operational emissions.

Mitigation Measure

AQ1 Los Angeles Department of Water and Power (LADWP) shall ensure that diesel-powered construction equipment greater than 50 horsepower meets the United States Environmental Protection Agency Tier 3 emission standards.

Significance After Mitigation

Construction activity would result in an unmitigated regional NO_X and a localized PM_{10} impact. Mitigation Measure **AQ1** requires USEPA Tier 3 emission controls for engines rated between 50 and

750 horsepower. Tier 3 emissions controls were phased-in between 2006 and 2008, and this equipment is readily available for use. The unmitigated emissions from CalEEMod were based on a combination of Tier 1 through Tier 3 emissions standards. Tier 3 emissions standards would reduce PM, CO, VOC, and NO_X emissions.

The only identified impacts were related to NO_X and PM_{10}, and, as such, NO_X and PM_{10} are the only pollutants assessed in the mitigated analysis. Implementation of Mitigation Measure **AQ1** would reduce maximum regional NO_X emissions from 101 to 74 pounds per day, and maximum localized PM_{10} from 12.6 to 10.2 μg/m^3. Mitigated emissions would be less than the SCAQMD significance threshold of 100 pounds per day for NO_X and 10.4 μg/m^3 for PM_{10}. Therefore, with mitigation, the proposed project would result in a less-than-significant impact related to regional and localized construction emissions.

3.5-3 Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (*Less-Than-Significant Impact With Mitigation*)

Impact Analysis

Because the Basin is designated as State and/or federal nonattainment for O_3, $PM_{2.5}$, PM_{10}, NO_2, and Pb, there is an ongoing regional cumulative impact associated with these pollutants. An individual project can emit these pollutants on a regional level without significantly contributing to this cumulative impact depending on the magnitude of emissions. The SCAQMD has indicated that the project-level thresholds may be used as an indicator defining if project emissions contribute to a cumulative impact. As discussed above, unmitigated construction (emissions would exceed the regional significance threshold for NO_X and the localized significance threshold for PM_{10}. Therefore, without mitigation, the proposed project would contribute to a cumulatively considerable net increase of criteria pollutants.

Mitigation Measure

Refer to Mitigation Measure **AQ1**.

Significance After Mitigation

As described above in the discussion for Impact 3.5-2, mitigated emissions would be less than the regional significance threshold for NO_X and the localized significance threshold for PM_{10}. Therefore, with mitigation, the proposed project would not contribute to a cumulatively considerable net increase of criteria pollutants.

3.5-4 Would the project expose sensitive receptors to substantial pollutant concentrations? (*Less-Than-Significant Impact*)

Impact Analysis

Construction

The greatest potential for TAC emissions during construction would be diesel PM emissions associated with heavy equipment operations. The dose to which receptors are exposed is the primary factor used to determine health risk (i.e., potential exposure to TAC and HAP emission levels that exceed applicable standards). Dose is a function of the concentration of a substance or substances in the environment and the duration of exposure to the substance. Dose is positively correlated with time, meaning that a longer exposure period would result in a higher exposure level for the maximally exposed individual. The risks estimated for a maximally exposed individual are higher if a fixed exposure occurs over a longer period of time. Local exposure would range from weeks to months depending on the construction phase and location. For example, construction activity associated with the AWPF would occur in one general location for 30 months. However, pipeline construction activity would move relatively rapidly along the alignment, occurring in one location for a few days at a time. Construction activity would not occur with enough intensity and duration to significantly increase health risk. In addition, the proposed project would be subject to the regulations and laws relating to TACs at the regional, State, and federal level that would protect sensitive receptors from substantial concentrations. Therefore, the proposed project would not expose sensitive receptors to substantial pollutant concentrations related to construction emissions.

Pipeline installation would affect traffic whenever a mixed-flow traffic lane is closed for construction activities. Reduced speeds through construction zones would result in additional localized concentrations. Traffic congestion would lessen as some automobile travelers would reroute to parallel streets when lane closures would occur. The proposed project is not projected to substantially increase traffic congestion since road closures would be limited to off-peak periods. In addition, construction activities would be limited to short segments of public roads at one time to minimize long-term traffic disruption. Therefore, the proposed project would result in a less-than-significant impact related to localized concentrations from traffic during construction.

Operations

The SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel PM emissions (e.g., truck stops and distribution facilities) and has provided guidance for analyzing mobile source diesel emissions.[7] The proposed project components would not include a new source of significant operational TAC emissions. New truck trips would be minimal (seven chemical deliveries per month), and would not warrant a long-term exposure health risk assessment that is typically reserved for distribution facilities. Therefore, the proposed project would result in a less-than-significant impact related to operational TAC emissions.

Mitigation Measure

Impacts would be less than significant and no mitigation measures are required.

3.5-5 Would the proposed project create objectionable odors affecting a substantial number of people? (Less-Than-Significant Impact)

Impact Analysis

Construction

Potential sources that may emit odors during construction activities include equipment exhaust and architectural coatings. Odors from these sources would be localized and generally confined to the immediate area surrounding the project site. The proposed project would utilize typical construction techniques (e.g., diesel-fueled heavy-duty equipment), and the odors would be typical of most construction sites and temporary in nature. Therefore, the proposed project would result in a less-than-significant impact related to construction odors.

Operations

The Los Angeles Department of Public Works Bureau of Sanitation (LASAN) prepared a Master Plan that evaluates the current odor control program, conducts studies in strategic areas throughout the City, identifies causes of odors, and provides recommendations for improvements. The Master Plan includes assessing and controlling odors at DCTWRP. The City uses a 65 percent magnesium hydroxide slurry as a non-hazardous means to regulate odors. This control measure is currently used at the DCTWRP. The magnesium hydroxide would continue to be used at DCTWRP, and it is not anticipated that the advanced water purification process would generate

[7] SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions*, December 2002.

new odors. The conveyance and replenishment elements (Purified Water Pipeline PSG, and HSG) of the proposed project have no potential to generate odors. Therefore, the proposed project would result in a less-than-significant impact related to operational odors.

Mitigation Measure

Impacts would be less than significant, and no mitigation measures are required.

3.6 CUMULATIVE IMPACTS

Refer to Impact 3.5-3, above, for a discussion of the cumulative impacts.

3.7 PROJECT ALTERNATIVES IMPACTS

No Project Alternative

The No Project Alternative assumes that all facilities continue to operate under current conditions. Improvements identified under the proposed project would not be implemented under the No Project Alternative. There would be no air quality effects and the No Project Alternative would not result in significant impacts related to air quality.

Valley Generating Station (VGS) Alternative

Under the VGS Alternative, an AWPF would be constructed to treat recycled water produced by the DCTWRP using advanced treatment technology located in the northwest corner of LADWP's VGS property. As with the proposed project, the AWPF would treat up to 44 million gallon per day (mgd) of recycled water and generate up to 35 mgd of purified recycled water. Recycled water would be conveyed from DCTWRP to VGS using the existing 54-inch-diameter pipeline. The existing 54-inch-diameter pipeline would also continue to be used to serve irrigation and industrial customers with recycled water for nonpotable reuse. The VGS Alternative also consists of the same three components as the proposed project: treatment, conveyance, and replenishment. Refer to the Draft Environmental Impact Report for a detailed description of the VGS Alternative, including construction details.

The VGS Alternative was assessed using the same methodology and significant thresholds used for the proposed project. The potential impact areas are discussed below.

Would the proposed project conflict with or obstruct implementation of the applicable air quality plan? (*Less-Than-Significant Impact*)

There are two key indicators of consistency with the AQMP: 1) whether the project will not result in an increase in the frequency or severity of existing air quality violations or cause or contribute to new violations, or delay timely attainment of air quality standards or the interim emission reductions specified in the AQMP; and 2) whether the project will not exceed the assumptions in the AQMP based on the year of project buildout. The first consistency criterion refers to violations of the CAAQS. Construction emissions would be temporary and would not have a long-term impact on the region's ability to meet State and federal air quality standards. In addition, the VGS Alternative would comply with State and local strategies designed to control air pollution, such as Rule 403 for the control of fugitive dust during construction. By meeting SCAQMD rules and regulations, construction activities would be consistent with the goals and objectives of the AQMP to improve air quality in the Basin. Operational emissions (e.g., worker trips) would not exceed the SCAQMD significance thresholds, and would not interfere with attainment or maintenance of ambient air quality standards. Therefore, the VGS Alternative would comply with Consistency Criterion No. 1.

The second consistency criterion requires that the VGS Alternative not exceed the assumptions in the AQMP. A project is consistent with the AQMP if it is consistent with the population, housing, and employment assumptions that were used in the development of the AQMP. The VGS Alternative does not include a residential component, and therefore, would not increase population or housing in the area. The 16 new employees generated by the proposed project would not significantly change employment projections in the City of Los Angeles. In addition, as discussed below, the VGS Alternative would not result in significant operational emissions. The VGS Alternative is considered to be consistent with growth assumptions included in the AQMP, and it would comply with Consistency Criterion No. 2.

Therefore, the VGS Alternative would result in a less-than-significant impact related to consistency with the AQMP.

Would the proposed project violate any air quality standard or contribute substantially to an existing or projected air quality violation? (*Significant and Unavoidable Impact*)

Construction. Construction emissions were estimated using the same methodology as the proposed project. **Table 3-8** shows the unmitigated maximum daily regional emissions by year. Unmitigated maximum daily emissions would exceed the SCAQMD significance thresholds for NO_X in 2020 and 2021. Therefore, without mitigation, the proposed project would result in a significant impact related to regional construction emissions. Mitigation Measure **AQ1** would reduce maximum regional NO_X emissions to 159 pounds per day through the implementation of Tier III emissions standards. This would still exceed the SCAQMD significance thresholds of 100 pounds per day. Therefore, the VGS Alternative would result in a significant and unavoidable impact related to regional construction NO_X emissions.

TABLE 3-8: REGIONAL CONSTRUCTION EMISSIONS (UNMITIGATED) - VGS ALTERNATIVE

	Pounds Per Day					
Construction Phase and Annual Maximum Emissions	**VOC**	**NO_X**	**CO**	**SO_X**	**$PM_{2.5}$**	**PM_{10}**
2018 /a/	3	34	17	<1	1	2
2019 /b/	2	30	16	<1	1	2
2020 /c/	14	199	141	<1	8	16
2021 /d/	11	125	126	<1	6	10
2022 /e/	9	93	107	<1	4	8
Regional Significance Threshold	**75**	**100**	**550**	**150**	**55**	**150**
Exceed Threshold?	No	**Yes**	No	No	No	No

/a/ 2018 maximum emissions would occur during purified recycled water pipeline construction.
/b/ 2019 maximum emissions would occur during purified recycled water pipeline construction.
/c/ 2020 maximum emissions would when the following phases overlap: flow equalizer tank, advanced water purification facility, brine line, and purified recycled water pipeline construction.
/d/ 2021 maximum emissions would when the following phases overlap: flow equalizer tank, advanced water purification facility, brine line, and Pacoima spreading grounds.
/e/ 2022 maximum emissions would when the following phases overlap: advanced water purification facility, Balboa Pump Station Expansion, brine line, Pacoima spreading grounds.
SOURCE: TAHA, 2015.

An analysis was completed to assess local exposure to construction emissions. Localized emissions include equipment exhaust and fugitive dust. Pipeline and DCTWRP components were assessed using a one-acre project site and a 25-meter receptor distance. This is the most conservative LST threshold in the SCAQMD guidance. The LADWP indicated that PSG and HSG construction activity would require up to 7 pieces of earth moving equipment, which would disturb approximately 3.5 acres per day. Construction of the AWPF would require up to 4 pieces of earth moving equipment, which would disturb approximately 2.0 acres per day.

Table 3-9 includes maximum localized emissions associated with the VGS Alternative. Localized emissions would not exceed the SCAQMD LSTs, except for emissions associated with the flow equalization tank at DCTWRP. Because these emissions would exceed the PM_{10} LST, a detailed localized concentration analysis was completed using AERMOD. The 24-hour PM_{10} concentrations would be 5.26 μg/m^3 at the recreational receptors east of construction activity. This concentration would be less than the SCAQMD significance threshold of 10.4 μg/m^3. Therefore, the VGS Alternative would result in a less-than-significant impact related to localized PM_{10} concentrations.

TABLE 3-9: LOCALIZED SIGNIFICANCE THRESHOLD ANALYSIS - VGS ALTERNATIVE

	Pounds Per Day			
	NO_X	**CO**	**$PM_{2.5}$**	**PM_{10}**
Purified Water Pipeline	25	14	1	2
Localized Significance Threshold /a/	**80**	**426**	**3**	**4**
Exceed Threshold?	No	No	No	No
Pacoima Spreading Ground	28	29	1	2
Localized Significance Threshold /b/	**114**	**786**	**4**	**7**
Exceed Threshold?	No	No	No	No
Hansen Spreading Ground	24	29	1	2
Localized Significance Threshold /c/	**144**	**2,786**	**21**	**62**
Exceed Threshold?	No	No	No	No
AWPF	34	27	2	4
Localized Significance Threshold /d/	**121**	**1,594**	**21**	**34**
Exceed Threshold?	No	No	No	No
DCTWRP	26	21	2	5
Localized Significance Threshold /a/	**80**	**426**	**3**	**4**
Exceed Threshold?	No	No	No	Yes

/a/ The localized significance thresholds are based on a one-acre project site and a 25-meter receptor distance.
/b/ The localized significance thresholds are based on a 2-acre project site and a 25-meter receptor distance.
/c/ The localized significance thresholds are based on a 2-acre project site and a 200-meter receptor distance.
/d/ The localized significance thresholds are based on a 2-acre project site and a 100-meter receptor distance.
SOURCE: TAHA, 2015.

Operations. The VGS Alternative would generate regional emissions from worker vehicle trips and delivery trucks. Regarding mobile emissions, vehicle trips associated with 16 full-time staff and 7 chemical truck deliveries per month would generate less than one pound per day of each criteria pollutant. In addition, the proposed project would not include other sources of potentially significant emissions, such as landscape maintenance activity or natural gas consumption. Operational emissions would not exceed the SCAQMD regional significance thresholds. Therefore, the VGS Alternative would result in a less-than-significant impact related to operational emissions.

Would the project result in a cumulatively considerable net increase of any criteria pollutant for which the project region is nonattainment under an applicable federal or state ambient air quality standard (including releasing emissions which exceed quantitative thresholds for ozone precursors)? (*Significant and Unavoidable Impact*)

Because the Basin is designated as State and/or federal nonattainment for O_3, $PM_{2.5}$, PM_{10}, NO_2, and Pb, there is an ongoing regional cumulative impact associated with these pollutants. An individual project can emit these pollutants on a regional level without significantly contributing to this cumulative impact depending on the magnitude of emissions. The SCAQMD has indicated that the project-level thresholds may be used as an indicator defining if project emissions contribute to the regional cumulative impact. Mitigated construction emissions would result in the exceedance of SCAQMD's regional threshold for NO_X. NO_X contributes to the formation of O_3, for which the Basin is nonattainment area under the CAAQS and NAAQS. Therefore, VGS Alternative construction emissions would result in a significant and unavoidable impact related to cumulative impacts.

Would the project expose sensitive receptors to substantial pollutant concentrations? (*Less-Than-Significant Impact*)

Construction of the VGS Alternative would generate diesel PM and other TAC emissions. Local exposure would range from weeks to months depending on the construction phase and location. For example, construction activity associated with the AWPF would occur in one general location for 30 months. However, pipeline construction activity would move relatively rapidly along the alignment, occurring in one location for a few days at a time. . Construction activity would not occur with enough intensity and duration to significantly increase health risk. In addition, the proposed project would subject to the regulations and laws relating to toxic air pollutants at the regional, State, and federal level that would protect sensitive receptors from substantial concentrations. Pipeline installation would affect traffic whenever a mixed-flow traffic lane is closed for construction activities. Reduced speeds through construction zones would result in additional localized concentrations. Traffic congestion would lessen as some automobile travelers would reroute to parallel streets when lane closures would occur. The proposed project is not projected to substantially increase traffic congestion since road closures would be limited to off-peak periods. In addition, construction activities would be limited to short segments of public roads at one time to minimize long-term traffic disruption. Therefore, the proposed project would result in a less-than-significant impact related to construction TAC emissions.

The SCAQMD recommends that health risk assessments be conducted for substantial sources of diesel particulate emissions (e.g., truck stops and distribution facilities) and has provided guidance for analyzing mobile source diesel emissions.[8] The proposed project would not include a new source of significant operational TAC emissions. New truck trips would be minimal (seven chemical deliveries per month), and would not warrant a long-term exposure health risk assessment that is typically reserved for distribution facilities. Therefore, the proposed project would result in a less-than-significant impact related to operational TAC emissions.

Would the proposed project create objectionable odors affecting a substantial number of people? (*Less-Than-Significant Impact*)

The VGS Alternative would include the same sources of odors as discussed for the proposed project. Potential sources that may emit odors during construction activities include equipment exhaust and architectural coatings. Regarding operational odors, LASAN has prepared a Master Plan that evaluates the current odor control program, conducts studies in strategic areas throughout the City, identifies causes of odors, and provides recommendations for improvements. Similar to the proposed project, the VGS Alternative would result in a less-than-significant impact related to odors.

3.8 NEPA ANALYSIS

The NEPA determination of adverse air quality effects is based on the local standards. The same methodology was used to determine the CEQA level of significance. The NEPA analysis considers emissions from the all components, including components not located at DCTWRP, as the project would not be possible without each component. As discussed above, the proposed project would

[8]SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions*, December 2002.

not result in adverse effects with implementation of Mitigation Measure **AQ1**. However, under the VGS Alternative, construction emissions would result in an adverse effect related to regional NO_X emissions.

3.9 CONFORMITY STATEMENT

Section 176 (c) of the CAA (42 United States Code [USC] Section 7506(c)) requires any entity of the federal government that engages in, supports, or in any way provides financial support for, licenses or permits, or approves any activity to demonstrate that the action conforms to the applicable SIP required under Section 110 (a) of the CAA (42 USC Section 7410(a)) before the action is otherwise approved. In this context, conformity means that such federal actions must be consistent with a SIP's purpose of eliminating or reducing the severity and number of violations of the NAAQS and achieving expeditious attainment of those standards. Each federal agency must determine that any action that is proposed by the agency, and that is subject to the regulations implementing the conformity requirements, will conform to the applicable SIP. The general conformity regulations incorporate a stepwise process, beginning with an applicability analysis. According to USEPA guidance, before any approval is given for a federal action to go forward, the regulating federal agency must apply the applicability requirements found at 40 CFR Section 51.853(b) to the federal action and/or determine the regional significance of the federal action pursuant to 40 CFR Section 51.853(j) to evaluate whether, on a pollutant-by-pollutant basis, a determination of general conformity is required. The guidance states that the applicability analysis can be (but is not required to be) completed concurrently with any analysis required under NEPA. If the regulating federal agency determines that the general conformity regulations do not apply to the federal action, no further analysis or documentation is required. If the general conformity regulations do apply to the federal action, the regulating federal agency must next conduct a conformity evaluation in accord with the criteria and procedures in the implementing regulations, publish a draft determination of general conformity for public review, and then publish the final determination of general conformity.

As part of the environmental review of the federal action, a general conformity evaluation has been completed pursuant to SCAQMD Rule 1901 and 40 CFR Part 51. The general conformity regulations apply because the portion of the Basin where the project is situated is a nonattainment area for ozone and $PM_{2.5}$, and Pb, and a maintenance area for PM_{10}, NO_2 and CO. The calculated federal action emissions are compared to the general conformity *de minimis* thresholds. The federal actions for this evaluation included construction emissions for the AWPF, warehouse and maintenance facilities, flow equalization tank, ancillary facilities, and the Purified Water Pipeline. No operational emissions would be generated at the project site.

Emissions were estimated using the same methodology discussed above in the CEQA analysis. As shown in **Table 3-10**, the emissions associated with the federal action would be less than the general conformity *de minimis* thresholds. Therefore, the federal action conforms to the purpose of the approved SIP and would be consistent with all applicable requirements.

The VGS Alternative includes flow equalization tanks and improvements to the Balboa Pump Station at the DCTWRP. As shown in **Table 3-11**, emissions associated with the federal action would be less than the general conformity *de minimis* thresholds. Therefore, the federal action conforms to the purpose of the approved SIP and would be consistent with all applicable requirements.

TABLE 3-10: GENERAL CONFORMITY EMISSIONS – PROPOSED PROJECT

Pollutant	Federal Status (Attainment, Nonattainment, Maintenance, or Unclassified)	Nonattainment Rates (i.e., Moderate, Serious, Severe, or Extreme)	Thresholds of Significance for Project Air Basin (If Applicable)	Construction Emissions (Tons/Year) /c/	Operation Emissions (Tons/Year)
Ozone (O_3) /a/	Nonattainment	Extreme	NA	N/A	N/A
Carbon Monoxide (CO)	Maintenance	N/A	100	5.7	N/A
Nitrogen Oxides (NO_X)	Maintenance	N/A	10	6.9	N/A
Reactive Organic Gases (ROG)	N/A	N/A	NA	0.6	N/A
Volatile Organic Compounds (VOC)	N/A	N/A	10	0.6	N/A
Lead (Pb)	Nonattainment	Moderate	25	NA	N/A
Fine Particulates ($PM_{2.5}$) – direct emissions and precursors /b/	Nonattainment	Moderate	100	0.3	N/A
Particulates (PM_{10})	Maintenance	N/A	100	0.6	N/A
Sulfur Dioxide(SO_2)	Attainment	N/A	100	<0.1	N/A

/a/ There is no *de minis* threshold for direct emissions of ozone.
/b/ The $PM_{2.5}$ precursors in the region include SOx, NOx, VOC and ammonia.
/c/ NO_X emissions are calculated assuming Tier III construction equipment would be used.
SOURCE: USEPA, *de Minimis* Levels, http://www.epa.gov/oar/genconform/deminimis.html, accessed August 11, 2015.

TABLE 3-11: GENERAL CONFORMITY EMISSIONS – VGS ALTERNATIVE

Pollutant	Federal Status (Attainment, Nonattainment, Maintenance, or Unclassified)	Nonattainment Rates (i.e., Moderate, Serious, Severe, or Extreme)	Thresholds of Significance for Project Air Basin (If Applicable)	Construction Emissions (Tons/Year) /c/	Operation Emissions (Tons/Year)
Ozone (O_3) /a/	Nonattainment	Extreme	NA	N/A	N/A
Carbon Monoxide (CO)	Maintenance	N/A	100	8.9	N/A
Nitrogen Oxides (NO_X)	Maintenance	N/A	10	8.5	N/A
Reactive Organic Gases (ROG)	N/A	N/A	NA	0.8	N/A
Volatile Organic Compounds (VOC)	N/A	N/A	10	0.8	N/A
Lead (Pb)	Nonattainment	Moderate	25	NA	N/A
Fine Particulates ($PM_{2.5}$) – direct emissions and precursors /b/	Nonattainment	Moderate	100	0.4	N/A
Particulates (PM_{10})	Maintenance	N/A	100	0.8	N/A
Sulfur Dioxide(SO_2)	Attainment	N/A	100	<0.1	N/A

/a/ There is no *de minis* threshold for direct emissions of ozone.
/b/ The $PM_{2.5}$ precursors in the region include SOx, NOx, VOC and ammonia.
/c/ NO_X emissions are calculated assuming Tier III construction equipment would be used.
SOURCE: USEPA, *de Minimis* Levels, http://www.epa.gov/oar/genconform/deminimis.html, accessed August 11, 2015.

4.0 GREENHOUSE GASES

The purpose of this section is to discuss describe how the proposed project would affect regional GHG emissions. GHG emissions refer to airborne pollutants that are generally believed to affect global climate conditions. These pollutants have the effect of trapping heat in the atmosphere, thereby altering weather patterns and climatic conditions.

4.1 POLLUTANTS & EFFECTS

The standard definition of GHG includes six substances: carbon dioxide (CO_2); methane (CH_4); nitrous oxide (N_2O); hydrofluorocarbons (HFCs); perfluorocarbons (PFCs); and sulfur hexafluoride (SF_6).[9] Tropospheric O_3, a short-lived, not-well-mixed gas, and black carbon are also important climate pollutants. CO_2 is the most abundant GHG, and collectively CO_2, CH_4, and N_2O amount to 80 percent GHG effects.

CO_2, CH_4, and N_2O concentrations have increased in the atmosphere since pre-industrial times, and this increase is the main driver of climate change. Globally, CO_2 increased by 40 percent from 278 ppm circa 1750 to 390.5 ppm in 2011.[10] During the same time interval, CH_4 increased by 150 percent, from 722 parts per billion (ppb) to 1,803 ppb, and N_2O by 20 percent, from 271 ppb to 324.2 ppb in 2011. The increase of CO_2, CH_4, and N_2O is caused by anthropogenic emissions from the use of fossil fuel as a source of energy, fertilizer usage, and from land use and land use change—in particular, agriculture.

For each GHG, a global warming potential (GWP) has been calculated to reflect how long emissions remain in the atmosphere and how strongly energy is absorbed on a per-kilogram basis relative to CO_2. GWP is a metric that indicates the relative climate forcing of a kilogram of emissions when averaged over the period of interest (both 20-year and 100-year horizons are used for the GWPs shown in **Table 4-1**. To account for this higher potential, emissions of other GHGs are frequently expressed in the equivalent of CO_2, denoted as CO_2e. CO_2e is a measurement used to account for the fact that different GHGs have different potential to retain infrared radiation in the atmosphere and contribute to the greenhouse effect.

TABLE 4-1: GLOBAL WARMING POTENTIAL FOR SELECTED GREENHOUSE GASES

Pollutant	Lifetime (Years)	Global Warming Potential (20-Year)	Global Warming Potential (100-Year)
Carbon Dioxide	100	1	1
Nitrous Oxide	121	264	265
Nitrogen Triflouride	500	12,800	16,100
Sulfur Hexaflouride	3,200	17,500	23,500
Perflourocarbons	3,000-50,000	5,000-8,000	7,000-11,000
Black Carbon	days to weeks	270-6,200	100-1,700
Methane	12	84	28
Hydroflourocarbons	Uncertain	100-11,000	100-12,000

SOURCE: CARB, *First Update to the Climate Change Scoping Plan*, 2014.

The primary effect of rising global concentrations of atmospheric GHG is a rise in the average global temperature of approximately 0.2 degrees Celsius per decade, determined from meteorological measurements worldwide between 1990 and 2005. Climate change modeling using emission rates shows that further warming is likely to occur given the expected rise in global

[9] CARB, *First Update to the Climate Change Scoping Plan*, 2014.
[10] *Ibid*.

atmospheric GHG concentrations from innumerable sources of GHG emissions worldwide, which would induce further changes in the global climate system during the current century.[11] Adverse impacts from global climate change worldwide and in California include:

- Declining sea ice and mountain snowpack levels, thereby increasing sea levels and sea surface evaporation rates with a corresponding increase in atmospheric water vapor due to the atmosphere's ability to hold more water vapor at higher temperatures;[12]
- Rising average global sea levels primarily due to thermal expansion and the melting of glaciers, ice caps, and the Greenland and Antarctic ice sheets;[13]
- Changing weather patterns, including changes to precipitation, ocean salinity, and wind patterns, and more energetic aspects of extreme weather including droughts, heavy precipitation, heat waves, extreme cold, and the intensity of tropical cyclones;[14]
- Declining Sierra Mountains snowpack levels, which account for approximately half of the surface water storage in California, by 70 percent to as much as 90 percent over the next 100 years;[15]
- Increasing the number of days conducive to O_3 formation (e.g., clear days with intense sun light) by 25 to 85 percent (depending on the future temperature scenario) in high O_3 areas located in the Southern California area and the San Joaquin Valley by the end of the 21st Century;[16] and
- Increasing the potential for erosion of California's coastlines and seawater intrusion into the Sacramento Delta and associated levee systems due to the rise in sea level.[17]

Scientific understanding of the fundamental processes responsible for global climate change has improved over the past decade. However, there remain significant scientific uncertainties. For example, uncertainties exist in predictions of local effects of climate change, occurrence of extreme weather events, and effects of aerosols, changes in clouds, shifts in the intensity and distribution of precipitation, and changes in oceanic circulation. Due to the complexity of the climate system, the uncertainty surrounding the implications of climate change may never be completely eliminated. Because of these uncertainties, there continues to be significant debate as to the extent to which increased concentrations of GHGs have caused or will cause climate change, and with respect to the appropriate actions to limit and/or respond to climate change. In addition, it may not be possible to link specific development projects to future specific climate change impacts, though estimating project-specific impacts is possible.

4.2 REGULATORY SETTING

In response to growing scientific and political concern with global climate change, California has adopted a series of laws to reduce emissions of GHGs into the atmosphere. Applicable regulations are provided below.

Federal

***Supreme Court Ruling**.* The United States Supreme Court ruled in *Massachusetts v. Environmental Protection Agency, 127 S. Ct. 1438 (2007)*, that CO_2 and other GHGs are pollutants

---

[11] USEPA, Draft Endangerment Finding, 74 Fed. Reg. 18886, 18904, April 24, 2009.
[12] *Ibid*.
[13] Intergovernmental Panel on Climate Change, *Climate Change,* 2007.
[14] *Ibid*.
[15] Cal/EPA, Climate Action Team, *Climate Action Team Report to Governor Schwarzenegger and the Legislature*, 2006.
[16] *Ibid*.
[17] *Ibid*.

under the CAA, which the USEPA must regulate if it determines they pose an endangerment to public health or welfare. On December 7, 2009, the USEPA Administrator made two distinct findings: (1) the current and projected concentrations of the six key GHGs in the atmosphere (i.e., CO_2, CH_4, N_2O, HFCs, PFCs, and SF_6) threaten the public health and welfare of current and future generations; and (2) the combined emissions of these GHGs from motor vehicle engines contribute to GHG pollution which threatens public health and welfare.

Council on Environmental Quality Guidelines. On December 18, 2014, the Council on Environmental Quality (CEQ) released revised draft guidance that describes how federal departments and agencies should consider the effects of GHG emissions and climate change in their NEPA reviews. The revised draft guidance supersedes the draft GHG and climate change guidance released by CEQ in February 2010. This guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action. The guidance also emphasizes that agency analyses should be commensurate with projected GHG emissions and climate impacts, and should employ appropriate quantitative or qualitative analytical methods to ensure useful information is available to inform the public and the decision-making process in distinguishing between alternatives and mitigations. It recommends that agencies consider 25,000 metric tons of CO2e emissions on an annual basis as a reference point below which a quantitative analysis of GHG is not recommended unless it is easily accomplished based on available tools and data. Unlike the 2010 draft guidance, the revised draft guidance applies to all proposed federal agency actions, including land and resource management actions. It reflects CEQ's consideration of comments received on the 2010 draft guidance in addition to other federal agency and affected stakeholder input. It does not create new or additional regulatory requirements. It instructs agencies on how to address the GHG emissions from and the effects of climate change on their proposed actions within the existing NEPA regulatory framework. The CEQ provided a revised draft guidance memorandum on the ways in which federal agencies can improve their consideration of the effects of GHG emissions in NEPA documents (CEQ 2014). The guidance states that direct emissions from a proposed action of 25,000 metric tons per year of CO2e can be used as a reference point, below which a GHG analysis is not warranted unless quantification below that reference point is easily accomplished.

State

California's Energy Efficiency Standards for Residential and Nonresidential Buildings. Located in Title 24, Part 6 of the California Code of Regulations and commonly referred to as "Title 24," these energy efficiency standards were established in 1978 in response to a legislative mandate to reduce California's energy consumption. The goal of Title 24 energy standards is the reduction of energy use. The standards are updated periodically to allow consideration and possible incorporation of new energy efficiency technologies and methods.[18] On May 31, 2012, the California Energy Commission (CEC) adopted the 2013 Building and Energy Efficiency Standards. Buildings that are constructed in accordance with the 2013 Building and Energy Efficiency Standards are 25 percent (residential) to 30 percent (nonresidential) more energy efficient than the 2008 standards as a result of better windows, insulation, lighting, ventilation systems, and other features that reduce energy consumption in home and businesses.

Executive Order (EO) S-3-05*.* On June 1, 2005, EO S-3-05 set the following GHG emission reduction targets: by 2010, reduce GHG emissions to 2000 levels; by 2020, reduce GHG emissions to 1990 levels; and by 2050, reduce GHG emissions to 80 percent below 1990 levels. The EO establishes State GHG emission targets of 1990 levels by 2020 (the same as Assembly

[18]The CEC, California's Energy Efficiency Standards for Residential and Nonresidential Buildings, *Title 24, Part 6, of the California Code of Regulations*, http://www.energy.ca.gov/title24.

Bill 32) and 80 percent below 1990 levels by 2050. It calls for the Secretary of Cal/EPA to be responsible for coordination of State agencies and progress reporting.

In response to the EO, the Secretary of the Cal/EPA created the Climate Action Team (CAT). California's CAT originated as a coordinating council organized by the Secretary for Environmental Protection. It included the Secretaries of the Natural Resources Agency, the Department of Food and Agriculture, and the Chairs of the Air Resources Board, Energy Commission, and Public Utilities Commission. The original council was an informal collaboration between the agencies to develop potential mechanisms for reductions in GHG emissions in the State. The council was given formal recognition in EO S-3-05 and became the CAT.

The original mandate for the CAT was to develop proposed measures to meet the emission reduction targets set forth in the EO. The CAT has since expanded and currently has members from 18 State agencies and departments. The CAT also has ten working groups, which coordinate policies among their members. The working groups and their major areas of focus are as follows:

- *Agriculture:* Focusing on opportunities for agriculture to reduce GHG emissions through efficiency improvements and alternative energy projects, while adapting agricultural systems to climate change;
- *Biodiversity:* Designing policies to protect species and natural habitats from the effects of climate change;
- *Energy:* Reducing GHG emissions through extensive energy efficiency policies and renewable energy generation;
- *Forestry:* Coupling GHG mitigation efforts with climate change adaptation related to forest preservation and resilience, waste to energy programs and forest offset protocols;
- *Land Use and Infrastructure:* Linking land use and infrastructure planning to efforts to reduce GHG from vehicles and adaptation to changing climatic conditions;
- *Oceans and Coastal:* Evaluating the effects sea level rise and changes in coastal storm patterns on human and natural systems in California;
- *Public Health:* Evaluating the effects of GHG mitigation policies on public health and adapting public health systems to cope with changing climatic conditions;
- *Research:* Coordinating research concerning impacts of and responses to climate change in California;
- *State Government:* Evaluating and implementing strategies to reduce GHG emissions resulting from State government operations; and
- *Water:* Reducing GHG impacts associated with the State's water systems and exploring strategies to protect water distribution and flood protection infrastructure.

Assembly Bill 32 (AB 32). In September 2006, the California Global Warming Solutions Act of 2006, also known as AB 32, was signed into law. AB 32 focuses on reducing GHG emissions in California and requires CARB to adopt rules and regulations that would achieve GHG emissions equivalent to Statewide levels in 1990 by 2020. CARB initially determined that the total Statewide aggregated GHG 1990 emissions level and 2020 emissions limit was 427 million metric tons of CO_2e. The 2020 target reduction was estimated to be 174 million metric tons of CO_2e.

To achieve the goal, AB 32 mandates that CARB establish a quantified emissions cap, institute a schedule to meet the cap, implement regulations to reduce Statewide GHG emissions from stationary sources, and develop tracking, reporting, and enforcement mechanisms to ensure that reductions are achieved. Because the intent of AB 32 is to limit 2020 emissions to the equivalent of 1990, it is expected that the regulations would affect many existing sources of GHG emissions and not just new general development projects. Senate Bill (SB) 1368, a companion bill to AB 32, requires the California Public Utilities Commission and the CEC to establish GHG emission performance standards for the generation of electricity. These standards will also apply to power that is generated outside of California and imported into the State.

AB 32 charges CARB with the responsibility to monitor and regulate sources of GHG emissions in order to reduce those emissions. On June 1, 2007, CARB adopted three discrete early action measures to reduce GHG emissions. These measures involved complying with a low carbon fuel standard, reducing refrigerant loss from motor vehicle air conditioning maintenance, and increasing methane capture from landfills.[19] On October 25, 2007, CARB tripled the set of previously approved early action measures. The approved measures include improving truck efficiency (i.e., reducing aerodynamic drag), electrifying port equipment, reducing PFCs emissions from the semiconductor industry, reducing propellants in consumer products, promoting proper tire inflation in vehicles, and reducing SF_6 emissions from the non-electricity sector.

The CARB AB 32 Scoping Plan (Scoping Plan) contains the main strategies to achieve the 2020 emissions cap. The Scoping Plan was developed by CARB with input from the CAT and proposes a comprehensive set of actions designed to reduce overall carbon emissions in California, improve the environment, reduce oil dependency, diversify energy sources, and enhance public health while creating new jobs and improving the State economy. The GHG reduction strategies contained in the Scoping Plan include direct regulations, alternative compliance mechanisms, monetary and non-monetary incentives, voluntary actions, and market-based mechanisms such as a cap-and-trade system. Key approaches for reducing GHG emissions to 1990 levels by 2020 include the following:

- Expanding and strengthening existing energy efficiency programs as well as building and appliance standards;
- Achieving a Statewide renewable electricity standard of 33 percent;
- Developing a California cap-and-trade program that links with other Western Climate Initiative partner programs to create a regional market system;
- Establishing targets for transportation-related GHG emissions for regions throughout the State, and pursuing policies and incentives to achieve those targets; and
- Adopting and implementing measures to reduce transportation sector emissions.

CARB recently released the Proposed First Update to the Climate Change Scoping Plan.[20] This update identifies the next steps for California's leadership on climate change. The first update to the initial AB 32 Scoping Plan describes progress made to meet the near-term objectives of AB 32 and defines California's climate change priorities and activities for the next several years. It also frames activities and issues facing the State as it develops an integrated framework for achieving both air quality and climate goals in California beyond 2020. Specifically, the update covers a range of topics, including the following:

- An update of the latest scientific findings related to climate change and its impacts, including short-lived climate pollutants;
- A review of progress-to-date, including an update of Scoping Plan measures and other State, federal, and local efforts to reduce GHG emissions in California;
- Potential technologically feasible and cost-effective actions to further reduce GHG emissions by 2020;
- Recommendations for establishing a mid-term emissions limit that aligns with the State's long-term goal of an emissions limit 80 percent below 1990 levels by 2050; and
- Sector-specific discussions covering issues, technologies, needs, and ongoing State activities to significantly reduce emissions throughout California's economy through 2050.

[19]CARB, *Proposed Early Action Measures to Mitigate Climate Change in California*, April 20, 2007.
[20]CARB, *First Update to the Climate Change Scoping Plan*, 2014.

As discussed above, in December 2007, CARB approved a total statewide GHG 1990 emissions level and 2020 emissions limit of 427 million metric tons of CO_2e. As part of the update, CARB is proposing to revise the 2020 statewide limit to 431 million metric tons of CO_2e, an approximately one percent increase from the original estimate. The 2020 business-as-usual (BAU) forecast in the update is 509 million metric tons of CO_2e. The State would need to reduce those emissions by 15 percent to meet the 431 million metric tons of CO_2e 2020 limit.

Senate Bill (SB) 375. SB 375, adopted in September 30, 2008, provides a means for achieving AB 32 goals through the reduction in emissions by cars and light trucks. SB 375 requires Regional Transportation Plans (RTP)s prepared by metropolitan planning organizations (MPOs) to include SCS. In adopting SB 375, the Legislature found that improved coordination between land use planning and transportation planning is needed in order to achieve the GHG emissions reduction target of AB 32. Further, the staff analysis for the bill prepared for the Senate Transportation and Housing Committee's August 29, 2008 hearing on SB 375 stated that the bill would help implement AB 32 by aligning planning for housing, land use, transportation and GHG emissions for the 17 MPOs in the State.

Senate Bill (SB) 743. SB 743, adopted September 27, 2013, encourages land use and transportation planning decisions and investments that reduce vehicle miles traveled that contribute to GHG emissions, as required by AB 32. Key provisions of SB 743 include reforming aesthetics and parking CEQA analyses for urban infill projects and eliminating the measurement of auto delay, including level of service (LOS), as a metric that can be used for measuring traffic impacts in transit priority areas. SB 743 requires the State Office of Planning and Research (OPR) to develop revisions to the CEQA Guidelines establishing criteria for determining the significance of transportation impacts of projects within transit priority areas that promote the reduction of GHG emissions, the development of multimodal transportation networks, and a diversity of land uses. It also allows OPR to develop alternative metrics outside of transit priority areas.

California Green Building Code. The California Green Building Code, referred to as CalGreen, is the first Statewide green building code. It was developed to provide a consistent, approach for green building within California. CalGreen lays out minimum requirements for newly constructed buildings in California, which will reduce greenhouse gas emissions through improved efficiency and process improvements. It requires residential and non-residential builders to install plumbing that cuts indoor water use by as much as 20 percent, to divert 50 percent of construction waste from landfills to recycling, and to use low-pollutant paints, carpets, and floors.

CEQA Guidelines Amendments. SB 97 required the Governor's OPR to develop CEQA Guidelines "for the mitigation of greenhouse gas emissions or the effects of greenhouse gas emissions." The CEQA Guidelines amendments provide guidance to public agencies regarding the analysis and mitigation of the effects of GHG emissions in CEQA documents. Noteworthy revisions to the CEQA Guidelines include the following:

- Lead agencies should quantify all relevant GHG emissions and consider the full range of project features that may increase or decrease GHG emissions as compared to the existing setting;
- Consistency with the CARB Scoping Plan is not a sufficient basis to determine that a project's GHG emissions would not be cumulatively considerable;
- A lead agency may appropriately look to thresholds developed by other public agencies, including the CARB's recommended CEQA thresholds;
- To qualify as mitigation, specific measures from an existing plan must be identified and incorporated into the project. General compliance with a plan, by itself, is not mitigation;
- The effects of GHG emissions are cumulative and should be analyzed in the context of CEQA's requirements for cumulative impact analysis; and

- Given that impacts resulting from GHG emissions are cumulative, significant advantages may result from analyzing such impacts on a programmatic level. If analyzed properly, later projects may tier, incorporate by reference, or otherwise rely on the programmatic analysis.

Regional

Southern California Association of Governments (SCAG) 2012-2035 Regional Transportation Plan/ Sustainable Communities Strategy (RTP/SCS). While Southern California is a leader in reducing emissions, and ambient levels of air pollutants are improving, the SCAG region continues to have the worst air quality in the nation. SCAG completed the RTP/SCS, which includes a strong commitment to reduce emissions from transportation sources to comply with SB 375. Goals and policies included in the RTP/SCS to reduce air pollution consist of adding density in proximity to transit stations, mixed-use development and encouraging active transportation (i.e., non-motorized transportation such as bicycling). SCAG promotes the following policies and actions related to active transportation to help the region confront congestion and mobility issues and consequently improve air quality:

- Implement Transportation Demand Management (TDM) strategies including integrating bicycling through folding bikes on buses programs, triple racks on buses, and dedicated racks on light and heavy rail vehicles;
- Encourage and support local jurisdictions to develop "Active Transportation Plans" for their jurisdiction, if they do not already have one;
- Expand the Compass Blueprint program to support member cities in the development of bicycle plans;
- Expand the Toolbox Tuesday's program to encourage local jurisdictions to direct enforcement agencies to focus on bicycling and walking safety to reduce multimodal conflicts;
- Support local advocacy groups and bicycle-related businesses to provide bicycle-safety curricula to the general public;
- Encourage children, including those with disabilities, to walk and bicycle to school;
- Encourage local jurisdictions to adopt and implement the proposed SCAG Regional Bikeway Network; and
- Support local jurisdictions to connect all of the cities within the SCAG region via bicycle facilities.

California Air Pollution Control Officers Association (CAPCOA). CAPCOA is a non-profit association of the air pollution control officers from all 35 local air quality agencies throughout California. CAPCOA promotes unity and efficiency in State air quality issues, and strives to encourage consistency in methods and practices of air pollution control. In 2008, CAPCOA published the CEQA and Climate Change White Paper.[21] This paper is intended to serve as a resource for reviewing GHG emissions from projects under CEQA. It considers the application of thresholds and offers approaches toward determining whether GHG emissions are significant. The paper also evaluates tools and methodologies for estimating impacts, and summarizes mitigation measures.

South Coast Air Quality Management District (SCAQMD). The SCAQMD adopted a "Policy on Global Warming and Stratospheric Ozone Depletion" on April 6, 1990. The policy commits the SCAQMD to consider global impacts in rulemaking and in drafting revisions to the AQMP. In March 1992, the SCAQMD Governing Board reaffirmed this policy and adopted amendments to the policy.

SCAQMD released draft guidance regarding interim CEQA GHG significance thresholds. In its October 2008 document, the SCAQMD proposed the use of a percent emission reduction target

[21]CAPCOA, *CEQA and Climate Change White Paper*, January 2008.

(e.g., 30 percent) to determine significance for commercial/residential projects that emit greater than 3,000 metric tons per year. On December 5, 2008, the SCAQMD Governing Board adopted the staff proposal for an interim GHG significance threshold of 10,000 metric tons per year of CO_2e for stationary source/industrial projects where the SCAQMD is the lead agency. However, SCAQMD has yet to adopt a GHG significance threshold for land use development projects (e.g., residential/commercial projects) and has formed a GHG Significance Threshold Working Group to further evaluate potential GHG significance thresholds.

SCAQMD has convened a GHG CEQA Significance Threshold Working Group to provide guidance to local lead agencies on determining significance for GHG emissions in their CEQA documents. Members of the working group include government agencies implementing CEQA and representatives from various stakeholder groups that will provide input to the SCAQMD staff on developing CEQA GHG Significance Thresholds. The working group is currently discussing multiple methodologies for determining project significance. These methodologies include categorical exemptions, consistency with regional GHG budgets in approved plans, a numerical threshold, performance standards, and emissions offsets.

Local

Los Angeles Department of Water and Power (LADWP). The Integrated Resource Plan (IRP) is the LADWP plan for providing reliable, affordable, and environmentally responsible electric service to customers. The IRP takes into account future energy demand, regulatory requirements, advances in renewable energy and other technologies, conservation and energy efficiency programs, and other factors. While LADWP has multiple and concurrent GHG emissions reduction strategies, the primary focus is on early replacement of coal-fired generation. Because coal-fired energy production emits relatively high levels of CO_2, switching to energy efficiency, renewables and other cleaner fuels will significantly lower the overall emission levels. Early coal replacement facilitates LADWP's compliance with the AB 32 Cap and Trade program.

During calendar year 2012, 33 percent of the energy delivered to LADWP customers was generated from two coal-fired generating stations: the Intermountain Power Project (IPP), located in Utah, and the Navajo Generating Station (NGS), located in Arizona. The NGS's operating agreement and land lease expires in December 2019 and IPP's Power Purchase Agreement (PPA) contract is in effect until June 2027. Although these stations provide dependable, low cost base load generation to Los Angeles, they emit about twice as much CO_2 as energy generated from natural gas. Accordingly, the 2013 IRP focuses on early coal replacement options as a means to lower LADWP's CO_2 emission levels.

LADWP's CO_2 emissions reduction strategy must comply with the following State regulations:

- SB 1368, the California Greenhouse Gas Emissions Performance Standard Act, enacted in 2006, prohibits LADWP and other California utilities from entering into long-term financial commitments for base load generation, unless it complies with the CO_2 emissions performance standard. The CO_2 emissions level must be equal, or below the emissions performance standard of 1,100 pounds per megawatt-hour that can be achieved by gas-fired combined cycle units. This standard also applies to existing power plants for any long-term investments or contractual extensions, effectively prohibiting LADWP from continued acceptance of coal-fired generation beyond the current contractual expiration dates for NGS (2019) and IPP (2027).

- AB 32, the California Global Warming Solutions Act of 2006, calls for reducing the State's CO_2 emissions to 1990 levels by 2020. The regulations for implementing a GHG emissions Cap and Trade program under AB 32 were finalized and adopted on October 20, 2011 by CARB. Enforcement and compliance with the trading program began January 1, 2013. The LADWP has been granted an administrative allocation of emission allowances that reflects its resource projections through 2020.

City of Los Angeles. On May 15, 2007, the City released the "GREEN LA – An Action Plan to Lead the Nation in Fighting Global Warming" (GREEN LA Plan) that has an overall goal of reducing the City of Los Angeles' GHG emissions by 35 percent below 1990 levels by 2030. This goal exceeds the targets set by both California and the Kyoto Protocol, and is the greatest reduction target of any large United States City. The cornerstone of the GREEN LA Plan is increasing the City's use of renewable energy to 35 percent by 2020. Key strategies listed in the GREEN LA Plan related to energy and water includes the following:

Green the Power from the Largest Municipal Utility in the United States
- Meet the goal to increase renewable energy from solar, wind, biomass, and geothermal sources to 20 percent by 2010;
- Increase use of renewable energy to 35 percent by 2020;
- Let contracts for power imports from coal-fired power plants expire;
- Increase the efficiency of natural gas-fired power plants; and
- Increase biogas co-firing of natural gas-fired power plants.

Make Los Angeles a Worldwide Leader in Green Buildings
- By July 2007, present a comprehensive set of green building policies to guide and support private sector development;
- Transform Los Angeles Into the Model of an Energy Efficient City; and
- Reduce energy use by all city departments to the maximum extent feasible.

Complete energy efficiency retrofits of all city-owned buildings to meet a 20 percent or more reduction in energy consumption
- Install the equivalent of 50 "cool roofs" per year by 2010 on new or remodeled city buildings;
- Install solar heating for all city-owned swimming pools;
- Improve energy efficiency at drinking water treatment and distribution facilities; and
- Maximize energy efficiency of wastewater treatment equipment.

Help Angelenos Be "Energy Misers"
- Distribute two compact fluorescent light bulbs to each of the 1.4 million households in the City;
- Increase the level and types of customer rebates for energy efficient appliances, windows, lighting, and heating and cooling systems;
- Increase the distribution of energy efficient refrigerators to qualified customers; and
- Create a fund to "acquire" energy savings as a resource from LADWP customers.

4.3 EXISTING SETTING

Over the last decade, the Statewide GHG emissions decreased from 468 million metric tons (MMT) CO_2e in 2000 to 456 MMT CO_2e in 2011—a decrease of 2.7 percent.[22] The emissions in 2011 are the lowest of the 12-year period, while 2004 had the highest emissions, with 495 MMT CO_2e. During the same period, California's population grew by 10.5 percent. As a result, California's per capita GHG emissions have decreased by 11.9 percent between 2000 and 2011. The recent recession had a major impact on GHG emissions between 2008 and 2009, when emissions decreased by almost 6 percent.

[22] CARB, *First Update to the Climate Change Scoping Plan*, 2014.

4.4 METHODOLOGY AND SIGNIFICANCE CRITERIA

4.4.1 Methodology

GHG emissions were estimated using a spreadsheet methodology and using the emissions factors and emission rates obtained from Appendix A - the Data Tables used by CalEEMod for off-road construction equipment (version 2013.2.2) and EMFAC2014 emission factors for worker and truck trips. CalEEMod is a Statewide land use emissions computer model designed to provide a uniform platform for government agencies, land use planners, and environmental professionals to quantify potential criteria pollutant and GHG emissions associated with both construction and operational from a variety of land use projects. The proposed project would generate operational emissions from increased electricity use, worker vehicle trips, and delivery trucks. Regarding mobile emissions, vehicle trips associated with 16 full-time staff and 7 chemical truck deliveries per month would generate negligible GHG emissions (i.e., typically less than one ton per year). Emissions from worker trips and deliveries to the sites would be negligible compared to the total GHG emissions generated by water treatment and transfer.

Regarding energy, water conveyance in California requires substantial amounts of energy. The CEC estimates that approximately 9,727 kWh/MG are consumed for water that is conveyed to Southern California.[23] Based on the importation of 30,000 AFY, or 9,777 MG/year (which would be offset by the proposed project), about 95.1 million kWh would be consumed annually.

Consistent with other estimates of energy intensity for treatment of recycled water for use in groundwater recharge, it is estimated that the proposed project would require 3,437 kWh/MG.[24] It is further estimated that it would require 1,960 kWh/MG to pump the purified water to HSG and PSG. Therefore, the total energy intensity for treatment and conveyance of water under the proposed project would be 5,397 kWh/MG. At 30,000 AFY, or 9,777 MG/year, the project would consume about 52.8 million kWh annually.

4.4.2 CEQA Significance Criteria

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to GHG if it would:

- Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
- Conflict with an applicable plan, policy or regulation adopted for the purpose of reducing the emissions of GHGs.

Appendix F of the State CEQA Guidelines provides guidance for evaluation of environmental impacts related to energy. Impacts on energy conservation are considered significant if implementation of the project would:

- Result in wasteful, inefficient, and unnecessary consumption of energy during construction and operation of the project.

The CEQA Guidelines require lead agencies to adopt GHG thresholds of significance. When adopting these thresholds, the amended Guideline allows lead agencies to consider thresholds of significance adopted or recommended by other public agencies, or recommended by experts, provided that the thresholds are supported by substantial evidence, and/or to develop their own significance threshold.

---

[23] CEC, *Refining Estimates Of Water-Related Energy Use In California* (CEC-500-2006-118), 2006.
[24] WateReuse Research Foundation, *Implications of Future Water Supply Sources for Energy Demands*, 2012.

The City of Los Angeles and LADWP have not adopted GHG thresholds of significance for CEQA. The SCAQMD Governing Board has adopted the staff proposal for GHG significance threshold of 10,000 metric tons per year of CO_2e for stationary source/industrial projects where the SCAQMD is the lead agency. Although the SCAQMD is not the lead agency for the proposed project, this threshold is applicable due to the industrial nature of the proposed project. In addition, this threshold is consistent with the 10,000-metric-ton standard used by the Market Advisory Committee for inclusion in a GHG Cap and Trade System in California.

4.4.3 NEPA Impact Criteria

The CEQ guidance explains that agencies should consider both the potential effects of a proposed action on climate change, as indicated by its estimated GHG emissions, and the implications of climate change for the environmental effects of a proposed action. It recommends that agencies consider 25,000 metric tons of CO_2e emissions on an annual basis as a reference point below which a quantitative analysis of GHG is not recommended unless it is easily accomplished based on available tools and data.

4.5 ENVIRONMENTAL IMPACTS

4.5.1 Would the proposed project generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment? (***Less-Than-Significant Impact***)

Impact Analysis

Operation of the proposed AWPF plant would generate GHG emissions from energy use during operations and from construction activity. It is anticipated that other sources, including vehicle trips associated with 16 staff members and 7 truck deliveries per month during operations, would result in negligible emissions in metric tons. The primary source of GHG emissions would be related to energy consumption for the treatment processes, such as the Reverse Osmosis membrane system. The estimated electricity consumption of 52.8 million kWh per year is based on 30,000 AFY of advanced treated water generated at the proposed AWPF plant and conveyed to HSG and PSG. As shown in **Table 4-2**, the proposed project would result in 17,596 metric tons per year of CO_2e emissions. These emissions include construction emissions (7,970 total metric tons) amortized over a 30-year span per SCAQMD methodology. The importation of water, which would be offset by the proposed project, generates 31.233 metric tons per year of CO_2e emissions. The net reduction in GHG emissions due to the proposed project would be 13,637 metric tons per year. The estimated net GHG emissions would not exceed the 10,000 metric tons of CO_2e per year quantitative significance threshold. Therefore, the proposed project would result in a less-than-significant impact related to GHG emissions.

TABLE 4-2: PROPOSED PROJECT GREENHOUSE GAS EMISSIONS

Scenario and Source	Carbon Dioxide Equivalent (Metric Tons Per Year)
EXISTING CONDITIONS	
Energy - Conveyance of Imported Water	**31,233**
PROPOSED PROJECT	
Energy - Treatment of Recycled Water	11,036
Energy - Pumping	6,294
Construction Amortized	266
Total Emissions	**17,596**
Net Emissions	**(13,637)**
Significance Threshold	10,000
Exceed Threshold?	**No**

SOURCE: TAHA, 2015.

Mitigation Measure

Impacts would be less than significant, and no mitigation measures are required.

4.5.2 Would the proposed project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs? (*Less-Than-Significant Impact*)

Impact Analysis

AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and establishes a cap on Statewide GHG emissions. CARB's First Update to the Climate Change Scoping Plan: Building on the Framework includes measures to meet California's goal of reducing emissions to 1990 levels by 2020 and also reiterates the State's role in the long-term goal established in EO S-3-05, which is to reduce GHG emissions to 80 percent below 1990 levels by 2050.

According to CARB, the 2020 goal was established as an achievable, mid-term target, and the 2050 GHG emissions reduction goal represents the level scientists believe is necessary to stabilize the climate.[25] However, the Plan does not recommend additional measures for meeting specific GHG emissions limits beyond 2020. In general, the measures described in the plan are designed to meet emissions goals in 2020 and do not become increasingly stringent until after 2020.

Measures included in the Scoping Plan would indirectly address GHG emissions levels associated with construction activities, including the phasing-in of cleaner technology for diesel engine fleets (including construction equipment) and the development of a low-carbon fuel standard. Policies formulated under the mandate of AB 32 that apply to construction-related activity, either directly or indirectly, are assumed to be implemented Statewide and would affect the proposed project should those policies be implemented before construction begins. The proposed project would comply with any mandate or standards set forth by the Scoping Plan update.

The Scoping Plan did not directly create any regulatory requirements for the proposed project. However, regulatory changes would affect GHG emission rates from vehicles used during project operations and emission rates associated with electricity demand. Therefore, it is assumed that project construction and operation would not conflict with the Scoping Plan update.

The purpose of the proposed project is to offset the current use of imported water with recycled water for groundwater replenishment. Since water delivery is energy-intensive, implementing programs that support water conservation can reduce GHG emissions. Therefore, the State has adopted goals for development of alternative water sources, such as recycled water and stormwater.[26] The State Water Resources Control Board adopted recycled water goals to increase usage above the 2002 usage levels by at least one million AFY by 2020 and by at least two million AFY by 2030.[27] According to CARB, water conservation is also critical to making the State's water supply more reliable and drought resistant. The proposed project would provide a sustainable and reliable source of recycled water for groundwater basin replenishment, and, therefore, would be consistent with the goals of the Scoping Plan update.

In addition, the proposed project would be consistent with the goals and policies of the all relevant GHG reduction plans, policies, and regulations (e.g., GREEN LA Plan) to conserve water. The proposed project would not conflict with the Scoping Plan update or any other plans, policies, or

[25] CARB, *First Update to the Climate Change Scoping Plan*, 2014.
[26] *Ibid*.
[27] *Ibid*.

regulations for the purpose of reducing GHG emissions. Therefore, the proposed project would result in a less-than-significant impact related to GHG reduction plans.

Mitigation Measure

Impacts would be less than significant and no mitigation measures are required.

4.5.3 Would the proposed project result in wasteful, inefficient, and unnecessary consumption of energy during construction and operation of the project? (*Less-Than-Significant Impact*)

Impact Analysis

Construction. During construction, the proposed project would result in energy consumption through the combustion of fossil fuels in construction vehicles, worker commute vehicles, and construction equipment, and the use of electricity for temporary buildings, lighting, and other sources. Fossil fuels used for construction vehicles and other energy-consuming equipment would be used during site preparation, trenching, building construction, and equipment installation.

California regulations limit idling from both on-road and off-road diesel-powered equipment and are enforced by CARB. Limitations on idling of vehicles and equipment and requirements that equipment be properly maintained would result in fuel savings. Also, given the high cost of fuel, contractors and owners have a strong financial incentive to avoid unnecessary energy consumption during operation of off-road vehicles.

Despite the increase in energy demand during construction, adherence with local, State, and federal regulations, which limit engine idling times and require recycling of construction debris, would reduce short-term energy demand. Therefore, the construction of the proposed project would not result in wasteful, inefficient, and unnecessary consumption of energy and impacts would be less than significant.

Operations. Operation of the proposed AWPF would consume energy for multiple purposes including, but not limited to, building heating and cooling, refrigeration, lighting, electronics, and commercial equipment. Operational energy would also be consumed during vehicle trips associated with the operators and maintenance staff. However, the primary source of energy consumption would be related to the treatment processes for the proposed AWPF and pumping of the purified water to HSG and PSG, which would require approximately 52.8 million kWh/year.

As previously discussed, water conveyance and treatment in California requires substantial amounts of energy. The CEC assumes that approximately 9,727 kWh/MG are consumed for water that is supplied and conveyed to Southern California.[28] Treatment of water requires an average of 111 kWh/MG.[29] Therefore, the total energy intensity for supply and conveyance and treatment of water would be 9,838 kWh/MG.

Recycled water generally requires no additional energy for supply and conveyance. The energy intensity of recycled water treatment depends upon the level of treatment required prior to discharge and the additional treatment required to bring it to the appropriate standard for the intended customer.

The only additional energy requirement for recycled water is typically pumping for distribution from the wastewater treatment plant to retail users. The energy consumption estimates for distribution

[28]CEC, *Refining Estimates Of Water-Related Energy Use In California* (CEC-500-2006-118), 2006.
[29]*Ibid*.

of recycled water range from 1,200 to 3,000 kWh/MG.[30] It is conservatively assumed that the distribution of recycled water would be comparable to potable water at 3,000 kWh/MG.

The proposed AWPF would generate approximately 30,000 AFY, or 9,777 MG/year. With an estimated energy consumption of 52.8 million kWh, the proposed project would have an energy intensity of 3,437 kWh/MG. This is consistent with other estimates of energy intensity for treatment of recycled water for use in groundwater recharge.[31]

The use of recycled water to irrigate or recharge aquifers effectively provides potable water savings equal to the potable water need displaced.[32] Therefore, when compared to the supply and treatment of potable water at 9,838 kWh/MG, the proposed AWPF plant would generate energy savings of 6,401 kWh/MG. This results in a total energy savings of approximately 62.6 million kWh per year.

As discussed above, the production and use of recycled water is more energy efficient than imported potable water. Based on the improvements to energy efficiency and energy savings associated with the proposed project, energy consumption associated with operation of the project would not be expected to be wasteful or inefficient. Therefore, the proposed project would result in a less-than-significant impact related to energy use.

Mitigation Measure

Impacts would be less than significant, and no mitigation measures are required.

4.6 CUMULATIVE IMPACTS

The proposed project would result in a reduction in the generation of GHGs. Therefore, the proposed project would not contribute to a cumulatively considerable GHG impact.

4.7 PROJECT ALTERNATIVES IMPACTS

No Project Alternative

The No Project Alternative assumes that all facilities continue to operate under current conditions. Improvements identified under the proposed project would not be implemented under the No Project Alternative. Compared to existing conditions, there would be no increase in GHG emissions, and the No Project Alternative would not result in significant impacts related to GHGs. However, compared to the proposed project, the No Project Alternative would generate approximately 13.637 metric tons per year of GHGs related to the continued importation of water to Southern California.

VGS Alternative

The VGS Alternative was assessed using the same methodology and significant thresholds used for the proposed project. The potential impact areas are discussed below.

Would the proposed project generate greenhouse gas emissions, either directly or indirectly, that may have a significant impact on the environment? (***Less-Than-Significant Impact***)

Operation of the proposed AWPF plant would generate GHG emissions from energy use and construction activity. It is anticipated that other source, including vehicle trips associated with 16 staff members and 7 truck deliveries per month, would result in negligible emissions in metric tons. Operationally, the proposed project would use an average of 52.8 megawatt-hours per year.

[30] *Ibid*.
[31] WateReuse Research Foundation, *Implications of Future Water Supply Sources for Energy Demands*, 2012.
[32] CEC, *Refining Estimates Of Water-Related Energy Use In California* (CEC-500-2006-118), 2006.

As shown in **Table 4-3**, the VGS Alternative would generate 17,723 metric tons per year of CO_2e emissions. These emissions include construction emissions amortized over a 30-year span per SCAQMD methodology (11,789 total metric tons). The importation of water that would be offset by the proposed project generates 31,233 metric tons per year of CO_2e emissions. The net reduction in GHG emission due to the proposed project would be 13,510 metric tons per year. The estimated net emissions would not exceed the 10,000 metric tons of CO_2e per year quantitative significance threshold. Therefore, the VGS Alternative would result in a less-than-significant impact related to GHG emissions.

TABLE 4-3: GREENHOUSE GAS EMISSIONS - VGS ALTERNATIVE	
Scenario and Source	**Carbon Dioxide Equivalent (Metric Tons Per Year)**
VGS ALTERNATIVE	
Energy - Conveyance of Imported Water	**31,233**
EXISTING CONDITIONS	
Energy - Treatment of Recycled Water	11,036
Energy - Pumping	6,294
Construction Amortized	393
Total Emissions	**17,723**
Net Project Emissions	**(13,510)**
Significance Threshold	**10,000**
Exceed Threshold?	**No**
SOURCE: TAHA, 2015.	

Would the proposed project conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of greenhouse gases? (*Less-Than-Significant Impact*)

Similar to the proposed project, the VGS Alternative would be consistent with the goals and policies of the all relevant GHG reduction plans, policies, and regulations (e.g., GREEN LA Plan) to conserve water. The VGS Alternative would not conflict with the Scoping Plan update or any other plans, policies, or regulations for the purpose of reducing GHG emissions. Therefore, the VGS Alternative would result in a less-than-significant impact related to GHG reduction plans.

Would the proposed project result in wasteful, inefficient, and unnecessary consumption of energy during construction and operation of the project? (*Less-Than-Significant Impact*)

As discussed above for the proposed project, the production and use of recycled water is more energy efficient than imported potable water. Based on the improvements to energy efficiency and energy savings associated with the VGS Alternative, energy consumption associated with operation of the project would not be expected to be wasteful or inefficient. Therefore, the VGS Alternative would result in a less-than-significant impact related to energy use.

4.8 NEPA ANALYSIS

The CEQ recommends that federal agencies consider 25,000 metric tons of CO_2e emissions on an annual basis as a reference point below which a quantitative analysis of GHG is not recommended unless it is easily accomplished based on available tools and data. As shown in **Table 4-2**, above, the proposed project would result in a reduction of 13.637 metric tons per year of CO_2e emissions. These emissions would be less than the CEQ screening criteria. Therefore, the proposed project would not result in an adverse effect related to GHG emissions.

5.0 REFERENCES

California Air Pollution Control Officers Association (CAPCOA), *California Emissions Estimator Model*, 2014.

CAPCOA, *CEQA and Climate Change White Paper*, January 2008.

California Air Resources Board (CARB), *2013 State Area Designations*, June 4, 2013.

CARB, *Air Quality Data Statistics - Top 4 Summary*, June 2014.

CARB, *Ambient Air Quality Standards*, March 17, 2014.

CARB, *Area Designation Maps*, available at http://www.arb.ca.gov/desig/adm/adm.htm, accessed June 10, 2014.

CARB, *Proposed Early Action Measures to Mitigate Climate Change in California*, April 20, 2007.

CARB, *First Update to the Climate Change Scoping Plan*, 2014.

California Energy Commission, *California's Energy Efficiency Standards for Residential and Nonresidential Buildings, Title 24, Part 6, of the California Code of Regulations*, 2014.

CEC, *Refining Estimates Of Water-Related Energy Use In California* (CEC-500-2006-118), 2006.

California Environmental Protection Agency, *Climate Action Team, Climate Action Team Report to Governor Schwarzenegger and the Legislature*, 2006.

South Coast Air Quality Management District (SCAQMD), *2006-2008 Localized Significance Thresholds*, October 21, 2009.

SCAQMD, *CEQA Air Quality Handbook*, 1993.

SCAQMD, *Final Localized Significance Threshold Methodology*, June 2003 (revised July 2008).

SCAQMD, *Final–Methodology to Calculate Particulate Matter (PM) 2.5 and PM 2.5 Significance Thresholds*, October 2006.

SCAQMD, *Final Program Environmental Impact Report for the 2012 AQMP*, December 7, 2012.

SCAQMD, *Health Risk Assessment Guidance for Analyzing Cancer Risks from Mobile Source Diesel Emissions*, December 2002.

SCAQMD, *Meteorological Data*, available at http://www.aqmd.gov/smog/metdata/MeteorologicalData.html, accessed March 30, 2014.

U.S. Environmental Protection Agency (USEPA), *Draft Endangerment Finding, 74 Fed. Reg. 18886, 18904*, April 24, 2009.

USEPA, *The Green Book Nonattainment Areas for Criteria Pollutants*, December 2013.

WateReuse Research Foundation, *Implications of Future Water Supply Sources for Energy Demands*, 2012.

Western Regional Climate Center, *Historical Climate Information*, available at http://www.wrrc.dri.edu, accessed March 13, 2014.

Appendix A

Air Quality and Greenhouse Gas Data and Calculations

Construction Emissions

DCT Alternative

GWRP Project - per day material handling emissions (lb/day)

		Construction Activity
Excavation Schedule	1	day

Fugitive Dust Material Handling

Aerodynamic Particle Size Multiplier[e]	Mean Wind Speed (mph)[f]	Moisture Content% [g]	Dirt Handled (cy)[h]	Dirt Handled (lbs./day)
0.35	4.96	7.50	50	125,000

Incremental Increase in Fugitive Dust Emissions from Construction Activities

Equations:

Material Handling[j]: PM10 Emissions (lb/day) = (0.0032 x aerodynamic particle size multiplier x (wind speed (mph)/5)$^{1.3}$/(moisture content/2)$^{1.4}$ x dirt handled (lb/day)/2,000 (lb/ton)

Description	Control Efficiency[k] %	Unmitigated PM10 lb/day	Unmitigated PM2.5 lb/day
Material Handling	61	0.004	0.001
Total		**0.004**	**0.001**

Notes:
a) USEPA, AP-42, July 1998, Table 11.9-3 Typical Values for Corection Factors Applicable to the Predictive Emission Factor Equations
b) Table A9-9-E2, SCAQMD CEQA Air Quality Handbook, 1993
c) Mean wind speed percent - percent of time mean wind speed exceeds 12 mph.
d) Assumed storage piles are 0.02 acres in size
e) USEPA, AP-42, Jan 1995, Section 13.2.4 Aggretate Handling and Storage Piles, p 13.2.4-3 Aerodynamic particle size multiplier for < 10 µm
f) Mean wind speed at the Downtown Wind Monitoring Station.
g) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, equation 2-13, p 2-28.
h) Obtained from LADWP.
I) USEPA, AP-42, Jan 1995, Section 13.2.4 Aggretate Handling and Storage Piles, Equation 1
j) USEPA, Fugitive Dust Background Document and Technical Information Document for Best Available Control Measures, Sept 1992, EPA-450/2-92-004, Equation 2-12.
l) Source: USEPA, AP-42, Emission Factor Equations for Uncontrolled Dust Sources at Western Surface Coal Mines, Table 11.9-1, Dragline calculations for PM_{10} and $PM_{2.5}$.
k) Includes watering at least three times a day per Rule 403 (61% control efficiency).

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	HP	LF	OFFROAD Emission Factors (g/hp-hr) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Bulldozer	1	8	255	0.40	0.71175	0.5981	4.98205	6.50184	0.0049	0.3002	0.2762	498.1862	0.1551
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Excavator	1	8	163	0.38	0.324959	0.2731	3.09338	2.92361	0.0049	0.1418	0.1304	490.6725	0.1528
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Backhoe	1	8	98	0.37	0.5003	0.4204	3.69155	4.15444	0.0049	0.2943	0.2708	494.1237	0.1538
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Truck-mounted cranes	1	8	226	0.29	0.574877	0.4831	2.13445	5.77298	0.0049	0.2499	0.2299	491.4069	0.153
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Bulldozer	1	8	255	0.40	0.680848	0.5721	4.74309	6.14335	0.0049	0.2828	0.2602	490.383	0.1552
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Excavator	1	8	163	0.38	0.293021	0.2462	3.08163	2.53264	0.0049	0.1221	0.1124	482.6838	0.1527
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Backhoe	1	8	98	0.37	0.437701	0.3678	3.63777	3.69257	0.0049	0.2465	0.2268	485.8548	0.1537
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Truck-mounted cranes	1	8	226	0.29	0.50769	0.4266	1.94079	5.0842	0.0049	0.2155	0.1983	483.4616	0.153
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Bulldozer	1	8	255	0.40	0.680848	0.5721	4.74309	6.14335	0.0049	0.2828	0.2602	490.383	0.1552
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Forklift	1	8	89	0.20	0.606336	0.5095	3.80391	4.54965	0.0049	0.3525	0.3243	482.0069	0.1525
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Loader	1	8	98	0.37	0.437701	0.3678	3.63777	3.69257	0.0049	0.2465	0.2268	485.8548	0.1537
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Bulldozer	1	8	255	0.40	0.680848	0.5721	4.74309	6.14335	0.0049	0.2828	0.2602	490.383	0.1552
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Forklift	1	8	89	0.20	0.606336	0.5095	3.80391	4.54965	0.0049	0.3525	0.3243	482.0069	0.1525
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Loader	1	8	98	0.37	0.437701	0.3678	3.63777	3.69257	0.0049	0.2465	0.2268	485.8548	0.1537
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Bulldozer	1	8	255	0.40	0.636621	0.5349	4.41134	5.64089	0.0049	0.2591	0.2384	479.7569	0.1552
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Forklift	1	8	89	0.20	0.545921	0.4587	3.75954	4.13299	0.0049	0.3079	0.2833	471.5285	0.1525
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Loader	1	8	98	0.37	0.393883	0.331	3.60147	3.32571	0.0049	0.2103	0.1935	475.1543	0.1537
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Bulldozer	1	8	255	0.40	0.680848	0.5721	4.74309	6.14335	0.0049	0.2828	0.2602	490.383	0.1552
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Scrapers	1	8	362	0.48	0.40804	0.3429	2.59466	4.15646	0.0049	0.1629	0.1498	482.7319	0.1527
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Forklift	1	8	89	0.20	0.606336	0.5095	3.80391	4.54965	0.0049	0.3525	0.3243	482.0069	0.1525
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Bulldozer	1	8	255	0.40	0.636621	0.5349	4.41134	5.64089	0.0049	0.2591	0.2384	479.7569	0.1552
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Scrapers	1	8	362	0.48	0.380326	0.3196	2.40063	3.78254	0.0049	0.1475	0.1357	472.1751	0.1527
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Forklift	1	8	89	0.20	0.545921	0.4587	3.75954	4.13299	0.0049	0.3079	0.2833	471.5285	0.1525
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Bulldozer	1	8	255	0.40	0.636621	0.5349	4.41134	5.64089	0.0049	0.2591	0.2384	479.7569	0.1552
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Scrapers	1	8	362	0.48	0.380326	0.3196	2.40063	3.78254	0.0049	0.1475	0.1357	472.1751	0.1527
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Forklift	1	8	89	0.20	0.545921	0.4587	3.75954	4.13299	0.0049	0.3079	0.2833	471.5285	0.1525
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Bulldozer	1	8	255	0.40	0.636621	0.5349	4.41134	5.64089	0.0049	0.2591	0.2384	479.7569	0.1552
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Scrapers	1	8	362	0.48	0.380326	0.3196	2.40063	3.78254	0.0049	0.1475	0.1357	472.1751	0.1527
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Forklift	1	8	89	0.20	0.545921	0.4587	3.75954	4.13299	0.0049	0.3079	0.2833	471.5285	0.1525
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Bulldozer	1	8	255	0.40	0.585817	0.4922	4.04107	5.081	0.0049	0.2321	0.2135	478.9868	0.1549
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Scrapers	1	8	362	0.48	0.356021	0.2992	2.25454	3.44481	0.0049	0.134	0.1233	472.4636	0.1528
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Forklift	1	8	89	0.20	0.490261	0.412	3.72	3.75592	0.0049	0.2666	0.2453	471.5285	0.1525
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Bulldozer	1	8	255	0.40	0.636621	0.5349	4.41134	5.64089	0.0049	0.2591	0.2384	479.7569	0.1552
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Excavator	1	8	163	0.38	0.275327	0.2314	3.08597	2.27838	0.0049	0.1104	0.1015	472.2891	0.1527
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Backhoe	2	8	98	0.37	0.393883	0.331	3.60147	3.32571	0.0049	0.2103	0.1935	475.1543	0.1537
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Forklift	1	8	89	0.20	0.545921	0.4587	3.75954	4.13299	0.0049	0.3079	0.2833	471.5285	0.1525
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Loader	1	8	98	0.37	0.393883	0.331	3.60147	3.32571	0.0049	0.2103	0.1935	475.1543	0.1537
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Crane	1	8	226	0.29	0.45669	0.3837	1.7904	4.56329	0.0049	0.1881	0.1731	472.9488	0.153
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Bulldozer	1	8	255	0.40	0.636621	0.5349	4.41134	5.64089	0.0049	0.2591	0.2384	479.7569	0.1552
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Excavator	1	8	163	0.38	0.275327	0.2314	3.08597	2.27838	0.0049	0.1104	0.1015	472.2891	0.1527
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Backhoe	2	8	98	0.37	0.393883	0.331	3.60147	3.32571	0.0049	0.2103	0.1935	475.1543	0.1537
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Forklift	1	8	89	0.20	0.545921	0.4587	3.75954	4.13299	0.0049	0.3079	0.2833	471.5285	0.1525
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Loader	1	8	98	0.37	0.393883	0.331	3.60147	3.32571	0.0049	0.2103	0.1935	475.1543	0.1537
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Crane	1	8	226	0.29	0.45669	0.3837	1.7904	4.56329	0.0049	0.1881	0.1731	472.9488	0.153
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Bulldozer	1	8	255	0.40	0.585817	0.4922	4.04107	5.081	0.0049	0.2321	0.2135	478.9868	0.1549

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

OFFROAD Emission Factors (g/hp-hr)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	HP	LF	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Excavator	1	8	163	0.38	0.257574	0.2164	3.08975	2.03357	0.0049	0.0986	0.0907	472.3586	0.1528
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Backhoe	2	8	98	0.37	0.35209	0.2959	3.57072	2.995	0.0049	0.1766	0.1625	475.3621	0.1537
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Forklift	1	8	89	0.20	0.490261	0.412	3.72	3.75592	0.0049	0.2666	0.2453	471.5285	0.1525
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Loader	1	8	98	0.37	0.35209	0.2959	3.57072	2.995	0.0049	0.1766	0.1625	475.3621	0.1537
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Crane	1	8	226	0.29	0.415905	0.3495	1.67824	4.10439	0.0049	0.1666	0.1533	472.9057	0.1529
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Excavator	1	8	163	0.38	0.22749	0.1912	3.074	1.6781	0.0049	0.0811	0.0746	472.1917	0.1527
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Backhoe	1	8	98	0.37	0.309669	0.2602	3.53551	2.64718	0.0049	0.1424	0.131	475.8975	0.1539
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Forklift	1	8	89	0.20	0.430627	0.3618	3.67507	3.36021	0.0049	0.2226	0.2048	471.5285	0.1525
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Loader	1	8	98	0.37	0.309669	0.2602	3.53551	2.64718	0.0049	0.1424	0.131	475.8975	0.1539
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Crane	1	8	226	0.29	0.375691	0.3157	1.60164	3.54149	0.0049	0.147	0.1353	472.9832	0.153
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Excavator	1	8	163	0.38	0.22749	0.1912	3.074	1.6781	0.0049	0.0811	0.0746	472.1917	0.1527
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Backhoe	1	8	98	0.37	0.309669	0.2602	3.53551	2.64718	0.0049	0.1424	0.131	475.8975	0.1539
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Forklift	1	8	89	0.20	0.430627	0.3618	3.67507	3.36021	0.0049	0.2226	0.2048	471.5285	0.1525
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Crane	1	8	226	0.29	0.375691	0.3157	1.60164	3.54149	0.0049	0.147	0.1353	472.9832	0.153
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Loader	1	8	98	0.37	0.309669	0.2602	3.53551	2.64718	0.0049	0.1424	0.131	475.8975	0.1539
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Crane	1	8	226	0.29	0.375691	0.3157	1.60164	3.54149	0.0049	0.147	0.1353	472.9832	0.153
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Excavator	1	8	163	0.38	0.257574	0.2164	3.08975	2.03357	0.0049	0.0986	0.0907	472.3586	0.1528
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Loader	1	8	98	0.37	0.35209	0.2959	3.57072	2.995	0.0049	0.1766	0.1625	475.3621	0.1537
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Pavement Cutter	1	8	131	0.36	0.272687	0.2291	3.03229	2.31505	0.0049	0.1143	0.1052	470.6495	0.1522
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Crane	1	8	226	0.29	0.415905	0.3495	1.67824	4.10439	0.0049	0.1666	0.1533	472.9057	0.1529
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Compactor	1	8	8	0.43	0.79	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Sweepers	1	8	64	0.46	0.523878	0.4402	3.75746	3.96194	0.0049	0.2914	0.2681	474.1157	0.1533
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Forklift	1	8	89	0.20	0.430627	0.3618	3.67507	3.36021	0.0049	0.2226	0.2048	471.5285	0.1525
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Tractor	1	8	98	0.37	0.309669	0.2602	3.53551	2.64718	0.0049	0.1424	0.131	475.8975	0.1539
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Generator	0	8	84	0.74	6.113	0.301	3.353	2.671	0.006	0.134	0.134	568.299	0.027
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Backhoe	4	8	98	0.37	0.393883	0.331	3.60147	3.32571	0.0049	0.2103	0.1935	475.1543	0.1537
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Crane	2	8	226	0.29	0.45669	0.3837	1.7904	4.56329	0.0049	0.1881	0.1731	472.9488	0.153
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Backhoe	4	8	98	0.37	0.35209	0.2959	3.57072	2.995	0.0049	0.1766	0.1625	475.3621	0.1537
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Crane	2	8	226	0.29	0.415905	0.3495	1.67824	4.10439	0.0049	0.1666	0.1533	472.9057	0.1529
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Excavator	3	8	163	0.38	0.257574	0.2164	3.08975	2.03357	0.0049	0.0986	0.0907	472.3586	0.1528
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Crane	2	8	226	0.29	0.415905	0.3495	1.67824	4.10439	0.0049	0.1666	0.1533	472.9057	0.1529
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Backhoe	3	8	98	0.37	0.35209	0.2959	3.57072	2.995	0.0049	0.1766	0.1625	475.3621	0.1537
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Concrete Pump	2	8	84	0.74	7.94	0.347	3.412	2.928	0.006	0.162	0.162	568.3	0.031
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Excavator	5	8	163	0.38	0.22749	0.1912	3.074	1.6781	0.0049	0.0811	0.0746	472.1917	0.1527
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Crane	2	8	226	0.29	0.375691	0.3157	1.60164	3.54149	0.0049	0.147	0.1353	472.9832	0.153
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Backhoe	2	8	98	0.37	0.309669	0.2602	3.53551	2.64718	0.0049	0.1424	0.131	475.8975	0.1539
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Concrete Pump	1	8	84	0.74	7.351	0.321	3.404	2.708	0.006	0.142	0.142	568.299	0.029
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Excavator	5	8	163	0.38	0.22749	0.1912	3.074	1.6781	0.0049	0.0811	0.0746	472.1917	0.1527
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Crane	2	8	226	0.29	0.375691	0.3157	1.60164	3.54149	0.0049	0.147	0.1353	472.9832	0.153
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Backhoe	2	8	98	0.37	0.309669	0.2602	3.53551	2.64718	0.0049	0.1424	0.131	475.8975	0.1539
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Concrete Pump	1	8	84	0.74	7.351	0.321	3.404	2.708	0.006	0.142	0.142	568.299	0.029

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansior	2018
Purified Recycled Water Pipelin	2018
Pacoima - Lateral Pipeline Cons	2018
Pacoima - Outlet Structure Con	2018
Hansen - Lateral Pipeline Const	2018
Hansen - Outlet Structure Cons	2018

Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
nel Round Trip Length (miles):	14.7
ck Round Trips Length (miles):	20
Figitive Dust Reduction	61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	HP	LF	OFFROAD Emission Factors (g/hp-hr) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Warehouse	2019																			
Maintenance Building	2019																			
Expansion of Flow EQ	2019																			
AWPF	2019																			
Brine Line	2019																			
Balboa Pump Station Expansior	2019																			
Purified Recycled Water Pipelin	2019																			
Pacoima - Lateral Pipeline Cons	2019																			
Pacoima - Outlet Structure Con	2019																			
Hansen - Lateral Pipeline Const	2019																			
Hansen - Outlet Structure Cons	2019																			
Warehouse	2020																			
Maintenance Building	2020																			
Expansion of Flow EQ	2020																			
AWPF	2020																			
Brine Line	2020																			
Balboa Pump Station Expansior	2020																			
Purified Recycled Water Pipelin	2020																			
Pacoima - Lateral Pipeline Cons	2020																			
Pacoima - Outlet Structure Con	2020																			
Hansen - Lateral Pipeline Const	2020																			
Hansen - Outlet Structure Cons	2020																			
Warehouse	2021																			
Maintenance Building	2021																			
Expansion of Flow EQ	2021																			
AWPF	2021																			
Brine Line	2021																			
Balboa Pump Station Expansior	2021																			
Purified Recycled Water Pipelin	2021																			
Pacoima - Lateral Pipeline Cons	2021																			
Pacoima - Outlet Structure Con	2021																			
Hansen - Lateral Pipeline Const	2021																			
Hansen - Outlet Structure Cons	2021																			
Warehouse	2022																			
Maintenance Building	2022																			
Expansion of Flow EQ	2022																			
AWPF	2022																			
Brine Line	2022																			
Balboa Pump Station Expansior	2022																			
Purified Recycled Water Pipelin	2022																			
Pacoima - Lateral Pipeline Cons	2022																			
Pacoima - Outlet Structure Con	2022																			
Hansen - Lateral Pipeline Const	2022																			
Hansen - Outlet Structure Cons	2022																			

Phase	Year
Warehouse	2018
Warehouse	2019
Maintenance Building	2019
Maintenance Building	2019
Maintenance Building	2020

Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
nel Round Trip Length (miles):	14.7
ck Round Trips Length (miles):	20
Figitive Dust Reduction	61%

OFFROAD Emission Factors (g/hp-hr)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	HP	LF	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Expansion of Flow EQ	2019																			
Expansion of Flow EQ	2020																			
Expansion of Flow EQ	2020																			
Expansion of Flow EQ	2020																			
Expansion of Flow EQ	2021																			
AWPF	2020																			
AWPF	2020																			
AWPF	2021																			
AWPF	2022																			
AWPF	2022																			
AWPF	2022																			
Brine Line	2021																			
Balboa Pump Station Expansior	2022																			
Purified Recycled Water Pipelin	2020																			
Purified Recycled Water Pipelin	2021																			
Pacoima - Lateral Pipeline Cons	2021																			
Pacoima - Outlet Structure Con	2021																			
Pacoima - Lateral Pipeline Cons	2022																			
Pacoima - Outlet Structure Con	2022																			
Hansen - Lateral Pipeline Const	2022																			
Hansen - Outlet Structure Cons	2022																			
Pacoima	2021																			
Pacoima	2022																			
Hansen	2022																			

Year
2018
2019
2020
2021
2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	OFFROAD Emission Rates (lb/day)									
										TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	N2O
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Bulldozer	1	8	1.280	1.076	8.963	11.697	0.009	1.917	0.682	896.224	0.279	0.029
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Excavator	1	8	0.355	0.298	3.379	3.194	0.005	0.155	0.142	536.028	0.167	0.017
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Backhoe	1	8	0.320	0.269	2.361	2.657	0.003	0.395	0.182	316.001	0.098	0.010
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Truck-mounted cranes	1	8	0.665	0.558	2.467	6.673	0.006	0.289	0.266	568.031	0.177	0.019
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Bulldozer	1	8	1.225	1.029	8.533	11.052	0.009	1.184	0.547	882.186	0.279	0.029
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Excavator	1	8	0.320	0.269	3.366	2.767	0.005	0.133	0.123	527.301	0.167	0.017
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Backhoe	1	8	0.280	0.235	2.326	2.361	0.003	0.364	0.153	310.713	0.098	0.010
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Truck-mounted cranes	1	8	0.587	0.493	2.243	5.877	0.006	0.249	0.229	558.847	0.177	0.018
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Bulldozer	1	8	1.225	1.029	8.533	11.052	0.009	2.471	0.742	882.186	0.279	0.029
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Forklift	1	8	0.190	0.160	1.194	1.428	0.002	0.111	0.102	151.321	0.048	0.005
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Loader	1	8	0.280	0.235	2.326	2.361	0.003	0.364	0.153	310.713	0.098	0.010
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Bulldozer	1	8	1.225	1.029	8.533	11.052	0.009	1.184	0.547	882.186	0.279	0.029
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Forklift	1	8	0.190	0.160	1.194	1.428	0.002	0.111	0.102	151.321	0.048	0.005
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Loader	1	8	0.280	0.235	2.326	2.361	0.003	0.364	0.153	310.713	0.098	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	1.141	0.508	863.070	0.279	0.028
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031	0.048	0.005
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Loader	1	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869	0.098	0.010
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Bulldozer	1	8	1.225	1.029	8.533	11.052	0.009	4.227	1.008	882.186	0.279	0.029
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Scrapers	1	8	1.250	1.051	7.952	12.738	0.015	0.499	0.459	1,479.382	0.468	0.048
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Forklift	1	8	0.190	0.160	1.428	1.428	0.002	0.111	0.102	151.321	0.048	0.005
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	4.184	0.969	863.070	0.279	0.028
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Scrapers	1	8	1.166	0.979	7.357	11.592	0.015	0.452	0.416	1,447.030	0.468	0.047
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031	0.048	0.005
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	1.609	0.579	863.070	0.279	0.028
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Scrapers	1	8	1.166	0.979	7.357	11.592	0.015	0.452	0.416	1,447.030	0.468	0.047
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031	0.048	0.005
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	0.907	0.473	863.070	0.279	0.028
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Scrapers	1	8	1.166	0.979	7.357	11.592	0.015	0.452	0.416	1,447.030	0.468	0.047
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031	0.048	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Bulldozer	1	8	1.054	0.885	7.270	9.141	0.009	0.858	0.428	861.685	0.279	0.028
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Scrapers	1	8	1.091	0.917	6.909	10.557	0.015	0.411	0.378	1,447.914	0.468	0.047
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Forklift	1	8	0.154	0.129	1.168	1.179	0.002	0.084	0.077	148.031	0.048	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	1.843	0.614	863.070	0.279	0.028
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Excavator	1	8	0.301	0.253	3.371	2.489	0.005	0.121	0.111	515.945	0.167	0.017
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Backhoe	2	8	0.504	0.423	4.606	4.254	0.006	0.683	0.264	607.739	0.197	0.020
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031	0.048	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Loader	1	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869	0.098	0.010
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Crane	1	8	0.528	0.444	2.070	5.275	0.006	0.217	0.200	546.695	0.177	0.018
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	1.609	0.579	863.070	0.279	0.028
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Excavator	1	8	0.301	0.253	3.371	2.489	0.005	0.121	0.111	515.945	0.167	0.017
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Backhoe	2	8	0.504	0.423	4.606	4.254	0.006	0.683	0.264	607.739	0.197	0.020
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031	0.048	0.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Loader	1	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869	0.098	0.010
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Crane	1	8	0.528	0.444	2.070	5.275	0.006	0.217	0.200	546.695	0.177	0.018
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Bulldozer	1	8	1.054	0.885	7.270	9.141	0.009	1.093	0.463	861.685	0.279	0.028

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										OFFROAD Emission Rates (lb/day)									
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**TOG**	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**	**N2O**
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Excavator	1	8	0.281	0.236	3.375	2.222	0.005	0.108	0.099	516.021	0.167	0.017
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Backhoe	2	8	0.450	0.378	4.567	3.831	0.006	0.639	0.225	608.005	0.197	0.020
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Forklift	1	8	0.154	0.129	1.168	1.179	0.002	0.084	0.077	148.031	0.048	0.005
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Loader	1	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002	0.098	0.010
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Crane	1	8	0.481	0.404	1.940	4.744	0.006	0.193	0.177	546.645	0.177	0.018
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Excavator	1	8	0.249	0.209	3.358	1.833	0.005	0.089	0.081	515.839	0.167	0.017
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Backhoe	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Forklift	1	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031	0.048	0.005
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Loader	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Crane	1	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735	0.177	0.018
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Excavator	1	8	0.249	0.209	3.358	1.833	0.005	0.089	0.081	515.839	0.167	0.017
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Backhoe	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Forklift	1	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031	0.048	0.005
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Crane	1	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735	0.177	0.018
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Loader	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Crane	1	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735	0.177	0.018
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Excavator	1	8	0.281	0.236	3.375	2.222	0.005	0.109	0.099	516.021	0.167	0.017
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Loader	1	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002	0.098	0.010
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Pavement Cutter	1	8	0.227	0.191	2.522	1.926	0.004	0.095	0.088	391.468	0.127	0.013
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Crane	1	8	0.481	0.404	1.940	4.744	0.006	0.193	0.177	546.645	0.177	0.018
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Sweepers	1	8	0.272	0.229	1.951	2.057	0.003	0.151	0.139	246.177	0.080	0.008
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Forklift	1	8	0.135	0.114	1.154	1.055	0.002	0.187	0.082	148.031	0.048	0.005
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Tractor	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Generator	0	8	-	-	-	-	-	-	-	-	-	-
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Backhoe	4	8	1.008	0.847	9.213	8.507	0.013	1.367	0.529	1,215.478	0.393	0.040
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Crane	2	8	1.056	0.887	4.139	10.550	0.011	0.435	0.400	1,093.390	0.354	0.036
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Backhoe	4	8	0.901	0.757	9.134	7.661	0.013	1.281	0.450	1,216.009	0.393	0.040
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Crane	2	8	0.962	0.808	3.880	9.489	0.011	0.385	0.354	1,093.291	0.353	0.036
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Excavator	3	8	0.844	0.709	10.126	6.665	0.016	0.325	0.298	1,548.064	0.501	0.050
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Crane	2	8	0.962	0.808	3.880	9.489	0.011	0.385	0.354	1,093.291	0.353	0.036
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Backhoe	3	8	0.676	0.568	6.851	5.746	0.009	1.310	0.390	912.007	0.295	0.030
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Concrete Pump	2	8	17.409	0.761	7.481	6.420	0.013	0.355	0.355	1,246.072	0.068	0.041
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Excavator	5	8	1.243	1.044	16.791	9.166	0.027	0.445	0.408	2,579.195	0.834	0.084
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Crane	2	8	0.869	0.730	3.703	8.187	0.011	0.340	0.313	1,093.470	0.354	0.036
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Backhoe	2	8	0.396	0.333	4.522	3.386	0.006	0.947	0.237	608.690	0.197	0.020
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Concrete Pump	1	8	8.059	0.352	3.732	2.969	0.007	0.156	0.156	623.035	0.032	0.020
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Excavator	5	8	1.243	1.044	16.791	9.166	0.027	0.445	0.408	2,579.195	0.834	0.084
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Crane	2	8	0.869	0.730	3.703	8.187	0.011	0.340	0.313	1,093.470	0.354	0.036
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Backhoe	2	8	0.396	0.333	4.522	3.386	0.006	0.947	0.237	608.690	0.197	0.020
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Concrete Pump	1	8	8.059	0.352	3.732	2.969	0.007	0.156	0.156	623.035	0.032	0.020

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansior	2018
Purified Recycled Water Pipelin	2018
Pacoima - Lateral Pipeline Cons	2018
Pacoima - Outlet Structure Con	2018
Hansen - Lateral Pipeline Const	2018
Hansen - Outlet Structure Cons	2018

Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
nel Round Trip Length (miles):	14.7
ck Round Trips Length (miles):	20
Figitive Dust Reduction	61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	OFFROAD Emission Rates (lb/day) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	N2O
Warehouse	2019																		
Maintenance Building	2019																		
Expansion of Flow EQ	2019																		
AWPF	2019																		
Brine Line	2019																		
Balboa Pump Station Expansior	2019																		
Purified Recycled Water Pipelin	2019																		
Pacoima - Lateral Pipeline Cons	2019																		
Pacoima - Outlet Structure Con	2019																		
Hansen - Lateral Pipeline Const	2019																		
Hansen - Outlet Structure Cons	2019																		
Warehouse	2020																		
Maintenance Building	2020																		
Expansion of Flow EQ	2020																		
AWPF	2020																		
Brine Line	2020																		
Balboa Pump Station Expansior	2020																		
Purified Recycled Water Pipelin	2020																		
Pacoima - Lateral Pipeline Cons	2020																		
Pacoima - Outlet Structure Con	2020																		
Hansen - Lateral Pipeline Const	2020																		
Hansen - Outlet Structure Cons	2020																		
Warehouse	2021																		
Maintenance Building	2021																		
Expansion of Flow EQ	2021																		
AWPF	2021																		
Brine Line	2021																		
Balboa Pump Station Expansior	2021																		
Purified Recycled Water Pipelin	2021																		
Pacoima - Lateral Pipeline Cons	2021																		
Pacoima - Outlet Structure Con	2021																		
Hansen - Lateral Pipeline Const	2021																		
Hansen - Outlet Structure Cons	2021																		
Warehouse	2022																		
Maintenance Building	2022																		
Expansion of Flow EQ	2022																		
AWPF	2022																		
Brine Line	2022																		
Balboa Pump Station Expansior	2022																		
Purified Recycled Water Pipelin	2022																		
Pacoima - Lateral Pipeline Cons	2022																		
Pacoima - Outlet Structure Con	2022																		
Hansen - Lateral Pipeline Const	2022																		
Hansen - Outlet Structure Cons	2022																		

Phase	Year
Warehouse	2018
Warehouse	2019
Maintenance Building	2019
Maintenance Building	2019
Maintenance Building	2020

Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
nel Round Trip Length (miles):	14.7
ck Round Trips Length (miles):	20
Figitive Dust Reduction	61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	OFFROAD Emission Rates (lb/day) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	N2O
Expansion of Flow EQ	2019																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2021																		
AWPF	2020																		
AWPF	2020																		
AWPF	2021																		
AWPF	2022																		
AWPF	2022																		
AWPF	2022																		
Brine Line	2021																		
Balboa Pump Station Expansior	2022																		
Purified Recycled Water Pipelin	2020																		
Purified Recycled Water Pipelin	2021																		
Pacoima - Lateral Pipeline Cons	2021																		
Pacoima - Outlet Structure Con	2021																		
Pacoima - Lateral Pipeline Cons	2022																		
Pacoima - Outlet Structure Con	2022																		
Hansen - Lateral Pipeline Const	2022																		
Hansen - Outlet Structure Cons	2022																		
Pacoima	2021																		
Pacoima	2022																		
Hansen	2022																		

	Year
	2018
	2019
	2020
	2021
	2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Emissions from Personnel Vehicles (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Bulldozer	1	8	0.025	0.018	0.709	0.067	0.002	0.031	0.013	227.860	0.009	0.003
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Excavator	1	8	0.025	0.018	0.709	0.067	0.002	0.031	0.013	227.860	0.009	0.003
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Backhoe	1	8	0.025	0.018	0.709	0.067	0.002	0.031	0.013	227.860	0.009	0.003
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Truck-mounted cranes	1	8	0.025	0.018	0.709	0.067	0.002	0.031	0.013	227.860	0.009	0.003
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Bulldozer	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Excavator	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Backhoe	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Truck-mounted cranes	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Bulldozer	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Compactor	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Forklift	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Loader	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Bulldozer	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Compactor	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Forklift	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Loader	1	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Bulldozer	1	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821	0.007	0.002
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Compactor	1	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821	0.007	0.002
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Forklift	1	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821	0.007	0.002
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Loader	1	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821	0.007	0.002
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Bulldozer	1	8	0.019	0.013	0.567	0.053	0.002	0.028	0.012	197.968	0.007	0.002
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Scrapers	1	8	0.019	0.013	0.567	0.053	0.002	0.028	0.012	197.968	0.007	0.002
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Compactor	1	8	0.019	0.013	0.567	0.053	0.002	0.028	0.012	197.968	0.007	0.002
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Forklift	1	8	0.019	0.013	0.567	0.053	0.002	0.028	0.012	197.968	0.007	0.002
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Bulldozer	1	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Scrapers	1	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Compactor	1	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Forklift	1	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Bulldozer	1	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Scrapers	1	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Compactor	1	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Forklift	1	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Bulldozer	1	8	0.004	0.003	0.115	0.010	0.000	0.006	0.003	42.564	0.001	0.000
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Scrapers	1	8	0.004	0.003	0.115	0.010	0.000	0.006	0.003	42.564	0.001	0.000
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Compactor	1	8	0.004	0.003	0.115	0.010	0.000	0.006	0.003	42.564	0.001	0.000
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Forklift	1	8	0.004	0.003	0.115	0.010	0.000	0.006	0.003	42.564	0.001	0.000
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Bulldozer	1	8	0.003	0.002	0.106	0.009	0.000	0.006	0.003	41.140	0.001	0.000
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Scrapers	1	8	0.003	0.002	0.106	0.009	0.000	0.006	0.003	41.140	0.001	0.000
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Compactor	1	8	0.003	0.002	0.106	0.009	0.000	0.006	0.003	41.140	0.001	0.000
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Forklift	1	8	0.003	0.002	0.106	0.009	0.000	0.006	0.003	41.140	0.001	0.000
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Bulldozer	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Compactor	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Excavator	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Backhoe	2	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Forklift	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Loader	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Crane	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Bulldozer	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Compactor	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Excavator	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Backhoe	2	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Forklift	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Loader	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Crane	1	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Bulldozer	1	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Emissions from Personnel Vehicles (lb/day)									
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Compactor	1	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Excavator	1	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Backhoe	2	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Forklift	1	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Loader	1	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Crane	1	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Compactor	1	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Excavator	1	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Backhoe	1	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Forklift	1	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Loader	1	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Crane	1	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Excavator	1	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Backhoe	1	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Forklift	1	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Crane	1	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Loader	1	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Crane	1	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Excavator	1	8	0.008	0.006	0.266	0.024	0.001	0.015	0.006	102.851	0.003	0.001
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Loader	1	8	0.008	0.006	0.266	0.024	0.001	0.015	0.006	102.851	0.003	0.001
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Pavement Cutter	1	8	0.008	0.006	0.266	0.024	0.001	0.015	0.006	102.851	0.003	0.001
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Crane	1	8	0.008	0.006	0.266	0.024	0.001	0.015	0.006	102.851	0.003	0.001
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Compactor	1	8	0.008	0.006	0.266	0.024	0.001	0.015	0.006	102.851	0.003	0.001
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Sweepers	1	8	0.008	0.006	0.266	0.024	0.001	0.015	0.006	102.851	0.003	0.001
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Forklift	1	8	0.006	0.004	0.198	0.017	0.001	0.012	0.005	79.256	0.002	0.001
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Tractor	1	8	0.006	0.004	0.198	0.017	0.001	0.012	0.005	79.256	0.002	0.001
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Generator	0	8	0.006	0.004	0.198	0.017	0.001	0.012	0.005	79.256	0.002	0.001
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Backhoe	4	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821	0.007	0.002
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Crane	2	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821	0.007	0.002
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Backhoe	4	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702	0.006	0.002
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Crane	2	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702	0.006	0.002
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Excavator	3	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702	0.006	0.002
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Crane	2	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702	0.006	0.002
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Backhoe	3	8	0.006	0.004	0.186	0.017	0.001	0.011	0.005	71.996	0.002	0.001
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Concrete Pump	2	8	0.006	0.004	0.186	0.017	0.001	0.011	0.005	71.996	0.002	0.001
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Excavator	5	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Crane	2	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Backhoe	2	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349	0.002	0.001
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Concrete Pump	1	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349	0.002	0.001
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Excavator	5	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Crane	2	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Backhoe	2	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349	0.002	0.001
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Concrete Pump	1	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349	0.002	0.001

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansior	2018
Purified Recycled Water Pipelin	2018
Pacoima - Lateral Pipeline Cons	2018
Pacoima - Outlet Structure Con	2018
Hansen - Lateral Pipeline Const	2018
Hansen - Outlet Structure Cons	2018

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Emissions from Personnel Vehicles (lb/day)									
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**TOG_RUNEX**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**	**CO2_RUNEX**	**CH4_RUNEX**	**N2O_RUNEX**
Warehouse	2019																		
Maintenance Building	2019																		
Expansion of Flow EQ	2019																		
AWPF	2019																		
Brine Line	2019																		
Balboa Pump Station Expansior	2019																		
Purified Recycled Water Pipelin	2019																		
Pacoima - Lateral Pipeline Cons	2019																		
Pacoima - Outlet Structure Con	2019																		
Hansen - Lateral Pipeline Const	2019																		
Hansen - Outlet Structure Cons	2019																		
Warehouse	2020																		
Maintenance Building	2020																		
Expansion of Flow EQ	2020																		
AWPF	2020																		
Brine Line	2020																		
Balboa Pump Station Expansior	2020																		
Purified Recycled Water Pipelin	2020																		
Pacoima - Lateral Pipeline Cons	2020																		
Pacoima - Outlet Structure Con	2020																		
Hansen - Lateral Pipeline Const	2020																		
Hansen - Outlet Structure Cons	2020																		
Warehouse	2021																		
Maintenance Building	2021																		
Expansion of Flow EQ	2021																		
AWPF	2021																		
Brine Line	2021																		
Balboa Pump Station Expansior	2021																		
Purified Recycled Water Pipelin	2021																		
Pacoima - Lateral Pipeline Cons	2021																		
Pacoima - Outlet Structure Con	2021																		
Hansen - Lateral Pipeline Const	2021																		
Hansen - Outlet Structure Cons	2021																		
Warehouse	2022																		
Maintenance Building	2022																		
Expansion of Flow EQ	2022																		
AWPF	2022																		
Brine Line	2022																		
Balboa Pump Station Expansior	2022																		
Purified Recycled Water Pipelin	2022																		
Pacoima - Lateral Pipeline Cons	2022																		
Pacoima - Outlet Structure Con	2022																		
Hansen - Lateral Pipeline Const	2022																		
Hansen - Outlet Structure Cons	2022																		

Phase	**Year**
Warehouse	2018
Warehouse	2019
Maintenance Building	2019
Maintenance Building	2019
Maintenance Building	2020

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Emissions from Personnel Vehicles (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
Expansion of Flow EQ	2019																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2021																		
AWPF	2020																		
AWPF	2020																		
AWPF	2021																		
AWPF	2022																		
AWPF	2022																		
AWPF	2022																		
Brine Line	2021																		
Balboa Pump Station Expansior	2022																		
Purified Recycled Water Pipelin	2020																		
Purified Recycled Water Pipelin	2021																		
Pacoima - Lateral Pipeline Cons	2021																		
Pacoima - Outlet Structure Con	2021																		
Pacoima - Lateral Pipeline Cons	2022																		
Pacoima - Outlet Structure Con	2022																		
Hansen - Lateral Pipeline Const	2022																		
Hansen - Outlet Structure Cons	2022																		
Pacoima	2021																		
Pacoima	2022																		
Hansen	2022																		

Year
2018
2019
2020
2021
2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Emissions from Daily Truck Trips (lb/day)									
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**TOG_RUNEX**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**	**CO2_RUNEX**	**CH4_RUNEX**	**N2O_RUNEX**
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Bulldozer	1	8	0.128	0.079	0.529	2.331	0.007	0.054	0.026	760.189	0.006	0.025
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Excavator	1	8	0.128	0.079	0.529	2.331	0.007	0.054	0.026	760.189	0.006	0.025
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Backhoe	1	8	0.128	0.079	0.529	2.331	0.007	0.054	0.026	760.189	0.006	0.025
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Truck-mounted cranes	1	8	0.128	0.079	0.529	2.331	0.007	0.054	0.026	760.189	0.006	0.025
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Bulldozer	1	8	0.049	0.030	0.209	0.874	0.003	0.021	0.010	299.756	0.003	0.010
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Excavator	1	8	0.049	0.030	0.209	0.874	0.003	0.021	0.010	299.756	0.003	0.010
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Backhoe	1	8	0.049	0.030	0.209	0.874	0.003	0.021	0.010	299.756	0.003	0.010
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Truck-mounted cranes	1	8	0.049	0.030	0.209	0.874	0.003	0.021	0.010	299.756	0.003	0.010
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Bulldozer	1	8	0.185	0.112	0.782	3.278	0.010	0.080	0.038	1,124.087	0.010	0.037
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Compactor	1	8	0.185	0.112	0.782	3.278	0.010	0.080	0.038	1,124.087	0.010	0.037
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Forklift	1	8	0.185	0.112	0.782	3.278	0.010	0.080	0.038	1,124.087	0.010	0.037
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Loader	1	8	0.185	0.112	0.782	3.278	0.010	0.080	0.038	1,124.087	0.010	0.037
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Bulldozer	1	8	0.049	0.030	0.209	0.874	0.003	0.021	0.010	299.756	0.003	0.010
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Compactor	1	8	0.049	0.030	0.209	0.874	0.003	0.021	0.010	299.756	0.003	0.010
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Forklift	1	8	0.049	0.030	0.209	0.874	0.003	0.021	0.010	299.756	0.003	0.010
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Loader	1	8	0.049	0.030	0.209	0.874	0.003	0.021	0.010	299.756	0.003	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Bulldozer	1	8	0.047	0.028	0.206	0.809	0.003	0.020	0.010	296.213	0.003	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Compactor	1	8	0.047	0.028	0.206	0.809	0.003	0.020	0.010	296.213	0.003	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Forklift	1	8	0.047	0.028	0.206	0.809	0.003	0.020	0.010	296.213	0.003	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Loader	1	8	0.047	0.028	0.206	0.809	0.003	0.020	0.010	296.213	0.003	0.010
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Bulldozer	1	8	0.371	0.224	1.565	6.555	0.021	0.159	0.077	2,248.173	0.019	0.073
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Scrapers	1	8	0.371	0.224	1.565	6.555	0.021	0.159	0.077	2,248.173	0.019	0.073
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Compactor	1	8	0.371	0.224	1.565	6.555	0.021	0.159	0.077	2,248.173	0.019	0.073
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Forklift	1	8	0.371	0.224	1.565	6.555	0.021	0.159	0.077	2,248.173	0.019	0.073
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Bulldozer	1	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2,221.597	0.019	0.072
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Scrapers	1	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2,221.597	0.019	0.072
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Compactor	1	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2,221.597	0.019	0.072
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Forklift	1	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2,221.597	0.019	0.072
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Bulldozer	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Scrapers	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Compactor	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Forklift	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Bulldozer	1	8	0.024	0.014	0.103	0.405	0.001	0.010	0.005	148.106	0.001	0.005
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Scrapers	1	8	0.024	0.014	0.103	0.405	0.001	0.010	0.005	148.106	0.001	0.005
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Compactor	1	8	0.024	0.014	0.103	0.405	0.001	0.010	0.005	148.106	0.001	0.005
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Forklift	1	8	0.024	0.014	0.103	0.405	0.001	0.010	0.005	148.106	0.001	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Bulldozer	1	8	0.023	0.013	0.102	0.370	0.001	0.010	0.005	146.426	0.001	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Scrapers	1	8	0.023	0.013	0.102	0.370	0.001	0.010	0.005	146.426	0.001	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Compactor	1	8	0.023	0.013	0.102	0.370	0.001	0.010	0.005	146.426	0.001	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Forklift	1	8	0.023	0.013	0.102	0.370	0.001	0.010	0.005	146.426	0.001	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Bulldozer	1	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Compactor	1	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Excavator	1	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Backhoe	2	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Forklift	1	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Loader	1	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Crane	1	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Bulldozer	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Compactor	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Excavator	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Backhoe	2	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Forklift	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Loader	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Crane	1	8	0.095	0.056	0.411	1.618	0.005	0.041	0.019	592.426	0.005	0.019
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Bulldozer	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Emissions from Daily Truck Trips (lb/day)									
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**TOG_RUNEX**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**	**CO2_RUNEX**	**CH4_RUNEX**	**N2O_RUNEX**
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Compactor	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Excavator	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Backhoe	2	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Forklift	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Loader	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Crane	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Compactor	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Excavator	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Backhoe	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Forklift	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Loader	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Crane	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Excavator	1	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Backhoe	1	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Forklift	1	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Crane	1	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Loader	1	8	0.023	0.013	0.102	0.370	0.001	0.010	0.005	146.426	0.001	0.005
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Crane	1	8	0.023	0.013	0.102	0.370	0.001	0.010	0.005	146.426	0.001	0.005
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Excavator	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Loader	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Pavement Cutter	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Crane	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Compactor	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Sweepers	1	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Forklift	1	8	0.012	0.007	0.051	0.185	0.001	0.005	0.002	73.213	0.001	0.002
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Tractor	1	8	0.012	0.007	0.051	0.185	0.001	0.005	0.002	73.213	0.001	0.002
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Generator	0	8	0.012	0.007	0.051	0.185	0.001	0.005	0.002	73.213	0.001	0.002
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Backhoe	4	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Crane	2	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Backhoe	4	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Crane	2	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Excavator	3	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Crane	2	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Backhoe	3	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Concrete Pump	2	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Excavator	5	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Crane	2	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Backhoe	2	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Concrete Pump	1	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Excavator	5	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Crane	2	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Backhoe	2	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Concrete Pump	1	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansior	2018
Purified Recycled Water Pipelin	2018
Pacoima - Lateral Pipeline Cons	2018
Pacoima - Outlet Structure Con	2018
Hansen - Lateral Pipeline Const	2018
Hansen - Outlet Structure Cons	2018

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Emissions from Daily Truck Trips (lb/day)									
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**TOG_RUNEX**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**	**CO2_RUNEX**	**CH4_RUNEX**	**N2O_RUNEX**
Warehouse	2019																		
Maintenance Building	2019																		
Expansion of Flow EQ	2019																		
AWPF	2019																		
Brine Line	2019																		
Balboa Pump Station Expansior	2019																		
Purified Recycled Water Pipelin	2019																		
Pacoima - Lateral Pipeline Cons	2019																		
Pacoima - Outlet Structure Con	2019																		
Hansen - Lateral Pipeline Const	2019																		
Hansen - Outlet Structure Cons	2019																		
Warehouse	2020																		
Maintenance Building	2020																		
Expansion of Flow EQ	2020																		
AWPF	2020																		
Brine Line	2020																		
Balboa Pump Station Expansior	2020																		
Purified Recycled Water Pipelin	2020																		
Pacoima - Lateral Pipeline Cons	2020																		
Pacoima - Outlet Structure Con	2020																		
Hansen - Lateral Pipeline Const	2020																		
Hansen - Outlet Structure Cons	2020																		
Warehouse	2021																		
Maintenance Building	2021																		
Expansion of Flow EQ	2021																		
AWPF	2021																		
Brine Line	2021																		
Balboa Pump Station Expansior	2021																		
Purified Recycled Water Pipelin	2021																		
Pacoima - Lateral Pipeline Cons	2021																		
Pacoima - Outlet Structure Con	2021																		
Hansen - Lateral Pipeline Const	2021																		
Hansen - Outlet Structure Cons	2021																		
Warehouse	2022																		
Maintenance Building	2022																		
Expansion of Flow EQ	2022																		
AWPF	2022																		
Brine Line	2022																		
Balboa Pump Station Expansior	2022																		
Purified Recycled Water Pipelin	2022																		
Pacoima - Lateral Pipeline Cons	2022																		
Pacoima - Outlet Structure Con	2022																		
Hansen - Lateral Pipeline Const	2022																		
Hansen - Outlet Structure Cons	2022																		

Phase	**Year**
Warehouse	2018
Warehouse	2019
Maintenance Building	2019
Maintenance Building	2019
Maintenance Building	2020

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Emissions from Daily Truck Trips (lb/day)									
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**TOG_RUNEX**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**	**CO2_RUNEX**	**CH4_RUNEX**	**N2O_RUNEX**
Expansion of Flow EQ	2019																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2020																		
Expansion of Flow EQ	2021																		
AWPF	2020																		
AWPF	2020																		
AWPF	2021																		
AWPF	2022																		
AWPF	2022																		
AWPF	2022																		
Brine Line	2021																		
Balboa Pump Station Expansior	2022																		
Purified Recycled Water Pipelin	2020																		
Purified Recycled Water Pipelin	2021																		
Pacoima - Lateral Pipeline Cons	2021																		
Pacoima - Outlet Structure Con	2021																		
Pacoima - Lateral Pipeline Cons	2022																		
Pacoima - Outlet Structure Con	2022																		
Hansen - Lateral Pipeline Const	2022																		
Hansen - Outlet Structure Cons	2022																		
Pacoima	2021																		
Pacoima	2022																		
Hansen	2022																		

	Year
	2018
	2019
	2020
	2021
	2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Reginal Daily (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Bulldozer	1	8	0.864	1.172	10.200	14.094	0.018	2.002	0.722	1,884.273	0.294	0.057	1,907.545
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Excavator	1	8	0.477	0.394	4.617	5.592	0.015	0.239	0.182	1,524.077	0.182	0.045	1,541.102
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Backhoe	1	8	0.653	0.365	3.598	5.055	0.012	0.480	0.221	1,304.050	0.113	0.038	1,317.255
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Truck-mounted cranes	1	8	0.727	0.655	3.705	9.071	0.015	0.373	0.305	1,556.081	0.192	0.046	1,573.659
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Bulldozer	1	8	0.751	1.074	9.372	11.985	0.014	1.235	0.571	1,401.907	0.289	0.041	1,420.862
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Excavator	1	8	0.363	0.313	4.205	3.700	0.010	0.185	0.146	1,047.022	0.177	0.029	1,059.767
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Backhoe	1	8	0.508	0.280	3.165	3.294	0.008	0.416	0.177	830.434	0.109	0.022	839.390
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Truck-mounted cranes	1	8	0.578	0.537	3.082	6.810	0.011	0.301	0.252	1,078.568	0.187	0.030	1,091.867
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Bulldozer	1	8	0.887	1.156	9.945	14.388	0.021	2.581	0.794	2,226.238	0.296	0.068	2,252.504
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Compactor	1	8	0.996	0.167	1.623	3.588	0.013	0.120	0.061	1,378.531	0.021	0.040	1,389.763
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Forklift	1	8	0.813	0.287	2.607	4.765	0.014	0.221	0.153	1,495.372	0.065	0.044	1,508.853
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Loader	1	8	0.644	0.362	3.739	5.698	0.016	0.475	0.205	1,654.764	0.116	0.049	1,671.032
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Bulldozer	1	8	0.751	1.074	9.372	11.985	0.014	1.235	0.571	1,401.907	0.289	0.041	1,420.862
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Compactor	1	8	0.860	0.084	1.049	1.184	0.005	0.062	0.033	554.201	0.014	0.013	558.121
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Forklift	1	8	0.677	0.204	2.033	2.361	0.007	0.162	0.125	671.042	0.058	0.017	677.211
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Loader	1	8	0.508	0.280	3.165	3.294	0.008	0.416	0.177	830.434	0.109	0.022	839.390
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Bulldozer	1	8	0.703	1.003	8.716	11.009	0.014	1.192	0.531	1,372.104	0.289	0.040	1,390.773
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Compactor	1	8	0.856	0.081	0.990	1.113	0.005	0.061	0.032	543.514	0.013	0.013	547.312
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Forklift	1	8	0.612	0.185	1.960	2.159	0.006	0.148	0.111	657.065	0.057	0.017	663.084
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Loader	1	8	0.460	0.252	3.083	2.988	0.008	0.392	0.155	812.904	0.108	0.022	821.680
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Bulldozer	1	8	1.070	1.266	10.665	17.660	0.032	4.413	1.096	3,328.328	0.305	0.104	3,364.478
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Scrapers	1	8	0.798	1.288	10.084	19.346	0.038	0.686	0.547	3,925.524	0.494	0.124	3,972.115
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Compactor	1	8	1.179	0.277	2.342	6.859	0.023	0.196	0.098	2,480.621	0.030	0.077	2,501.737
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Forklift	1	8	0.996	0.397	3.326	8.036	0.024	0.297	0.190	2,597.462	0.074	0.080	2,620.827
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Bulldozer	1	8	1.009	1.184	9.995	16.264	0.031	4.365	1.052	3,276.207	0.304	0.102	3,311.874
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Scrapers	1	8	0.753	1.202	9.416	17.708	0.037	0.633	0.499	3,860.167	0.493	0.121	3,906.160
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Compactor	1	8	1.163	0.262	2.270	6.368	0.023	0.191	0.093	2,447.616	0.029	0.075	2,468.414
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Forklift	1	8	0.919	0.366	3.240	7.414	0.024	0.278	0.172	2,561.168	0.073	0.079	2,584.186
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Bulldozer	1	8	0.748	1.030	8.864	11.813	0.016	1.678	0.610	1,647.035	0.291	0.049	1,668.253
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Scrapers	1	8	0.492	1.047	8.285	13.258	0.022	0.520	0.447	2,230.995	0.479	0.068	2,262.539
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Compactor	1	8	0.902	0.108	1.139	1.917	0.008	0.078	0.040	818.445	0.015	0.022	824.793
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Forklift	1	8	0.657	0.212	2.108	2.963	0.009	0.165	0.120	931.996	0.059	0.026	940.565
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Bulldozer	1	8	0.664	0.979	8.154	10.563	0.011	0.923	0.480	1,053.741	0.282	0.033	1,070.477
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Scrapers	1	8	0.408	0.996	7.575	12.007	0.017	0.468	0.423	1,637.701	0.471	0.052	1,664.763
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Compactor	1	8	0.817	0.057	0.428	0.666	0.002	0.026	0.017	225.150	0.006	0.006	227.016
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Forklift	1	8	0.573	0.161	1.398	1.713	0.003	0.113	0.096	338.702	0.051	0.010	342.788
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Bulldozer	1	8	0.612	0.901	7.478	9.520	0.011	0.875	0.435	1,049.251	0.281	0.033	1,065.931
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Scrapers	1	8	0.382	0.933	7.118	10.937	0.017	0.427	0.385	1,635.481	0.471	0.052	1,662.530
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Compactor	1	8	0.816	0.056	0.419	0.631	0.002	0.026	0.017	222.046	0.006	0.006	223.883
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Forklift	1	8	0.517	0.145	1.376	1.559	0.003	0.100	0.084	335.598	0.050	0.010	339.655
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Bulldozer	1	8	0.801	1.064	9.886	12.302	0.021	1.971	0.671	2,135.656	0.303	0.058	2,159.425
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Compactor	1	8	0.955	0.142	2.160	2.405	0.013	0.137	0.066	1,307.065	0.027	0.031	1,315.965
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Excavator	1	8	0.440	0.355	5.321	4.643	0.018	0.248	0.167	1,788.531	0.191	0.046	1,806.157
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Backhoe	2	8	0.559	0.525	6.556	6.408	0.018	0.810	0.320	1,880.325	0.220	0.049	1,899.577
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Forklift	1	8	0.711	0.246	3.130	3.451	0.014	0.224	0.145	1,420.617	0.072	0.034	1,431.737
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Loader	1	8	0.559	0.314	4.253	4.281	0.015	0.469	0.188	1,576.455	0.122	0.039	1,590.332
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Crane	1	8	0.622	0.546	4.019	7.429	0.018	0.345	0.256	1,819.281	0.201	0.047	1,837.454
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Bulldozer	1	8	0.778	1.050	9.783	11.897	0.020	1.727	0.630	1,987.549	0.302	0.053	2,010.005
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Compactor	1	8	0.931	0.128	2.057	2.001	0.011	0.127	0.061	1,158.959	0.026	0.026	1,166.545
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Excavator	1	8	0.416	0.341	5.218	4.238	0.016	0.238	0.162	1,640.425	0.189	0.042	1,656.737
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Backhoe	2	8	0.535	0.511	6.453	6.003	0.017	0.800	0.316	1,732.218	0.219	0.045	1,750.157
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Forklift	1	8	0.687	0.232	3.027	3.047	0.012	0.214	0.140	1,272.510	0.070	0.030	1,282.317
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Loader	1	8	0.535	0.300	4.150	3.876	0.014	0.459	0.183	1,428.349	0.121	0.035	1,440.912
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Crane	1	8	0.598	0.531	3.916	7.024	0.016	0.335	0.251	1,671.175	0.199	0.043	1,688.034
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Bulldozer	1	8	0.674	0.941	8.803	9.999	0.017	1.189	0.505	1,668.792	0.297	0.043	1,688.384

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e
										Reginal Daily (lb/day)										
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Compactor	1	8	0.878	0.096	1.744	1.110	0.008	0.106	0.051	841.587	0.022	0.016	846.336
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Excavator	1	8	0.346	0.292	4.908	3.080	0.013	0.204	0.140	1,323.129	0.186	0.031	1,336.608
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Backhoe	2	8	0.440	0.434	6.100	4.689	0.014	0.736	0.266	1,415.112	0.215	0.034	1,430.216
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Forklift	1	8	0.578	0.185	2.701	2.037	0.009	0.180	0.118	955.138	0.067	0.019	962.108
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Loader	1	8	0.440	0.245	3.817	2.774	0.011	0.416	0.154	1,111.110	0.117	0.024	1,120.837
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Crane	1	8	0.504	0.460	3.473	5.603	0.014	0.289	0.219	1,353.753	0.195	0.032	1,367.771
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Compactor	1	8	0.867	0.088	1.404	1.077	0.007	0.091	0.045	723.614	0.018	0.014	727.889
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Excavator	1	8	0.304	0.257	4.552	2.659	0.012	0.170	0.116	1,204.973	0.181	0.030	1,217.974
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Backhoe	1	8	0.386	0.214	3.454	2.519	0.010	0.379	0.127	993.479	0.113	0.023	1,002.739
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Forklift	1	8	0.507	0.161	2.347	1.881	0.008	0.151	0.099	837.165	0.062	0.018	843.661
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Loader	1	8	0.386	0.214	3.454	2.519	0.010	0.379	0.127	993.479	0.113	0.023	1,002.739
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Crane	1	8	0.452	0.413	3.045	4.919	0.012	0.251	0.191	1,235.869	0.191	0.031	1,249.418
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Excavator	1	8	0.285	0.245	4.253	2.453	0.010	0.149	0.108	1,032.690	0.178	0.027	1,044.721
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Backhoe	1	8	0.367	0.202	3.156	2.312	0.008	0.359	0.118	821.195	0.109	0.020	829.486
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Forklift	1	8	0.488	0.149	2.049	1.674	0.007	0.131	0.090	664.882	0.059	0.015	670.408
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Crane	1	8	0.433	0.401	2.746	4.713	0.011	0.231	0.183	1,063.585	0.188	0.028	1,076.165
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Loader	1	8	0.348	0.190	2.858	2.106	0.006	0.338	0.110	648.912	0.106	0.016	656.233
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Crane	1	8	0.414	0.389	2.448	4.507	0.009	0.210	0.174	891.302	0.184	0.024	902.912
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Excavator	1	8	0.312	0.269	3.846	2.985	0.009	0.145	0.115	911.725	0.173	0.027	923.801
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Loader	1	8	0.407	0.222	2.754	2.679	0.007	0.355	0.128	699.706	0.104	0.020	708.031
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Pavement Cutter	1	8	0.327	0.223	2.992	2.689	0.008	0.130	0.103	787.171	0.132	0.023	797.043
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Crane	1	8	0.470	0.437	2.410	5.508	0.009	0.228	0.193	942.349	0.182	0.028	954.964
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Compactor	1	8	0.845	0.073	0.681	1.015	0.004	0.045	0.025	430.183	0.009	0.012	433.529
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Sweepers	1	8	0.578	0.261	2.421	2.821	0.006	0.187	0.155	641.880	0.085	0.019	649.182
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Forklift	1	8	0.448	0.124	1.403	1.257	0.003	0.204	0.089	300.500	0.051	0.008	304.024
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Tractor	1	8	0.327	0.177	2.510	1.895	0.005	0.315	0.100	456.814	0.101	0.013	463.102
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Generator	0	8	6.131	0.011	0.249	0.202	0.001	0.017	0.007	152.469	0.003	0.003	153.375
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Backhoe	4	8	0.555	0.944	10.404	10.987	0.023	1.459	0.570	2,316.938	0.408	0.071	2,347.094
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Crane	2	8	0.618	0.984	5.330	13.030	0.022	0.527	0.442	2,194.851	0.368	0.067	2,222.848
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Backhoe	4	8	0.508	0.849	10.279	9.930	0.023	1.371	0.490	2,300.268	0.407	0.070	2,330.269
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Crane	2	8	0.571	0.900	5.025	11.757	0.021	0.476	0.395	2,177.549	0.367	0.066	2,205.379
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Excavator	3	8	0.309	0.741	10.811	7.267	0.020	0.370	0.317	1,973.405	0.509	0.060	2,003.439
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Crane	2	8	0.467	0.840	4.565	10.091	0.015	0.431	0.374	1,518.632	0.362	0.045	1,540.616
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Backhoe	3	8	0.393	0.592	7.190	6.318	0.012	1.336	0.401	1,203.642	0.299	0.038	1,221.965
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Concrete Pump	2	8	7.981	0.785	7.821	6.992	0.016	0.381	0.367	1,537.707	0.072	0.048	1,552.560
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Excavator	5	8	0.277	1.075	17.439	9.764	0.031	0.490	0.428	2,996.975	0.842	0.093	3,045.181
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Crane	2	8	0.426	0.760	4.351	8.785	0.015	0.385	0.333	1,511.250	0.362	0.045	1,533.181
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Backhoe	2	8	0.350	0.357	4.849	3.956	0.009	0.973	0.249	897.678	0.201	0.028	910.616
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Concrete Pump	1	8	7.391	0.376	4.058	3.539	0.009	0.181	0.167	912.024	0.036	0.028	920.464
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Excavator	5	8	0.277	1.075	17.439	9.764	0.031	0.490	0.428	2,996.975	0.842	0.093	3,045.181
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Crane	2	8	0.426	0.760	4.351	8.785	0.015	0.385	0.333	1,511.250	0.362	0.045	1,533.181
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Backhoe	2	8	0.350	0.357	4.849	3.956	0.009	0.973	0.249	897.678	0.201	0.028	910.616
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Concrete Pump	1	8	7.391	0.376	4.058	3.539	0.009	0.181	0.167	912.024	0.036	0.028	920.464
										Reginal Daily Emissions (tons/year)										
Warehouse	2018									0.2	0.1	0.9	1.4	0.0	0.1	0.1	305	0.03	0.01	307.79
Maintenance Building	2018																-	-	-	-
Expansion of Flow EQ	2018																-	-	-	-
AWPF	2018																-	-	-	-
Brine Line	2018																-	-	-	-
Balboa Pump Station Expansior	2018																-	-	-	-
Purified Recycled Water Pipelin	2018																-	-	-	-
Pacoima - Lateral Pipeline Cons	2018																-	-	-	-
Pacoima - Outlet Structure Con	2018																-	-	-	-
Hansen - Lateral Pipeline Const	2018																-	-	-	-
Hansen - Outlet Structure Cons	2018																-	-	-	-

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e	
										Reginal Daily (lb/day)											
																	-	-	-	-	
Warehouse	2019									0.4	0.2	2.2	2.8	0.0	0.2	0.1	577	0.08	0.02	583.21	
Maintenance Building	2019									0.3	0.1	1.3	2.0	0.0	0.2	0.1	522	0.03	0.01	526.42	
Expansion of Flow EQ	2019									0.2	0.1	1.2	2.6	0.0	0.2	0.1	730	0.03	0.02	736.78	
AWPF	2019																-	-	-	-	
Brine Line	2019																-	-	-	-	
Balboa Pump Station Expansior	2019																-	-	-	-	
Purified Recycled Water Pipelin	2019																-	-	-	-	
Pacoima - Lateral Pipeline Cons	2019																-	-	-	-	
Pacoima - Outlet Structure Con	2019																-	-	-	-	
Hansen - Lateral Pipeline Const	2019																-	-	-	-	
Hansen - Outlet Structure Cons	2019																-	-	-	-	
																	-	-	-	-	
Warehouse	2020																-	-	-	-	
Maintenance Building	2020									0.3	0.1	1.1	1.3	0.0	0.1	0.1	319	0.03	0.01	322.41	
Expansion of Flow EQ	2020									0.6	0.4	3.1	4.9	0.0	0.4	0.2	1,141	0.12	0.03	1,153.51	
AWPF	2020									0.3	0.2	2.3	2.6	0.0	0.3	0.1	753	0.07	0.02	760.17	
Brine Line	2020																-	-	-	-	
Balboa Pump Station Expansior	2020																-	-	-	-	
Purified Recycled Water Pipelin	2020									0.1	0.1	1.2	1.8	0.0	0.2	0.1	347	0.06	0.01	351.89	
Pacoima - Lateral Pipeline Cons	2020																-	-	-	-	
Pacoima - Outlet Structure Con	2020																-	-	-	-	
Hansen - Lateral Pipeline Const	2020																-	-	-	-	
Hansen - Outlet Structure Cons	2020																-	-	-	-	
																	-	-	-	-	
Warehouse	2021																-	-	-	-	
Maintenance Building	2021																-	-	-	-	
Expansion of Flow EQ	2021									0.1	0.1	0.6	0.8	0.0	0.0	0.0	128	0.03	0.00	129.54	
AWPF	2021									0.5	0.3	4.1	3.8	0.0	0.4	0.2	1,131	0.14	0.03	1,142.17	
Brine Line	2021									0.3	0.1	1.5	1.7	0.0	0.1	0.1	435	0.07	0.01	439.96	
Balboa Pump Station Expansior	2021																-	-	-	-	
Purified Recycled Water Pipelin	2021									0.1	0.2	1.8	2.6	0.0	0.2	0.1	533	0.09	0.02	539.74	
Pacoima - Lateral Pipeline Cons	2021									0.0	0.0	0.3	0.4	0.0	0.0	0.0	79	0.02	0.00	79.74	
Pacoima - Outlet Structure Con	2021									0.2	0.0	0.3	0.3	0.0	0.0	0.0	62	0.01	0.00	62.43	
Hansen - Lateral Pipeline Const	2021																-	-	-	-	
Hansen - Outlet Structure Cons	2021																-	-	-	-	
																	-	-	-	-	
Warehouse	2022																-	-	-	-	
Maintenance Building	2022																-	-	-	-	
Expansion of Flow EQ	2022																-	-	-	-	
AWPF	2022									0.4	0.1	1.8	1.6	0.0	0.2	0.1	652	0.07	0.01	657.45	
Brine Line	2022																-	-	-	-	
Balboa Pump Station Expansior	2022									2.8	0.0	0.6	0.5	0.0	0.1	0.0	158	0.02	0.00	159.54	
Purified Recycled Water Pipelin	2022																-	-	-	-	
Pacoima - Lateral Pipeline Cons	2022									0.1	0.2	2.1	1.8	0.0	0.1	0.1	440	0.12	0.01	446.39	
Pacoima - Outlet Structure Con	2022									0.8	0.1	0.9	0.7	0.0	0.1	0.0	176	0.02	0.01	178.53	
Hansen - Lateral Pipeline Const	2022									0.0	0.1	0.7	0.6	0.0	0.0	0.0	147	0.04	0.00	148.80	Metric Tons (ammortized)
Hansen - Outlet Structure Cons	2022									0.3	0.0	0.3	0.2	0.0	0.0	0.0	59	0.01	0.00	59.51	266
										Per project (tons)											Metric Tons
										8.1	2.8	28.3	34.5	0.1	3.0	1.4	8,692	1.1	0.2	8,786	7,970.49
										Emissions (tons per year)											
										1.6	0.6	5.7	6.9	0.0	0.6	0.3	1,738.4	0.2	0.0	1,757	

Phase	Year	Reginal Daily (lb/day)										
Warehouse	2018	5	3	26	41	0	3	2	9,233	0.8	0.3	9,327
Warehouse	2019	4	2	22	29	0	2	1	5,917	0.8	0.2	5,982
Maintenance Building	2019	5	2	22	38	0	4	1	10,787	0.5	0.3	10,887
Maintenance Building	2019	4	2	18	22	0	2	1	5,017	0.5	0.1	5,065
Maintenance Building	2020	4	2	17	20	0	2	1	4,913	0.5	0.1	4,960

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Reginal Daily (lb/day)										
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e
Expansion of Flow EQ	2019									7	4	35	78	0	6	2	22,117	1.0	0.7	22,327
Expansion of Flow EQ	2020									7	4	33	72	0	6	2	21,798	1.0	0.7	22,005
Expansion of Flow EQ	2020									5	3	24	37	0	3	1	8,764	0.9	0.3	8,856
Expansion of Flow EQ	2020									4	2	18	27	0	2	1	4,018	0.8	0.1	4,074
Expansion of Flow EQ	2021									4	2	17	24	0	1	1	3,993	0.8	0.1	4,048
AWPF	2020									5	3	35	41	0	4	2	11,928	1.1	0.3	12,041
AWPF	2020									4	3	35	38	0	4	2	10,891	1.1	0.3	10,995
AWPF	2021									4	3	32	29	0	3	1	8,669	1.1	0.2	8,752
AWPF	2022									4	1	19	16	0	2	1	6,678	0.7	0.2	6,737
AWPF	2022									3	1	15	13	0	1	1	5,133	0.6	0.1	5,180
AWPF	2022									3	1	8	9	0	1	0	3,263	0.3	0.1	3,292
Brine Line	2021									3	1	15	18	0	1	1	4,413	0.7	0.1	4,467
Balboa Pump Station Expansior	2022									22	0	5	4	0	1	0	1,215	0.2	0.0	1,227
Purified Recycled Water Pipelin	2020									1	2	16	24	0	2	1	4,512	0.8	0.1	4,570
Purified Recycled Water Pipelin	2021									1	2	15	22	0	2	1	4,478	0.8	0.1	4,536
Pacoima - Lateral Pipeline Cons	2021									1	2	15	17	0	1	1	3,492	0.9	0.1	3,544
Pacoima - Outlet Structure Con	2021									8	1	15	13	0	2	1	2,741	0.4	0.1	2,775
Pacoima - Lateral Pipeline Cons	2022									1	2	22	19	0	1	1	4,508	1.2	0.1	4,578
Pacoima - Outlet Structure Con	2022									8	1	9	7	0	1	0	1,810	0.2	0.1	1,831
Hansen - Lateral Pipeline Const	2022									1	2	22	19	0	1	1	4,508	1.2	0.1	4,578
Hansen - Outlet Structure Cons	2022									8	1	9	7	0	1	0	1,810	0.2	0.1	1,831
Pacoima	2021																			
Pacoima	2022																			
Hansen	2022																			

Year	Reginal Daily (lb/day)									
2018	5.1	3	26	41	0	3	2	9,233	0.8	0.3	9,327
2019	7.4	4	35	78	0	6	2	22,117	1.0	0.7	22,327
2020	10.9	8	75	102	0	9	4	26,710	2.8	0.8	26,965
2021	15.9	7	77	78	0	7	4	19,315	3.0	0.5	19,537
2022	33.9	4	55	46	0	5	2	14,210.4	2.3	0.4	14,374

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Localized Daily (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Bulldozer	1	8	1.280	1.076	8.963	11.697	0.009	1.917	0.682	896.224
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Excavator	1	8	0.355	0.298	3.379	3.194	0.005	0.155	0.142	536.028
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Backhoe	1	8	0.320	0.269	2.361	2.657	0.003	0.395	0.182	316.001
Warehouse	2018	10/1/2018	12/31/2018	66	20	10	Truck-mounted cranes	1	8	0.665	0.558	2.467	6.673	0.006	0.289	0.266	568.031
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Bulldozer	1	8	1.225	1.029	8.533	11.052	0.009	1.184	0.547	882.186
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Excavator	1	8	0.320	0.269	3.366	2.767	0.005	0.133	0.123	527.301
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Backhoe	1	8	0.280	0.235	2.326	2.361	0.003	0.364	0.153	310.713
Warehouse	2019	1/1/2019	9/30/2019	195	20	4	Truck-mounted cranes	1	8	0.587	0.493	2.243	5.877	0.006	0.249	0.229	558.847
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Bulldozer	1	8	1.225	1.029	8.533	11.052	0.009	2.471	0.742	882.186
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Forklift	1	8	0.190	0.160	1.194	1.428	0.002	0.111	0.102	151.321
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	15	Loader	1	8	0.280	0.235	2.326	2.361	0.003	0.364	0.153	310.713
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Bulldozer	1	8	1.225	1.029	8.533	11.052	0.009	1.184	0.547	882.186
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Forklift	1	8	0.190	0.160	1.194	1.428	0.002	0.111	0.102	151.321
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	4	Loader	1	8	0.280	0.235	2.326	2.361	0.003	0.364	0.153	310.713
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	1.141	0.508	863.070
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	4	Loader	1	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Bulldozer	1	8	1.225	1.029	8.533	11.052	0.009	4.227	1.008	882.186
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Scrapers	1	8	1.250	1.051	7.952	12.738	0.015	0.499	0.459	1,479.382
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	30	Forklift	1	8	0.190	0.160	1.194	1.428	0.002	0.111	0.102	151.321
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	4.184	0.969	863.070
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Scrapers	1	8	1.166	0.979	7.357	11.592	0.015	0.452	0.416	1,447.030
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	30	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	1.609	0.579	863.070
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Scrapers	1	8	1.166	0.979	7.357	11.592	0.015	0.452	0.416	1,447.030
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	8	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	0.907	0.473	863.070
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Scrapers	1	8	1.166	0.979	7.357	11.592	0.015	0.452	0.416	1,447.030
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	2	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Bulldozer	1	8	1.054	0.885	7.270	9.141	0.009	0.858	0.428	861.685
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Scrapers	1	8	1.091	0.917	6.909	10.557	0.015	0.411	0.378	1,447.914
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	2	Forklift	1	8	0.154	0.129	1.168	1.179	0.002	0.084	0.077	148.031
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	1.843	0.614	863.070
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Excavator	1	8	0.301	0.253	3.371	2.489	0.005	0.121	0.111	515.945
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Backhoe	2	8	0.504	0.423	4.606	4.254	0.006	0.683	0.264	607.739
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Loader	1	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869
AWPF	2020	7/1/2020	9/30/2020	66	50	10	Crane	1	8	0.528	0.444	2.070	5.275	0.006	0.217	0.200	546.695
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Bulldozer	1	8	1.145	0.962	7.936	10.148	0.009	1.609	0.579	863.070
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Excavator	1	8	0.301	0.253	3.371	2.489	0.005	0.121	0.111	515.945
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Backhoe	2	8	0.504	0.423	4.606	4.254	0.006	0.683	0.264	607.739
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Forklift	1	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Loader	1	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869
AWPF	2020	10/1/2020	12/31/2020	66	50	8	Crane	1	8	0.528	0.444	2.070	5.275	0.006	0.217	0.200	546.695
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Bulldozer	1	8	1.054	0.885	7.270	9.141	0.009	1.093	0.463	861.685

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Localized Daily (lb/day)							
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Excavator	1	8	0.281	0.236	3.375	2.222	0.005	0.108	0.099	516.021
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Backhoe	2	8	0.450	0.378	4.567	3.831	0.006	0.639	0.225	608.005
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Forklift	1	8	0.154	0.129	1.168	1.179	0.002	0.084	0.077	148.031
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Loader	1	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002
AWPF	2021	1/1/2021	12/31/2021	261	50	4	Crane	1	8	0.481	0.404	1.940	4.744	0.006	0.193	0.177	546.645
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Excavator	1	8	0.249	0.209	3.358	1.833	0.005	0.089	0.081	515.839
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Backhoe	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Forklift	1	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Loader	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
AWPF	2022	1/1/2022	4/30/2022	85	40	4	Crane	1	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Excavator	1	8	0.249	0.209	3.358	1.833	0.005	0.089	0.081	515.839
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Backhoe	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Forklift	1	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031
AWPF	2022	5/1/2022	8/31/2022	88	30	3	Crane	1	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Loader	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
AWPF	2022	9/1/2022	12/31/2022	87	20	2	Crane	1	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Excavator	1	8	0.281	0.236	3.375	2.222	0.005	0.109	0.099	516.021
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Loader	1	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Pavement Cutter	1	8	0.227	0.191	2.522	1.926	0.004	0.095	0.088	391.468
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Crane	1	8	0.481	0.404	1.940	4.744	0.006	0.193	0.177	546.645
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Compactor	1	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Brine Line	2021	4/1/2021	12/31/2021	197	10	4	Sweepers	1	8	0.272	0.229	1.951	2.057	0.003	0.151	0.139	246.177
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Forklift	1	8	0.135	0.114	1.154	1.055	0.002	0.187	0.082	148.031
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Tractor	1	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
Balboa Pump Station Expansior	2022	1/1/2022	12/31/2022	260	8	1	Generator	0	8	-	-	-	-	-	-	-	-
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Backhoe	4	8	1.008	0.847	9.213	8.507	0.013	1.367	0.529	1,215.478
Purified Recycled Water Pipelin	2020	6/1/2020	12/31/2020	154	20	12	Crane	2	8	1.056	0.887	4.139	10.550	0.011	0.435	0.400	1,093.390
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Backhoe	4	8	0.901	0.757	9.134	7.661	0.013	1.281	0.450	1,216.009
Purified Recycled Water Pipelin	2021	1/1/2021	11/30/2021	238	20	12	Crane	2	8	0.962	0.808	3.880	9.489	0.011	0.385	0.354	1,093.291
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Excavator	3	8	0.844	0.709	10.126	6.665	0.016	0.325	0.298	1,548.064
Pacoima - Lateral Pipeline Cons	2021	11/1/2021	12/31/2021	45	20	3	Crane	2	8	0.962	0.808	3.880	9.489	0.011	0.385	0.354	1,093.291
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Backhoe	3	8	0.676	0.568	6.851	5.746	0.009	1.310	0.390	912.007
Pacoima - Outlet Structure Con	2021	11/1/2021	12/31/2021	45	7	3	Concrete Pump	2	8	17.409	0.761	7.481	6.420	0.013	0.355	0.355	1,246.072
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Excavator	5	8	1.243	1.044	16.791	9.166	0.027	0.445	0.408	2,579.195
Pacoima - Lateral Pipeline Cons	2022	1/1/2022	9/30/2022	195	20	3	Crane	2	8	0.869	0.730	3.703	8.187	0.011	0.340	0.313	1,093.470
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Backhoe	2	8	0.396	0.333	4.522	3.386	0.006	0.947	0.237	608.690
Pacoima - Outlet Structure Con	2022	1/1/2022	9/30/2022	195	7	3	Concrete Pump	1	8	8.059	0.352	3.732	2.969	0.007	0.156	0.156	623.035
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Excavator	5	8	1.243	1.044	16.791	9.166	0.027	0.445	0.408	2,579.195
Hansen - Lateral Pipeline Const	2022	10/1/2022	12/31/2022	65	20	3	Crane	2	8	0.869	0.730	3.703	8.187	0.011	0.340	0.313	1,093.470
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Backhoe	2	8	0.396	0.333	4.522	3.386	0.006	0.947	0.237	608.690
Hansen - Outlet Structure Cons	2022	10/1/2022	12/31/2022	65	7	3	Concrete Pump	1	8	8.059	0.352	3.732	2.969	0.007	0.156	0.156	623.035

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansior	2018
Purified Recycled Water Pipelin	2018
Pacoima - Lateral Pipeline Cons	2018
Pacoima - Outlet Structure Con	2018
Hansen - Lateral Pipeline Const	2018
Hansen - Outlet Structure Cons	2018

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Localized Daily (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
Warehouse	2019																
Maintenance Building	2019																
Expansion of Flow EQ	2019																
AWPF	2019																
Brine Line	2019																
Balboa Pump Station Expansior	2019																
Purified Recycled Water Pipelin	2019																
Pacoima - Lateral Pipeline Cons	2019																
Pacoima - Outlet Structure Con	2019																
Hansen - Lateral Pipeline Const	2019																
Hansen - Outlet Structure Cons	2019																
Warehouse	2020																
Maintenance Building	2020																
Expansion of Flow EQ	2020																
AWPF	2020																
Brine Line	2020																
Balboa Pump Station Expansior	2020																
Purified Recycled Water Pipelin	2020																
Pacoima - Lateral Pipeline Cons	2020																
Pacoima - Outlet Structure Con	2020																
Hansen - Lateral Pipeline Const	2020																
Hansen - Outlet Structure Cons	2020																
Warehouse	2021																
Maintenance Building	2021																
Expansion of Flow EQ	2021																
AWPF	2021																
Brine Line	2021																
Balboa Pump Station Expansior	2021																
Purified Recycled Water Pipelin	2021																
Pacoima - Lateral Pipeline Cons	2021																
Pacoima - Outlet Structure Con	2021																
Hansen - Lateral Pipeline Const	2021																
Hansen - Outlet Structure Cons	2021																
Warehouse	2022																
Maintenance Building	2022																
Expansion of Flow EQ	2022																
AWPF	2022																
Brine Line	2022																
Balboa Pump Station Expansior	2022																
Purified Recycled Water Pipelin	2022																
Pacoima - Lateral Pipeline Cons	2022																
Pacoima - Outlet Structure Con	2022																
Hansen - Lateral Pipeline Const	2022																
Hansen - Outlet Structure Cons	2022																

Phase	Year	Localized Daily (lb/day)							
Warehouse	2018	2.6	2.2	17.2	24.2	0.0	2.8	1.3	2,316.3
Warehouse	2019	2.4	2.0	16.5	22.1	0.0	1.9	1.1	2,279.0
Maintenance Building	2019	1.7	1.5	12.3	15.1	0.0	3.0	1.0	1,378.7
Maintenance Building	2019	1.7	1.5	12.3	15.1	0.0	1.7	0.8	1,378.7
Maintenance Building	2020	1.6	1.4	11.6	13.8	0.0	1.6	0.7	1,349.4

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
nel Round Trip Length (miles): 14.7
ck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Localized Daily (lb/day)							
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**TOG_RUNEX**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**	**CO2_RUNEX**
Expansion of Flow EQ	2019									2.7	2.3	17.9	25.5	0.0	4.8	1.6	2,547.4
Expansion of Flow EQ	2020									2.5	2.1	16.7	23.3	0.0	4.7	1.5	2,492.6
Expansion of Flow EQ	2020									2.5	2.1	16.7	23.3	0.0	2.2	1.1	2,492.6
Expansion of Flow EQ	2020									2.5	2.1	16.7	23.3	0.0	1.5	1.0	2,492.6
Expansion of Flow EQ	2021									2.3	2.0	15.6	21.1	0.0	1.4	0.9	2,492.1
AWPF	2020									2.9	2.5	21.7	25.8	0.0	3.3	1.4	3,019.8
AWPF	2020									2.9	2.5	21.7	25.8	0.0	3.1	1.4	3,019.8
AWPF	2021									2.7	2.3	20.8	23.3	0.0	2.4	1.2	3,018.9
AWPF	2022									1.3	1.1	11.1	10.6	0.0	1.4	0.6	1,853.8
AWPF	2022									1.0	0.9	8.6	8.7	0.0	1.0	0.4	1,514.9
AWPF	2022									0.6	0.5	4.1	5.8	0.0	0.7	0.3	851.1
Brine Line	2021									1.5	1.3	12.3	13.1	0.0	0.9	0.6	2,038.8
Balboa Pump Station Expansior	2022									0.3	0.3	3.4	2.7	0.0	0.5	0.2	452.4
Purified Recycled Water Pipelin	2020									2.1	1.7	13.4	19.1	0.0	1.8	0.9	2,308.9
Purified Recycled Water Pipelin	2021									1.9	1.6	13.0	17.2	0.0	1.7	0.8	2,309.3
Pacoima - Lateral Pipeline Cons	2021									1.8	1.5	14.0	16.2	0.0	0.7	0.7	2,641.4
Pacoima - Outlet Structure Con	2021									18.1	1.3	14.3	12.2	0.0	1.7	0.7	2,158.1
Pacoima - Lateral Pipeline Cons	2022									2.1	1.8	20.5	17.4	0.0	0.8	0.7	3,672.7
Pacoima - Outlet Structure Con	2022									8.5	0.7	8.3	6.4	0.0	1.1	0.4	1,231.7
Hansen - Lateral Pipeline Const	2022									2.1	1.8	20.5	17.4	0.0	0.8	0.7	3,672.7
Hansen - Outlet Structure Cons	2022									8.5	0.7	8.3	6.4	0.0	1.1	0.4	1,231.7
Pacoima	2021									19.89	2.85	28.34	28.32	0.05	2.38	1.40	4,799.43
Pacoima	2022									10.57	2.46	28.75	23.71	0.05	1.89	1.11	4,904.39
Hansen	2022									10.57	2.46	28.75	23.71	0.05	1.89	1.11	4,904.39

Year
2018
2019
2020
2021
2022

DCT Alternative

Using Tier III Equipment

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	HP	LF	OFFROAD Emission Factors (g/hp-hr) ROG	CO	NOX	SO2	PM10	PM2.5
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Excavator	1	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Backhoe	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Truck-mounted cran	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Excavator	1	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Backhoe	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Truck-mounted cran	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Scrapers	1	8	362	0.48	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Scrapers	1	8	362	0.48	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Scrapers	1	8	362	0.48	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Scrapers	1	8	362	0.48	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Scrapers	1	8	362	0.48	0.120	2.600	2.320	-	0.088	0.088
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Excavator	1	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
AWPF	2020	7/1/2020	9/30/2020	66	50	2	10	Backhoe	2	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Crane	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Excavator	1	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
AWPF	2020	10/1/2020	12/31/2020	66	50	2	8	Backhoe	2	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Crane	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Bulldozer	1	8	255	0.4	0.120	2.600	2.320	-	0.088	0.088
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	1	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	HP	LF	OFFROAD Emission Factors (g/hp-hr) ROG	CO	NOX	SO2	PM10	PM2.5
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Backhoe	2	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Excavator	1	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Excavator	1	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Backhoe	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Crane	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Crane	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Excavator	1	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Loader	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Pavement Cutter	1	8	131	0.36	0.120	3.700	2.320	-	0.112	0.112
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Crane	1	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Compactor	1	8	8	0.43	0.290	4.100	4.630	-	0.280	0.280
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Sweepers	1	8	64	0.46	0.120	3.700	2.740	-	0.192	0.192
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Forklift	1	8	89	0.2	0.120	3.700	2.740	-	0.192	0.192
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	1	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	4	12	Backhoe	4	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	2	12	Crane	2	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	4	12	Backhoe	4	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	2	12	Crane	2	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	3	3	Excavator	3	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	2	3	Crane	2	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	3	3	Backhoe	3	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	2	3	Concrete Pump	2	8	84	0.74	0.120	3.700	2.740	-	0.192	0.192
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	5	3	Excavator	5	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	2	3	Crane	2	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	2	3	Backhoe	2	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	1	3	Concrete Pump	1	8	84	0.74	0.120	3.700	2.740	-	0.192	0.192
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	5	3	Excavator	5	8	163	0.38	0.120	3.700	2.320	-	0.112	0.112
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	2	3	Crane	2	8	226	0.29	0.120	2.600	2.320	-	0.088	0.088
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	2	3	Backhoe	2	8	98	0.37	0.120	3.700	2.740	-	0.192	0.192
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	1	3	Concrete Pump	1	8	84	0.74	0.120	3.700	2.740	-	0.192	0.192

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansion	2018
Purified Recycled Water Pipeline	2018
Pacoima - Lateral Pipeline Construc	2018
Pacoima - Outlet Structure Constru	2018
Hansen - Lateral Pipeline Constructi	2018
Hansen - Outlet Structure Construct	2018

Warehouse	2019
Maintenance Building	2019
Expansion of Flow EQ	2019
AWPF	2019

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

													OFFROAD Emission Factors (g/hp-hr)					
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	HP	LF	ROG	CO	NOX	SO2	PM10	PM2.5
Brine Line	2019																	
Balboa Pump Station Expansion	2019																	
Purified Recycled Water Pipeline	2019																	
Pacoima - Lateral Pipeline Construc	2019																	
Pacoima - Outlet Structure Constru	2019																	
Hansen - Lateral Pipeline Constructi	2019																	
Hansen - Outlet Structure Construct	2019																	
Warehouse	2020																	
Maintenance Building	2020																	
Expansion of Flow EQ	2020																	
AWPF	2020																	
Brine Line	2020																	
Balboa Pump Station Expansion	2020																	
Purified Recycled Water Pipeline	2020																	
Pacoima - Lateral Pipeline Construc	2020																	
Pacoima - Outlet Structure Constru	2020																	
Hansen - Lateral Pipeline Constructi	2020																	
Hansen - Outlet Structure Construct	2020																	
Warehouse	2021																	
Maintenance Building	2021																	
Expansion of Flow EQ	2021																	
AWPF	2021																	
Brine Line	2021																	
Balboa Pump Station Expansion	2021																	
Purified Recycled Water Pipeline	2021																	
Pacoima - Lateral Pipeline Construc	2021																	
Pacoima - Outlet Structure Constru	2021																	
Hansen - Lateral Pipeline Constructi	2021																	
Hansen - Outlet Structure Construct	2021																	
Warehouse	2022																	
Maintenance Building	2022																	
Expansion of Flow EQ	2022																	
AWPF	2022																	
Brine Line	2022																	
Balboa Pump Station Expansion	2022																	
Purified Recycled Water Pipeline	2022																	
Pacoima - Lateral Pipeline Construc	2022																	
Pacoima - Outlet Structure Constru	2022																	
Hansen - Lateral Pipeline Constructi	2022																	
Hansen - Outlet Structure Construct	2022																	

Phase	Year
Warehouse	2018
Warehouse	2019
Maintenance Building	2019
Maintenance Building	2019
Maintenance Building	2020
Expansion of Flow EQ	2019
Expansion of Flow EQ	2020
Expansion of Flow EQ	2020

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	HP	LF	OFFROAD Emission Factors (g/hp-hr) ROG	CO	NOX	SO2	PM10	PM2.5
Expansion of Flow EQ	2020																	
Expansion of Flow EQ	2021																	
AWPF	2020																	
AWPF	2020																	
AWPF	2021																	
AWPF	2022																	
AWPF	2022																	
AWPF	2022																	
Brine Line	2021																	
Balboa Pump Station Expansion	2022																	
Purified Recycled Water Pipeline	2020																	
Purified Recycled Water Pipeline	2021																	
Pacoima - Lateral Pipeline Construc	2021																	
Pacoima - Outlet Structure Constru	2021																	
Pacoima - Lateral Pipeline Construc	2022																	
Pacoima - Outlet Structure Constru	2022																	
Hansen - Lateral Pipeline Constructi	2022																	
Hansen - Outlet Structure Construct	2022																	
Pacoima	2021																	
Pacoima	2022																	
Hansen	2022																	

Year
2018
2019
2020
2021
2022

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	OFFROAD Emission Rates (lb/day)					
											ROG	CO	NOX	SO2	PM10	PM2.5
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Backhoe	1	8	0.077	2.366	1.752	-	0.330	0.131
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Truck-mounted crane	1	8	0.139	3.005	2.682	-	0.102	0.102
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Backhoe	1	8	0.077	2.366	1.752	-	0.330	0.131
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Truck-mounted crane	1	8	0.139	3.005	2.682	-	0.102	0.102
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
AWPF	2020	7/1/2020	9/30/2020	66	50	2	10	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
AWPF	2020	10/1/2020	12/31/2020	66	50	2	8	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	OFFROAD Emission Rates (lb/day) ROG	CO	NOX	SO2	PM10	PM2.5
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Backhoe	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Pavement Cutter	1	8	0.100	3.078	1.930	-	0.093	0.093
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Sweepers	1	8	0.062	1.921	1.423	-	0.100	0.100
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	1	8	0.077	2.366	1.752	-	0.330	0.131
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	4	12	Backhoe	4	8	0.307	9.465	7.009	-	1.318	0.525
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	2	12	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	4	12	Backhoe	4	8	0.307	9.465	7.009	-	1.318	0.525
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	2	12	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	3	3	Excavator	3	8	0.393	12.126	7.603	-	0.367	0.367
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	2	3	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	3	3	Backhoe	3	8	0.230	7.099	5.257	-	0.989	0.394
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	2	3	Concrete Pump	2	8	0.263	8.113	6.008	-	0.421	0.421
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	5	3	Excavator	5	8	0.655	20.210	12.672	-	0.612	0.612
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	2	3	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	2	3	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	1	3	Concrete Pump	1	8	0.132	4.056	3.004	-	0.210	0.210
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	5	3	Excavator	5	8	0.655	20.210	12.672	-	0.612	0.612
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	2	3	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	2	3	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	1	3	Concrete Pump	1	8	0.132	4.056	3.004	-	0.210	0.210

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansion	2018
Purified Recycled Water Pipeline	2018
Pacoima - Lateral Pipeline Construc	2018
Pacoima - Outlet Structure Constru	2018
Hansen - Lateral Pipeline Constructi	2018
Hansen - Outlet Structure Construct	2018

Warehouse	2019
Maintenance Building	2019
Expansion of Flow EQ	2019
AWPF	2019

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	OFFROAD Emission Rates (lb/day) ROG	CO	NOX	SO2	PM10	PM2.5
Brine Line	2019															
Balboa Pump Station Expansion	2019															
Purified Recycled Water Pipeline	2019															
Pacoima - Lateral Pipeline Construc	2019															
Pacoima - Outlet Structure Constru	2019															
Hansen - Lateral Pipeline Constructi	2019															
Hansen - Outlet Structure Construct	2019															
Warehouse	2020															
Maintenance Building	2020															
Expansion of Flow EQ	2020															
AWPF	2020															
Brine Line	2020															
Balboa Pump Station Expansion	2020															
Purified Recycled Water Pipeline	2020															
Pacoima - Lateral Pipeline Construc	2020															
Pacoima - Outlet Structure Constru	2020															
Hansen - Lateral Pipeline Constructi	2020															
Hansen - Outlet Structure Construct	2020															
Warehouse	2021															
Maintenance Building	2021															
Expansion of Flow EQ	2021															
AWPF	2021															
Brine Line	2021															
Balboa Pump Station Expansion	2021															
Purified Recycled Water Pipeline	2021															
Pacoima - Lateral Pipeline Construc	2021															
Pacoima - Outlet Structure Constru	2021															
Hansen - Lateral Pipeline Constructi	2021															
Hansen - Outlet Structure Construct	2021															
Warehouse	2022															
Maintenance Building	2022															
Expansion of Flow EQ	2022															
AWPF	2022															
Brine Line	2022															
Balboa Pump Station Expansion	2022															
Purified Recycled Water Pipeline	2022															
Pacoima - Lateral Pipeline Construc	2022															
Pacoima - Outlet Structure Constru	2022															
Hansen - Lateral Pipeline Constructi	2022															
Hansen - Outlet Structure Construct	2022															

Phase	Year
Warehouse	2018
Warehouse	2019
Maintenance Building	2019
Maintenance Building	2019
Maintenance Building	2020
Expansion of Flow EQ	2019
Expansion of Flow EQ	2020
Expansion of Flow EQ	2020

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

											OFFROAD Emission Rates (lb/day)					
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**
Expansion of Flow EQ	2020															
Expansion of Flow EQ	2021															
AWPF	2020															
AWPF	2020															
AWPF	2021															
AWPF	2022															
AWPF	2022															
AWPF	2022															
Brine Line	2021															
Balboa Pump Station Expansion	2022															
Purified Recycled Water Pipeline	2020															
Purified Recycled Water Pipeline	2021															
Pacoima - Lateral Pipeline Construc	2021															
Pacoima - Outlet Structure Constru	2021															
Pacoima - Lateral Pipeline Construc	2022															
Pacoima - Outlet Structure Constru	2022															
Hansen - Lateral Pipeline Constructi	2022															
Hansen - Outlet Structure Construct	2022															
Pacoima	2021															
Pacoima	2022															
Hansen	2022															

	Year
	2018
	2019
	2020
	2021
	2022

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

											Emissions from Personnel Vehicles (lb/day)					
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Bulldozer	1	8	0.018	0.709	0.067	0.002	0.031	0.013
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Excavator	1	8	0.018	0.709	0.067	0.002	0.031	0.013
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Backhoe	1	8	0.018	0.709	0.067	0.002	0.031	0.013
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Truck-mounted cran	1	8	0.018	0.709	0.067	0.002	0.031	0.013
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Bulldozer	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Excavator	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Backhoe	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Truck-mounted cran	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Bulldozer	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Compactor	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Forklift	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Loader	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Bulldozer	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Compactor	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Forklift	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Loader	1	8	0.014	0.630	0.059	0.002	0.031	0.013
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Bulldozer	1	8	0.013	0.574	0.052	0.002	0.031	0.013
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Compactor	1	8	0.013	0.574	0.052	0.002	0.031	0.013
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Forklift	1	8	0.013	0.574	0.052	0.002	0.031	0.013
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Loader	1	8	0.013	0.574	0.052	0.002	0.031	0.013
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Bulldozer	1	8	0.013	0.567	0.053	0.002	0.028	0.012
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Scrapers	1	8	0.013	0.567	0.053	0.002	0.028	0.012
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Compactor	1	8	0.013	0.567	0.053	0.002	0.028	0.012
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Forklift	1	8	0.013	0.567	0.053	0.002	0.028	0.012
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Bulldozer	1	8	0.011	0.517	0.047	0.002	0.027	0.012
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Scrapers	1	8	0.011	0.517	0.047	0.002	0.027	0.012
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Compactor	1	8	0.011	0.517	0.047	0.002	0.027	0.012
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Forklift	1	8	0.011	0.517	0.047	0.002	0.027	0.012
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Bulldozer	1	8	0.011	0.517	0.047	0.002	0.027	0.012
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Scrapers	1	8	0.011	0.517	0.047	0.002	0.027	0.012
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Compactor	1	8	0.011	0.517	0.047	0.002	0.027	0.012
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Forklift	1	8	0.011	0.517	0.047	0.002	0.027	0.012
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Bulldozer	1	8	0.003	0.115	0.010	0.000	0.006	0.003
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Scrapers	1	8	0.003	0.115	0.010	0.000	0.006	0.003
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Compactor	1	8	0.003	0.115	0.010	0.000	0.006	0.003
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Forklift	1	8	0.003	0.115	0.010	0.000	0.006	0.003
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Bulldozer	1	8	0.002	0.106	0.009	0.000	0.006	0.003
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Scrapers	1	8	0.002	0.106	0.009	0.000	0.006	0.003
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Compactor	1	8	0.002	0.106	0.009	0.000	0.006	0.003
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Forklift	1	8	0.002	0.106	0.009	0.000	0.006	0.003
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Bulldozer	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Compactor	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Excavator	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	7/1/2020	9/30/2020	66	50	2	10	Backhoe	2	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Forklift	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Loader	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Crane	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Bulldozer	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Compactor	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Excavator	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	10/1/2020	12/31/2020	66	50	2	8	Backhoe	2	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Forklift	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Loader	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Crane	1	8	0.032	1.435	0.131	0.005	0.076	0.032
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Bulldozer	1	8	0.029	1.329	0.118	0.005	0.076	0.032
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	1	8	0.029	1.329	0.118	0.005	0.076	0.032
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	1	8	0.029	1.329	0.118	0.005	0.076	0.032

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Emissions from Personnel Vehicles (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Backhoe	2	8	0.029	1.329	0.118	0.005	0.076	0.032
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	1	8	0.029	1.329	0.118	0.005	0.076	0.032
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	1	8	0.029	1.329	0.118	0.005	0.076	0.032
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	1	8	0.029	1.329	0.118	0.005	0.076	0.032
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	1	8	0.021	0.989	0.085	0.004	0.061	0.026
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Excavator	1	8	0.021	0.989	0.085	0.004	0.061	0.026
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	1	8	0.021	0.989	0.085	0.004	0.061	0.026
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	1	8	0.021	0.989	0.085	0.004	0.061	0.026
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	1	8	0.021	0.989	0.085	0.004	0.061	0.026
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	1	8	0.021	0.989	0.085	0.004	0.061	0.026
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Excavator	1	8	0.016	0.742	0.064	0.003	0.046	0.019
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Backhoe	1	8	0.016	0.742	0.064	0.003	0.046	0.019
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Forklift	1	8	0.016	0.742	0.064	0.003	0.046	0.019
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Crane	1	8	0.016	0.742	0.064	0.003	0.046	0.019
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Loader	1	8	0.010	0.494	0.043	0.002	0.030	0.013
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Crane	1	8	0.010	0.494	0.043	0.002	0.030	0.013
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Excavator	1	8	0.006	0.266	0.024	0.001	0.015	0.006
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Loader	1	8	0.006	0.266	0.024	0.001	0.015	0.006
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Pavement Cutter	1	8	0.006	0.266	0.024	0.001	0.015	0.006
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Crane	1	8	0.006	0.266	0.024	0.001	0.015	0.006
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Compactor	1	8	0.006	0.266	0.024	0.001	0.015	0.006
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Sweepers	1	8	0.006	0.266	0.024	0.001	0.015	0.006
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Forklift	1	8	0.004	0.198	0.017	0.001	0.012	0.005
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	1	8	0.004	0.198	0.017	0.001	0.012	0.005
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	4	12	Backhoe	4	8	0.013	0.574	0.052	0.002	0.031	0.013
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	2	12	Crane	2	8	0.013	0.574	0.052	0.002	0.031	0.013
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	4	12	Backhoe	4	8	0.012	0.531	0.047	0.002	0.030	0.013
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	2	12	Crane	2	8	0.012	0.531	0.047	0.002	0.030	0.013
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	3	3	Excavator	3	8	0.012	0.531	0.047	0.002	0.030	0.013
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	2	3	Crane	2	8	0.012	0.531	0.047	0.002	0.030	0.013
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	3	3	Backhoe	3	8	0.004	0.186	0.017	0.001	0.011	0.005
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	2	3	Concrete Pump	2	8	0.004	0.186	0.017	0.001	0.011	0.005
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	5	3	Excavator	5	8	0.010	0.494	0.043	0.002	0.030	0.013
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	2	3	Crane	2	8	0.010	0.494	0.043	0.002	0.030	0.013
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	2	3	Backhoe	2	8	0.004	0.173	0.015	0.001	0.011	0.004
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	1	3	Concrete Pump	1	8	0.004	0.173	0.015	0.001	0.011	0.004
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	5	3	Excavator	5	8	0.010	0.494	0.043	0.002	0.030	0.013
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	2	3	Crane	2	8	0.010	0.494	0.043	0.002	0.030	0.013
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	2	3	Backhoe	2	8	0.004	0.173	0.015	0.001	0.011	0.004
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	1	3	Concrete Pump	1	8	0.004	0.173	0.015	0.001	0.011	0.004

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansion	2018
Purified Recycled Water Pipeline	2018
Pacoima - Lateral Pipeline Construc	2018
Pacoima - Outlet Structure Constru	2018
Hansen - Lateral Pipeline Constructi	2018
Hansen - Outlet Structure Construct	2018

Warehouse	2019
Maintenance Building	2019
Expansion of Flow EQ	2019
AWPF	2019

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

											Emissions from Personnel Vehicles (lb/day)					
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Brine Line	2019															
Balboa Pump Station Expansion	2019															
Purified Recycled Water Pipeline	2019															
Pacoima - Lateral Pipeline Construc	2019															
Pacoima - Outlet Structure Constru	2019															
Hansen - Lateral Pipeline Constructi	2019															
Hansen - Outlet Structure Construct	2019															
Warehouse	2020															
Maintenance Building	2020															
Expansion of Flow EQ	2020															
AWPF	2020															
Brine Line	2020															
Balboa Pump Station Expansion	2020															
Purified Recycled Water Pipeline	2020															
Pacoima - Lateral Pipeline Construc	2020															
Pacoima - Outlet Structure Constru	2020															
Hansen - Lateral Pipeline Constructi	2020															
Hansen - Outlet Structure Construct	2020															
Warehouse	2021															
Maintenance Building	2021															
Expansion of Flow EQ	2021															
AWPF	2021															
Brine Line	2021															
Balboa Pump Station Expansion	2021															
Purified Recycled Water Pipeline	2021															
Pacoima - Lateral Pipeline Construc	2021															
Pacoima - Outlet Structure Constru	2021															
Hansen - Lateral Pipeline Constructi	2021															
Hansen - Outlet Structure Construct	2021															
Warehouse	2022															
Maintenance Building	2022															
Expansion of Flow EQ	2022															
AWPF	2022															
Brine Line	2022															
Balboa Pump Station Expansion	2022															
Purified Recycled Water Pipeline	2022															
Pacoima - Lateral Pipeline Construc	2022															
Pacoima - Outlet Structure Constru	2022															
Hansen - Lateral Pipeline Constructi	2022															
Hansen - Outlet Structure Construct	2022															

Phase	Year
Warehouse	2018
Warehouse	2019
Maintenance Building	2019
Maintenance Building	2019
Maintenance Building	2020
Expansion of Flow EQ	2019
Expansion of Flow EQ	2020
Expansion of Flow EQ	2020

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Emissions from Personnel Vehicles (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Expansion of Flow EQ	2020															
Expansion of Flow EQ	2021															
AWPF	2020															
AWPF	2020															
AWPF	2021															
AWPF	2022															
AWPF	2022															
AWPF	2022															
Brine Line	2021															
Balboa Pump Station Expansion	2022															
Purified Recycled Water Pipeline	2020															
Purified Recycled Water Pipeline	2021															
Pacoima - Lateral Pipeline Construc	2021															
Pacoima - Outlet Structure Constru	2021															
Pacoima - Lateral Pipeline Construc	2022															
Pacoima - Outlet Structure Constru	2022															
Hansen - Lateral Pipeline Constructi	2022															
Hansen - Outlet Structure Construct	2022															
Pacoima	2021															
Pacoima	2022															
Hansen	2022															

Year
2018
2019
2020
2021
2022

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

											Emissions from Daily Truck Trips (lb/day)					
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Bulldozer	1	8	0.079	0.529	2.331	0.007	0.054	0.026
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Excavator	1	8	0.079	0.529	2.331	0.007	0.054	0.026
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Backhoe	1	8	0.079	0.529	2.331	0.007	0.054	0.026
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Truck-mounted cran	1	8	0.079	0.529	2.331	0.007	0.054	0.026
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Bulldozer	1	8	0.030	0.209	0.874	0.003	0.021	0.010
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Excavator	1	8	0.030	0.209	0.874	0.003	0.021	0.010
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Backhoe	1	8	0.030	0.209	0.874	0.003	0.021	0.010
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Truck-mounted cran	1	8	0.030	0.209	0.874	0.003	0.021	0.010
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Bulldozer	1	8	0.112	0.782	3.278	0.010	0.080	0.038
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Compactor	1	8	0.112	0.782	3.278	0.010	0.080	0.038
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Forklift	1	8	0.112	0.782	3.278	0.010	0.080	0.038
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Loader	1	8	0.112	0.782	3.278	0.010	0.080	0.038
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Bulldozer	1	8	0.030	0.209	0.874	0.003	0.021	0.010
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Compactor	1	8	0.030	0.209	0.874	0.003	0.021	0.010
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Forklift	1	8	0.030	0.209	0.874	0.003	0.021	0.010
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Loader	1	8	0.030	0.209	0.874	0.003	0.021	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Bulldozer	1	8	0.028	0.206	0.809	0.003	0.020	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Compactor	1	8	0.028	0.206	0.809	0.003	0.020	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Forklift	1	8	0.028	0.206	0.809	0.003	0.020	0.010
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Loader	1	8	0.028	0.206	0.809	0.003	0.020	0.010
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Bulldozer	1	8	0.224	1.565	6.555	0.021	0.159	0.077
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Scrapers	1	8	0.224	1.565	6.555	0.021	0.159	0.077
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Compactor	1	8	0.224	1.565	6.555	0.021	0.159	0.077
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Forklift	1	8	0.224	1.565	6.555	0.021	0.159	0.077
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Bulldozer	1	8	0.211	1.543	6.069	0.020	0.154	0.071
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Scrapers	1	8	0.211	1.543	6.069	0.020	0.154	0.071
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Compactor	1	8	0.211	1.543	6.069	0.020	0.154	0.071
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Forklift	1	8	0.211	1.543	6.069	0.020	0.154	0.071
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Bulldozer	1	8	0.056	0.411	1.618	0.005	0.041	0.019
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Scrapers	1	8	0.056	0.411	1.618	0.005	0.041	0.019
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Compactor	1	8	0.056	0.411	1.618	0.005	0.041	0.019
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Forklift	1	8	0.056	0.411	1.618	0.005	0.041	0.019
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Bulldozer	1	8	0.014	0.103	0.405	0.001	0.010	0.005
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Scrapers	1	8	0.014	0.103	0.405	0.001	0.010	0.005
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Compactor	1	8	0.014	0.103	0.405	0.001	0.010	0.005
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Forklift	1	8	0.014	0.103	0.405	0.001	0.010	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Bulldozer	1	8	0.013	0.102	0.370	0.001	0.010	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Scrapers	1	8	0.013	0.102	0.370	0.001	0.010	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Compactor	1	8	0.013	0.102	0.370	0.001	0.010	0.005
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Forklift	1	8	0.013	0.102	0.370	0.001	0.010	0.005
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Bulldozer	1	8	0.070	0.514	2.023	0.007	0.051	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Compactor	1	8	0.070	0.514	2.023	0.007	0.051	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Excavator	1	8	0.070	0.514	2.023	0.007	0.051	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	2	10	Backhoe	2	8	0.070	0.514	2.023	0.007	0.051	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Forklift	1	8	0.070	0.514	2.023	0.007	0.051	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Loader	1	8	0.070	0.514	2.023	0.007	0.051	0.024
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Crane	1	8	0.070	0.514	2.023	0.007	0.051	0.024
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Bulldozer	1	8	0.056	0.411	1.618	0.005	0.041	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Compactor	1	8	0.056	0.411	1.618	0.005	0.041	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Excavator	1	8	0.056	0.411	1.618	0.005	0.041	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	2	8	Backhoe	2	8	0.056	0.411	1.618	0.005	0.041	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Forklift	1	8	0.056	0.411	1.618	0.005	0.041	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Loader	1	8	0.056	0.411	1.618	0.005	0.041	0.019
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Crane	1	8	0.056	0.411	1.618	0.005	0.041	0.019
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Bulldozer	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	1	8	0.027	0.205	0.740	0.003	0.020	0.009

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

											Emissions from Daily Truck Trips (lb/day)					
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Backhoe	2	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Excavator	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	1	8	0.027	0.205	0.740	0.003	0.020	0.009
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Excavator	1	8	0.020	0.153	0.555	0.002	0.015	0.007
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Backhoe	1	8	0.020	0.153	0.555	0.002	0.015	0.007
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Forklift	1	8	0.020	0.153	0.555	0.002	0.015	0.007
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Crane	1	8	0.020	0.153	0.555	0.002	0.015	0.007
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Loader	1	8	0.013	0.102	0.370	0.001	0.010	0.005
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Crane	1	8	0.013	0.102	0.370	0.001	0.010	0.005
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Excavator	1	8	0.027	0.205	0.740	0.003	0.020	0.009
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Loader	1	8	0.027	0.205	0.740	0.003	0.020	0.009
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Pavement Cutter	1	8	0.027	0.205	0.740	0.003	0.020	0.009
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Crane	1	8	0.027	0.205	0.740	0.003	0.020	0.009
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Compactor	1	8	0.027	0.205	0.740	0.003	0.020	0.009
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Sweepers	1	8	0.027	0.205	0.740	0.003	0.020	0.009
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Forklift	1	8	0.007	0.051	0.185	0.001	0.005	0.002
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	1	8	0.007	0.051	0.185	0.001	0.005	0.002
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	4	12	Backhoe	4	8	0.084	0.617	2.428	0.008	0.061	0.029
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	2	12	Crane	2	8	0.084	0.617	2.428	0.008	0.061	0.029
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	4	12	Backhoe	4	8	0.081	0.614	2.221	0.008	0.060	0.028
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	2	12	Crane	2	8	0.081	0.614	2.221	0.008	0.060	0.028
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	3	3	Excavator	3	8	0.020	0.153	0.555	0.002	0.015	0.007
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	2	3	Crane	2	8	0.020	0.153	0.555	0.002	0.015	0.007
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	3	3	Backhoe	3	8	0.020	0.153	0.555	0.002	0.015	0.007
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	2	3	Concrete Pump	2	8	0.020	0.153	0.555	0.002	0.015	0.007
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	5	3	Excavator	5	8	0.020	0.153	0.555	0.002	0.015	0.007
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	2	3	Crane	2	8	0.020	0.153	0.555	0.002	0.015	0.007
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	2	3	Backhoe	2	8	0.020	0.153	0.555	0.002	0.015	0.007
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	1	3	Concrete Pump	1	8	0.020	0.153	0.555	0.002	0.015	0.007
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	5	3	Excavator	5	8	0.020	0.153	0.555	0.002	0.015	0.007
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	2	3	Crane	2	8	0.020	0.153	0.555	0.002	0.015	0.007
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	2	3	Backhoe	2	8	0.020	0.153	0.555	0.002	0.015	0.007
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	1	3	Concrete Pump	1	8	0.020	0.153	0.555	0.002	0.015	0.007

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansion	2018
Purified Recycled Water Pipeline	2018
Pacoima - Lateral Pipeline Construc	2018
Pacoima - Outlet Structure Constru	2018
Hansen - Lateral Pipeline Constructi	2018
Hansen - Outlet Structure Construct	2018

Warehouse	2019
Maintenance Building	2019
Expansion of Flow EQ	2019
AWPF	2019

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Emissions from Daily Truck Trips (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Brine Line	2019															
Balboa Pump Station Expansion	2019															
Purified Recycled Water Pipeline	2019															
Pacoima - Lateral Pipeline Construc	2019															
Pacoima - Outlet Structure Constru	2019															
Hansen - Lateral Pipeline Constructi	2019															
Hansen - Outlet Structure Construct	2019															
Warehouse	2020															
Maintenance Building	2020															
Expansion of Flow EQ	2020															
AWPF	2020															
Brine Line	2020															
Balboa Pump Station Expansion	2020															
Purified Recycled Water Pipeline	2020															
Pacoima - Lateral Pipeline Construc	2020															
Pacoima - Outlet Structure Constru	2020															
Hansen - Lateral Pipeline Constructi	2020															
Hansen - Outlet Structure Construct	2020															
Warehouse	2021															
Maintenance Building	2021															
Expansion of Flow EQ	2021															
AWPF	2021															
Brine Line	2021															
Balboa Pump Station Expansion	2021															
Purified Recycled Water Pipeline	2021															
Pacoima - Lateral Pipeline Construc	2021															
Pacoima - Outlet Structure Constru	2021															
Hansen - Lateral Pipeline Constructi	2021															
Hansen - Outlet Structure Construct	2021															
Warehouse	2022															
Maintenance Building	2022															
Expansion of Flow EQ	2022															
AWPF	2022															
Brine Line	2022															
Balboa Pump Station Expansion	2022															
Purified Recycled Water Pipeline	2022															
Pacoima - Lateral Pipeline Construc	2022															
Pacoima - Outlet Structure Constru	2022															
Hansen - Lateral Pipeline Constructi	2022															
Hansen - Outlet Structure Construct	2022															

Phase	Year
Warehouse	2018
Warehouse	2019
Maintenance Building	2019
Maintenance Building	2019
Maintenance Building	2020
Expansion of Flow EQ	2019
Expansion of Flow EQ	2020
Expansion of Flow EQ	2020

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

											Emissions from Daily Truck Trips (lb/day)					
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**
Expansion of Flow EQ	2020															
Expansion of Flow EQ	2021															
AWPF	2020															
AWPF	2020															
AWPF	2021															
AWPF	2022															
AWPF	2022															
AWPF	2022															
Brine Line	2021															
Balboa Pump Station Expansion	2022															
Purified Recycled Water Pipeline	2020															
Purified Recycled Water Pipeline	2021															
Pacoima - Lateral Pipeline Construc	2021															
Pacoima - Outlet Structure Constru	2021															
Pacoima - Lateral Pipeline Construc	2022															
Pacoima - Outlet Structure Constru	2022															
Hansen - Lateral Pipeline Constructi	2022															
Hansen - Outlet Structure Construct	2022															
Pacoima	2021															
Pacoima	2022															
Hansen	2022															

	Year
	2018
	2019
	2020
	2021
	2022

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Reginal Daily (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Bulldozer	1	8	0.312	5.915	6.571	0.009	0.450	0.206
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Excavator	1	8	0.227	5.279	4.932	0.009	0.207	0.162
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Backhoe	1	8	0.173	3.604	4.150	0.009	0.414	0.171
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Truck-mounted cran	1	8	0.235	4.243	5.080	0.009	0.186	0.141
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Bulldozer	1	8	0.260	5.516	5.106	0.005	0.417	0.190
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Excavator	1	8	0.175	4.881	3.467	0.005	0.174	0.146
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Backhoe	1	8	0.121	3.205	2.685	0.005	0.381	0.154
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Truck-mounted cran	1	8	0.183	3.844	3.615	0.005	0.153	0.125
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Bulldozer	1	8	0.342	6.090	7.510	0.013	0.475	0.218
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Compactor	1	8	0.144	1.661	3.617	0.013	0.127	0.068
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Forklift	1	8	0.164	2.574	4.197	0.013	0.170	0.112
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Loader	1	8	0.203	3.779	5.089	0.013	0.440	0.182
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Bulldozer	1	8	0.260	5.516	5.106	0.005	0.417	0.190
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Compactor	1	8	0.062	1.088	1.214	0.005	0.069	0.040
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Forklift	1	8	0.082	2.000	1.793	0.005	0.112	0.083
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Loader	1	8	0.121	3.205	2.685	0.005	0.381	0.154
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Bulldozer	1	8	0.257	5.457	5.035	0.005	0.416	0.189
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Compactor	1	8	0.058	1.029	1.143	0.005	0.068	0.039
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Forklift	1	8	0.078	1.941	1.722	0.005	0.111	0.083
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Loader	1	8	0.118	3.146	2.614	0.005	0.381	0.154
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Bulldozer	1	8	0.453	6.809	10.782	0.023	0.552	0.255
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Scrapers	1	8	0.605	10.100	13.718	0.023	0.456	0.358
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Compactor	1	8	0.255	2.381	6.889	0.023	0.204	0.105
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Forklift	1	8	0.275	3.294	7.468	0.023	0.247	0.149
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Bulldozer	1	8	0.438	6.737	10.290	0.022	0.546	0.250
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Scrapers	1	8	0.590	10.027	13.226	0.022	0.451	0.353
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Compactor	1	8	0.240	2.308	6.397	0.022	0.198	0.100
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Forklift	1	8	0.260	3.221	6.977	0.022	0.241	0.143
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Bulldozer	1	8	0.283	5.605	5.839	0.007	0.434	0.197
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Scrapers	1	8	0.435	8.896	8.775	0.007	0.338	0.300
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Compactor	1	8	0.085	1.177	1.946	0.007	0.085	0.048
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Forklift	1	8	0.105	2.090	2.526	0.007	0.129	0.091
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Bulldozer	1	8	0.232	4.895	4.589	0.002	0.381	0.174
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Scrapers	1	8	0.384	8.186	7.525	0.002	0.286	0.277
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Compactor	1	8	0.034	0.466	0.696	0.002	0.033	0.024
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Forklift	1	8	0.054	1.379	1.275	0.002	0.077	0.068
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Bulldozer	1	8	0.232	4.886	4.553	0.002	0.381	0.174
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Scrapers	1	8	0.384	8.177	7.489	0.002	0.286	0.277
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Compactor	1	8	0.033	0.457	0.660	0.002	0.033	0.024
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Forklift	1	8	0.053	1.370	1.240	0.002	0.076	0.067
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Bulldozer	1	8	0.318	6.627	6.328	0.012	0.493	0.223
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Compactor	1	8	0.120	2.198	2.435	0.012	0.145	0.073
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Excavator	1	8	0.233	5.992	4.688	0.012	0.250	0.178
AWPF	2020	7/1/2020	9/30/2020	66	50	2	10	Backhoe	2	8	0.255	6.682	5.659	0.012	0.787	0.318
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Forklift	1	8	0.140	3.111	3.014	0.012	0.188	0.116
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Loader	1	8	0.179	4.316	3.906	0.012	0.457	0.187
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Crane	1	8	0.241	4.955	4.836	0.012	0.229	0.158
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Bulldozer	1	8	0.304	6.524	5.923	0.011	0.482	0.218
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Compactor	1	8	0.106	2.096	2.030	0.011	0.134	0.068
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Excavator	1	8	0.219	5.889	4.284	0.011	0.240	0.174
AWPF	2020	10/1/2020	12/31/2020	66	50	2	8	Backhoe	2	8	0.241	6.579	5.254	0.011	0.776	0.314
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Forklift	1	8	0.126	3.008	2.610	0.011	0.178	0.112
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Loader	1	8	0.165	4.213	3.502	0.011	0.447	0.182
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Crane	1	8	0.227	4.852	4.431	0.011	0.219	0.153
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Bulldozer	1	8	0.272	6.210	5.032	0.008	0.461	0.208
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	1	8	0.073	1.782	1.139	0.008	0.113	0.058
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	1	8	0.187	5.575	3.393	0.008	0.219	0.164

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
											Reginal Daily (lb/day)					
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Backhoe	2	8	0.209	6.266	4.363	0.008	0.756	0.304
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	1	8	0.093	2.695	1.718	0.008	0.157	0.102
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	1	8	0.132	3.899	2.611	0.008	0.426	0.173
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	1	8	0.194	4.539	3.540	0.008	0.198	0.143
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	1	8	0.065	1.442	1.107	0.007	0.098	0.052
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Excavator	1	8	0.179	5.235	3.360	0.007	0.203	0.157
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	1	8	0.125	3.560	2.578	0.007	0.411	0.166
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	1	8	0.085	2.355	1.686	0.007	0.141	0.095
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	1	8	0.125	3.560	2.578	0.007	0.411	0.166
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	1	8	0.186	4.199	3.507	0.007	0.183	0.137
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Excavator	1	8	0.167	4.937	3.154	0.005	0.183	0.148
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Backhoe	1	8	0.113	3.261	2.372	0.005	0.390	0.157
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Forklift	1	8	0.073	2.057	1.479	0.005	0.121	0.086
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Crane	1	8	0.175	3.901	3.301	0.005	0.163	0.128
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Loader	1	8	0.101	2.963	2.165	0.003	0.370	0.149
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Crane	1	8	0.163	3.602	3.095	0.003	0.142	0.119
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Excavator	1	8	0.164	4.512	3.298	0.004	0.158	0.138
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Loader	1	8	0.109	2.836	2.516	0.004	0.365	0.147
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Pavement Cutter	1	8	0.132	3.548	2.694	0.004	0.129	0.109
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Crane	1	8	0.171	3.476	3.446	0.004	0.137	0.117
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Compactor	1	8	0.050	0.719	1.045	0.004	0.052	0.033
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Sweepers	1	8	0.095	2.391	2.187	0.004	0.135	0.115
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Forklift	1	8	0.049	1.410	1.062	0.001	0.077	0.068
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	1	8	0.088	2.615	1.954	0.001	0.347	0.139
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	4	12	Backhoe	4	8	0.404	10.656	9.489	0.010	1.410	0.566
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	2	12	Crane	2	8	0.374	7.202	7.844	0.010	0.295	0.245
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	4	12	Backhoe	4	8	0.399	10.610	9.277	0.010	1.409	0.565
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	2	12	Crane	2	8	0.370	7.156	7.632	0.010	0.294	0.244
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	3	3	Excavator	3	8	0.425	12.811	8.206	0.004	0.413	0.387
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	2	3	Crane	2	8	0.309	6.696	5.966	0.004	0.249	0.223
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	3	3	Backhoe	3	8	0.254	7.438	5.829	0.003	1.015	0.405
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	2	3	Concrete Pump	2	8	0.287	8.452	6.580	0.003	0.447	0.432
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	5	3	Excavator	5	8	0.686	20.858	13.270	0.004	0.657	0.631
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	2	3	Crane	2	8	0.308	6.659	5.961	0.004	0.249	0.223
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	2	3	Backhoe	2	8	0.177	5.059	4.075	0.003	0.685	0.274
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	1	3	Concrete Pump	1	8	0.155	4.383	3.574	0.003	0.236	0.222
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	5	3	Excavator	5	8	0.686	20.858	13.270	0.004	0.657	0.631
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	2	3	Crane	2	8	0.308	6.659	5.961	0.004	0.249	0.223
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	2	3	Backhoe	2	8	0.177	5.059	4.075	0.003	0.685	0.274
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	1	3	Concrete Pump	1	8	0.155	4.383	3.574	0.003	0.236	0.222
											Reginal Daily Emissions (tons/year)					
Warehouse	2018										0.0	0.8	0.9	0.0	0.0	0.0
Maintenance Building	2018															
Expansion of Flow EQ	2018															
AWPF	2018															
Brine Line	2018															
Balboa Pump Station Expansion	2018															
Purified Recycled Water Pipeline	2018															
Pacoima - Lateral Pipeline Construc	2018															
Pacoima - Outlet Structure Constru	2018															
Hansen - Lateral Pipeline Constructi	2018															
Hansen - Outlet Structure Construct	2018															
Warehouse	2019										0.1	1.9	1.7	0.0	0.1	0.1
Maintenance Building	2019										0.1	1.1	1.5	0.0	0.1	0.0
Expansion of Flow EQ	2019										0.1	1.0	2.2	0.0	0.1	0.0
AWPF	2019															

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

											Reginal Daily (lb/day)					
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**
Brine Line	2019															
Balboa Pump Station Expansion	2019															
Purified Recycled Water Pipeline	2019															
Pacoima - Lateral Pipeline Construc	2019															
Pacoima - Outlet Structure Constru	2019															
Hansen - Lateral Pipeline Constructi	2019															
Hansen - Outlet Structure Construct	2019															
Warehouse	2020															
Maintenance Building	2020										0.0	0.9	0.9	0.0	0.1	0.0
Expansion of Flow EQ	2020										0.2	2.7	3.5	0.0	0.2	0.1
AWPF	2020										0.1	2.2	1.9	0.0	0.2	0.1
Brine Line	2020															
Balboa Pump Station Expansion	2020															
Purified Recycled Water Pipeline	2020										0.1	1.4	1.3	0.0	0.1	0.1
Pacoima - Lateral Pipeline Construc	2020															
Pacoima - Outlet Structure Constru	2020															
Hansen - Lateral Pipeline Constructi	2020															
Hansen - Outlet Structure Construct	2020															
Warehouse	2021															
Maintenance Building	2021															
Expansion of Flow EQ	2021										0.0	0.5	0.5	0.0	0.0	0.0
AWPF	2021										0.2	4.0	2.8	0.0	0.3	0.2
Brine Line	2021										0.1	1.7	1.5	0.0	0.1	0.1
Balboa Pump Station Expansion	2021															
Purified Recycled Water Pipeline	2021										0.1	2.1	2.0	0.0	0.2	0.1
Pacoima - Lateral Pipeline Construc	2021										0.0	0.4	0.3	0.0	0.0	0.0
Pacoima - Outlet Structure Constru	2021										0.0	0.4	0.3	0.0	0.0	0.0
Hansen - Lateral Pipeline Constructi	2021															
Hansen - Outlet Structure Construct	2021															
Warehouse	2022															
Maintenance Building	2022															
Expansion of Flow EQ	2022															
AWPF	2022										0.1	2.1	1.5	0.0	0.1	0.1
Brine Line	2022															
Balboa Pump Station Expansion	2022										0.0	0.6	0.5	0.0	0.1	0.0
Purified Recycled Water Pipeline	2022															
Pacoima - Lateral Pipeline Construc	2022										0.1	2.7	1.9	0.0	0.1	0.1
Pacoima - Outlet Structure Constru	2022										0.0	0.9	0.7	0.0	0.1	0.0
Hansen - Lateral Pipeline Constructi	2022										0.0	0.9	0.6	0.0	0.0	0.0
Hansen - Outlet Structure Construct	2022										0.0	0.3	0.2	0.0	0.0	0.0
											Per project (tons)					
											1.3	28.7	26.8	0.1	2.0	1.1

Phase	**Year**	**Reginal Daily (lb/day)**					
Warehouse	2018	1.2	22.8	27.9	0.1	1.5	0.8
Warehouse	2019	0.9	20.0	17.7	0.0	1.3	0.7
Maintenance Building	2019	1.2	18.3	30.4	0.1	1.5	0.7
Maintenance Building	2019	0.7	14.3	13.6	0.0	1.1	0.5
Maintenance Building	2020	0.6	13.9	13.1	0.0	1.1	0.5
Expansion of Flow EQ	2019	2.5	31.1	65.3	0.2	2.2	1.2
Expansion of Flow EQ	2020	2.4	30.5	61.4	0.2	2.2	1.2
Expansion of Flow EQ	2020	1.2	21.5	25.7	0.1	1.3	0.8

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Reginal Daily (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Expansion of Flow EQ	2020										0.8	15.8	15.7	0.0	0.8	0.6
Expansion of Flow EQ	2021										0.8	15.7	15.5	0.0	0.8	0.6
AWPF	2020										1.5	33.9	30.9	0.1	2.5	1.3
AWPF	2020										1.4	33.2	28.0	0.1	2.5	1.2
AWPF	2021										1.2	31.0	21.8	0.1	2.3	1.2
AWPF	2022										0.8	21.5	15.6	0.0	1.5	0.8
AWPF	2022										0.6	16.8	12.2	0.0	1.0	0.6
AWPF	2022										0.4	9.5	7.3	0.0	0.7	0.4
Brine Line	2021										0.7	17.5	15.2	0.0	1.0	0.7
Balboa Pump Station Expansion	2022										0.2	4.8	3.6	0.0	0.5	0.2
Purified Recycled Water Pipeline	2020										0.8	17.9	17.3	0.0	1.7	0.8
Purified Recycled Water Pipeline	2021										0.8	17.8	16.9	0.0	1.7	0.8
Pacoima - Lateral Pipeline Construc	2021										0.7	19.5	14.2	0.0	0.7	0.6
Pacoima - Outlet Structure Constru	2021										0.5	15.9	12.4	0.0	1.5	0.8
Pacoima - Lateral Pipeline Construc	2022										1.0	27.5	19.2	0.0	0.9	0.9
Pacoima - Outlet Structure Constru	2022										0.3	9.4	7.6	0.0	0.9	0.5
Hansen - Lateral Pipeline Constructi	2022										1.0	27.5	19.2	0.0	0.9	0.9
Hansen - Outlet Structure Construct	2022										0.3	9.4	7.6	0.0	0.9	0.5
Pacoima	2021															
Pacoima	2022															
Hansen	2022															

Year	Reginal Daily (lb/day) - Overlapping					
2018	1.2	22.8	27.9	0.1	1.5	0.8
2019	2.5	31.1	65.3	0.2	2.2	1.2
2020	3.4	73.2	74.5	0.2	5.5	2.8
2021	3.2	83.8	63.6	0.1	5.4	3.3
2022	2.3	63.3	46.1	0.1	3.8	2.4

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Localized Daily (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Backhoe	1	8	0.077	2.366	1.752	-	0.330	0.131
Warehouse	2018	10/1/2018	12/31/2018	66	20	1	10	Truck-mounted crane	1	8	0.139	3.005	2.682	-	0.102	0.102
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Backhoe	1	8	0.077	2.366	1.752	-	0.330	0.131
Warehouse	2019	1/1/2019	9/30/2019	195	20	1	4	Truck-mounted crane	1	8	0.139	3.005	2.682	-	0.102	0.102
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Maintenance Building	2019	7/1/2019	9/30/2019	66	20	1	15	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Maintenance Building	2019	10/1/2019	12/31/2019	66	20	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Maintenance Building	2020	1/1/2020	6/30/2020	130	20	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2019	10/1/2019	12/31/2019	66	18	1	30	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2020	1/1/2020	1/31/2020	23	18	1	30	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2020	2/1/2020	9/30/2020	173	18	1	8	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2020	10/1/2020	12/31/2020	66	4	1	2	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Scrapers	1	8	0.368	7.968	7.110	-	0.270	0.270
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Expansion of Flow EQ	2021	1/1/2021	3/31/2021	64	4	1	2	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
AWPF	2020	7/1/2020	9/30/2020	66	50	2	10	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2020	7/1/2020	9/30/2020	66	50	1	10	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
AWPF	2020	10/1/2020	12/31/2020	66	50	2	8	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2020	10/1/2020	12/31/2020	66	50	1	8	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Bulldozer	1	8	0.216	4.677	4.174	-	0.365	0.167
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Localized Daily (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Backhoe	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
AWPF	2022	5/1/2022	8/31/2022	88	30	1	3	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
AWPF	2022	9/1/2022	12/31/2022	87	20	1	2	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Excavator	1	8	0.131	4.042	2.534	-	0.122	0.122
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Loader	1	8	0.077	2.366	1.752	-	0.330	0.131
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Pavement Cutter	1	8	0.100	3.078	1.930	-	0.093	0.093
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Crane	1	8	0.139	3.005	2.682	-	0.102	0.102
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Compactor	1	8	0.018	0.249	0.281	-	0.017	0.017
Brine Line	2021	4/1/2021	12/31/2021	197	10	1	4	Sweepers	1	8	0.062	1.921	1.423	-	0.100	0.100
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Forklift	1	8	0.038	1.162	0.860	-	0.060	0.060
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	1	8	0.077	2.366	1.752	-	0.330	0.131
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	4	12	Backhoe	4	8	0.307	9.465	7.009	-	1.318	0.525
Purified Recycled Water Pipeline	2020	6/1/2020	12/31/2020	154	20	2	12	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	4	12	Backhoe	4	8	0.307	9.465	7.009	-	1.318	0.525
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	2	12	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	3	3	Excavator	3	8	0.393	12.126	7.603	-	0.367	0.367
Pacoima - Lateral Pipeline Construc	2021	11/1/2021	12/31/2021	45	20	2	3	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	3	3	Backhoe	3	8	0.230	7.099	5.257	-	0.989	0.394
Pacoima - Outlet Structure Constru	2021	11/1/2021	12/31/2021	45	7	2	3	Concrete Pump	2	8	0.263	8.113	6.008	-	0.421	0.421
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	5	3	Excavator	5	8	0.655	20.210	12.672	-	0.612	0.612
Pacoima - Lateral Pipeline Construc	2022	1/1/2022	9/30/2022	195	20	2	3	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	2	3	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
Pacoima - Outlet Structure Constru	2022	1/1/2022	9/30/2022	195	7	1	3	Concrete Pump	1	8	0.132	4.056	3.004	-	0.210	0.210
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	5	3	Excavator	5	8	0.655	20.210	12.672	-	0.612	0.612
Hansen - Lateral Pipeline Constructi	2022	10/1/2022	12/31/2022	65	20	2	3	Crane	2	8	0.277	6.011	5.364	-	0.203	0.203
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	2	3	Backhoe	2	8	0.153	4.732	3.505	-	0.659	0.262
Hansen - Outlet Structure Construct	2022	10/1/2022	12/31/2022	65	7	1	3	Concrete Pump	1	8	0.132	4.056	3.004	-	0.210	0.210

Warehouse	2018
Maintenance Building	2018
Expansion of Flow EQ	2018
AWPF	2018
Brine Line	2018
Balboa Pump Station Expansion	2018
Purified Recycled Water Pipeline	2018
Pacoima - Lateral Pipeline Construc	2018
Pacoima - Outlet Structure Constru	2018
Hansen - Lateral Pipeline Constructi	2018
Hansen - Outlet Structure Construct	2018

Warehouse	2019
Maintenance Building	2019
Expansion of Flow EQ	2019
AWPF	2019

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

											Localized Daily (lb/day)					
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**# of Equip.**	**hr/day**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**
Brine Line	2019															
Balboa Pump Station Expansion	2019															
Purified Recycled Water Pipeline	2019															
Pacoima - Lateral Pipeline Construc	2019															
Pacoima - Outlet Structure Constru	2019															
Hansen - Lateral Pipeline Constructi	2019															
Hansen - Outlet Structure Construct	2019															
Warehouse	2020															
Maintenance Building	2020															
Expansion of Flow EQ	2020															
AWPF	2020															
Brine Line	2020															
Balboa Pump Station Expansion	2020															
Purified Recycled Water Pipeline	2020															
Pacoima - Lateral Pipeline Construc	2020															
Pacoima - Outlet Structure Constru	2020															
Hansen - Lateral Pipeline Constructi	2020															
Hansen - Outlet Structure Construct	2020															
Warehouse	2021															
Maintenance Building	2021															
Expansion of Flow EQ	2021															
AWPF	2021															
Brine Line	2021															
Balboa Pump Station Expansion	2021															
Purified Recycled Water Pipeline	2021															
Pacoima - Lateral Pipeline Construc	2021															
Pacoima - Outlet Structure Constru	2021															
Hansen - Lateral Pipeline Constructi	2021															
Hansen - Outlet Structure Construct	2021															
Warehouse	2022															
Maintenance Building	2022															
Expansion of Flow EQ	2022															
AWPF	2022															
Brine Line	2022															
Balboa Pump Station Expansion	2022															
Purified Recycled Water Pipeline	2022															
Pacoima - Lateral Pipeline Construc	2022															
Pacoima - Outlet Structure Constru	2022															
Hansen - Lateral Pipeline Constructi	2022															
Hansen - Outlet Structure Construct	2022															

Phase	**Year**	**Localized Daily (lb/day)**					
Warehouse	2018	0.6	14.1	11.1	-	0.9	0.5
Warehouse	2019	0.6	14.1	11.1	-	0.9	0.5
Maintenance Building	2019	0.3	8.5	7.1	-	0.8	0.4
Maintenance Building	2019	0.3	8.5	7.1	-	0.8	0.4
Maintenance Building	2020	0.3	8.5	7.1	-	0.8	0.4
Expansion of Flow EQ	2019	0.6	14.1	12.4	-	0.7	0.5
Expansion of Flow EQ	2020	0.6	14.1	12.4	-	0.7	0.5
Expansion of Flow EQ	2020	0.6	14.1	12.4	-	0.7	0.5

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	# of Equip.	hr/day	Localized Daily (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Expansion of Flow EQ	2020										0.6	14.1	12.4	-	0.7	0.5
Expansion of Flow EQ	2021										0.6	14.1	12.4	-	0.7	0.5
AWPF	2020										0.8	20.2	15.8	-	1.7	0.9
AWPF	2020										0.8	20.2	15.8	-	1.7	0.9
AWPF	2021										0.8	20.2	15.8	-	1.7	0.9
AWPF	2022										0.5	13.2	9.9	-	1.0	0.6
AWPF	2022										0.4	10.6	7.8	-	0.6	0.4
AWPF	2022										0.2	5.4	4.4	-	0.4	0.2
Brine Line	2021										0.5	14.7	10.6	-	0.8	0.6
Balboa Pump Station Expansion	2022										0.1	3.5	2.6	-	0.4	0.2
Purified Recycled Water Pipeline	2020										0.6	15.5	12.4	-	1.5	0.7
Purified Recycled Water Pipeline	2021										0.6	15.5	12.4	-	1.5	0.7
Pacoima - Lateral Pipeline Construc	2021										0.7	18.1	13.0	-	0.6	0.6
Pacoima - Outlet Structure Constru	2021										0.5	15.2	11.3	-	1.4	0.8
Pacoima - Lateral Pipeline Construc	2022										0.9	26.2	18.0	-	0.8	0.8
Pacoima - Outlet Structure Constru	2022										0.3	8.8	6.5	-	0.9	0.5
Hansen - Lateral Pipeline Constructi	2022										0.9	26.2	18.0	-	0.8	0.8
Hansen - Outlet Structure Construct	2022										0.3	8.8	6.5	-	0.9	0.5
Pacoima	2021										1.2	33.3	24.2	-	2.0	1.4
Pacoima	2022										1.2	35.0	24.5	-	1.7	1.3
Hansen	2022										1.2	35.0	24.5	-	1.7	1.3

	Year
	2018
	2019
	2020
	2021
	2022

VGS Alternative

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

													OFFROAD Emission Factors (g/hp-hr)								
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Sub-phase**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**hr/day**	**HP**	**LF**	**TOG**	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**
AWPF	2020	7/1/2020	12/31/2020	132	1	50	2	10	Bulldozer	8	255	0.4	0.637	0.535	4.411	5.641	0.005	0.259	0.238	479.757	0.155
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Compactor	8	8	0.43	0.790	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Excavator	8	163	0.38	0.275	0.231	3.086	2.278	0.005	0.110	0.102	472.289	0.153
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Backhoe	8	98	0.37	0.394	0.331	3.601	3.326	0.005	0.210	0.194	475.154	0.154
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Forklift	8	89	0.2	0.546	0.459	3.760	4.133	0.005	0.308	0.283	471.529	0.153
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Loader	8	98	0.37	0.394	0.331	3.601	3.326	0.005	0.210	0.194	475.154	0.154
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Crane	8	226	0.29	0.457	0.384	1.790	4.563	0.005	0.188	0.173	472.949	0.153
AWPF	2021	1/1/2021	12/31/2021	261	2	50	2	4	Bulldozer	8	255	0.4	0.586	0.492	4.041	5.081	0.005	0.232	0.214	478.987	0.155
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Compactor	8	8	0.43	0.790	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Excavator	8	163	0.38	0.258	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Backhoe	8	98	0.37	0.352	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Forklift	8	89	0.2	0.490	0.412	3.720	3.756	0.005	0.267	0.245	471.529	0.153
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Loader	8	98	0.37	0.352	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Crane	8	226	0.29	0.416	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Bulldozer	8	255	0.4	0.565	0.475	3.895	4.808	0.005	0.220	0.202	479.311	0.155
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Compactor	8	8	0.43	0.790	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Backhoe	8	98	0.37	0.310	0.260	3.536	2.647	0.005	0.142	0.131	475.898	0.154
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Forklift	8	89	0.2	0.431	0.362	3.675	3.360	0.005	0.223	0.205	471.529	0.153
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Loader	8	98	0.37	0.310	0.260	3.536	2.647	0.005	0.142	0.131	475.898	0.154
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Crane	8	226	0.29	0.376	0.316	1.602	3.541	0.005	0.147	0.135	472.983	0.153
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Compactor	8	8	0.43	0.790	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Forklift	8	89	0.2	0.431	0.362	3.675	3.360	0.005	0.223	0.205	471.529	0.153
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Loader	8	98	0.37	0.310	0.260	3.536	2.647	0.005	0.142	0.131	475.898	0.154
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Crane	8	226	0.29	0.376	0.316	1.602	3.541	0.005	0.147	0.135	472.983	0.153
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Forklift	8	89	0.2	0.431	0.362	3.675	3.360	0.005	0.223	0.205	471.529	0.153
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Loader	8	98	0.37	0.310	0.260	3.536	2.647	0.005	0.142	0.131	475.898	0.154
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Bulldozer	8	255	0.4	0.637	0.535	4.411	5.641	0.005	0.259	0.238	479.757	0.155
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Scrapers	8	362	0.48	0.380	0.320	2.401	3.783	0.005	0.148	0.136	472.175	0.153
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Excavator	8	163	0.38	0.275	0.231	3.086	2.278	0.005	0.110	0.102	472.289	0.153
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Loader	8	98	0.37	0.394	0.331	3.601	3.326	0.005	0.210	0.194	475.154	0.154
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Backhoe	8	98	0.37	0.352	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Forklift	8	89	0.2	0.490	0.412	3.720	3.756	0.005	0.267	0.245	471.529	0.153
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Compactor	8	8	0.43	0.790	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Boom Lifts	8	63	0.31	0.130	0.109	3.176	1.744	0.005	0.033	0.031	472.114	0.153
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Tractor	8	98	0.37	0.310	0.260	3.536	2.647	0.005	0.142	0.131	475.898	0.154
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Generator	8	84	0.74	6.113	0.301	3.353	2.671	0.006	0.134	0.134	568.299	0.027
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Excavator	8	163	0.38	0.275	0.231	3.086	2.278	0.005	0.110	0.102	472.289	0.153
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Loader	8	98	0.37	0.394	0.331	3.601	3.326	0.005	0.210	0.194	475.154	0.154
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Pavement Cutter	8	131	0.36	0.295	0.248	3.024	2.555	0.005	0.128	0.118	470.736	0.152
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Compactor	8	8	0.43	0.790	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Sweepers	8	64	0.46	0.619	0.520	3.828	4.482	0.005	0.360	0.331	474.116	0.153
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Excavator	8	163	0.38	0.258	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Loader	8	98	0.37	0.352	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Pavement Cutter	8	131	0.36	0.273	0.229	3.032	2.315	0.005	0.114	0.105	470.650	0.152
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Compactor	8	8	0.43	0.790	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Sweepers	8	64	0.46	0.524	0.440	3.757	3.962	0.005	0.291	0.268	474.116	0.153
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Excavator	8	163	0.38	0.227	0.191	3.074	1.678	0.005	0.081	0.075	472.192	0.153
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Loader	8	98	0.37	0.310	0.260	3.536	2.647	0.005	0.142	0.131	475.898	0.154
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Pavement Cutter	8	131	0.36	0.253	0.213	3.038	2.073	0.005	0.101	0.093	470.665	0.152
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Compactor	8	8	0.43	0.790	0.661	3.469	4.142	0.008	0.161	0.161	568.299	0.059
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Sweepers	8	64	0.46	0.443	0.372	3.692	3.472	0.005	0.232	0.214	474.116	0.153
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Backhoe	8	98	0.37	0.500	0.420	3.692	4.154	0.005	0.294	0.271	494.124	0.154
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Crane	8	226	0.29	0.575	0.483	2.134	5.773	0.005	0.250	0.230	491.407	0.153
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Backhoe	8	98	0.37	0.438	0.368	3.638	3.693	0.005	0.247	0.227	485.855	0.154
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Crane	8	226	0.29	0.508	0.427	1.941	5.084	0.005	0.216	0.198	483.462	0.153
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Backhoe	8	98	0.37	0.394	0.331	3.601	3.326	0.005	0.210	0.194	475.154	0.154
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Crane	8	226	0.29	0.457	0.384	1.790	4.563	0.005	0.188	0.173	472.949	0.153
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Backhoe	8	98	0.37	0.352	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Crane	8	226	0.29	0.416	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	HP	LF	OFFROAD Emission Factors (g/hp-hr) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	5	6	Excavator	8	163	0.38	0.227	0.191	3.074	1.678	0.005	0.081	0.075	472.192	0.153
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	2	6	Crane	8	226	0.29	0.376	0.316	1.602	3.541	0.005	0.147	0.135	472.983	0.153
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	2	0	Backhoe	8	98	0.37	0.310	0.260	3.536	2.647	0.005	0.142	0.131	475.898	0.154
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	1	0	Concrete Pump	8	84	0.74	7.351	0.321	3.404	2.708	0.006	0.142	0.142	568.299	0.029
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	5	6	Excavator	8	163	0.38	0.258	0.216	3.090	2.034	0.005	0.099	0.091	472.359	0.153
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	2	6	Crane	8	226	0.29	0.416	0.350	1.678	4.104	0.005	0.167	0.153	472.906	0.153
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	2	0	Backhoe	8	98	0.37	0.352	0.296	3.571	2.995	0.005	0.177	0.163	475.362	0.154
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	1	0	Concrete Pump	8	84	0.74	7.940	0.347	3.412	2.928	0.006	0.162	0.162	568.300	0.031
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	5	6	Excavator	8	163	0.38	0.227	0.191	3.074	1.678	0.005	0.081	0.075	472.192	0.153
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	2	6	Crane	8	226	0.29	0.376	0.316	1.602	3.541	0.005	0.147	0.135	472.983	0.153
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	2	0	Backhoe	8	98	0.37	0.310	0.260	3.536	2.647	0.005	0.142	0.131	475.898	0.154
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	1	0	Concrete Pump	8	84	0.74	7.351	0.321	3.404	2.708	0.006	0.142	0.142	568.299	0.029

AWPF	2018
Expansion of Flow EQ	2018
Balboa Pump Station Expansion	2018
Brine Line	2018
Purified Recycled Water Pipeline	2018
Hansen - Lateral Pipeline Construction	2018
Hansen - Outlet Structure Construction	2018
Pacoima - Lateral Pipeline Construction	2018
Pacoima - Outlet Structure Construction	2018
AWPF	2019
Expansion of Flow EQ	2019
Balboa Pump Station Expansion	2019
Brine Line	2019
Purified Recycled Water Pipeline	2019
Hansen - Lateral Pipeline Construction	2019
Hansen - Outlet Structure Construction	2019
Pacoima - Lateral Pipeline Construction	2019
Pacoima - Outlet Structure Construction	2019
AWPF	2020
Expansion of Flow EQ	2020
Balboa Pump Station Expansion	2020
Brine Line	2020
Purified Recycled Water Pipeline	2020
Hansen - Lateral Pipeline Construction	2020
Hansen - Outlet Structure Construction	2020
Pacoima - Lateral Pipeline Construction	2020
Pacoima - Outlet Structure Construction	2020
AWPF	2021
Expansion of Flow EQ	2021
Balboa Pump Station Expansion	2021
Brine Line	2021
Purified Recycled Water Pipeline	2021
Hansen - Lateral Pipeline Construction	2021
Hansen - Outlet Structure Construction	2021
Pacoima - Lateral Pipeline Construction	2021
Pacoima - Outlet Structure Construction	2021
AWPF	2022
Expansion of Flow EQ	2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	HP	LF	OFFROAD Emission Factors (g/hp-hr) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4
Balboa Pump Station Expansion	2022																				
Brine Line	2022																				
Purified Recycled Water Pipeline	2022																				
Hansen - Lateral Pipeline Construction	2022																				
Hansen - Outlet Structure Construction	2022																				
Pacoima - Lateral Pipeline Construction	2022																				
Pacoima - Outlet Structure Construction	2022																				

Phase	Year	Sub-phase
AWPF	2020	1
AWPF	2021	2
AWPF	2022	3
AWPF	2022	4
AWPF	2022	5
Expansion of Flow EQ	2020	1
Expansion of Flow EQ	2021	2
Balboa Pump Station Expansion	2022	1
Brine Line	2020	1
Brine Line	2021	2
Brine Line	2022	3
Purified Recycled Water Pipeline	2018	1
Purified Recycled Water Pipeline	2019	2
Purified Recycled Water Pipeline	2020	3
Purified Recycled Water Pipeline	2021	4
Hansen - Lateral Pipeline Construction	2022	1
Hansen - Outlet Structure Construction	2022	1
Pacoima - Lateral Pipeline Construction	2021	1
Pacoima - Outlet Structure Construction	2021	1
Pacoima - Lateral Pipeline Construction	2022	2
Pacoima - Outlet Structure Construction	2022	2

Hansen
Pacoima

	Year
	2018
	2019
	2020
	2021
	2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	N2O
											OFFROAD Emission Rates (lb/day)									
AWPF	2020	7/1/2020	12/31/2020	132	1	50	2	10	Bulldozer	8	2.291	1.925	15.872	20.296	0.018	2.516	1.052	1,726.140	0.558	0.056
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Excavator	8	0.301	0.253	3.371	2.489	0.005	0.121	0.111	515.945	0.167	0.017
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Backhoe	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869	0.098	0.010
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Forklift	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031	0.048	0.005
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Loader	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869	0.098	0.010
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Crane	8	0.528	0.444	2.070	5.275	0.006	0.217	0.200	546.695	0.177	0.018
AWPF	2021	1/1/2021	12/31/2021	261	2	50	2	4	Bulldozer	8	2.108	1.771	14.540	18.281	0.018	1.717	0.856	1,723.369	0.557	0.056
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Excavator	8	0.281	0.236	3.375	2.222	0.005	0.108	0.099	516.021	0.167	0.017
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Backhoe	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002	0.098	0.010
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Forklift	8	0.154	0.129	1.168	1.179	0.002	0.084	0.077	148.031	0.048	0.005
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Loader	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002	0.098	0.010
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Crane	8	0.481	0.404	1.940	4.744	0.006	0.193	0.177	546.645	0.177	0.018
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Bulldozer	8	1.016	0.854	7.007	8.649	0.009	1.071	0.443	862.267	0.279	0.028
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Backhoe	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Forklift	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031	0.048	0.005
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Loader	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Crane	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735	0.177	0.018
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Forklift	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031	0.048	0.005
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Loader	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Crane	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735	0.177	0.018
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Forklift	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031	0.048	0.005
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Loader	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Bulldozer	8	1.145	0.962	7.936	10.148	0.009	4.184	0.969	863.070	0.279	0.028
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Scrapers	8	1.166	0.979	7.357	11.592	0.015	0.452	0.416	1,447.030	0.468	0.047
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Excavator	8	0.301	0.253	3.371	2.489	0.005	0.121	0.111	515.945	0.167	0.017
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Loader	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869	0.098	0.010
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Backhoe	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002	0.098	0.010
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Forklift	8	0.154	0.129	1.168	1.179	0.002	0.084	0.077	148.031	0.048	0.005
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479	0.004	0.001
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Boom Lifts	8	0.045	0.037	1.094	0.601	0.002	0.011	0.011	162.620	0.053	0.005
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Tractor	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345	0.098	0.010
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Generator	8	6.702	0.330	3.676	2.928	0.007	0.147	0.147	623.035	0.030	0.020
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Excavator	8	1.203	1.011	13.485	9.956	0.021	0.484	0.444	2,063.782	0.667	0.067
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Loader	8	1.008	0.847	9.213	8.507	0.013	1.365	0.529	1,215.478	0.393	0.040
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Pavement Cutter	8	0.980	0.823	10.061	8.501	0.016	0.425	0.391	1,566.158	0.506	0.051
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Compactor	8	0.144	0.120	0.631	0.754	0.001	0.029	0.029	103.438	0.011	0.003
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Sweepers	8	0.964	0.810	5.962	6.982	0.008	0.561	0.516	738.530	0.239	0.024
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Excavator	8	1.126	0.946	13.501	8.886	0.021	0.432	0.397	2,064.085	0.668	0.067
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Loader	8	0.901	0.757	9.134	7.661	0.013	1.279	0.449	1,216.009	0.393	0.040
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Pavement Cutter	8	0.907	0.762	10.089	7.702	0.016	0.380	0.350	1,565.871	0.506	0.051
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Compactor	8	0.144	0.120	0.631	0.754	0.001	0.029	0.029	103.438	0.011	0.003
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Sweepers	8	0.816	0.686	5.853	6.172	0.008	0.454	0.418	738.530	0.239	0.024
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Excavator	8	0.994	0.835	13.433	7.333	0.021	0.356	0.326	2,063.356	0.667	0.067
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Loader	8	0.792	0.666	9.044	6.772	0.013	1.191	0.369	1,217.379	0.394	0.040
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Pavement Cutter	8	0.842	0.708	10.107	6.898	0.016	0.336	0.309	1,565.921	0.506	0.051
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Compactor	8	0.144	0.120	0.631	0.754	0.001	0.029	0.029	103.438	0.011	0.003
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Sweepers	8	0.690	0.580	5.751	5.409	0.008	0.362	0.333	738.530	0.239	0.024
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Backhoe	8	0.960	0.807	7.082	7.971	0.009	1.187	0.545	948.002	0.295	0.031
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Crane	8	1.994	1.675	7.402	20.019	0.017	0.867	0.797	1,704.094	0.531	0.056
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Backhoe	8	0.840	0.706	6.979	7.084	0.009	1.095	0.461	932.138	0.295	0.030
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Crane	8	1.761	1.479	6.730	17.631	0.017	0.747	0.688	1,676.541	0.531	0.055
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Backhoe	8	0.756	0.635	6.910	6.381	0.009	1.025	0.397	911.608	0.295	0.030
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Crane	8	1.584	1.331	6.209	15.825	0.017	0.652	0.600	1,640.085	0.531	0.053
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Backhoe	8	0.676	0.568	6.851	5.746	0.009	0.961	0.337	912.007	0.295	0.030
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Crane	8	1.442	1.212	5.820	14.233	0.017	0.578	0.532	1,639.936	0.530	0.053

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

											OFFROAD Emission Rates (lb/day)									
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Sub-phase**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**hr/day**	**TOG**	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**	**CO2**	**CH4**	**N2O**
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	5	6	Excavator	8	1.243	1.044	16.791	9.166	0.027	0.445	0.408	2,579.195	0.834	0.084
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	2	6	Crane	8	0.869	0.730	3.703	8.187	0.011	0.340	0.313	1,093.470	0.354	0.036
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	2	0	Backhoe	8	0.396	0.333	4.522	3.386	0.006	0.596	0.184	608.690	0.197	0.020
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	1	0	Concrete Pump	8	8.059	0.352	3.732	2.969	0.007	0.156	0.156	623.035	0.032	0.020
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	5	6	Excavator	8	1.407	1.182	16.877	11.108	0.027	0.540	0.496	2,580.106	0.835	0.084
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	2	6	Crane	8	0.962	0.808	3.880	9.489	0.011	0.385	0.354	1,093.291	0.353	0.036
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	2	0	Backhoe	8	0.450	0.378	4.567	3.831	0.006	0.639	0.225	608.005	0.197	0.020
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	1	0	Concrete Pump	8	8.705	0.380	3.741	3.210	0.007	0.178	0.178	623.036	0.034	0.020
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	5	6	Excavator	8	1.243	1.044	16.791	9.166	0.027	0.445	0.408	2,579.195	0.834	0.084
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	2	6	Crane	8	0.869	0.730	3.703	8.187	0.011	0.340	0.313	1,093.470	0.354	0.036
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	2	0	Backhoe	8	0.396	0.333	4.522	3.386	0.006	0.596	0.184	608.690	0.197	0.020
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	1	0	Concrete Pump	8	8.059	0.352	3.732	2.969	0.007	0.156	0.156	623.035	0.032	0.020

AWPF	2018
Expansion of Flow EQ	2018
Balboa Pump Station Expansion	2018
Brine Line	2018
Purified Recycled Water Pipeline	2018
Hansen - Lateral Pipeline Construction	2018
Hansen - Outlet Structure Construction	2018
Pacoima - Lateral Pipeline Construction	2018
Pacoima - Outlet Structure Construction	2018

AWPF	2019
Expansion of Flow EQ	2019
Balboa Pump Station Expansion	2019
Brine Line	2019
Purified Recycled Water Pipeline	2019
Hansen - Lateral Pipeline Construction	2019
Hansen - Outlet Structure Construction	2019
Pacoima - Lateral Pipeline Construction	2019
Pacoima - Outlet Structure Construction	2019

AWPF	2020
Expansion of Flow EQ	2020
Balboa Pump Station Expansion	2020
Brine Line	2020
Purified Recycled Water Pipeline	2020
Hansen - Lateral Pipeline Construction	2020
Hansen - Outlet Structure Construction	2020
Pacoima - Lateral Pipeline Construction	2020
Pacoima - Outlet Structure Construction	2020

AWPF	2021
Expansion of Flow EQ	2021
Balboa Pump Station Expansion	2021
Brine Line	2021
Purified Recycled Water Pipeline	2021
Hansen - Lateral Pipeline Construction	2021
Hansen - Outlet Structure Construction	2021
Pacoima - Lateral Pipeline Construction	2021
Pacoima - Outlet Structure Construction	2021

AWPF	2022
Expansion of Flow EQ	2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	OFFROAD Emission Rates (lb/day) TOG	ROG	CO	NOX	SO2	PM10	PM2.5	CO2	CH4	N2O
Balboa Pump Station Expansion	2022																			
Brine Line	2022																			
Purified Recycled Water Pipeline	2022																			
Hansen - Lateral Pipeline Construction	2022																			
Hansen - Outlet Structure Construction	2022																			
Pacoima - Lateral Pipeline Construction	2022																			
Pacoima - Outlet Structure Construction	2022																			

Phase	Year	Sub-phase
AWPF	2020	1
AWPF	2021	2
AWPF	2022	3
AWPF	2022	4
AWPF	2022	5
Expansion of Flow EQ	2020	1
Expansion of Flow EQ	2021	2
Balboa Pump Station Expansion	2022	1
Brine Line	2020	1
Brine Line	2021	2
Brine Line	2022	3
Purified Recycled Water Pipeline	2018	1
Purified Recycled Water Pipeline	2019	2
Purified Recycled Water Pipeline	2020	3
Purified Recycled Water Pipeline	2021	4
Hansen - Lateral Pipeline Construction	2022	1
Hansen - Outlet Structure Construction	2022	1
Pacoima - Lateral Pipeline Construction	2021	1
Pacoima - Outlet Structure Construction	2021	1
Pacoima - Lateral Pipeline Construction	2022	2
Pacoima - Outlet Structure Construction	2022	2

Hansen
Pacoima

Year
2018
2019
2020
2021
2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

											Emissions from Personnel Vehicles (lb/day)									
Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
AWPF	2020	7/1/2020	12/31/2020	132	1	50	2	10	Bulldozer	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Compactor	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Excavator	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Backhoe	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Forklift	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Loader	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Crane	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054	0.018	0.005
AWPF	2021	1/1/2021	12/31/2021	261	2	50	2	4	Bulldozer	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Compactor	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Excavator	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Backhoe	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Forklift	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Loader	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Crane	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255	0.016	0.005
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Bulldozer	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Compactor	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Backhoe	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Forklift	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Loader	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Crane	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282	0.012	0.004
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Compactor	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Forklift	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Loader	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Crane	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Forklift	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Loader	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Bulldozer	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Scrapers	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Excavator	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Loader	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539	0.006	0.002
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Backhoe	8	0.015	0.010	0.478	0.042	0.002	0.027	0.012	185.132	0.006	0.002
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Forklift	8	0.015	0.010	0.478	0.042	0.002	0.027	0.012	185.132	0.006	0.002
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Compactor	8	0.015	0.010	0.478	0.042	0.002	0.027	0.012	185.132	0.006	0.002
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Boom Lifts	8	0.015	0.010	0.478	0.042	0.002	0.027	0.012	185.132	0.006	0.002
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Tractor	8	0.006	0.004	0.198	0.017	0.001	0.012	0.005	79.256	0.002	0.001
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Generator	8	0.006	0.004	0.198	0.017	0.001	0.012	0.005	79.256	0.002	0.001
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Excavator	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232	0.011	0.003
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Loader	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232	0.011	0.003
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Pavement Cutter	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232	0.011	0.003
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Compactor	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232	0.011	0.003
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Sweepers	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232	0.011	0.003
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Excavator	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553	0.010	0.003
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Loader	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553	0.010	0.003
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Pavement Cutter	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553	0.010	0.003
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Compactor	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553	0.010	0.003
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Sweepers	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553	0.010	0.003
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Excavator	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Loader	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Pavement Cutter	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Compactor	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Sweepers	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211	0.009	0.003
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Backhoe	8	0.025	0.018	0.709	0.067	0.002	0.031	0.013	227.860	0.009	0.003
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Crane	8	0.025	0.018	0.709	0.067	0.002	0.031	0.013	227.860	0.009	0.003
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Backhoe	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Crane	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965	0.008	0.002
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Backhoe	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821	0.007	0.002
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Crane	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821	0.007	0.002
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Backhoe	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702	0.006	0.002
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Crane	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702	0.006	0.002

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

										Emissions from Personnel Vehicles (lb/day)									
Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	5	6	Excavator	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	2	6	Crane	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	2	0	Backhoe	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349	0.002	0.001
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	1	0	Concrete Pump	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349	0.002	0.001
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	5	6	Excavator	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702	0.006	0.002
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	2	6	Crane	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702	0.006	0.002
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	2	0	Backhoe	8	0.006	0.004	0.186	0.017	0.001	0.011	0.005	71.996	0.002	0.001
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	1	0	Concrete Pump	8	0.006	0.004	0.186	0.017	0.001	0.011	0.005	71.996	0.002	0.001
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	5	6	Excavator	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	2	6	Crane	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141	0.006	0.002
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	2	0	Backhoe	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349	0.002	0.001
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	1	0	Concrete Pump	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349	0.002	0.001

AWPF	2018
Expansion of Flow EQ	2018
Balboa Pump Station Expansion	2018
Brine Line	2018
Purified Recycled Water Pipeline	2018
Hansen - Lateral Pipeline Construction	2018
Hansen - Outlet Structure Construction	2018
Pacoima - Lateral Pipeline Construction	2018
Pacoima - Outlet Structure Construction	2018
AWPF	2019
Expansion of Flow EQ	2019
Balboa Pump Station Expansion	2019
Brine Line	2019
Purified Recycled Water Pipeline	2019
Hansen - Lateral Pipeline Construction	2019
Hansen - Outlet Structure Construction	2019
Pacoima - Lateral Pipeline Construction	2019
Pacoima - Outlet Structure Construction	2019
AWPF	2020
Expansion of Flow EQ	2020
Balboa Pump Station Expansion	2020
Brine Line	2020
Purified Recycled Water Pipeline	2020
Hansen - Lateral Pipeline Construction	2020
Hansen - Outlet Structure Construction	2020
Pacoima - Lateral Pipeline Construction	2020
Pacoima - Outlet Structure Construction	2020
AWPF	2021
Expansion of Flow EQ	2021
Balboa Pump Station Expansion	2021
Brine Line	2021
Purified Recycled Water Pipeline	2021
Hansen - Lateral Pipeline Construction	2021
Hansen - Outlet Structure Construction	2021
Pacoima - Lateral Pipeline Construction	2021
Pacoima - Outlet Structure Construction	2021
AWPF	2022
Expansion of Flow EQ	2022

Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20
Figitive Dust Reduction	61%

Emissions from Personnel Vehicles (lb/day)

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
Balboa Pump Station Expansion	2022																			
Brine Line	2022																			
Purified Recycled Water Pipeline	2022																			
Hansen - Lateral Pipeline Construction	2022																			
Hansen - Outlet Structure Construction	2022																			
Pacoima - Lateral Pipeline Construction	2022																			
Pacoima - Outlet Structure Construction	2022																			

Phase	Year	Sub-phase
AWPF	2020	1
AWPF	2021	2
AWPF	2022	3
AWPF	2022	4
AWPF	2022	5
Expansion of Flow EQ	2020	1
Expansion of Flow EQ	2021	2
Balboa Pump Station Expansion	2022	1
Brine Line	2020	1
Brine Line	2021	2
Brine Line	2022	3
Purified Recycled Water Pipeline	2018	1
Purified Recycled Water Pipeline	2019	2
Purified Recycled Water Pipeline	2020	3
Purified Recycled Water Pipeline	2021	4
Hansen - Lateral Pipeline Construction	2022	1
Hansen - Outlet Structure Construction	2022	1
Pacoima - Lateral Pipeline Construction	2021	1
Pacoima - Outlet Structure Construction	2021	1
Pacoima - Lateral Pipeline Construction	2022	2
Pacoima - Outlet Structure Construction	2022	2
Hansen		
Pacoima		

Year
2018
2019
2020
2021
2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

											Emissions from Daily Truck Trips (lb/day)									
Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
AWPF	2020	7/1/2020	12/31/2020	132	1	50	2	10	Bulldozer	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Compactor	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Excavator	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Backhoe	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Forklift	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Loader	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Crane	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532	0.006	0.024
AWPF	2021	1/1/2021	12/31/2021	261	2	50	2	4	Bulldozer	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Compactor	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Excavator	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Backhoe	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Forklift	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Loader	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Crane	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Bulldozer	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Compactor	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Backhoe	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Forklift	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Loader	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Crane	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852	0.002	0.010
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Compactor	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Forklift	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Loader	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Crane	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639	0.002	0.007
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Forklift	8	0.023	0.013	0.102	0.370	0.001	0.010	0.005	146.426	0.001	0.005
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Loader	8	0.023	0.013	0.102	0.370	0.001	0.010	0.005	146.426	0.001	0.005
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Bulldozer	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2,221.597	0.019	0.072
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Scrapers	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2,221.597	0.019	0.072
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Excavator	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2,221.597	0.019	0.072
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Loader	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2,221.597	0.019	0.072
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Backhoe	8	0.092	0.054	0.409	1.481	0.005	0.040	0.018	585.705	0.005	0.019
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Forklift	8	0.092	0.054	0.409	1.481	0.005	0.040	0.018	585.705	0.005	0.019
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Compactor	8	0.092	0.054	0.409	1.481	0.005	0.040	0.018	585.705	0.005	0.019
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Boom Lifts	8	0.092	0.054	0.409	1.481	0.005	0.040	0.018	585.705	0.005	0.019
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Tractor	8	0.012	0.007	0.051	0.185	0.001	0.005	0.002	73.213	0.001	0.002
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Generator	8	0.012	0.007	0.051	0.185	0.001	0.005	0.002	73.213	0.001	0.002
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Excavator	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Loader	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Pavement Cutter	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Compactor	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Sweepers	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Excavator	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Loader	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Pavement Cutter	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Compactor	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Sweepers	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Excavator	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Loader	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Pavement Cutter	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Compactor	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Sweepers	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Backhoe	8	0.153	0.094	0.635	2.797	0.008	0.065	0.032	912.227	0.008	0.030
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Crane	8	0.153	0.094	0.635	2.797	0.008	0.065	0.032	912.227	0.008	0.030
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Backhoe	8	0.148	0.090	0.626	2.622	0.008	0.064	0.031	899.269	0.008	0.029
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Crane	8	0.148	0.090	0.626	2.622	0.008	0.064	0.031	899.269	0.008	0.029
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Backhoe	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Crane	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639	0.008	0.029
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Backhoe	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Crane	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557	0.007	0.029

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	Emissions from Daily Truck Trips (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	5	6	Excavator	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278	0.004	0.014
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	2	6	Crane	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278	0.004	0.014
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	2	0	Backhoe	8	-	-	-	-	-	-	-	-	-	-
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	1	0	Concrete Pump	8	-	-	-	-	-	-	-	-	-	-
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	5	6	Excavator	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278	0.004	0.014
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	2	6	Crane	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278	0.004	0.014
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	2	0	Backhoe	8	-	-	-	-	-	-	-	-	-	-
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	1	0	Concrete Pump	8	-	-	-	-	-	-	-	-	-	-
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	5	6	Excavator	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278	0.004	0.014
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	2	6	Crane	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278	0.004	0.014
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	2	0	Backhoe	8	-	-	-	-	-	-	-	-	-	-
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	1	0	Concrete Pump	8	-	-	-	-	-	-	-	-	-	-

AWPF	2018
Expansion of Flow EQ	2018
Balboa Pump Station Expansion	2018
Brine Line	2018
Purified Recycled Water Pipeline	2018
Hansen - Lateral Pipeline Construction	2018
Hansen - Outlet Structure Construction	2018
Pacoima - Lateral Pipeline Construction	2018
Pacoima - Outlet Structure Construction	2018

AWPF	2019
Expansion of Flow EQ	2019
Balboa Pump Station Expansion	2019
Brine Line	2019
Purified Recycled Water Pipeline	2019
Hansen - Lateral Pipeline Construction	2019
Hansen - Outlet Structure Construction	2019
Pacoima - Lateral Pipeline Construction	2019
Pacoima - Outlet Structure Construction	2019

AWPF	2020
Expansion of Flow EQ	2020
Balboa Pump Station Expansion	2020
Brine Line	2020
Purified Recycled Water Pipeline	2020
Hansen - Lateral Pipeline Construction	2020
Hansen - Outlet Structure Construction	2020
Pacoima - Lateral Pipeline Construction	2020
Pacoima - Outlet Structure Construction	2020

AWPF	2021
Expansion of Flow EQ	2021
Balboa Pump Station Expansion	2021
Brine Line	2021
Purified Recycled Water Pipeline	2021
Hansen - Lateral Pipeline Construction	2021
Hansen - Outlet Structure Construction	2021
Pacoima - Lateral Pipeline Construction	2021
Pacoima - Outlet Structure Construction	2021

AWPF	2022
Expansion of Flow EQ	2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	Emissions from Daily Truck Trips (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX
Balboa Pump Station Expansion	2022																			
Brine Line	2022																			
Purified Recycled Water Pipeline	2022																			
Hansen - Lateral Pipeline Construction	2022																			
Hansen - Outlet Structure Construction	2022																			
Pacoima - Lateral Pipeline Construction	2022																			
Pacoima - Outlet Structure Construction	2022																			

Phase	Year	Sub-phase
AWPF	2020	1
AWPF	2021	2
AWPF	2022	3
AWPF	2022	4
AWPF	2022	5
Expansion of Flow EQ	2020	1
Expansion of Flow EQ	2021	2
Balboa Pump Station Expansion	2022	1
Brine Line	2020	1
Brine Line	2021	2
Brine Line	2022	3
Purified Recycled Water Pipeline	2018	1
Purified Recycled Water Pipeline	2019	2
Purified Recycled Water Pipeline	2020	3
Purified Recycled Water Pipeline	2021	4
Hansen - Lateral Pipeline Construction	2022	1
Hansen - Outlet Structure Construction	2022	1
Pacoima - Lateral Pipeline Construction	2021	1
Pacoima - Outlet Structure Construction	2021	1
Pacoima - Lateral Pipeline Construction	2022	2
Pacoima - Outlet Structure Construction	2022	2

Hansen
Pacoima

	Year
	2018
	2019
	2020
	2021
	2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	Regoinal Daily (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e
AWPF	2020	7/1/2020	12/31/2020	132	1	50	2	10	Bulldozer	8	0.801	2.027	17.821	22.450	0.030	2.644	1.108	2,998.726	0.582	0.086	3,037.763
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Compactor	8	0.955	0.142	2.160	2.405	0.013	0.137	0.066	1,307.065	0.027	0.031	1,315.965
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Excavator	8	0.440	0.355	5.321	4.643	0.018	0.248	0.167	1,788.531	0.191	0.046	1,806.157
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Backhoe	8	0.559	0.314	4.253	4.281	0.015	0.469	0.188	1,576.455	0.122	0.039	1,590.332
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Forklift	8	0.711	0.246	3.130	3.451	0.014	0.224	0.145	1,420.617	0.072	0.034	1,431.737
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Loader	8	0.559	0.314	4.253	4.281	0.015	0.469	0.188	1,576.455	0.122	0.039	1,590.332
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Crane	8	0.622	0.546	4.019	7.429	0.018	0.345	0.256	1,819.281	0.201	0.047	1,837.454
AWPF	2021	1/1/2021	12/31/2021	261	2	50	2	4	Bulldozer	8	0.674	1.827	16.073	19.139	0.025	1.813	0.897	2,530.477	0.576	0.071	2,565.309
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Compactor	8	0.878	0.096	1.744	1.110	0.008	0.106	0.051	841.587	0.022	0.016	846.336
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Excavator	8	0.346	0.292	4.908	3.080	0.013	0.204	0.140	1,323.129	0.186	0.031	1,336.608
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Backhoe	8	0.440	0.245	3.817	2.774	0.011	0.416	0.154	1,111.110	0.117	0.024	1,120.837
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Forklift	8	0.578	0.185	2.701	2.037	0.009	0.180	0.118	955.138	0.067	0.019	962.108
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Loader	8	0.440	0.245	3.817	2.774	0.011	0.416	0.154	1,111.110	0.117	0.024	1,120.837
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Crane	8	0.504	0.460	3.473	5.603	0.014	0.289	0.219	1,353.753	0.195	0.032	1,367.771
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Bulldozer	8	0.642	0.902	8.200	9.475	0.015	1.152	0.478	1,551.401	0.293	0.041	1,570.529
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Compactor	8	0.867	0.088	1.404	1.077	0.007	0.091	0.045	723.614	0.018	0.014	727.889
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Backhoe	8	0.386	0.214	3.454	2.519	0.010	0.379	0.127	993.479	0.113	0.023	1,002.739
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Forklift	8	0.507	0.161	2.347	1.881	0.008	0.151	0.099	837.165	0.062	0.018	843.661
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Loader	8	0.386	0.214	3.454	2.519	0.010	0.379	0.127	993.479	0.113	0.023	1,002.739
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Crane	8	0.452	0.413	3.045	4.919	0.012	0.251	0.191	1,235.869	0.191	0.031	1,249.418
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Compactor	8	0.847	0.076	1.106	0.871	0.005	0.071	0.036	551.330	0.014	0.011	554.636
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Forklift	8	0.488	0.149	2.049	1.674	0.007	0.131	0.090	664.882	0.059	0.015	670.408
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Loader	8	0.367	0.202	3.156	2.312	0.008	0.359	0.118	821.195	0.109	0.020	829.486
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Crane	8	0.433	0.401	2.746	4.713	0.011	0.231	0.183	1,063.585	0.188	0.028	1,076.165
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Forklift	8	0.469	0.137	1.750	1.468	0.005	0.110	0.082	492.598	0.055	0.011	497.155
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Loader	8	0.348	0.190	2.858	2.106	0.006	0.338	0.110	648.912	0.106	0.016	656.233
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Bulldozer	8	1.009	1.184	9.995	16.264	0.031	4.365	1.052	3,276.207	0.304	0.102	3,311.874
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Scrapers	8	0.753	1.202	9.416	17.708	0.037	0.633	0.499	3,860.167	0.493	0.121	3,906.160
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Excavator	8	0.648	0.475	5.431	8.605	0.028	0.302	0.194	2,929.082	0.192	0.091	2,958.606
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Loader	8	0.767	0.434	4.363	8.243	0.026	0.522	0.215	2,717.006	0.123	0.084	2,742.781
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Backhoe	8	0.460	0.253	3.171	3.438	0.010	0.387	0.142	1,074.839	0.109	0.031	1,086.042
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Forklift	8	0.598	0.194	2.055	2.702	0.009	0.151	0.107	918.867	0.059	0.026	927.313
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Compactor	8	0.898	0.104	1.098	1.774	0.008	0.077	0.040	805.316	0.014	0.022	811.541
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Boom Lifts	8	0.237	0.102	1.981	2.124	0.009	0.079	0.040	933.456	0.063	0.026	942.160
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Tractor	8	0.327	0.177	2.510	1.895	0.005	0.315	0.100	456.814	0.101	0.013	463.102
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Generator	8	6.131	0.341	3.925	3.130	0.008	0.164	0.154	775.505	0.033	0.023	782.617
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Excavator	8	0.445	1.114	14.963	12.462	0.033	0.591	0.492	3,271.653	0.685	0.099	3,317.192
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Loader	8	0.564	0.950	10.691	11.014	0.024	1.472	0.576	2,423.349	0.411	0.072	2,453.891
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Pavement Cutter	8	0.465	0.927	11.539	11.007	0.028	0.532	0.439	2,774.030	0.524	0.083	2,810.769
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Compactor	8	0.960	0.224	2.110	3.260	0.013	0.137	0.077	1,311.309	0.029	0.036	1,321.545
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Sweepers	8	0.789	0.913	7.440	9.488	0.019	0.668	0.564	1,946.401	0.257	0.056	1,968.504
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Excavator	8	0.421	1.044	14.912	11.178	0.033	0.539	0.444	3,251.195	0.685	0.099	3,296.553
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Loader	8	0.516	0.855	10.545	9.953	0.024	1.385	0.496	2,403.119	0.410	0.071	2,433.470
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Pavement Cutter	8	0.436	0.860	11.499	9.994	0.027	0.486	0.397	2,752.981	0.524	0.083	2,789.522
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Compactor	8	0.954	0.218	2.042	3.046	0.013	0.135	0.076	1,290.548	0.028	0.035	1,300.587
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Sweepers	8	0.688	0.784	7.264	8.463	0.019	0.560	0.464	1,925.640	0.256	0.056	1,947.546
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Excavator	8	0.389	0.932	14.788	9.618	0.032	0.462	0.373	3,239.124	0.684	0.098	3,284.371
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Loader	8	0.471	0.762	10.399	9.057	0.024	1.298	0.415	2,393.147	0.410	0.071	2,423.432
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Pavement Cutter	8	0.414	0.804	11.462	9.183	0.027	0.442	0.356	2,741.690	0.523	0.082	2,778.138
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Compactor	8	0.951	0.217	1.987	3.039	0.013	0.135	0.076	1,279.207	0.027	0.035	1,289.153
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Sweepers	8	0.605	0.676	7.106	7.694	0.019	0.468	0.379	1,914.298	0.255	0.055	1,936.112
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Backhoe	8	0.678	0.918	8.426	10.834	0.020	1.282	0.590	2,088.089	0.311	0.063	2,113.607
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Crane	8	0.753	1.787	8.745	22.883	0.028	0.962	0.842	2,844.181	0.547	0.088	2,882.819
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Backhoe	8	0.607	0.810	8.235	9.765	0.020	1.189	0.504	2,051.372	0.310	0.062	2,076.515
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Crane	8	0.677	1.583	7.986	20.312	0.028	0.842	0.731	2,795.776	0.546	0.086	2,833.943
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Backhoe	8	0.555	0.732	8.101	8.861	0.020	1.117	0.438	2,013.069	0.309	0.061	2,037.849
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Crane	8	0.618	1.428	7.400	18.305	0.027	0.744	0.642	2,741.546	0.545	0.085	2,779.214
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Backhoe	8	0.508	0.660	7.996	8.014	0.020	1.052	0.378	1,996.266	0.309	0.060	2,020.890
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Crane	8	0.571	1.304	6.965	16.501	0.027	0.669	0.572	2,724.195	0.544	0.084	2,761.692

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e
											Regoinal Daily (lb/day)										
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	5	6	Excavator	8	0.312	1.095	17.592	10.319	0.033	0.505	0.434	3,216.614	0.844	0.100	3,266.768
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	2	6	Crane	8	0.460	0.781	4.504	9.341	0.017	0.400	0.339	1,730.889	0.363	0.052	1,754.768
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	2	0	Backhoe	8	0.315	0.336	4.695	3.401	0.007	0.606	0.189	678.039	0.199	0.020	689.029
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	1	0	Concrete Pump	8	7.356	0.356	3.905	2.984	0.007	0.166	0.160	692.384	0.034	0.021	698.877
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	5	6	Excavator	8	0.344	1.234	17.715	12.265	0.033	0.601	0.522	3,225.087	0.845	0.100	3,275.326
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	2	6	Crane	8	0.502	0.860	4.718	10.646	0.017	0.446	0.381	1,738.271	0.364	0.052	1,762.204
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	2	0	Backhoe	8	0.358	0.382	4.753	3.847	0.007	0.650	0.229	680.000	0.199	0.020	690.999
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	1	0	Concrete Pump	8	7.946	0.384	3.927	3.227	0.007	0.188	0.182	695.032	0.036	0.021	701.607
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	5	6	Excavator	8	0.312	1.095	17.592	10.319	0.033	0.505	0.434	3,216.614	0.844	0.100	3,266.768
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	2	6	Crane	8	0.460	0.781	4.504	9.341	0.017	0.400	0.339	1,730.889	0.363	0.052	1,754.768
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	2	0	Backhoe	8	0.315	0.336	4.695	3.401	0.007	0.606	0.189	678.039	0.199	0.020	689.029
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	1	0	Concrete Pump	8	7.356	0.356	3.905	2.984	0.007	0.166	0.160	692.384	0.034	0.021	698.877
											Reginal Daily Emissions (tons/year)										
AWPF	2018																				
Expansion of Flow EQ	2018																				
Balboa Pump Station Expansion	2018																				
Brine Line	2018																				
Purified Recycled Water Pipeline	2018										0.0	0.1	0.4	0.7	0.0	0.0	0.0	103.6	0.0	0.0	104.9
Hansen - Lateral Pipeline Construction	2018																				
Hansen - Outlet Structure Construction	2018																				
Pacoima - Lateral Pipeline Construction	2018																				
Pacoima - Outlet Structure Construction	2018																				
AWPF	2019																				
Expansion of Flow EQ	2019																				
Balboa Pump Station Expansion	2019																				
Brine Line	2019																				
Purified Recycled Water Pipeline	2019										0.2	0.3	2.1	3.9	0.0	0.3	0.2	632.6	0.1	0.0	640.8
Hansen - Lateral Pipeline Construction	2019																				
Hansen - Outlet Structure Construction	2019																				
Pacoima - Lateral Pipeline Construction	2019																				
Pacoima - Outlet Structure Construction	2019																				
AWPF	2020										0.3	0.3	2.7	3.2	0.0	0.3	0.1	824.2	0.1	0.0	832.2
Expansion of Flow EQ	2020										0.4	0.3	2.5	5.0	0.0	0.4	0.2	1480.7	0.1	0.0	1495.1
Balboa Pump Station Expansion	2020																				
Brine Line	2020										0.4	0.5	6.1	6.2	0.0	0.4	0.3	1536.2	0.2	0.0	1555.2
Purified Recycled Water Pipeline	2020										0.2	0.3	2.0	3.6	0.0	0.2	0.1	622.9	0.1	0.0	631.0
Hansen - Lateral Pipeline Construction	2020																				
Hansen - Outlet Structure Construction	2020																				
Pacoima - Lateral Pipeline Construction	2020																				
Pacoima - Outlet Structure Construction	2020																				
AWPF	2021										0.5	0.4	4.8	4.8	0.0	0.4	0.2	1204.0	0.2	0.0	1216.2
Expansion of Flow EQ	2021										0.5	0.1	1.5	2.1	0.0	0.2	0.1	889.5	0.0	0.0	897.0
Balboa Pump Station Expansion	2021																				
Brine Line	2021										0.4	0.5	6.0	5.6	0.0	0.4	0.2	1516.9	0.2	0.0	1535.7
Purified Recycled Water Pipeline	2021										0.1	0.2	1.8	2.9	0.0	0.2	0.1	561.7	0.1	0.0	569.1
Hansen - Lateral Pipeline Construction	2021																				
Hansen - Outlet Structure Construction	2021																				
Pacoima - Lateral Pipeline Construction	2021										0.0	0.0	0.3	0.3	0.0	0.0	0.0	57.1	0.0	0.0	57.9
Pacoima - Outlet Structure Construction	2021										1.2	0.1	1.2	1.0	0.0	0.1	0.1	194.6	0.0	0.0	197.1
AWPF	2022										0.5	0.2	2.0	1.9	0.0	0.2	0.1	679.0	0.1	0.0	684.8
Expansion of Flow EQ	2022																				

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Regoinal Daily (lb/day)

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e
Balboa Pump Station Expansion	2022										2.8	0.1	0.9	0.7	0.0	0.1	0.0	219.7	0.0	0.0	221.8
Brine Line	2022										0.4	0.4	5.9	5.0	0.0	0.4	0.2	1503.8	0.2	0.0	1522.5
Purified Recycled Water Pipeline	2022																				
Hansen - Lateral Pipeline Construction	2022										0.0	0.1	0.7	0.6	0.0	0.0	0.0	160.8	0.0	0.0	163.2
Hansen - Outlet Structure Construction	2022										0.2	0.0	0.3	0.2	0.0	0.0	0.0	44.5	0.0	0.0	45.1
Pacoima - Lateral Pipeline Construction	2022										0.1	0.2	2.2	1.9	0.0	0.1	0.1	482.4	0.1	0.0	489.6
Pacoima - Outlet Structure Construction	2022										0.7	0.1	0.8	0.6	0.0	0.1	0.0	133.6	0.0	0.0	135.3

	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e
Per Project (tons)	9.1	4.1	44.3	50.2	0.1	4.1	2.1	12847.5	1.8	0.4	12994.7
Project emissions (tons/year)	1.8	0.8	8.9	10.0	0.0	0.8	0.4	2,569.5	0.4	0.1	2,598.9

In Metric tons per year
2,358

Reginal Daily (lb/day)

Phase	Year	Sub-phase	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CH4_RUNEX	N2O_RUNEX	CO2e
AWPF	2020	1	4.6	3.9	41.0	48.9	0.1	4.5	2.1	12,487.1	1.3	0.3	12,609.7
AWPF	2021	2	3.9	3.3	36.5	36.5	0.1	3.4	1.7	9,226.3	1.3	0.2	9,319.8
AWPF	2022	3	3.5	2.0	23.1	23.2	0.1	2.5	1.1	7,024.1	0.8	0.2	7,090.0
AWPF	2022	4	3.4	0.9	11.7	11.4	0.0	1.3	0.6	4,651.5	0.4	0.1	4,690.0
AWPF	2022	5	3.3	0.4	7.6	5.6	0.0	0.9	0.3	2,864.3	0.2	0.1	2,885.9
Expansion of Flow EQ	2020	1	6.5	4.2	37.4	75.3	0.2	6.5	2.3	22,435.0	1.2	0.7	22,653.6
Expansion of Flow EQ	2021	2	4.2	0.9	11.9	16.1	0.1	1.9	0.6	6,815.8	0.3	0.2	6,873.7
Balboa Pump Station Expansion	2022	1	21.9	0.6	7.2	5.6	0.0	0.6	0.3	1,689.7	0.1	0.0	1,705.8
Brine Line	2020	1	3.2	4.1	46.7	47.2	0.1	3.4	2.1	11,726.7	1.9	0.3	11,871.9
Brine Line	2021	2	3.0	3.8	46.3	42.6	0.1	3.1	1.9	11,623.5	1.9	0.3	11,767.7
Brine Line	2022	3	2.8	3.4	45.7	38.6	0.1	2.8	1.6	11,567.5	1.9	0.3	11,711.2
Purified Recycled Water Pipeline	2018	1	1.4	2.7	17.2	33.7	0.0	2.2	1.4	4,932.3	0.9	0.2	4,996.4
Purified Recycled Water Pipeline	2019	2	1.3	2.4	16.2	30.1	0.0	2.0	1.2	4,847.1	0.9	0.1	4,910.5
Purified Recycled Water Pipeline	2020	3	1.2	2.2	15.5	27.2	0.0	1.9	1.1	4,754.6	0.9	0.1	4,817.1
Purified Recycled Water Pipeline	2021	4	1.1	2.0	15.0	24.5	0.0	1.7	0.9	4,720.5	0.9	0.1	4,782.6
Hansen - Lateral Pipeline Construction	2022	1	0.8	1.9	22.1	19.7	0.1	0.9	0.8	4,947.5	1.2	0.2	5,021.5
Hansen - Outlet Structure Construction	2022	1	7.7	0.7	8.6	6.4	0.0	0.8	0.3	1,370.4	0.2	0.0	1,387.9
Pacoima - Lateral Pipeline Construction	2021	1	0.8	2.1	22.4	22.9	0.1	1.0	0.9	4,963.4	1.2	0.2	5,037.5
Pacoima - Outlet Structure Construction	2021	1	8.3	0.8	8.7	7.1	0.0	0.8	0.4	1,375.0	0.2	0.0	1,392.6
Pacoima - Lateral Pipeline Construction	2022	2	0.8	1.9	22.1	19.7	0.1	0.9	0.8	4,947.5	1.2	0.2	5,021.5
Pacoima - Outlet Structure Construction	2022	2	7.7	0.7	8.6	6.4	0.0	0.8	0.3	1,370.4	0.2	0.0	1,387.9

Hansen
Pacoima

Reginal Daily (lb/day)

Year	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX	CO2_RUNEX	CO2_RUNEX	CO2_RUNEX
2018	1	3	17	34	0	2	1	4,932	1	0	4,996
2019	1	2	16	30	0	2	1	4,847	1	0	4,910
2020	16	14	141	199	0	16	8	51,403	5	2	51,952
2021	20	11	126	125	0	10	6	34,004	5	1	34,391
2022	37	9	107	93	0	8	4	26,599	4	1	26,916

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

											Localized Daily (lb/day)							
Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
AWPF	2020	7/1/2020	12/31/2020	132	1	50	2	10	Bulldozer	8	2.291	1.925	15.872	20.296	0.018	2.516	1.052	1,726.140
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Excavator	8	0.301	0.253	3.371	2.489	0.005	0.121	0.111	515.945
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Backhoe	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Forklift	8	0.171	0.144	1.180	1.298	0.002	0.097	0.089	148.031
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Loader	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869
AWPF	2020	7/1/2020	12/31/2020	132	1	50	1	10	Crane	8	0.528	0.444	2.070	5.275	0.006	0.217	0.200	546.695
AWPF	2021	1/1/2021	12/31/2021	261	2	50	2	4	Bulldozer	8	2.108	1.771	14.540	18.281	0.018	1.717	0.856	1,723.369
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Excavator	8	0.281	0.236	3.375	2.222	0.005	0.108	0.099	516.021
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Backhoe	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Forklift	8	0.154	0.129	1.168	1.179	0.002	0.084	0.077	148.031
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Loader	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002
AWPF	2021	1/1/2021	12/31/2021	261	2	50	1	4	Crane	8	0.481	0.404	1.940	4.744	0.006	0.193	0.177	546.645
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Bulldozer	8	1.016	0.854	7.007	8.649	0.009	1.071	0.443	862.267
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Backhoe	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Forklift	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Loader	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
AWPF	2022	1/1/2022	4/30/2022	85	3	40	1	4	Crane	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Forklift	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Loader	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
AWPF	2022	5/1/2022	9/30/2022	110	4	30	1	3	Crane	8	0.434	0.365	1.851	4.094	0.006	0.170	0.156	546.735
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Forklift	8	0.135	0.114	1.154	1.055	0.002	0.070	0.064	148.031
AWPF	2022	9/1/2022	12/31/2022	87	5	20	1	2	Loader	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Bulldozer	8	1.145	0.962	7.936	10.148	0.009	4.184	0.969	863.070
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Scrapers	8	1.166	0.979	7.357	11.592	0.015	0.452	0.416	1,447.030
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Excavator	8	0.301	0.253	3.371	2.489	0.005	0.121	0.111	515.945
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	1	18	1	30	Loader	8	0.252	0.212	2.303	2.127	0.003	0.341	0.132	303.869
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Backhoe	8	0.225	0.189	2.284	1.915	0.003	0.320	0.112	304.002
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Forklift	8	0.154	0.129	1.168	1.179	0.002	0.084	0.077	148.031
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Compactor	8	0.048	0.040	0.210	0.251	0.000	0.010	0.010	34.479
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	2	18	1	8	Boom Lifts	8	0.045	0.037	1.094	0.601	0.002	0.011	0.011	162.620
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Tractor	8	0.198	0.166	2.261	1.693	0.003	0.298	0.092	304.345
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	1	8	1	1	Generator	8	6.702	0.330	3.676	2.928	0.007	0.147	0.147	623.035
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Excavator	8	1.203	1.011	13.485	9.956	0.021	0.484	0.444	2,063.782
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Loader	8	1.008	0.847	9.213	8.507	0.013	1.365	0.529	1,215.478
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	4	12	Pavement Cutter	8	0.980	0.823	10.061	8.501	0.016	0.425	0.391	1,566.158
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Compactor	8	0.144	0.120	0.631	0.754	0.001	0.029	0.029	103.438
Brine Line	2020	1/1/2020	12/31/2020	262	1	30	3	12	Sweepers	8	0.964	0.810	5.962	6.982	0.008	0.561	0.516	738.530
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Excavator	8	1.126	0.946	13.501	8.886	0.021	0.432	0.397	2,064.085
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Loader	8	0.901	0.757	9.134	7.661	0.013	1.279	0.449	1,216.009
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	4	12	Pavement Cutter	8	0.907	0.762	10.089	7.702	0.016	0.380	0.350	1,565.871
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Compactor	8	0.144	0.120	0.631	0.754	0.001	0.029	0.029	103.438
Brine Line	2021	1/1/2021	12/31/2021	261	2	30	3	12	Sweepers	8	0.816	0.686	5.853	6.172	0.008	0.454	0.418	738.530
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Excavator	8	0.994	0.835	13.433	7.333	0.021	0.356	0.326	2,063.356
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Loader	8	0.792	0.666	9.044	6.772	0.013	1.191	0.369	1,217.379
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	4	12	Pavement Cutter	8	0.842	0.708	10.107	6.898	0.016	0.336	0.309	1,565.921
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Compactor	8	0.144	0.120	0.631	0.754	0.001	0.029	0.029	103.438
Brine Line	2022	1/1/2022	12/31/2022	260	3	30	3	12	Sweepers	8	0.690	0.580	5.751	5.409	0.008	0.362	0.333	738.530
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Backhoe	8	0.960	0.807	7.082	7.971	0.009	1.187	0.545	948.002
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	1	20	3	12	Crane	8	1.994	1.675	7.402	20.019	0.017	0.867	0.797	1,704.094
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Backhoe	8	0.840	0.706	6.979	7.084	0.009	1.095	0.461	932.138
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	2	20	3	12	Crane	8	1.761	1.479	6.730	17.631	0.017	0.747	0.688	1,676.541
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Backhoe	8	0.756	0.635	6.910	6.381	0.009	1.025	0.397	911.608
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	3	20	3	12	Crane	8	1.584	1.331	6.209	15.825	0.017	0.652	0.600	1,640.085
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Backhoe	8	0.676	0.568	6.851	5.746	0.009	0.961	0.337	912.007
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	4	20	3	12	Crane	8	1.442	1.212	5.820	14.233	0.017	0.578	0.532	1,639.936

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

											Localized Daily (lb/day)							
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Sub-phase**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**hr/day**	**TOG_RUNEX**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**	**CO2_RUNEX**
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	5	6	Excavator	8	1.243	1.044	16.791	9.166	0.027	0.445	0.408	2,579.195
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	1	20	2	6	Crane	8	0.869	0.730	3.703	8.187	0.011	0.340	0.313	1,093.470
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	2	0	Backhoe	8	0.396	0.333	4.522	3.386	0.006	0.596	0.184	608.690
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	1	7	1	0	Concrete Pump	8	8.059	0.352	3.732	2.969	0.007	0.156	0.156	623.035
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	5	6	Excavator	8	1.407	1.182	16.877	11.108	0.027	0.540	0.496	2,580.106
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	1	20	2	6	Crane	8	0.962	0.808	3.880	9.489	0.011	0.385	0.354	1,093.291
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	2	0	Backhoe	8	0.450	0.378	4.567	3.831	0.006	0.639	0.225	608.005
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	1	7	1	0	Concrete Pump	8	8.705	0.380	3.741	3.210	0.007	0.178	0.178	623.036
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	5	6	Excavator	8	1.243	1.044	16.791	9.166	0.027	0.445	0.408	2,579.195
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	2	20	2	6	Crane	8	0.869	0.730	3.703	8.187	0.011	0.340	0.313	1,093.470
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	2	0	Backhoe	8	0.396	0.333	4.522	3.386	0.006	0.596	0.184	608.690
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	2	7	1	0	Concrete Pump	8	8.059	0.352	3.732	2.969	0.007	0.156	0.156	623.035

AWPF	2018
Expansion of Flow EQ	2018
Balboa Pump Station Expansion	2018
Brine Line	2018
Purified Recycled Water Pipeline	2018
Hansen - Lateral Pipeline Construction	2018
Hansen - Outlet Structure Construction	2018
Pacoima - Lateral Pipeline Construction	2018
Pacoima - Outlet Structure Construction	2018

AWPF	2019
Expansion of Flow EQ	2019
Balboa Pump Station Expansion	2019
Brine Line	2019
Purified Recycled Water Pipeline	2019
Hansen - Lateral Pipeline Construction	2019
Hansen - Outlet Structure Construction	2019
Pacoima - Lateral Pipeline Construction	2019
Pacoima - Outlet Structure Construction	2019

AWPF	2020
Expansion of Flow EQ	2020
Balboa Pump Station Expansion	2020
Brine Line	2020
Purified Recycled Water Pipeline	2020
Hansen - Lateral Pipeline Construction	2020
Hansen - Outlet Structure Construction	2020
Pacoima - Lateral Pipeline Construction	2020
Pacoima - Outlet Structure Construction	2020

AWPF	2021
Expansion of Flow EQ	2021
Balboa Pump Station Expansion	2021
Brine Line	2021
Purified Recycled Water Pipeline	2021
Hansen - Lateral Pipeline Construction	2021
Hansen - Outlet Structure Construction	2021
Pacoima - Lateral Pipeline Construction	2021
Pacoima - Outlet Structure Construction	2021

AWPF	2022
Expansion of Flow EQ	2022

Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20
Figitive Dust Reduction 61%

Phase	Year	Start	End	Duration (days)	Sub-phase	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	Localized Daily (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
Balboa Pump Station Expansion	2022																	
Brine Line	2022																	
Purified Recycled Water Pipeline	2022																	
Hansen - Lateral Pipeline Construction	2022																	
Hansen - Outlet Structure Construction	2022																	
Pacoima - Lateral Pipeline Construction	2022																	
Pacoima - Outlet Structure Construction	2022																	

Phase	Year	Sub-phase	Localized by phase (lb/day)							
AWPF	2020	1	3.8	3.2	27.3	33.9	0.0	3.6	1.7	3,579.0
AWPF	2021	2	3.5	3.0	25.8	30.5	0.0	2.8	1.4	3,576.6
AWPF	2022	3	2.0	1.7	14.7	17.4	0.0	1.9	0.9	2,200.2
AWPF	2022	4	0.8	0.7	5.5	7.1	0.0	0.9	0.4	1,033.6
AWPF	2022	5	0.3	0.3	3.4	2.7	0.0	0.6	0.2	452.4
Expansion of Flow EQ	2020	1	2.9	2.4	21.0	26.4	0.0	5.1	1.6	3,129.9
Expansion of Flow EQ	2021	2	0.5	0.4	4.8	3.9	0.0	1.4	0.4	649.1
Balboa Pump Station Expansion	2022	1	6.9	0.5	5.9	4.6	0.0	0.6	0.3	927.4
Brine Line	2020	1	4.3	3.6	39.4	34.7	0.1	2.9	1.9	5,687.4
Brine Line	2021	2	3.9	3.3	39.2	31.2	0.1	2.6	1.6	5,687.9
Brine Line	2022	3	3.5	2.9	39.0	27.2	0.1	2.3	1.4	5,688.6
Purified Recycled Water Pipeline	2018	1								
Purified Recycled Water Pipeline	2019	2	2.6	2.2	13.7	24.7	0.0	1.8	1.1	2,608.7
Purified Recycled Water Pipeline	2020	3	2.3	2.0	13.1	22.2	0.0	1.7	1.0	2,551.7
Purified Recycled Water Pipeline	2021	4	2.1	1.8	12.7	20.0	0.0	1.5	0.9	2,551.9
Hansen - Lateral Pipeline Construction	2022	1	2.1	1.8	20.5	17.4	0.0	0.8	0.7	3,672.7
Hansen - Outlet Structure Construction	2022	1	8.5	0.7	8.3	6.4	0.0	0.8	0.3	1,231.7
Pacoima - Lateral Pipeline Construction	2021	1	2.4	2.0	20.8	20.6	0.0	0.9	0.9	3,673.4
Pacoima - Outlet Structure Construction	2021	1	9.2	0.8	8.3	7.0	0.0	0.8	0.4	1,231.0
Pacoima - Lateral Pipeline Construction	2022	2	2.1	1.8	20.5	17.4	0.0	0.8	0.7	3,672.7
Pacoima - Outlet Structure Construction	2022	2	8.5	0.7	8.3	6.4	0.0	0.8	0.3	1,231.7
Hansen			10.6	2.5	28.7	23.7	0.1	1.5	1.1	4,904.4
Pacoima			11.52	2.75	29.06	27.64	0.05	1.74	1.25	4,904.44

Year
2018
2019
2020
2021
2022

VGS Alternative

Using Tier III Equipment

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

												OFFROAD Emission Factors (g/hp-hr)					
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**hr/day**	**HP**	**LF**	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**
AWPF	2020	7/1/2020	12/31/2020	132	50	2	10	Bulldozer	8	255	0.4	0.12	2.6	2.32	0	0.088	0.088
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Compactor	8	8	0.43	0.29	4.1	4.63	0	0.28	0.28
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Forklift	8	89	0.2	0.12	3.7	2.74	0	0.192	0.192
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Bulldozer	8	255	0.4	0.12	2.6	2.32	0	0.088	0.088
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	8	8	0.43	0.29	4.1	4.63	0	0.28	0.28
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	8	89	0.2	0.12	3.7	2.74	0	0.192	0.192
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Bulldozer	8	255	0.4	0.12	2.6	2.32	0	0.088	0.088
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	8	8	0.43	0.29	4.1	4.63	0	0.28	0.28
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	8	89	0.2	0.12	3.7	2.74	0	0.192	0.192
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Compactor	8	8	0.43	0.29	4.1	4.63	0	0.28	0.28
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Forklift	8	89	0.2	0.12	3.7	2.74	0	0.192	0.192
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Forklift	8	89	0.2	0.12	3.7	2.74	0	0.192	0.192
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Bulldozer	8	255	0.4	0.12	2.6	2.32	0	0.088	0.088
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Scrapers	8	362	0.48	0.12	2.6	2.32	0	0.088	0.088
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Forklift	8	89	0.2	0.12	3.7	2.74	0	0.192	0.192
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Compactor	8	8	0.43	0.29	4.1	4.63	0	0.28	0.28
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Boom Lifts	8	63	0.31	0.12	3.7	2.74	0	0.192	0.192
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Generator	8	84	0.74	0.12	3.7	2.74	0	0.192	0.192
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Pavement Cutter	8	131	0.36	0.12	3.7	2.32	0	0.112	0.112
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Compactor	8	8	0.43	0.29	4.1	4.63	0	0.28	0.28
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Sweepers	8	64	0.46	0.12	3.7	2.74	0	0.192	0.192
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Pavement Cutter	8	131	0.36	0.12	3.7	2.32	0	0.112	0.112
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Compactor	8	8	0.43	0.29	4.1	4.63	0	0.28	0.28
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Sweepers	8	64	0.46	0.12	3.7	2.74	0	0.192	0.192
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Loader	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Pavement Cutter	8	131	0.36	0.12	3.7	2.32	0	0.112	0.112
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Compactor	8	8	0.43	0.29	4.1	4.63	0	0.28	0.28
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Sweepers	8	64	0.46	0.12	3.7	2.74	0	0.192	0.192
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	5	6	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	2	6	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	2	0	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	1	0	Concrete Pump	8	84	0.74	0.12	3.7	2.74	0	0.192	0.192
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	5	6	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	2	6	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	2	0	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	1	0	Concrete Pump	8	84	0.74	0.12	3.7	2.74	0	0.192	0.192

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

OFFROAD Emission Factors (g/hp-hr)

Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**hr/day**	**HP**	**LF**	**ROG**	**CO**	**NOX**	**SO2**	**PM10**	**PM2.5**
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	5	6	Excavator	8	163	0.38	0.12	3.7	2.32	0	0.112	0.112
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	2	6	Crane	8	226	0.29	0.12	2.6	2.32	0	0.088	0.088
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	2	0	Backhoe	8	98	0.37	0.12	3.7	2.74	0	0.192	0.192
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	1	0	Concrete Pump	8	84	0.74	0.12	3.7	2.74	0	0.192	0.192

AWPF	2018
Expansion of Flow EQ	2018
Balboa Pump Station Expansion	2018
Brine Line	2018
Purified Recycled Water Pipeline	2018
Hansen - Lateral Pipeline Construction	2018
Hansen - Outlet Structure Construction	2018
Pacoima - Lateral Pipeline Construction	2018
Pacoima - Outlet Structure Construction	2018
AWPF	2019
Expansion of Flow EQ	2019
Balboa Pump Station Expansion	2019
Brine Line	2019
Purified Recycled Water Pipeline	2019
Hansen - Lateral Pipeline Construction	2019
Hansen - Outlet Structure Construction	2019
Pacoima - Lateral Pipeline Construction	2019
Pacoima - Outlet Structure Construction	2019
AWPF	2020
Expansion of Flow EQ	2020
Balboa Pump Station Expansion	2020
Brine Line	2020
Purified Recycled Water Pipeline	2020
Hansen - Lateral Pipeline Construction	2020
Hansen - Outlet Structure Construction	2020
Pacoima - Lateral Pipeline Construction	2020
Pacoima - Outlet Structure Construction	2020
AWPF	2021
Expansion of Flow EQ	2021
Balboa Pump Station Expansion	2021
Brine Line	2021
Purified Recycled Water Pipeline	2021
Hansen - Lateral Pipeline Construction	2021
Hansen - Outlet Structure Construction	2021
Pacoima - Lateral Pipeline Construction	2021
Pacoima - Outlet Structure Construction	2021
AWPF	2022
Expansion of Flow EQ	2022
Balboa Pump Station Expansion	2022
Brine Line	2022
Purified Recycled Water Pipeline	2022
Hansen - Lateral Pipeline Construction	2022
Hansen - Outlet Structure Construction	2022
Pacoima - Lateral Pipeline Construction	2022
Pacoima - Outlet Structure Construction	2022

Phase	**Year**

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

OFFROAD Emission Factors (g/hp-hr)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	HP	LF	ROG	CO	NOX	SO2	PM10	PM2.5
AWPF	2020																
AWPF	2021																
AWPF	2022																
AWPF	2022																
AWPF	2022																
Expansion of Flow EQ	2020																
Expansion of Flow EQ	2021																
Balboa Pump Station Expansion	2022																
Brine Line	2020																
Brine Line	2021																
Brine Line	2022																
Purified Recycled Water Pipeline	2018																
Purified Recycled Water Pipeline	2019																
Purified Recycled Water Pipeline	2020																
Purified Recycled Water Pipeline	2021																
Hansen - Lateral Pipeline Construction	2022																
Hansen - Outlet Structure Construction	2022																
Pacoima - Lateral Pipeline Construction	2021																
Pacoima - Outlet Structure Construction	2021																
Pacoima - Lateral Pipeline Construction	2022																
Pacoima - Outlet Structure Construction	2022																

	Year
	2018
	2019
	2020
	2021
	2022

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

										OFFROAD Emission Rates (lb/day)					
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	ROG	CO	NOX	SO2	PM10	PM2.5
AWPF	2020	7/1/2020	12/31/2020	132	50	2	10	Bulldozer	8	0.43	9.35	8.35	0.00	1.90	0.51
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Excavator	8	0.13	4.04	2.53	0.00	0.12	0.12
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Backhoe	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Crane	8	0.14	3.01	2.68	0.00	0.10	0.10
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Bulldozer	8	0.43	9.35	8.35	0.00	1.20	0.40
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	8	0.13	4.04	2.53	0.00	0.12	0.12
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Backhoe	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	8	0.14	3.01	2.68	0.00	0.10	0.10
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Bulldozer	8	0.22	4.68	4.17	0.00	0.83	0.24
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	8	0.14	3.01	2.68	0.00	0.10	0.10
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Crane	8	0.14	3.01	2.68	0.00	0.10	0.10
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Bulldozer	8	0.22	4.68	4.17	0.00	3.88	0.70
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Scrapers	8	0.37	7.97	7.11	0.00	0.27	0.27
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Excavator	8	0.13	4.04	2.53	0.00	0.12	0.12
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Backhoe	8	0.08	2.37	1.75	0.00	0.33	0.13
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Boom Lifts	8	0.04	1.27	0.94	0.00	0.07	0.07
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	8	0.08	2.37	1.75	0.00	0.33	0.13
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Generator	8	0.13	4.06	3.00	0.00	0.21	0.21
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Excavator	8	0.52	16.17	10.14	0.00	0.49	0.49
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Loader	8	0.31	9.46	7.01	0.00	1.32	0.52
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Pavement Cutter	8	0.40	12.31	7.72	0.00	0.37	0.37
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Compactor	8	0.05	0.75	0.84	0.00	0.05	0.05
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Sweepers	8	0.19	5.76	4.27	0.00	0.30	0.30
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Excavator	8	0.52	16.17	10.14	0.00	0.49	0.49
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Loader	8	0.31	9.46	7.01	0.00	1.32	0.52
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Pavement Cutter	8	0.40	12.31	7.72	0.00	0.37	0.37
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Compactor	8	0.05	0.75	0.84	0.00	0.05	0.05
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Sweepers	8	0.19	5.76	4.27	0.00	0.30	0.30
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Excavator	8	0.52	16.17	10.14	0.00	0.49	0.49
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Loader	8	0.31	9.46	7.01	0.00	1.32	0.52
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Pavement Cutter	8	0.40	12.31	7.72	0.00	0.37	0.37
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Compactor	8	0.05	0.75	0.84	0.00	0.05	0.05
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Sweepers	8	0.19	5.76	4.27	0.00	0.30	0.30
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Backhoe	8	0.23	7.10	5.26	0.00	0.99	0.39
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Crane	8	0.42	9.02	8.05	0.00	0.31	0.31
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Backhoe	8	0.23	7.10	5.26	0.00	0.99	0.39
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Crane	8	0.42	9.02	8.05	0.00	0.31	0.31
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Backhoe	8	0.23	7.10	5.26	0.00	0.99	0.39
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Crane	8	0.42	9.02	8.05	0.00	0.31	0.31
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Backhoe	8	0.23	7.10	5.26	0.00	0.99	0.39
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Crane	8	0.42	9.02	8.05	0.00	0.31	0.31
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	5	6	Excavator	8	0.66	20.21	12.67	0.00	0.61	0.61
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	2	6	Crane	8	0.28	6.01	5.36	0.00	0.20	0.20
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	2	0	Backhoe	8	0.15	4.73	3.50	0.00	0.66	0.26
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	1	0	Concrete Pump	8	0.13	4.06	3.00	0.00	0.21	0.21
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	5	6	Excavator	8	0.66	20.21	12.67	0.00	0.61	0.61
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	2	6	Crane	8	0.28	6.01	5.36	0.00	0.20	0.20
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	2	0	Backhoe	8	0.15	4.73	3.50	0.00	0.66	0.26
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	1	0	Concrete Pump	8	0.13	4.06	3.00	0.00	0.21	0.21

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

OFFROAD Emission Rates (lb/day)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	ROG	CO	NOX	SO2	PM10	PM2.5
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	5	6	Excavator	8	0.66	20.21	12.67	0.00	0.61	0.61
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	2	6	Crane	8	0.28	6.01	5.36	0.00	0.20	0.20
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	2	0	Backhoe	8	0.15	4.73	3.50	0.00	0.66	0.26
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	1	0	Concrete Pump	8	0.13	4.06	3.00	0.00	0.21	0.21
AWPF	2018														
Expansion of Flow EQ	2018														
Balboa Pump Station Expansion	2018														
Brine Line	2018														
Purified Recycled Water Pipeline	2018														
Hansen - Lateral Pipeline Construction	2018														
Hansen - Outlet Structure Construction	2018														
Pacoima - Lateral Pipeline Construction	2018														
Pacoima - Outlet Structure Construction	2018														
AWPF	2019														
Expansion of Flow EQ	2019														
Balboa Pump Station Expansion	2019														
Brine Line	2019														
Purified Recycled Water Pipeline	2019														
Hansen - Lateral Pipeline Construction	2019														
Hansen - Outlet Structure Construction	2019														
Pacoima - Lateral Pipeline Construction	2019														
Pacoima - Outlet Structure Construction	2019														
AWPF	2020														
Expansion of Flow EQ	2020														
Balboa Pump Station Expansion	2020														
Brine Line	2020														
Purified Recycled Water Pipeline	2020														
Hansen - Lateral Pipeline Construction	2020														
Hansen - Outlet Structure Construction	2020														
Pacoima - Lateral Pipeline Construction	2020														
Pacoima - Outlet Structure Construction	2020														
AWPF	2021														
Expansion of Flow EQ	2021														
Balboa Pump Station Expansion	2021														
Brine Line	2021														
Purified Recycled Water Pipeline	2021														
Hansen - Lateral Pipeline Construction	2021														
Hansen - Outlet Structure Construction	2021														
Pacoima - Lateral Pipeline Construction	2021														
Pacoima - Outlet Structure Construction	2021														
AWPF	2022														
Expansion of Flow EQ	2022														
Balboa Pump Station Expansion	2022														
Brine Line	2022														
Purified Recycled Water Pipeline	2022														
Hansen - Lateral Pipeline Construction	2022														
Hansen - Outlet Structure Construction	2022														
Pacoima - Lateral Pipeline Construction	2022														
Pacoima - Outlet Structure Construction	2022														

Phase	Year

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

OFFROAD Emission Rates (lb/day)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	ROG	CO	NOX	SO2	PM10	PM2.5
AWPF	2020														
AWPF	2021														
AWPF	2022														
AWPF	2022														
AWPF	2022														
Expansion of Flow EQ	2020														
Expansion of Flow EQ	2021														
Balboa Pump Station Expansion	2022														
Brine Line	2020														
Brine Line	2021														
Brine Line	2022														
Purified Recycled Water Pipeline	2018														
Purified Recycled Water Pipeline	2019														
Purified Recycled Water Pipeline	2020														
Purified Recycled Water Pipeline	2021														
Hansen - Lateral Pipeline Construction	2022														
Hansen - Outlet Structure Construction	2022														
Pacoima - Lateral Pipeline Construction	2021														
Pacoima - Outlet Structure Construction	2021														
Pacoima - Lateral Pipeline Construction	2022														
Pacoima - Outlet Structure Construction	2022														

	Year
	2018
	2019
	2020
	2021
	2022

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

Emissions from Personnel Vehicles (lb/day)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
AWPF	2020	7/1/2020	12/31/2020	132	50	2	10	Bulldozer	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Compactor	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Excavator	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Backhoe	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Forklift	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Loader	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Crane	8	0.046	0.032	1.435	0.131	0.005	0.076	0.032	532.054
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Bulldozer	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Backhoe	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	8	0.042	0.029	1.329	0.118	0.005	0.076	0.032	514.255
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Bulldozer	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	8	0.030	0.021	0.989	0.085	0.004	0.061	0.026	396.282
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Compactor	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Forklift	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Loader	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Crane	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Forklift	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Loader	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Bulldozer	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Scrapers	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Excavator	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Loader	8	0.017	0.011	0.517	0.047	0.002	0.027	0.012	191.539
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Backhoe	8	0.015	0.010	0.478	0.042	0.002	0.027	0.012	185.132
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Forklift	8	0.015	0.010	0.478	0.042	0.002	0.027	0.012	185.132
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Compactor	8	0.015	0.010	0.478	0.042	0.002	0.027	0.012	185.132
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Boom Lifts	8	0.015	0.010	0.478	0.042	0.002	0.027	0.012	185.132
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	8	0.006	0.004	0.198	0.017	0.001	0.012	0.005	79.256
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Generator	8	0.006	0.004	0.198	0.017	0.001	0.012	0.005	79.256
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Excavator	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Loader	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Pavement Cutter	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Compactor	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Sweepers	8	0.028	0.019	0.861	0.079	0.003	0.046	0.019	319.232
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Excavator	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Loader	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Pavement Cutter	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Compactor	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Sweepers	8	0.025	0.017	0.797	0.071	0.003	0.046	0.019	308.553
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Excavator	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Loader	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Pavement Cutter	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Compactor	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Sweepers	8	0.023	0.016	0.742	0.064	0.003	0.046	0.019	297.211
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Backhoe	8	0.025	0.018	0.709	0.067	0.002	0.031	0.013	227.860
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Crane	8	0.025	0.018	0.709	0.067	0.002	0.031	0.013	227.860
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Backhoe	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Crane	8	0.021	0.014	0.630	0.059	0.002	0.031	0.013	219.965
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Backhoe	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Crane	8	0.018	0.013	0.574	0.052	0.002	0.031	0.013	212.821
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Backhoe	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Crane	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	5	6	Excavator	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	2	6	Crane	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	2	0	Backhoe	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	1	0	Concrete Pump	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	5	6	Excavator	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	2	6	Crane	8	0.017	0.012	0.531	0.047	0.002	0.030	0.013	205.702
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	2	0	Backhoe	8	0.006	0.004	0.186	0.017	0.001	0.011	0.005	71.996
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	1	0	Concrete Pump	8	0.006	0.004	0.186	0.017	0.001	0.011	0.005	71.996

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

Emissions from Personnel Vehicles (lb/day)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	5	6	Excavator	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	2	6	Crane	8	0.015	0.010	0.494	0.043	0.002	0.030	0.013	198.141
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	2	0	Backhoe	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	1	0	Concrete Pump	8	0.005	0.004	0.173	0.015	0.001	0.011	0.004	69.349

AWPF	2018
Expansion of Flow EQ	2018
Balboa Pump Station Expansion	2018
Brine Line	2018
Purified Recycled Water Pipeline	2018
Hansen - Lateral Pipeline Construction	2018
Hansen - Outlet Structure Construction	2018
Pacoima - Lateral Pipeline Construction	2018
Pacoima - Outlet Structure Construction	2018
AWPF	2019
Expansion of Flow EQ	2019
Balboa Pump Station Expansion	2019
Brine Line	2019
Purified Recycled Water Pipeline	2019
Hansen - Lateral Pipeline Construction	2019
Hansen - Outlet Structure Construction	2019
Pacoima - Lateral Pipeline Construction	2019
Pacoima - Outlet Structure Construction	2019
AWPF	2020
Expansion of Flow EQ	2020
Balboa Pump Station Expansion	2020
Brine Line	2020
Purified Recycled Water Pipeline	2020
Hansen - Lateral Pipeline Construction	2020
Hansen - Outlet Structure Construction	2020
Pacoima - Lateral Pipeline Construction	2020
Pacoima - Outlet Structure Construction	2020
AWPF	2021
Expansion of Flow EQ	2021
Balboa Pump Station Expansion	2021
Brine Line	2021
Purified Recycled Water Pipeline	2021
Hansen - Lateral Pipeline Construction	2021
Hansen - Outlet Structure Construction	2021
Pacoima - Lateral Pipeline Construction	2021
Pacoima - Outlet Structure Construction	2021
AWPF	2022
Expansion of Flow EQ	2022
Balboa Pump Station Expansion	2022
Brine Line	2022
Purified Recycled Water Pipeline	2022
Hansen - Lateral Pipeline Construction	2022
Hansen - Outlet Structure Construction	2022
Pacoima - Lateral Pipeline Construction	2022
Pacoima - Outlet Structure Construction	2022

Phase	Year

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	Emissions from Personnel Vehicles (lb/day) TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
AWPF	2020																
AWPF	2021																
AWPF	2022																
AWPF	2022																
AWPF	2022																
Expansion of Flow EQ	2020																
Expansion of Flow EQ	2021																
Balboa Pump Station Expansion	2022																
Brine Line	2020																
Brine Line	2021																
Brine Line	2022																
Purified Recycled Water Pipeline	2018																
Purified Recycled Water Pipeline	2019																
Purified Recycled Water Pipeline	2020																
Purified Recycled Water Pipeline	2021																
Hansen - Lateral Pipeline Construction	2022																
Hansen - Outlet Structure Construction	2022																
Pacoima - Lateral Pipeline Construction	2021																
Pacoima - Outlet Structure Construction	2021																
Pacoima - Lateral Pipeline Construction	2022																
Pacoima - Outlet Structure Construction	2022																

	Year
	2018
	2019
	2020
	2021
	2022

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

										Emissions from Daily Truck Trips (lb/day)							
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
AWPF	2020	7/1/2020	12/31/2020	132	50	2	10	Bulldozer	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Compactor	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Excavator	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Backhoe	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Forklift	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Loader	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Crane	8	0.119	0.070	0.514	2.023	0.007	0.051	0.024	740.532
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Bulldozer	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Backhoe	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Bulldozer	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Compactor	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Forklift	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Loader	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Crane	8	0.046	0.027	0.205	0.740	0.003	0.020	0.009	292.852
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Forklift	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Loader	8	0.035	0.020	0.153	0.555	0.002	0.015	0.007	219.639
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Bulldozer	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2221.597
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Scrapers	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2221.597
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Excavator	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2221.597
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Loader	8	0.356	0.211	1.543	6.069	0.020	0.154	0.071	2221.597
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Backhoe	8	0.092	0.054	0.409	1.481	0.005	0.040	0.018	585.705
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Forklift	8	0.092	0.054	0.409	1.481	0.005	0.040	0.018	585.705
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Compactor	8	0.092	0.054	0.409	1.481	0.005	0.040	0.018	585.705
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Boom Lifts	8	0.092	0.054	0.409	1.481	0.005	0.040	0.018	585.705
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	8	0.012	0.007	0.051	0.185	0.001	0.005	0.002	73.213
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Generator	8	0.012	0.007	0.051	0.185	0.001	0.005	0.002	73.213
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Excavator	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Loader	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Pavement Cutter	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Compactor	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Sweepers	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Excavator	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Loader	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Pavement Cutter	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Compactor	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Sweepers	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Excavator	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Loader	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Pavement Cutter	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Compactor	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Sweepers	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Backhoe	8	0.153	0.094	0.635	2.797	0.008	0.065	0.032	912.227
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Crane	8	0.153	0.094	0.635	2.797	0.008	0.065	0.032	912.227
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Backhoe	8	0.148	0.090	0.626	2.622	0.008	0.064	0.031	899.269
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Crane	8	0.148	0.090	0.626	2.622	0.008	0.064	0.031	899.269
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Backhoe	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Crane	8	0.142	0.084	0.617	2.428	0.008	0.061	0.029	888.639
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Backhoe	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Crane	8	0.139	0.081	0.614	2.221	0.008	0.060	0.028	878.557
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	5	6	Excavator	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	2	6	Crane	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	2	0	Backhoe	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	1	0	Concrete Pump	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	5	6	Excavator	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	2	6	Crane	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	2	0	Backhoe	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	1	0	Concrete Pump	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

Emissions from Daily Truck Trips (lb/day)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	5	6	Excavator	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	2	6	Crane	8	0.069	0.040	0.307	1.110	0.004	0.030	0.014	439.278
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	2	0	Backhoe	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	1	0	Concrete Pump	8	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
AWPF	2018																
Expansion of Flow EQ	2018																
Balboa Pump Station Expansion	2018																
Brine Line	2018																
Purified Recycled Water Pipeline	2018																
Hansen - Lateral Pipeline Construction	2018																
Hansen - Outlet Structure Construction	2018																
Pacoima - Lateral Pipeline Construction	2018																
Pacoima - Outlet Structure Construction	2018																
AWPF	2019																
Expansion of Flow EQ	2019																
Balboa Pump Station Expansion	2019																
Brine Line	2019																
Purified Recycled Water Pipeline	2019																
Hansen - Lateral Pipeline Construction	2019																
Hansen - Outlet Structure Construction	2019																
Pacoima - Lateral Pipeline Construction	2019																
Pacoima - Outlet Structure Construction	2019																
AWPF	2020																
Expansion of Flow EQ	2020																
Balboa Pump Station Expansion	2020																
Brine Line	2020																
Purified Recycled Water Pipeline	2020																
Hansen - Lateral Pipeline Construction	2020																
Hansen - Outlet Structure Construction	2020																
Pacoima - Lateral Pipeline Construction	2020																
Pacoima - Outlet Structure Construction	2020																
AWPF	2021																
Expansion of Flow EQ	2021																
Balboa Pump Station Expansion	2021																
Brine Line	2021																
Purified Recycled Water Pipeline	2021																
Hansen - Lateral Pipeline Construction	2021																
Hansen - Outlet Structure Construction	2021																
Pacoima - Lateral Pipeline Construction	2021																
Pacoima - Outlet Structure Construction	2021																
AWPF	2022																
Expansion of Flow EQ	2022																
Balboa Pump Station Expansion	2022																
Brine Line	2022																
Purified Recycled Water Pipeline	2022																
Hansen - Lateral Pipeline Construction	2022																
Hansen - Outlet Structure Construction	2022																
Pacoima - Lateral Pipeline Construction	2022																
Pacoima - Outlet Structure Construction	2022																

Phase	Year

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

										Emissions from Daily Truck Trips (lb/day)							
Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
AWPF	2020																
AWPF	2021																
AWPF	2022																
AWPF	2022																
AWPF	2022																
Expansion of Flow EQ	2020																
Expansion of Flow EQ	2021																
Balboa Pump Station Expansion	2022																
Brine Line	2020																
Brine Line	2021																
Brine Line	2022																
Purified Recycled Water Pipeline	2018																
Purified Recycled Water Pipeline	2019																
Purified Recycled Water Pipeline	2020																
Purified Recycled Water Pipeline	2021																
Hansen - Lateral Pipeline Construction	2022																
Hansen - Outlet Structure Construction	2022																
Pacoima - Lateral Pipeline Construction	2021																
Pacoima - Outlet Structure Construction	2021																
Pacoima - Lateral Pipeline Construction	2022																
Pacoima - Outlet Structure Construction	2022																

	Year
	2018
	2019
	2020
	2021
	2022

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

										Reginal Daily (lb/day)					
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**hr/day**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**
AWPF	2020	7/1/2020	12/31/2020	132	50	2	10	Bulldozer	8	0.53	11.30	10.50	0.01	2.03	0.57
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Compactor	8	0.12	2.20	2.43	0.01	0.14	0.07
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Excavator	8	0.23	5.99	4.69	0.01	0.25	0.18
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Backhoe	8	0.18	4.32	3.91	0.01	0.46	0.19
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Forklift	8	0.14	3.11	3.01	0.01	0.19	0.12
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Loader	8	0.18	4.32	3.91	0.01	0.46	0.19
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Crane	8	0.24	4.96	4.84	0.01	0.23	0.16
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Bulldozer	8	0.49	10.89	9.21	0.01	1.29	0.45
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	8	0.07	1.78	1.14	0.01	0.11	0.06
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	8	0.19	5.58	3.39	0.01	0.22	0.16
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Backhoe	8	0.13	3.90	2.61	0.01	0.43	0.17
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	8	0.09	2.69	1.72	0.01	0.16	0.10
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	8	0.13	3.90	2.61	0.01	0.43	0.17
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	8	0.19	4.54	3.54	0.01	0.20	0.14
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Bulldozer	8	0.26	5.87	5.00	0.01	0.91	0.27
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	8	0.07	1.44	1.11	0.01	0.10	0.05
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	8	0.12	3.56	2.58	0.01	0.41	0.17
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	8	0.09	2.36	1.69	0.01	0.14	0.10
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	8	0.12	3.56	2.58	0.01	0.41	0.17
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	8	0.19	4.20	3.51	0.01	0.18	0.14
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Compactor	8	0.06	1.19	1.09	0.01	0.08	0.05
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Forklift	8	0.08	2.11	1.66	0.01	0.13	0.09
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Loader	8	0.12	3.31	2.56	0.01	0.40	0.16
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Crane	8	0.18	3.95	3.49	0.01	0.17	0.13
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Forklift	8	0.07	1.81	1.46	0.00	0.11	0.08
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Loader	8	0.11	3.01	2.35	0.00	0.38	0.15
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Bulldozer	8	0.44	6.74	10.29	0.02	4.06	0.78
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Scrapers	8	0.59	10.03	13.23	0.02	0.45	0.35
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Excavator	8	0.35	6.10	8.65	0.02	0.30	0.21
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Loader	8	0.30	4.43	7.87	0.02	0.51	0.21
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Backhoe	8	0.14	3.25	3.28	0.01	0.40	0.16
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Forklift	8	0.10	2.05	2.38	0.01	0.13	0.09
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Compactor	8	0.08	1.14	1.80	0.01	0.08	0.05
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Boom Lifts	8	0.11	2.16	2.47	0.01	0.13	0.10
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	8	0.09	2.62	1.95	0.00	0.35	0.14
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Generator	8	0.14	4.31	3.21	0.00	0.23	0.22
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Excavator	8	0.63	17.65	12.64	0.01	0.60	0.54
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Loader	8	0.41	10.94	9.52	0.01	1.43	0.57
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Pavement Cutter	8	0.50	13.79	10.22	0.01	0.48	0.42
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Compactor	8	0.16	2.22	3.35	0.01	0.16	0.10
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Sweepers	8	0.29	7.24	6.77	0.01	0.41	0.35
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Excavator	8	0.62	17.58	12.43	0.01	0.60	0.54
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Loader	8	0.41	10.88	9.30	0.01	1.42	0.57
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Pavement Cutter	8	0.50	13.72	10.01	0.01	0.48	0.42
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Compactor	8	0.15	2.16	3.13	0.01	0.16	0.10
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Sweepers	8	0.28	7.17	6.56	0.01	0.41	0.35
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Excavator	8	0.62	17.52	12.42	0.01	0.60	0.54
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Loader	8	0.40	10.82	9.29	0.01	1.42	0.57
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Pavement Cutter	8	0.50	13.67	10.00	0.01	0.48	0.42
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Compactor	8	0.15	2.10	3.13	0.01	0.16	0.10
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Sweepers	8	0.28	7.12	6.55	0.01	0.41	0.35
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Backhoe	8	0.34	8.44	8.12	0.01	1.09	0.44
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Crane	8	0.53	10.36	10.91	0.01	0.40	0.35
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Backhoe	8	0.33	8.35	7.94	0.01	1.08	0.44
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Crane	8	0.52	10.27	10.73	0.01	0.40	0.35
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Backhoe	8	0.33	8.29	7.74	0.01	1.08	0.44
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Crane	8	0.51	10.21	10.53	0.01	0.40	0.35
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Backhoe	8	0.32	8.24	7.52	0.01	1.08	0.43
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Crane	8	0.51	10.16	10.31	0.01	0.40	0.35
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	5	6	Excavator	8	0.71	21.01	13.83	0.01	0.67	0.64
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	2	6	Crane	8	0.33	6.81	6.52	0.01	0.26	0.23
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	2	0	Backhoe	8	0.16	4.91	3.52	0.00	0.67	0.27
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	1	0	Concrete Pump	8	0.14	4.23	3.02	0.00	0.22	0.21
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	5	6	Excavator	8	0.71	21.05	13.83	0.01	0.67	0.64
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	2	6	Crane	8	0.33	6.85	6.52	0.01	0.26	0.23
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	2	0	Backhoe	8	0.16	4.92	3.52	0.00	0.67	0.27
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	1	0	Concrete Pump	8	0.14	4.24	3.02	0.00	0.22	0.21

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day		Reginal Daily (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	5	6	Excavator	8		0.71	21.01	13.83	0.01	0.67	0.64
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	2	6	Crane	8		0.33	6.81	6.52	0.01	0.26	0.23
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	2	0	Backhoe	8		0.16	4.91	3.52	0.00	0.67	0.27
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	1	0	Concrete Pump	8		0.14	4.23	3.02	0.00	0.22	0.21

Reginal Daily Emissions (tons/year)

Phase	Year		ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
AWPF	2018							
Expansion of Flow EQ	2018							
Balboa Pump Station Expansion	2018							
Brine Line	2018							
Purified Recycled Water Pipeline	2018		0.0	0.4	0.4	0.0	0.0	0.0
Hansen - Lateral Pipeline Construction	2018							
Hansen - Outlet Structure Construction	2018							
Pacoima - Lateral Pipeline Construction	2018							
Pacoima - Outlet Structure Construction	2018							
AWPF	2019							
Expansion of Flow EQ	2019							
Balboa Pump Station Expansion	2019							
Brine Line	2019							
Purified Recycled Water Pipeline	2019		0.1	2.4	2.4	0.0	0.2	0.1
Hansen - Lateral Pipeline Construction	2019							
Hansen - Outlet Structure Construction	2019							
Pacoima - Lateral Pipeline Construction	2019							
Pacoima - Outlet Structure Construction	2019							
AWPF	2020		0.1	2.4	2.2	0.0	0.2	0.1
Expansion of Flow EQ	2020		0.2	2.3	4.3	0.0	0.4	0.1
Balboa Pump Station Expansion	2020							
Brine Line	2020		0.3	6.8	5.6	0.0	0.4	0.3
Purified Recycled Water Pipeline	2020		0.1	2.4	2.4	0.0	0.2	0.1
Hansen - Lateral Pipeline Construction	2020							
Hansen - Outlet Structure Construction	2020							
Pacoima - Lateral Pipeline Construction	2020							
Pacoima - Outlet Structure Construction	2020							
AWPF	2021		0.2	4.3	3.2	0.0	0.4	0.2
Expansion of Flow EQ	2021		0.1	1.6	2.1	0.0	0.3	0.1
Balboa Pump Station Expansion	2021							
Brine Line	2021		0.3	6.7	5.4	0.0	0.4	0.3
Purified Recycled Water Pipeline	2021		0.1	2.2	2.1	0.0	0.2	0.1
Hansen - Lateral Pipeline Construction	2021							
Hansen - Outlet Structure Construction	2021							
Pacoima - Lateral Pipeline Construction	2021		0.0	0.3	0.2	0.0	0.0	0.0
Pacoima - Outlet Structure Construction	2021		0.0	1.3	0.9	0.0	0.1	0.1
AWPF	2022		0.1	2.0	1.6	0.0	0.2	0.1
Expansion of Flow EQ	2022							
Balboa Pump Station Expansion	2022		0.0	1.0	0.7	0.0	0.1	0.1
Brine Line	2022		0.3	6.7	5.4	0.0	0.4	0.3
Purified Recycled Water Pipeline	2022							
Hansen - Lateral Pipeline Construction	2022		0.0	0.9	0.7	0.0	0.0	0.0
Hansen - Outlet Structure Construction	2022		0.0	0.3	0.2	0.0	0.0	0.0
Pacoima - Lateral Pipeline Construction	2022		0.1	2.7	2.0	0.0	0.1	0.1
Pacoima - Outlet Structure Construction	2022		0.0	0.9	0.6	0.0	0.1	0.0
		Per project (tons)	2.0	47.7	42.5	0.1	3.8	2.0
		Project Emissions (tons/year)	0.4	9.5	8.5	0.0	0.8	0.4

Phase **Year** **Reginal Daily (lb/day)**

Figitive Dust Reduction 61%
Average Wind Speed (mph): 2.2
Average Truck Size (cu. yd): 12
Personnel Round Trip Length (miles): 14.7
Truck Round Trips Length (miles): 20

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	Reginal Daily (lb/day) ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
AWPF	2020									1.6	36.2	33.3	0.1	3.8	1.5
AWPF	2021									1.3	33.3	24.2	0.1	2.8	1.3
AWPF	2022									0.9	22.2	17.3	0.0	2.2	0.9
AWPF	2022									0.6	13.4	11.2	0.0	1.4	0.6
AWPF	2022									0.3	8.1	6.8	0.0	1.1	0.4
Expansion of Flow EQ	2020									2.6	35.5	64.5	0.2	6.0	1.9
Expansion of Flow EQ	2021									0.7	12.2	16.0	0.1	2.0	0.7
Balboa Pump Station Expansion	2022									0.3	7.7	5.8	0.0	0.7	0.4
Brine Line	2020									2.0	51.8	42.5	0.1	3.1	2.0
Brine Line	2021									2.0	51.5	41.4	0.1	3.1	2.0
Brine Line	2022									2.0	51.2	41.4	0.1	3.1	2.0
Purified Recycled Water Pipeline	2018									0.9	18.8	19.0	0.0	1.5	0.8
Purified Recycled Water Pipeline	2019									0.9	18.6	18.7	0.0	1.5	0.8
Purified Recycled Water Pipeline	2020									0.8	18.5	18.3	0.0	1.5	0.8
Purified Recycled Water Pipeline	2021									0.8	18.4	17.8	0.0	1.5	0.8
Hansen - Lateral Pipeline Construction	2022									1.0	27.8	20.3	0.0	0.9	0.9
Hansen - Outlet Structure Construction	2022									0.3	9.1	6.5	0.0	0.9	0.5
Pacoima - Lateral Pipeline Construction	2021									1.0	27.9	20.4	0.0	0.9	0.9
Pacoima - Outlet Structure Construction	2021									0.3	9.2	6.5	0.0	0.9	0.5
Pacoima - Lateral Pipeline Construction	2022									1.0	27.8	20.3	0.0	0.9	0.9
Pacoima - Outlet Structure Construction	2022									0.3	9.1	6.5	0.0	0.9	0.5

Year	Reginal Daily (lb/day)					
2018	0.9	18.8	19.0	0.0	1.5	0.8
2019	0.9	18.6	18.7	0.0	1.5	0.8
2020	7.0	142.1	158.6	0.3	14.3	6.1
2021	5.3	134.0	108.6	0.2	9.7	5.2
2022	4.4	118.0	91.3	0.1	7.9	4.6

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

										Localized Daily (lb/day)					
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**hr/day**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**
AWPF	2020	7/1/2020	12/31/2020	132	50	2	10	Bulldozer	8	0.43	9.35	8.35	0.00	1.90	0.51
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Excavator	8	0.13	4.04	2.53	0.00	0.12	0.12
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Backhoe	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2020	7/1/2020	12/31/2020	132	50	1	10	Crane	8	0.14	3.01	2.68	0.00	0.10	0.10
AWPF	2021	1/1/2021	12/31/2021	261	50	2	4	Bulldozer	8	0.43	9.35	8.35	0.00	1.20	0.40
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Excavator	8	0.13	4.04	2.53	0.00	0.12	0.12
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Backhoe	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2021	1/1/2021	12/31/2021	261	50	1	4	Crane	8	0.14	3.01	2.68	0.00	0.10	0.10
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Bulldozer	8	0.22	4.68	4.17	0.00	0.83	0.24
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Backhoe	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2022	1/1/2022	4/30/2022	85	40	1	4	Crane	8	0.14	3.01	2.68	0.00	0.10	0.10
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
AWPF	2022	5/1/2022	9/30/2022	110	30	1	4	Crane	8	0.14	3.01	2.68	0.00	0.10	0.10
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
AWPF	2022	9/1/2022	12/31/2022	87	20	1	3	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Bulldozer	8	0.22	4.68	4.17	0.00	3.88	0.70
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Scrapers	8	0.37	7.97	7.11	0.00	0.27	0.27
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Excavator	8	0.13	4.04	2.53	0.00	0.12	0.12
Expansion of Flow EQ	2020	7/1/2020	12/31/2020	132	18	1	30	Loader	8	0.08	2.37	1.75	0.00	0.33	0.13
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Backhoe	8	0.08	2.37	1.75	0.00	0.33	0.13
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Forklift	8	0.04	1.16	0.86	0.00	0.06	0.06
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Compactor	8	0.02	0.25	0.28	0.00	0.02	0.02
Expansion of Flow EQ	2021	1/1/2021	12/31/2021	261	18	1	8	Boom Lifts	8	0.04	1.27	0.94	0.00	0.07	0.07
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Tractor	8	0.08	2.37	1.75	0.00	0.33	0.13
Balboa Pump Station Expansion	2022	1/1/2022	12/31/2022	260	8	1	1	Generator	8	0.13	4.06	3.00	0.00	0.21	0.21
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Excavator	8	0.52	16.17	10.14	0.00	0.49	0.49
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Loader	8	0.31	9.46	7.01	0.00	1.32	0.52
Brine Line	2020	1/1/2020	12/31/2020	262	30	4	12	Pavement Cutter	8	0.40	12.31	7.72	0.00	0.37	0.37
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Compactor	8	0.05	0.75	0.84	0.00	0.05	0.05
Brine Line	2020	1/1/2020	12/31/2020	262	30	3	12	Sweepers	8	0.19	5.76	4.27	0.00	0.30	0.30
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Excavator	8	0.52	16.17	10.14	0.00	0.49	0.49
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Loader	8	0.31	9.46	7.01	0.00	1.32	0.52
Brine Line	2021	1/1/2021	12/31/2021	261	30	4	12	Pavement Cutter	8	0.40	12.31	7.72	0.00	0.37	0.37
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Compactor	8	0.05	0.75	0.84	0.00	0.05	0.05
Brine Line	2021	1/1/2021	12/31/2021	261	30	3	12	Sweepers	8	0.19	5.76	4.27	0.00	0.30	0.30
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Excavator	8	0.52	16.17	10.14	0.00	0.49	0.49
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Loader	8	0.31	9.46	7.01	0.00	1.32	0.52
Brine Line	2022	1/1/2022	12/31/2022	260	30	4	12	Pavement Cutter	8	0.40	12.31	7.72	0.00	0.37	0.37
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Compactor	8	0.05	0.75	0.84	0.00	0.05	0.05
Brine Line	2022	1/1/2022	12/31/2022	260	30	3	12	Sweepers	8	0.19	5.76	4.27	0.00	0.30	0.30
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Backhoe	8	0.23	7.10	5.26	0.00	0.99	0.39
Purified Recycled Water Pipeline	2018	11/1/2018	12/30/2018	42	20	3	12	Crane	8	0.42	9.02	8.05	0.00	0.31	0.31
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Backhoe	8	0.23	7.10	5.26	0.00	0.99	0.39
Purified Recycled Water Pipeline	2019	1/1/2019	12/31/2019	261	20	3	12	Crane	8	0.42	9.02	8.05	0.00	0.31	0.31
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Backhoe	8	0.23	7.10	5.26	0.00	0.99	0.39
Purified Recycled Water Pipeline	2020	1/1/2020	12/31/2020	262	20	3	12	Crane	8	0.42	9.02	8.05	0.00	0.31	0.31
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Backhoe	8	0.23	7.10	5.26	0.00	0.99	0.39
Purified Recycled Water Pipeline	2021	1/1/2021	11/30/2021	238	20	3	12	Crane	8	0.42	9.02	8.05	0.00	0.31	0.31
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	5	6	Excavator	8	0.66	20.21	12.67	0.00	0.61	0.61
Hansen - Lateral Pipeline Construction	2022	10/1/2022	12/31/2022	65	20	2	6	Crane	8	0.28	6.01	5.36	0.00	0.20	0.20
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	2	0	Backhoe	8	0.15	4.73	3.50	0.00	0.66	0.26
Hansen - Outlet Structure Construction	2022	10/1/2022	12/31/2022	65	7	1	0	Concrete Pump	8	0.13	4.06	3.00	0.00	0.21	0.21
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	5	6	Excavator	8	0.66	20.21	12.67	0.00	0.61	0.61
Pacoima - Lateral Pipeline Construction	2021	12/1/2021	12/31/2021	23	20	2	6	Crane	8	0.28	6.01	5.36	0.00	0.20	0.20
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	2	0	Backhoe	8	0.15	4.73	3.50	0.00	0.66	0.26
Pacoima - Outlet Structure Construction	2021	12/1/2021	12/31/2022	283	7	1	0	Concrete Pump	8	0.13	4.06	3.00	0.00	0.21	0.21

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

Localized Daily (lb/day)

Phase	Year	Start	End	Duration (days)	Total Daily Personnel	Total Daily Equipment	Total Daily Truck Trips	Equipment	hr/day	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	5	6	Excavator	8	0.66	20.21	12.67	0.00	0.61	0.61
Pacoima - Lateral Pipeline Construction	2022	1/1/2022	9/30/2022	195	20	2	6	Crane	8	0.28	6.01	5.36	0.00	0.20	0.20
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	2	0	Backhoe	8	0.15	4.73	3.50	0.00	0.66	0.26
Pacoima - Outlet Structure Construction	2022	1/1/2022	9/30/2022	195	7	1	0	Concrete Pump	8	0.13	4.06	3.00	0.00	0.21	0.21

AWPF	2018
Expansion of Flow EQ	2018
Balboa Pump Station Expansion	2018
Brine Line	2018
Purified Recycled Water Pipeline	2018
Hansen - Lateral Pipeline Construction	2018
Hansen - Outlet Structure Construction	2018
Pacoima - Lateral Pipeline Construction	2018
Pacoima - Outlet Structure Construction	2018
AWPF	2019
Expansion of Flow EQ	2019
Balboa Pump Station Expansion	2019
Brine Line	2019
Purified Recycled Water Pipeline	2019
Hansen - Lateral Pipeline Construction	2019
Hansen - Outlet Structure Construction	2019
Pacoima - Lateral Pipeline Construction	2019
Pacoima - Outlet Structure Construction	2019
AWPF	2020
Expansion of Flow EQ	2020
Balboa Pump Station Expansion	2020
Brine Line	2020
Purified Recycled Water Pipeline	2020
Hansen - Lateral Pipeline Construction	2020
Hansen - Outlet Structure Construction	2020
Pacoima - Lateral Pipeline Construction	2020
Pacoima - Outlet Structure Construction	2020
AWPF	2021
Expansion of Flow EQ	2021
Balboa Pump Station Expansion	2021
Brine Line	2021
Purified Recycled Water Pipeline	2021
Hansen - Lateral Pipeline Construction	2021
Hansen - Outlet Structure Construction	2021
Pacoima - Lateral Pipeline Construction	2021
Pacoima - Outlet Structure Construction	2021
AWPF	2022
Expansion of Flow EQ	2022
Balboa Pump Station Expansion	2022
Brine Line	2022
Purified Recycled Water Pipeline	2022
Hansen - Lateral Pipeline Construction	2022
Hansen - Outlet Structure Construction	2022
Pacoima - Lateral Pipeline Construction	2022
Pacoima - Outlet Structure Construction	2022

Phase	Year	Localized by phase (lb/day)

Figitive Dust Reduction	61%
Average Wind Speed (mph):	2.2
Average Truck Size (cu. yd):	12
Personnel Round Trip Length (miles):	14.7
Truck Round Trips Length (miles):	20

										Localized Daily (lb/day)					
Phase	**Year**	**Start**	**End**	**Duration (days)**	**Total Daily Personnel**	**Total Daily Equipment**	**Total Daily Truck Trips**	**Equipment**	**hr/day**	**ROG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**SOx_RUNEX**	**PM10 Total**	**PM25 Total**
AWPF	2020									0.9	22.5	18.2	-	2.9	1.1
AWPF	2021									0.9	22.5	18.2	-	2.2	1.0
AWPF	2022									0.6	13.8	11.5	-	1.7	0.7
AWPF	2022									0.3	6.8	5.6	-	1.0	0.4
AWPF	2022									0.1	3.5	2.6	-	0.7	0.2
Expansion of Flow EQ	2020									0.8	19.1	15.6	-	4.6	1.2
Expansion of Flow EQ	2021									0.2	5.1	3.8	-	1.4	0.4
Balboa Pump Station Expansion	2022									0.2	6.4	4.8	-	0.7	0.4
Brine Line	2020									1.5	44.5	30.0	-	2.5	1.7
Brine Line	2021									1.5	44.5	30.0	-	2.5	1.7
Brine Line	2022									1.5	44.5	30.0	-	2.5	1.7
Purified Recycled Water Pipeline	2018														
Purified Recycled Water Pipeline	2019									0.6	16.1	13.3	-	1.3	0.7
Purified Recycled Water Pipeline	2020									0.6	16.1	13.3	-	1.3	0.7
Purified Recycled Water Pipeline	2021									0.6	16.1	13.3	-	1.3	0.7
Hansen - Lateral Pipeline Construction	2022									0.9	26.2	18.0	-	0.8	0.8
Hansen - Outlet Structure Construction	2022									0.3	8.8	6.5	-	0.9	0.5
Pacoima - Lateral Pipeline Construction	2021									0.9	26.2	18.0	-	0.8	0.8
Pacoima - Outlet Structure Construction	2021									0.3	8.8	6.5	-	0.9	0.5
Pacoima - Lateral Pipeline Construction	2022									0.9	26.2	18.0	-	0.8	0.8
Pacoima - Outlet Structure Construction	2022									0.3	8.8	6.5	-	0.9	0.5

	Year
	2018
	2019
	2020
	2021
	2022

EMFAC2014 Emission Factors (g/mile)

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
Los Angele	2018	HHDT	Aggregatec	Aggregatec	GAS	490.481	66782.67	9813.5444	0.782382917	0.54288171	32.59187759	3.383634668	0.018424058	0.082600215	0.032253758	1792.263213
Los Angele	2018	HHDT	Aggregatec	Aggregatec	DSL	47954.14	6454031	0	0.284318411	0.174478331	0.874385684	5.305615549	0.015926511	0.122819222	0.060291327	1723.372978
Los Angele	2018	LDA	Aggregatec	Aggregatec	GAS	3646833	1.26E+08	22946392	0.032696583	0.022988966	0.947024153	0.081414259	0.003250865	0.046980316	0.019801755	324.0964313
Los Angele	2018	LDA	Aggregatec	Aggregatec	DSL	29356.33	1105709	180418.83	0.047633455	0.041841227	0.372945198	0.170799346	0.002843198	0.069909901	0.041821488	297.8224708
Los Angele	2018	LDA	Aggregatec	Aggregatec	ELEC	38637.31	1791473	251614.97	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2018	LDT1	Aggregatec	Aggregatec	GAS	320616.7	10866997	1944702.3	0.092409198	0.065031969	2.495634041	0.237111406	0.003829239	0.049035045	0.021693463	379.4309081
Los Angele	2018	LDT1	Aggregatec	Aggregatec	DSL	488.3829	13706.29	2553.4011	0.221714436	0.19475396	1.09234475	1.088577042	0.003899539	0.189939453	0.156658614	408.4732559
Los Angele	2018	LDT1	Aggregatec	Aggregatec	ELEC	334.1666	10367.67	2022.2347	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2018	LDT2	Aggregatec	Aggregatec	GAS	1280159	46987051	8084882.4	0.042352832	0.029715694	1.223386531	0.13399336	0.004349294	0.046940325	0.019765164	433.6774033
Los Angele	2018	LDT2	Aggregatec	Aggregatec	DSL	1892.736	77038.48	12224.2	0.026863354	0.02359677	0.194366278	0.065577959	0.003665962	0.051633305	0.024335529	384.0063145
Los Angele	2018	LHDT1	Aggregatec	Aggregatec	GAS	78578.44	2407958	1170701.7	0.116274068	0.081466691	1.967162489	0.41891228	0.007494768	0.086177532	0.036360226	747.4140338
Los Angele	2018	LHDT1	Aggregatec	Aggregatec	DSL	44978.06	1770528	565767.46	0.108955444	0.095706462	0.539327671	2.607355766	0.004786907	0.109887056	0.056279252	501.424339
Los Angele	2018	LHDT2	Aggregatec	Aggregatec	GAS	15776.99	563667.9	235053.68	0.056797605	0.039255256	0.95435617	0.277608743	0.00817674	0.098419831	0.041360456	817.5018242
Los Angele	2018	LHDT2	Aggregatec	Aggregatec	DSL	19837.66	841978.3	249532.78	0.08765618	0.076997188	0.407396214	1.805177254	0.005250536	0.118598454	0.057884924	549.9890028
Los Angele	2018	MCY	Aggregatec	Aggregatec	GAS	160542.1	1134172	321052.05	3.307854154	2.692269493	20.35111373	1.138086749	0.002280136	0.017917618	0.008062921	186.7050265
Los Angele	2018	MDV	Aggregatec	Aggregatec	GAS	851403.5	29204394	5306795.8	0.092701436	0.068635795	2.152641832	0.246144461	0.005757335	0.047205889	0.02001459	573.1304688
Los Angele	2018	MDV	Aggregatec	Aggregatec	DSL	11153.49	452091.9	71724.148	0.024678696	0.021677767	0.297896365	0.063740467	0.00474052	0.053756909	0.026367267	496.5652824
Los Angele	2018	MH	Aggregatec	Aggregatec	GAS	21245.83	181157.5	2125.4324	0.29197168	0.217920909	6.462696236	0.740633572	0.012042981	0.144919417	0.061249322	1195.485153
Los Angele	2018	MH	Aggregatec	Aggregatec	DSL	4472.265	41658.09	447.22646	0.09983776	0.087697488	0.381681175	4.589254496	0.009628966	0.264722483	0.173121286	1008.625771
Los Angele	2018	MHDT	Aggregatec	Aggregatec	GAS	12192.66	643771.1	243950.72	0.183701379	0.126891711	3.311552995	0.78997906	0.011940362	0.143486399	0.059915042	1190.475659
Los Angele	2018	MHDT	Aggregatec	Aggregatec	DSL	67928.9	3691211	0	0.197919905	0.173854316	0.562008499	3.315401076	0.011166342	0.236881034	0.149311209	1170.418768
Los Angele	2018	OBUS	Aggregatec	Aggregatec	GAS	5276.923	253330.4	105580.68	0.086371865	0.059574435	1.528049905	0.414153237	0.011861798	0.143156452	0.059611057	1185.692801
Los Angele	2018	OBUS	Aggregatec	Aggregatec	DSL	3543.328	299522.6	0	0.1256572	0.110378219	0.383213299	4.216170387	0.013245114	0.164079572	0.079659106	1388.308748
Los Angele	2018	SBUS	Aggregatec	Aggregatec	GAS	1130.503	45559.73	4522.0128	0.155858172	0.106810871	2.477848467	0.626990605	0.006688525	0.754217925	0.322503624	665.7241906
Los Angele	2018	SBUS	Aggregatec	Aggregatec	DSL	2924.15	112008.8	0	0.161827547	0.14215052	0.391738444	7.857329359	0.012452268	0.803398632	0.366782681	1305.205275
Los Angele	2018	UBUS	Aggregatec	Aggregatec	GAS	1314.66	155596.8	5258.6387	1.437250261	0.99526673	9.515140724	1.776245575	0.017130987	0.145435149	0.06171365	1697.06418
Los Angele	2018	UBUS	Aggregatec	Aggregatec	DSL	3867.891	454294.7	15471.563	5.548604085	1.14482417	15.23051758	17.47614369	0.008154884	1.092466	0.59210215	2185.285627
Los Angele	2019	HHDT	Aggregatec	Aggregatec	GAS	497.715	68544.29	9958.2812	0.694729397	0.479419814	31.42236577	3.221253086	0.018128247	0.082581	0.032234653	1764.723114
Los Angele	2019	HHDT	Aggregatec	Aggregatec	DSL	49408	6707157	0	0.276003761	0.166397481	0.873965439	4.973383294	0.015675058	0.120628362	0.058188033	1698.923223
Los Angele	2019	LDA	Aggregatec	Aggregatec	GAS	3673003	1.27E+08	23127601	0.027459081	0.018862497	0.850341726	0.072426961	0.003149175	0.046967794	0.01978939	314.0761715
Los Angele	2019	LDA	Aggregatec	Aggregatec	DSL	31759.37	1181822	196117.46	0.04297288	0.037747378	0.357060064	0.147260135	0.002752669	0.066717826	0.0387675	288.3396071
Los Angele	2019	LDA	Aggregatec	Aggregatec	ELEC	57693.48	2681847	376032.94	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2019	LDT1	Aggregatec	Aggregatec	GAS	321855.7	10883720	1953799.7	0.07894484	0.054591801	2.2312581	0.21181196	0.003726495	0.04877426	0.021451701	369.592718
Los Angele	2019	LDT1	Aggregatec	Aggregatec	DSL	464.3988	12957.52	2425.0133	0.209544437	0.184063834	1.045322119	1.034232186	0.003829598	0.181683669	0.148759972	401.14706
Los Angele	2019	LDT1	Aggregatec	Aggregatec	ELEC	316.2626	9722.537	1909.4165	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2019	LDT2	Aggregatec	Aggregatec	GAS	1303752	47667768	8244995.4	0.035738143	0.024657192	1.08050886	0.115250649	0.004211147	0.0469282	0.019753173	420.0815048
Los Angele	2019	LDT2	Aggregatec	Aggregatec	DSL	2102.413	83618.65	13569.489	0.02606838	0.022898465	0.193604451	0.059349287	0.003583432	0.051180276	0.023902098	375.3612998
Los Angele	2019	LHDT1	Aggregatec	Aggregatec	GAS	74659.88	2252513	1112321	0.105136944	0.073161952	1.774596999	0.392811318	0.007462485	0.086083201	0.036272507	744.5151162
Los Angele	2019	LHDT1	Aggregatec	Aggregatec	DSL	47022.79	1831841	591487.59	0.101120277	0.088824051	0.49806881	2.298099236	0.004724765	0.108372089	0.054829822	494.914968
Los Angele	2019	LHDT2	Aggregatec	Aggregatec	GAS	15483.22	551868.1	230676.95	0.046743779	0.032282195	0.785649217	0.242278963	0.008105426	0.098355301	0.041301002	810.6520137
Los Angele	2019	LHDT2	Aggregatec	Aggregatec	DSL	21041.68	884379.3	264677.9	0.080167127	0.070418804	0.368653755	1.520155185	0.005167001	0.117151369	0.056500439	541.2388606
Los Angele	2019	MCY	Aggregatec	Aggregatec	GAS	167377	1171561	334720.49	3.268233988	2.648491005	19.85616713	1.135674839	0.002272797	0.017996787	0.008134663	186.8657612
Los Angele	2019	MDV	Aggregatec	Aggregatec	GAS	852836.5	29091656	5314706.4	0.081558822	0.059942804	1.959614324	0.219508184	0.005604089	0.047168552	0.019978732	558.1139369
Los Angele	2019	MDV	Aggregatec	Aggregatec	DSL	12541.25	496937.5	80622.853	0.023798353	0.020904473	0.298599895	0.059023299	0.00462582	0.053122353	0.025760161	484.5505385
Los Angele	2019	MH	Aggregatec	Aggregatec	GAS	20886.72	178248	2089.5076	0.242383156	0.177500844	5.329904514	0.656916277	0.011860722	0.144603528	0.060952577	1179.152199
Los Angele	2019	MH	Aggregatec	Aggregatec	DSL	4561.845	42160.61	456.1845	0.093768044	0.08236585	0.353260461	4.286388937	0.009545614	0.255749488	0.164536459	999.8947039
Los Angele	2019	MHDT	Aggregatec	Aggregatec	GAS	12191.94	642923.5	243936.34	0.151166421	0.10384904	2.716583364	0.670887663	0.011749115	0.143422565	0.059855611	1172.34638
Los Angele	2019	MHDT	Aggregatec	Aggregatec	DSL	70858.15	3853378	0	0.164919739	0.144866725	0.482526636	2.839406127	0.01107438	0.220570199	0.133705973	1160.779557
Los Angele	2019	OBUS	Aggregatec	Aggregatec	GAS	5417.337	256740.8	108390.07	0.072976245	0.050261448	1.283751553	0.355659471	0.011673171	0.143188077	0.059640005	1167.218801
Los Angele	2019	OBUS	Aggregatec	Aggregatec	DSL	3754.968	313247.5	0	0.118492864	0.104085013	0.370542452	3.902701172	0.013091422	0.162668576	0.078309149	1372.199245
Los Angele	2019	SBUS	Aggregatec	Aggregatec	GAS	1210.01	48242.87	4840.038	0.13358703	0.091548276	2.11412736	0.555140141	0.006650908	0.754142521	0.322434293	662.5924407
Los Angele	2019	SBUS	Aggregatec	Aggregatec	DSL	2932.125	112039.5	0	0.156792639	0.13772782	0.387033857	7.394842653	0.012414323	0.799797881	0.363337697	1301.227971
Los Angele	2019	UBUS	Aggregatec	Aggregatec	GAS	1365.223	160017	5460.8921	1.298798108	0.895617828	8.307028512	1.618751217	0.017000339	0.145271006	0.061559122	1686.280277
Los Angele	2019	UBUS	Aggregatec	Aggregatec	DSL	3684.482	428667.3	14737.93	5.355968386	1.087864052	14.83954829	16.58254788	0.00775151	1.079787358	0.57997198	2165.876109
Los Angele	2020	HHDT	Aggregatec	Aggregatec	GAS	507.742	70375.78	10158.903	0.634280093	0.436111868	30.83332456	3.107180596	0.017917951	0.082594458	0.032246232	1744.758102
Los Angele	2020	HHDT	Aggregatec	Aggregatec	DSL	50743.35	6949594	0	0.265442562	0.156423329	0.865793655	4.603223947	0.015467009	0.116408753	0.054141992	1678.83715
Los Angele	2020	LDA	Aggregatec	Aggregatec	GAS	3698702	1.27E+08	23300177	0.024652476	0.016925675	0.786302561	0.065483052	0.003061359	0.046948612	0.019771699	305.387358
Los Angele	2020	LDA	Aggregatec	Aggregatec	DSL	34095.23	1250361	211350.41	0.039335476	0.034552282	0.347172915	0.128425661	0.00267754	0.064154049	0.036314631	280.4699273
Los Angele	2020	LDA	Aggregatec	Aggregatec	ELEC	82486.27	3789521	537752.3	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2020	LDT1	Aggregatec	Aggregatec	GAS	323942.4	10911874	1968189.5	0.06925923	0.047599852	2.01954187	0.190732357	0.003636033	0.048560826	0.021254791	360.8911427
Los Angele	2020	LDT1	Aggregatec	Aggregatec	DSL	442.902	12290.63	2311.4533	0.198505833	0.174367524	1.000335255	0.976772934	0.003767801	0.174141451	0.141544027	394.6738689
Los Angele	2020	LDT1	Aggregatec	Aggregatec	ELEC	299.1754	9125.643	1802.3524	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2020	LDT2	Aggregatec	Aggregatec	GAS	1331413	48391682	8429252.5	0.031304351	0.021477882	0.97580631	0.101057831	0.004089494	0.046919075	0.019744528	408.0714935
Los Angele	2020	LDT2	Aggregatec	Aggregatec	DSL	2301.818	89536.01	14840.712	0.02566463	0.022543811	0.195125021	0.054680348	0.003512513	0.050873094	0.023608204	367.9326837
Los Angele	2020	LHDT1	Aggregatec	Aggregatec	GAS	70905.7	2109907	1056389.3	0.095978637	0.066318026	1.606877486	0.368609247	0.007428856	0.086020131	0.036213675	741.4366279
Los Angele	2020	LHDT1	Aggregatec	Aggregatec	DSL	49041.95	1887929	616885.99	0.094748959	0.083227485	0.461742839	2.01887046	0.004672733	0.107078633	0.05359232	489.464674
Los Angele	2020	LHDT2	Aggregatec	Aggregatec	GAS	15232.92	541634.4	226947.87	0.038882223	0.026745623	0.647769143	0.212328197	0.008048391	0.098317224	0.04126577	805.1777969
Los Angele	2020	LHDT2	Aggregatec	Aggregatec	DSL	22249.14	923661.1	279866.16	0.074522046	0.065460165	0.337493925	1.279353608	0.005102645	0.116009467	0.055407935	534.4975583
Los Angele	2020	MCY	Aggregatec	Aggregatec	GAS	173980.3	1204430	347925.78	3.249046745	2.623488349	19.48065963	1.134244534	0.002272821	0.018070429	0.00820159	187.5159856
Los Angele	2020	MDV	Aggregatec	Aggregatec	GAS	855415.8	29002731	5330907.4	0.072289195	0.05273652	1.79498195	0.196417734	0.005465865	0.047131633	0.019943545	544.5522558
Los Angele	2020	MDV	Aggregatec	Aggregatec	DSL	13894.5	538312.4	89258.492	0.023351408	0.020511877	0.302596764	0.055642295	0.00452852	0.052697044	0.025353252	474.3584937
Los Angele	2020	MH	Aggregatec	Aggregatec	GAS	20584.37	175662	2059.2604	0.19931438	0.14202181	4.30445874	0.583010524	0.01178864	0.144339239	0.060703656	1173.669093
Los Angele	2020	MH	Aggregatec	Aggregatec	DSL	4647.284	42587.39	464.72844	0.08904333	0.078215662	0.329978553	4.02788568	0.009507677	0.246928637	0.156097194	995.920823
Los Angele	2020	MHDT	Aggregatec	Aggregatec	GAS	12218.26	642461.8	244462.96	0.126610365	0.086767111	2.26384624	0.57147346	0.011673736	0.143400401	0.059834979	1165.578084
Los Angele	2020	MHDT	Aggregatec	Aggregatec	DSL	72858.9	4007904	0	0.108514413	0.095319867	0.343501563	2.069184619	0.011036611	0.191107524	0.10551784	1156.820824
Los Angele	2020	OBUS	Aggregatec	Aggregatec	GAS	5565.146	260270.4	111347.44	0.06246053	0.042870559	1.083892151	0.307989258	0.011600674	0.143226899	0.059675517	1160.300754
Los Angele	2020	OBUS	Aggregatec	Aggregatec	DSL	3968.103	326275	0	0.111239387	0.097713505	0.361267826	3.444819113	0.013003237	0.16027642	0.076020476	1362.955948
Los Angele	2020	SBUS	Aggregatec	Aggregatec	GAS	1290.29	50885.26	5161.1587	0.117526707	0.080542007	1.851742004	0.494529828	0.00661885	0.754090923	0.32238685	659.8401163
Los Angele	2020	SBUS	Aggregatec	Aggregatec	DSL	2941.245	112070	0	0.15237127	0.133844056	0.383621656	6.948066583	0.01238036	0.796651934	0.360327842	1297.668118
Los Angele	2020	UBUS	Aggregatec	Aggregatec	GAS	1416.376	164382.4	5665.5034	1.175004617	0.805301322	7.181276617	1.478017228	0.016894743	0.14510671	0.061403913	1677.833743
Los Angele	2020	UBUS	Aggregatec	Aggregatec	DSL	3499.153	403160.3	13996.611	5.187195231	1.029407209	14.46774687	15.57628156	0.007247122	1.064376399	0.565227692	2143.913915
Los Angele	2021	HHDT	Aggregatec	Aggregatec	GAS	520.5901	72320.23	10415.967	0.583967232	0.400197486	30.15502126	3.006200464	0.017737958	0.082621114	0.032270139	1727.939409
Los Angele	2021	HHDT	Aggregatec	Aggregatec	DSL	52019.25	7199666	0	0.258908876	0.150206603	0.868511717	4.209497861	0.015271258	0.114406908	0.052215953	1659.765248
Los Angele	2021	LDA	Aggregatec	Aggregatec	GAS	3722449	1.27E+08	23457874	0.02245739	0.015411414	0.73764804	0.059822525	0.002978721	0.04691725	0.019742814	297.1913466
Los Angele	2021	LDA	Aggregatec	Aggregatec	DSL	36328.68	1311572	225891.13	0.034619441	0.030409717	0.327466654	0.108906782	0.002607565	0.061565037	0.033837619	273.1401293
Los Angele	2021	LDA	Aggregatec	Aggregatec	ELEC	112312.4	5063317	732027.63	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2021	LDT1	Aggregatec	Aggregatec	GAS	326645.7	10950681	1986654.4	0.062604094	0.043005498	1.845480071	0.172761567	0.003540985	0.04836345	0.02107313	351.6619742
Los Angele	2021	LDT1	Aggregatec	Aggregatec	DSL	425.2627	11733.7	2216.793	0.190529472	0.167361088	0.960467462	0.921611864	0.003704481	0.168519333	0.136165119	388.0411284
Los Angele	2021	LDT1	Aggregatec	Aggregatec	ELEC	283.6018	8592.13	1704.5207	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2021	LDT2	Aggregatec	Aggregatec	GAS	1361898	49139827	8629450	0.028542856	0.019578171	0.902026627	0.090178379	0.003962669	0.046904782	0.019731348	395.4898139
Los Angele	2021	LDT2	Aggregatec	Aggregatec	DSL	2493.017	94941.23	16051.067	0.025580591	0.022469991	0.198690815	0.051100858	0.003430709	0.050660516	0.023404823	359.3637643
Los Angele	2021	LHDT1	Aggregatec	Aggregatec	GAS	67388.25	1981861	1003984.5	0.08681478	0.059494874	1.44467764	0.344256684	0.007394937	0.085967535	0.036164499	738.3202483
Los Angele	2021	LHDT1	Aggregatec	Aggregatec	DSL	51022.73	1939239	641801.78	0.089193929	0.078347948	0.429600878	1.772306567	0.004627981	0.10589029	0.052455385	484.7769271
Los Angele	2021	LHDT2	Aggregatec	Aggregatec	GAS	15009.65	532477.1	223621.46	0.032248473	0.02210014	0.536073169	0.185385472	0.007996619	0.098294361	0.0412446	800.186048
Los Angele	2021	LHDT2	Aggregatec	Aggregatec	DSL	23428.89	959242.6	294706.02	0.069936024	0.061431803	0.311861818	1.077447489	0.005049167	0.115030987	0.054471784	528.8958359

EMFAC2014 Emission Factors (g/mile)

Region	CalYr	VehClass	MdlYr	Speed	Fuel	Population	VMT	Trips	TOG_RUNEX	ROG_RUNEX	CO_RUNEX	NOx_RUNEX	SOx_RUNEX	PM10 Total	PM25 Total	CO2_RUNEX
Los Angele	2021	MCY	Aggregatec	Aggregatec	GAS	180450.1	1233056	360864.04	3.245722075	2.613057036	19.19611384	1.133519853	0.002277771	0.018142885	0.008267773	188.4697274
Los Angele	2021	MDV	Aggregatec	Aggregatec	GAS	858617	28931907	5351878.2	0.062026114	0.044429208	1.590069461	0.172676498	0.005316763	0.047082176	0.019896728	529.9671215
Los Angele	2021	MDV	Aggregatec	Aggregatec	DSL	15193.08	576080.8	97507.815	0.021733278	0.019090511	0.297764554	0.049701396	0.004417384	0.052003139	0.024689364	462.7170643
Los Angele	2021	MH	Aggregatec	Aggregatec	GAS	20334.03	173393.9	2034.2167	0.159542908	0.10933605	3.373146649	0.516883895	0.01174217	0.144108688	0.060486223	1170.59438
Los Angele	2021	MH	Aggregatec	Aggregatec	DSL	4730.739	42954.25	473.07389	0.085237572	0.074872683	0.310341771	3.801260743	0.009479755	0.238895604	0.148411667	992.9960054
Los Angele	2021	MHDT	Aggregatec	Aggregatec	GAS	12254.29	642532.7	245183.87	0.104476475	0.071598577	1.871490148	0.482674919	0.011624337	0.14339475	0.059829783	1161.310584
Los Angele	2021	MHDT	Aggregatec	Aggregatec	DSL	73768.84	4152017	0	0.051631182	0.045353214	0.198191905	1.345778725	0.011018669	0.148690639	0.064935891	1154.940134
Los Angele	2021	OBUS	Aggregatec	Aggregatec	GAS	5707.585	263331.3	114197.37	0.053726477	0.036819191	0.925460245	0.268676953	0.011555644	0.143269061	0.059714217	1156.064017
Los Angele	2021	OBUS	Aggregatec	Aggregatec	DSL	4133.635	338758.1	0	0.103028831	0.090501292	0.349226528	2.869488142	0.012904508	0.157084203	0.072966353	1352.607499
Los Angele	2021	SBUS	Aggregatec	Aggregatec	GAS	1370.705	53484.38	5482.8208	0.1036214	0.071012587	1.633421062	0.440849674	0.006590659	0.754059031	0.322357526	657.3997333
Los Angele	2021	SBUS	Aggregatec	Aggregatec	DSL	2948.749	112100.3	0	0.148159981	0.130144829	0.38070419	6.508478765	0.012348651	0.793732915	0.357535098	1294.344409
Los Angele	2021	UBUS	Aggregatec	Aggregatec	GAS	1467.668	168670.7	5870.6708	1.083725274	0.74268573	6.570979624	1.370179463	0.016808044	0.145067383	0.061367708	1670.374545
Los Angele	2021	UBUS	Aggregatec	Aggregatec	DSL	3352.594	382538.9	13410.376	4.979212273	0.973938396	14.08677417	14.78273026	0.006896025	1.054182457	0.555474736	2127.294626
Los Angele	2022	HHDT	Aggregatec	Aggregatec	GAS	536.2524	74274.96	10729.338	0.546708924	0.374664065	29.82881628	2.945638038	0.017560791	0.082662095	0.03230782	1710.812065
Los Angele	2022	HHDT	Aggregatec	Aggregatec	DSL	53072.13	7429489	0	0.251613027	0.143408847	0.866642517	3.820027688	0.015062288	0.112101475	0.049999393	1639.119681
Los Angele	2022	LDA	Aggregatec	Aggregatec	GAS	3745947	1.26E+08	23613238	0.020483522	0.014050984	0.695207318	0.054899859	0.002890707	0.046894563	0.019721912	288.4463486
Los Angele	2022	LDA	Aggregatec	Aggregatec	DSL	38497.42	1363860	239916.29	0.030813028	0.027066164	0.311383561	0.09380069	0.002535996	0.059458973	0.031822662	265.643401
Los Angele	2022	LDA	Aggregatec	Aggregatec	ELEC	146472.6	6434561	954264.89	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2022	LDT1	Aggregatec	Aggregatec	GAS	329920.4	10977955	2008862.9	0.056223368	0.038595783	1.681633823	0.156344036	0.003435382	0.048175565	0.020900178	341.3585535
Los Angele	2022	LDT1	Aggregatec	Aggregatec	DSL	408.4115	11203.5	2129.3682	0.180718488	0.15874312	0.918551305	0.866893958	0.003627523	0.161769402	0.129707187	379.9798713
Los Angele	2022	LDT1	Aggregatec	Aggregatec	ELEC	269.3389	8107.983	1616.9843	0	0	0	0	0	0.044750013	0.017750005	0
Los Angele	2022	LDT2	Aggregatec	Aggregatec	GAS	1395013	49801708	8844759.3	0.026148605	0.017930945	0.843452205	0.081363121	0.003826818	0.046894295	0.019721671	381.9789273
Los Angele	2022	LDT2	Aggregatec	Aggregatec	DSL	2668.547	99400.51	17156.505	0.025362493	0.022278414	0.200768604	0.048211422	0.003338621	0.050486849	0.023238668	349.7175927
Los Angele	2022	LHDT1	Aggregatec	Aggregatec	GAS	64023.32	1864617	953852.04	0.076918223	0.052712683	1.303909441	0.31700905	0.007359937	0.085928441	0.036128554	735.0641385
Los Angele	2022	LHDT1	Aggregatec	Aggregatec	DSL	52956.9	1985309	666131.18	0.084024503	0.073807123	0.400348355	1.554050585	0.004587465	0.104740361	0.051355201	480.5328754
Los Angele	2022	LHDT2	Aggregatec	Aggregatec	GAS	14823.46	524377.7	220847.49	0.02651503	0.018170965	0.449010951	0.160506927	0.007945904	0.098280681	0.041232021	795.2589621
Los Angele	2022	LHDT2	Aggregatec	Aggregatec	DSL	24575.91	991045.7	309134.08	0.065853561	0.057845768	0.289548974	0.905150015	0.005001931	0.114131654	0.053611355	523.9478501
Los Angele	2022	MCY	Aggregatec	Aggregatec	GAS	186762.2	1257691	373487.13	3.232534562	2.596090881	18.93699891	1.132678625	0.002277795	0.0181965	0.008316599	188.9189942
Los Angele	2022	MDV	Aggregatec	Aggregatec	GAS	862586.7	28828853	5379277.9	0.049728713	0.03417985	1.356318978	0.148763792	0.005148734	0.047015039	0.019833102	513.5371167
Los Angele	2022	MDV	Aggregatec	Aggregatec	DSL	16441.95	609168.2	105396.14	0.020292254	0.017824716	0.291932704	0.044896032	0.004296944	0.051430032	0.02414105	450.1011303
Los Angele	2022	MH	Aggregatec	Aggregatec	GAS	20082.42	171114.5	2009.0452	0.129154871	0.088510882	2.726400137	0.443471121	0.01168043	0.143976017	0.060364236	1165.514406
Los Angele	2022	MH	Aggregatec	Aggregatec	DSL	4809.896	43250.49	480.98959	0.081387455	0.071490741	0.290847764	3.589155735	0.009447913	0.231271195	0.141117086	989.660623
Los Angele	2022	MHDT	Aggregatec	Aggregatec	GAS	12305.69	642773.9	246212.21	0.084933049	0.058205308	1.531316927	0.405490611	0.011559998	0.143395235	0.059830229	1155.456774
Los Angele	2022	MHDT	Aggregatec	Aggregatec	DSL	77429.61	4281036	0	0.050324543	0.044205453	0.198016306	1.253333056	0.010974466	0.148057718	0.06433035	1150.306967
Los Angele	2022	OBUS	Aggregatec	Aggregatec	GAS	5835.331	265705	116753.31	0.045450598	0.031147664	0.7819435	0.233406498	0.011496404	0.143307202	0.059749286	1150.379048
Los Angele	2022	OBUS	Aggregatec	Aggregatec	DSL	4303.692	349554	0	0.098635471	0.086642131	0.34462968	2.553845997	0.012824265	0.154682031	0.070668098	1344.196745
Los Angele	2022	SBUS	Aggregatec	Aggregatec	GAS	1451.059	55997.61	5804.2348	0.088691732	0.060781164	1.404140236	0.385940826	0.006564597	0.754039565	0.322339628	655.1927963
Los Angele	2022	SBUS	Aggregatec	Aggregatec	DSL	2955.276	112131.1	0	0.143812605	0.126326061	0.377663704	6.064087293	0.012317667	0.790899105	0.354823878	1291.096795
Los Angele	2022	UBUS	Aggregatec	Aggregatec	GAS	1516.736	172525.9	6066.9444	1.018724739	0.698140336	5.978507115	1.274857537	0.016725999	0.145040855	0.061343316	1663.276472
Los Angele	2022	UBUS	Aggregatec	Aggregatec	DSL	3239.042	365872.3	12956.169	4.752144407	0.920440494	13.69345706	14.08373992	0.006622003	1.046309574	0.547942431	2112.996677

Operational Emissions

Operational Emissions

			Emission Factors (g/mile)						Emissions (lb/day)					
Item	**Trips per d**	**Trip length (mile)**	**VOC**	**NOx**	**CO**	**SOx**	**PM2.5**	**PM10**	**VOC**	**NOx**	**CO**	**SOx**	**PM2.5**	**PM10**
Staff	16	14.7	0.016067459	0.06589517	0.762858	0.003063	0.019816	0.046992	0.008	0.034	0.396	0.002	0.010	0.024
Truck	1	20	0.145697894	3.811372665	1.153321	0.015087	0.049824	0.11181	0.006	0.168	0.051	0.001	0.002	0.005
								Total (lb per day)	0.015	0.202	0.446	0.002	0.012	0.029
								Emissions (tons per year)	0.0015	0.0074	0.0723	0.0003	0.0019	0.0044

GHG Emissions From Electricity Usage of The Facility

Assumptions:

Total Amount of Water	30,000	Acre-feet per year
	9,775,530,000	gallons per year
	9,776	Million gallons per year
Existing Energy Consumption (Supply annd Conveyance + Treatment + Pumping)	11798	kwh per million gallon
Current Project Energy Consumption (Recycled Water + Purification + Pumping)	5,397	kwh per million gallon

Calculations:	**Energy Usage per day**	**Unit**	**Net Emissions (MT/year)**
Existing Energy Consumption			
Conveyance	**95,086,580**		31,233
Total	95,086,580	kW-hr per year	31,233
Current Project Energy Consumption (Recycled Water + Purification + Pumping)			
Treatment	33,598,497		11,036
Conveyance	19,160,039		6,294
Total	52,758,535	kW-hr per year	17,330

Existing Energy Consumption (Supply annd Conveyance + Treatment + Pumping)		
Daily GHG emissions	68,854,095	lb/year CO2
	3,165	lb/year CH4
	673	lb/year N2O
	69,121,161	lb per year of CO2e
Current Project Energy Consumption (Recycled Water + Purification + Pumping)		
Daily GHG emissions	38,203,511	lb/year CO2
	1,756	lb/year CH4
	374	lb/year N2O
	38,351,692	lb per year of CO2e

Existing Energy Consumption (Supply annd Conveyance + Treatment + Pumping)		**Net Emissions**
Yearly GHG Emissions	31,232	MT/year CO2
	1.4	MT/year CH4
	0.3	MT/year N2O
	31,233	MT per day of CO2e
Current Project Energy Consumption (Recycled Water + Purification + Pumping)		**Net Emissions**
Yearly GHG Emissions	17,329	MT/year CO2
	0.8	MT/year CH4
	0.2	MT/year N2O
	17,330	MT per day of CO2e

Emission Rates		Souther California Edison (lb/MWh)
724.120	CO2 intensity factor (lb/MWh)	630.890
0.033	CH4 intensity factor (lb/MWh)	0.029
0.007	N2O intensity factor (lb/MWh)	0.006

References:

1. CO2 emission rates obtained from 2010 Urban Water Management, reference uses rates from 2007, CAMX, Western Electricity Coordinating Council California

1. The same CH4-to-CO2 and N2O-to-CO2 ratios obtained from CalEEMod 2013 for Souther California Edison have been applied to CO2 emission rates obtained from 2010 Urban Water Management Plan to estimate N2O and CH4 emission rates.

2. AP-42, Vol. 1 and 2, 3.1: Stationary Gas Turbines, http://www.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf

3. Summary of Subsumed Rules, Control Measures, RECLAIM Facotrs and Proposed BARCT, AQMD

http://www.epa.gov/ttnchie1/ap42/ch03/final/c03s01.pdf

http://www.aqmd.gov/prdas/RECLAIM/BARCT.pdf

EMFAC2014 (v1.0.7) Emission Rates
Region Type: County
Region: Los Angeles
Calendar Year: 2022
Season: Annual
Vehicle Classification: EMFAC2007 Categories
Units: miles/day for VMT, trips/day for Trips, g/mile for RUNEX, PMBW and PMTW, g/trip for STREX, HTSK and RUNLS, g/vehicle/day for IDLEX, RESTL and DIURN

Region	**CalYr**	**VehClass**	**Fuel**	**VMT**	**Trips**	**ROG_RUNEX**	**TOG_RUNEX**	**CO_RUNEX**	**NOx_RUNEX**	**CO2_RUNEX**	**PM10_RUNEX**	**PM10_PMTW**	**PM10_PMBW**	**PM2_5_RUNEX**	**PM2_5_PMTW**	**PM2_5_PMBW**	**SOx_RUNEX**	**PM10 tota**	**PM2.5 tota**
Los Angeles	2022	HHDT	GAS	74274.95516	10729.34	0.374664065	0.546708924	29.82881628	2.945638038	1710.812065	0.000922071	0.020000006	0.061740018	0.00084781	0.005000001	0.026460008	0.017560791	0.082662	0.032308
Los Angeles	2022	HHDT	DSL	7429489.372	0	0.143408847	0.251613027	0.866642517	3.820027688	1639.119681	0.015707044	0.035504394	0.060890037	0.015027564	0.008876099	0.02609573	0.015062288	0.112101	0.049999
Los Angeles	2022	LDA	GAS	125872632.9	23613238	0.014050984	0.020483522	0.695207318	0.054899859	288.4463486	0.00214455	0.008000002	0.036750011	0.001971907	0.002000001	0.015750005	0.002890707	0.046895	0.019722
Los Angeles	2022	LDA	DSL	1363860.266	239916.3	0.027066164	0.030813028	0.311383561	0.09380069	265.643401	0.01470896	0.008000002	0.036750011	0.014072657	0.002000001	0.015750005	0.002535996	0.059459	0.031823
Los Angeles	2022	LDA	ELEC	6434561.107	954264.9	0	0	0	0	0	0	0.008000002	0.036750011	0	0.002000001	0.015750005	0	0.04475	0.01775
Los Angeles	2022	LDT1	GAS	10977954.72	2008863	0.038595783	0.056223368	1.681633823	0.156344036	341.3585535	0.003425552	0.008000002	0.036750011	0.003150173	0.002000001	0.015750005	0.003435382	0.048176	0.0209
Los Angeles	2022	LDT1	DSL	11203.50113	2129.368	0.15874312	0.180718488	0.918551305	0.866893958	379.9798713	0.117019389	0.008000002	0.036750011	0.111957182	0.002000001	0.015750005	0.003627523	0.161769	0.129707
Los Angeles	2022	LDT1	ELEC	8107.982921	1616.984	0	0	0	0	0	0	0.008000002	0.036750011	0	0.002000001	0.015750005	0	0.04475	0.01775
Los Angeles	2022	LDT2	GAS	49801707.76	8844759	0.017930945	0.026148605	0.843452205	0.081363121	381.9789273	0.002144282	0.008000002	0.036750011	0.001971666	0.002000001	0.015750005	0.003826818	0.046894	0.019722
Los Angeles	2022	LDT2	DSL	99400.51192	17156.5	0.022278414	0.025362493	0.200768604	0.048211422	349.7175927	0.005736836	0.008000002	0.036750011	0.005488663	0.002000001	0.015750005	0.003338621	0.050487	0.023239
Los Angeles	2022	LHDT1	GAS	1864617.259	953852	0.052712683	0.076918223	1.303909441	0.31700905	735.0641385	0.001488417	0.008000002	0.076440022	0.001368544	0.002000001	0.032760009	0.007359937	0.085928	0.036129
Los Angeles	2022	LHDT1	DSL	1985308.954	666131.2	0.073807123	0.084024503	0.400348355	1.554050585	480.5328754	0.016300336	0.012000003	0.076440022	0.015595191	0.003000001	0.032760009	0.004587465	0.10474	0.051355
Los Angeles	2022	LHDT2	GAS	524377.6888	220847.5	0.018170965	0.02651503	0.449010951	0.160506927	795.2589621	0.001100653	0.008000002	0.089180026	0.00101201	0.002000001	0.038220011	0.007945904	0.098281	0.041232
Los Angeles	2022	LHDT2	DSL	991045.6929	309134.1	0.057845768	0.065853561	0.289548974	0.905150015	523.9478501	0.012951625	0.012000003	0.089180026	0.012391343	0.003000001	0.038220011	0.005001931	0.114132	0.053611
Los Angeles	2022	MCY	GAS	1257690.617	373487.1	2.596090881	3.232534562	18.93699891	1.132678625	188.9189942	0.002436496	0.004000001	0.011760003	0.002276597	0.001	0.005040001	0.002277795	0.018197	0.008317
Los Angeles	2022	MDV	GAS	28828853.39	5379278	0.03417985	0.049728713	1.356318978	0.148763792	513.5371167	0.002265026	0.008000002	0.036750011	0.002083097	0.002000001	0.015750005	0.005148734	0.047015	0.019833
Los Angeles	2022	MDV	DSL	609168.2084	105396.1	0.017824716	0.020292254	0.291932704	0.044896032	450.1011303	0.006680019	0.008000002	0.036750011	0.006391044	0.002000001	0.015750005	0.004296944	0.05143	0.024141
Los Angeles	2022	MH	GAS	171114.497	2009.045	0.088510882	0.129154871	2.726400137	0.443471121	1165.514406	0.001635976	0.012000003	0.130340037	0.00150422	0.003000001	0.055860016	0.01168043	0.143976	0.060364
Los Angeles	2022	MH	DSL	43250.48804	480.9896	0.071490741	0.081387455	0.290847764	3.589155735	989.660623	0.084931153	0.016000005	0.130340037	0.081257069	0.004000001	0.055860016	0.009447913	0.231271	0.141117
Los Angeles	2022	MHDT	GAS	642773.9194	246212.2	0.058205308	0.084933049	1.531316927	0.405490611	1155.456774	0.001055194	0.012000003	0.130340037	0.000970212	0.003000001	0.055860016	0.011559998	0.143395	0.05983
Los Angeles	2022	MHDT	DSL	4281036.181	0	0.044205453	0.050324543	0.198016306	1.253333056	1150.306967	0.005717677	0.012000003	0.130340037	0.005470333	0.003000001	0.055860016	0.010974466	0.148058	0.06433
Los Angeles	2022	OBUS	GAS	265705.0261	116753.3	0.031147664	0.045450598	0.7819435	0.233406498	1150.379048	0.000967161	0.012000003	0.130340037	0.000889269	0.003000001	0.055860016	0.011496404	0.143307	0.059749
Los Angeles	2022	OBUS	DSL	349553.9869	0	0.086642131	0.098635471	0.34462968	2.553845997	1344.196745	0.01234199	0.012000003	0.130340037	0.011808081	0.003000001	0.055860016	0.012824265	0.154682	0.070668
Los Angeles	2022	SBUS	GAS	55997.61495	5804.235	0.060781164	0.088691732	1.404140236	0.385940826	655.1927963	0.001239349	0.008000002	0.744800213	0.001139536	0.002000001	0.319200091	0.006564597	0.75404	0.32234
Los Angeles	2022	SBUS	DSL	112131.1352	0	0.126326061	0.143812605	0.377663704	6.064087293	1291.096795	0.034098889	0.012000003	0.744800213	0.032623786	0.003000001	0.319200091	0.012317667	0.790899	0.354824
Los Angeles	2022	UBUS	GAS	172525.8647	6066.944	0.698140336	1.018724739	5.978507115	1.274857537	1663.276472	0.002700814	0.012000003	0.130340037	0.002483299	0.003000001	0.055860016	0.016725999	0.145041	0.061343
Los Angeles	2022	UBUS	DSL	365872.3205	12956.17	0.920440494	4.752144407	13.69345706	14.08373992	2112.996677	0.19248933	0.012000003	0.841820241	0.184162327	0.003000001	0.360780103	0.006622003	1.04631	0.547942

Dispersion Modeling Reports

AERMOD

```
***************************************
** AERMOD Control Pathway
***************************************
**
**
CO STARTING
   TITLEONE LA Ground Water Replenishment Project
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   URBANOPT 9862049
   POLLUTID NOX
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-NO2.err
CO FINISHED
**
***************************************
** AERMOD Source Pathway
***************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION WAREHOUSE_V  VOLUME     363660.728  3783587.418      219.660
   LOCATION FLOWEQ_V     VOLUME     363848.668  3783471.040      217.970
   LOCATION MAINTBLD_V   VOLUME     363528.440  3783175.430      215.900
   LOCATION AWPF_V       VOLUME     363829.890  3783175.990      215.160
** Source Parameters **
   SRCPARAM WAREHOUSE_V    0.03815     5.000     5.863     1.400
   SRCPARAM FLOWEQ_V       0.04011     5.000    17.530     1.400
   SRCPARAM MAINTBLD_V     0.02377     5.000    12.065     1.400
   SRCPARAM AWPF_V          0.0407     5.000    16.379     1.400
   URBANSRC ALL

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "WORKHOURS"
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT WAREHOUSE_V  HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_V     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT MAINTBLD_V   HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AWPF_V       HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP AWPF_V   AWPF_V
   SRCGROUP FLOWEQ_V FLOWEQ_V
   SRCGROUP MAINTB_V MAINTBLD_V
   SRCGROUP WAREH_V  WAREHOUSE_V
   SRCGROUP ALL
SO FINISHED
**
***************************************
** AERMOD Receptor Pathway
***************************************
**
```

```
**
RE STARTING
   INCLUDED GWRP-NO2.rou
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE ..\..\rese8.sfc
   PROFFILE ..\..\rese8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST GWRP-NO2.AD\01H1GALL.PLT 31
   PLOTFILE 1 AWPF_V 1ST GWRP-NO2.AD\01H1G001.PLT 32
   PLOTFILE 1 FLOWEQ_V 1ST GWRP-NO2.AD\01H1G002.PLT 33
   PLOTFILE 1 MAINTB_V 1ST GWRP-NO2.AD\01H1G003.PLT 34
   PLOTFILE 1 WAREH_V 1ST GWRP-NO2.AD\01H1G004.PLT 35
   PLOTFILE ANNUAL ALL GWRP-NO2.AD\AN00GALL.PLT 36
   PLOTFILE ANNUAL AWPF_V GWRP-NO2.AD\AN00G001.PLT 37
   PLOTFILE ANNUAL FLOWEQ_V GWRP-NO2.AD\AN00G002.PLT 38
   PLOTFILE ANNUAL MAINTB_V GWRP-NO2.AD\AN00G003.PLT 39
   PLOTFILE ANNUAL WAREH_V GWRP-NO2.AD\AN00G004.PLT 40
   SUMMFILE GWRP-NO2.sum
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:39:12

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F
```

```
 **Model Uses URBAN Dispersion Algorithm for the SBL for     4 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  NOX

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      4 Source(s);       5 Source Group(s); and     105 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-NO2.err
 **File for Summary of Results:
 GWRP-NO2.sum
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
 15:39:12

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.    INIT.   URBAN  EMISSION RATE
   SOURCE      PART.  (GRAMS/SEC)     X         Y     ELEV.   HEIGHT      SY       SZ     SOURCE  SCALAR VARY
     ID        CATS.                (METERS) (METERS) (METERS) (METERS) (METERS) (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

```
 - -

 WAREHOUSE_V      0   0.38150E-01  363660.7 3783587.4   219.7     5.00     5.86     1.40     YES   HROFDY
 FLOWEQ_V         0   0.40110E-01  363848.7 3783471.0   218.0     5.00    17.53     1.40     YES   HROFDY
 MAINTBLD_V       0   0.23770E-01  363528.4 3783175.4   215.9     5.00    12.07     1.40     YES   HROFDY
 AWPF_V           0   0.40700E-01  363829.9 3783176.0   215.2     5.00    16.38     1.40     YES   HROFDY
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:39:12

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                             SOURCE IDs
 -----------                                             ----------



  AWPF_V     AWPF_V      ,

  FLOWEQ_V   FLOWEQ_V    ,

  MAINTB_V   MAINTBLD_V  ,

  WAREH_V    WAREHOUSE_V ,

  ALL        WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:39:12

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                            *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                   SOURCE IDs
  --------   ---------                                   ----------



              9862049.   WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:39:12

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

     HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -


 SOURCE ID = WAREHOUSE_V  ; SOURCE TYPE = VOLUME   :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
```

```
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = FLOWEQ_V     ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = MAINTBLD_V   ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = AWPF_V       ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                           ***
 15:39:12

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);         ( 363917.1, 3783132.5,     214.8,
     214.8,       2.0);
     ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);         ( 363917.1, 3783182.5,     214.2,
     214.2,       2.0);
     ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);         ( 363918.7, 3783233.1,     214.3,
     214.3,       2.0);
     ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);         ( 363918.7, 3783283.1,     215.5,
     215.5,       2.0);
     ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);         ( 363919.2, 3783332.3,     216.7,
     216.7,       2.0);
     ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);         ( 363919.2, 3783382.3,     217.3,
     217.3,       2.0);
     ( 363919.2, 3783407.3,     217.6,     217.6,       2.0);         ( 363468.4, 3783096.5,     215.5,
     215.5,       2.0);
     ( 363480.3, 3783096.2,     215.5,     215.5,       2.0);         ( 363505.3, 3783096.2,     215.5,
     215.5,       2.0);
     ( 363530.3, 3783096.2,     215.4,     215.4,       2.0);         ( 363555.3, 3783096.2,     215.4,
     215.4,       2.0);
     ( 363580.3, 3783096.2,     215.3,     215.3,       2.0);         ( 363605.3, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363629.8, 3783096.2,     215.4,     215.4,       2.0);         ( 363654.8, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363679.8, 3783093.7,     215.2,     215.2,       2.0);         ( 363704.8, 3783093.7,     215.2,
     215.2,       2.0);
     ( 363729.8, 3783093.6,     215.2,     215.2,       2.0);         ( 363754.8, 3783093.6,     215.3,
     215.3,       2.0);
     ( 363779.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363804.8, 3783092.7,     215.2,
     215.2,       2.0);
```

```
    ( 363829.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363854.8, 3783092.7,     215.2,
    215.2,       2.0);
    ( 363879.8, 3783092.7,     215.1,     215.1,       2.0);         ( 363587.8, 3783466.4,     218.1,
    218.1,       2.0);
    ( 363601.3, 3783480.9,     218.4,     218.4,       2.0);         ( 363601.3, 3783505.9,     218.9,
    218.9,       2.0);
    ( 363601.3, 3783530.9,     219.5,     219.5,       2.0);         ( 363601.3, 3783555.9,     219.9,
    219.9,       2.0);
    ( 363601.3, 3783580.9,     220.3,     220.3,       2.0);         ( 363601.3, 3783605.9,     220.3,
    220.3,       2.0);
    ( 363573.3, 3783452.3,     217.8,     217.8,       2.0);         ( 363561.1, 3783441.8,     217.7,
    217.7,       2.0);
    ( 363551.2, 3783438.1,     217.7,     217.7,       2.0);         ( 363550.9, 3783426.3,     217.6,
    217.6,       2.0);
    ( 363551.2, 3783411.5,     217.3,     217.3,       2.0);         ( 363550.9, 3783395.9,     217.2,
    217.2,       2.0);
    ( 363550.7, 3783381.7,     217.1,     217.1,       2.0);         ( 363550.4, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363536.9, 3783363.0,     217.0,     217.0,       2.0);         ( 363528.5, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363528.2, 3783357.4,     217.0,     217.0,       2.0);         ( 363513.7, 3783357.4,     217.0,
    217.0,       2.0);
    ( 363504.5, 3783352.6,     216.9,     216.9,       2.0);         ( 363507.2, 3783337.9,     216.8,
    216.8,       2.0);
    ( 363501.4, 3783331.1,     216.8,     216.8,       2.0);         ( 363491.7, 3783322.5,     216.7,
    216.7,       2.0);
    ( 363485.3, 3783316.3,     216.7,     216.7,       2.0);         ( 363478.9, 3783311.4,     216.7,
    216.7,       2.0);
    ( 363470.7, 3783132.7,     215.7,     215.7,       2.0);         ( 363470.7, 3783157.7,     215.8,
    215.8,       2.0);
    ( 363470.7, 3783182.7,     215.9,     215.9,       2.0);         ( 363469.6, 3783203.5,     216.1,
    216.1,       2.0);
    ( 363469.6, 3783228.5,     216.2,     216.2,       2.0);         ( 363469.6, 3783253.5,     216.4,
    216.4,       2.0);
    ( 363469.6, 3783278.5,     216.5,     216.5,       2.0);         ( 363469.6, 3783303.5,     216.7,
    216.7,       2.0);
    ( 363798.9, 3783066.8,     215.2,     215.2,       2.0);         ( 363795.1, 3783063.9,     215.2,
    215.2,       2.0);
    ( 363795.4, 3783052.6,     215.2,     215.2,       2.0);         ( 363798.6, 3783048.7,     215.2,
    215.2,       2.0);
    ( 363811.1, 3783048.7,     215.2,     215.2,       2.0);         ( 363815.4, 3783052.6,     215.2,
    215.2,       2.0);
    ( 363815.2, 3783063.7,     215.2,     215.2,       2.0);         ( 363811.2, 3783067.4,     215.2,
    215.2,       2.0);
    ( 363298.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363323.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363348.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363373.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363422.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);         ( 363472.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);         ( 363517.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);         ( 363567.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363618.5, 3783857.4,     220.2,
    220.2,       2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363671.7, 3783856.6,     220.2,
    220.2,       2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);         ( 363722.1, 3783854.7,     220.2,
    220.2,       2.0);
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
```

```
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 15:39:12

PAGE   7
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                              (METERS)

     ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363771.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363821.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363871.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363921.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363971.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);         ( 364021.7, 3783854.3,     221.2,
     221.2,       2.0);
     ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);         ( 364073.7, 3783852.3,     223.7,
     223.7,       2.0);
     ( 364061.8, 3783840.4,     222.8,     222.8,
     2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 15:39:12

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                             *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                 (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                               (METERS/SEC)

                                                   1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 15:39:12

PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***
```

```
  Surface file:   ..\..\rese8.sfc                                                                      Met Version:  14134
  Profile file:   ..\..\rese8.PFL
  Surface format:
  FREE
  Profile format:
  FREE
  Surface station no.:       0                  Upper air station no.:     3190
                Name: UNKNOWN                                 Name: UNKNOWN
                Year:   2008                                  Year:   2008

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-
 08 01 01   1 01 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 02 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 03 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 06 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 07 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.56  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 09   22.6 -9.000 -9.000 -9.000   54. -999. -99999.0  0.50   1.00   0.32  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 10   71.8 -9.000 -9.000 -9.000  147. -999. -99999.0  0.50   1.00   0.24  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 11  111.2 -9.000 -9.000 -9.000  357. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 12  128.1 -9.000 -9.000 -9.000  571. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 13  127.4 -9.000 -9.000 -9.000  712. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 14  109.8 -9.000 -9.000 -9.000  763. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  290.9    5.5
 08 01 01   1 15   52.2 -9.000 -9.000 -9.000  786. -999. -99999.0  0.50   1.00   0.25  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 16   27.2 -9.000 -9.000 -9.000  796. -999. -99999.0  0.50   1.00   0.33  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 17 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.59  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 18 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 08 01 01 01    5.5 0 -999.  -99.00   287.1   99.0  -99.00  -99.00
 08 01 01 01    9.1 1 -999.  -99.00  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
 15:39:12

PAGE  10
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: AWPF_V   ***
                                  INCLUDING SOURCE(S):     AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF NOX      IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
```

363917.08 3783107.55 0.26089 363917.08 3783132.55
0.34344
363917.08 3783157.55 0.42228 363917.08 3783182.55
0.44689
363917.08 3783207.55 0.39667 363918.68 3783233.09
0.29792
363918.68 3783258.09 0.22010 363918.68 3783283.09
0.16071
363918.68 3783308.09 0.11883 363919.21 3783332.28
0.09057
363919.21 3783357.28 0.07029 363919.21 3783382.28
0.05576
363919.21 3783407.28 0.04507 363468.40 3783096.50
0.01866
363480.32 3783096.24 0.01994 363505.32 3783096.24
0.02313
363530.32 3783096.24 0.02713 363555.32 3783096.24
0.03221
363580.32 3783096.24 0.03878 363605.32 3783096.24
0.04746
363629.81 3783096.24 0.05884 363654.81 3783096.24
0.07501
363679.81 3783093.68 0.09639 363704.81 3783093.68
0.12954
363729.81 3783093.56 0.18014 363754.81 3783093.56
0.25930
363779.81 3783092.66 0.37038 363804.81 3783092.66
0.49810
363829.81 3783092.66 0.56169 363854.81 3783092.66
0.50586
363879.81 3783092.66 0.38054 363587.82 3783466.38
0.02083
363601.35 3783480.91 0.02026 363601.35 3783505.91
0.01794
363601.35 3783530.91 0.01595 363601.35 3783555.91
0.01425
363601.35 3783580.91 0.01280 363601.35 3783605.91
0.01156
363573.32 3783452.30 0.02118 363561.08 3783441.85
0.02122
363551.24 3783438.12 0.02078 363550.94 3783426.26
0.02182
363551.19 3783411.48 0.02325 363550.94 3783395.93
0.02477
363550.68 3783381.66 0.02620 363550.43 3783363.30
0.02810
363536.92 3783363.05 0.02625 363528.51 3783363.30
0.02514
363528.25 3783357.44 0.02560 363513.72 3783357.44
0.02379
363504.55 3783352.60 0.02305 363507.18 3783337.93
0.02432
363501.43 3783331.08 0.02401 363491.71 3783322.46
0.02325
363485.30 3783316.28 0.02275 363478.89 3783311.41
0.02219
363470.66 3783132.66 0.02056 363470.66 3783157.66
0.02152
363470.66 3783182.66 0.02224 363469.56 3783203.46
0.02248
363469.56 3783228.46 0.02266 363469.56 3783253.46
0.02253
363469.56 3783278.46 0.02209 363469.56 3783303.46
0.02139

```
        363798.94    3783066.77        0.28117                        363795.11    3783063.90
        0.26007
        363795.43    3783052.56        0.21637                        363798.62    3783048.73
        0.20776
        363811.08    3783048.73        0.22045                        363815.39    3783052.56
        0.23838
        363815.23    3783063.74        0.29039                        363811.24    3783067.41
        0.30598
        363298.29    3783861.01        0.00373                        363323.29    3783861.01
        0.00383
        363348.29    3783861.01        0.00394                        363373.29    3783861.01
        0.00405
        363398.29    3783861.01        0.00417                        363422.49    3783859.43
        0.00429
        363447.49    3783859.43        0.00441                        363472.49    3783859.43
        0.00452
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 15:39:12

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: AWPF_V   ***
                                 INCLUDING SOURCE(S):     AWPF_V      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)   Y-COORD (M)        CONC                         X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.00464                        363517.73    3783858.63
        0.00475
        363542.73    3783858.63        0.00486                        363567.73    3783858.63
        0.00497
        363593.53    3783857.44        0.00509                        363618.53    3783857.44
        0.00519
        363643.53    3783857.44        0.00528                        363671.70    3783856.65
        0.00538
        363697.10    3783854.67        0.00547                        363722.10    3783854.67
        0.00552
        363746.70    3783854.27        0.00556                        363771.70    3783854.27
        0.00557
        363796.70    3783854.27        0.00556                        363821.70    3783854.27
        0.00554
        363846.70    3783854.27        0.00550                        363871.70    3783854.27
        0.00544
        363896.70    3783854.27        0.00537                        363921.70    3783854.27
        0.00527
        363946.70    3783854.27        0.00517                        363971.70    3783854.27
        0.00505
        363996.70    3783854.27        0.00492                        364021.70    3783854.27
        0.00477
        364046.70    3783854.27        0.00461                        364073.73    3783852.30
        0.00445
        364061.84    3783840.40
        0.00467
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 15:39:12
```

PAGE 12
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: FLOWEQ_V ***
INCLUDING SOURCE(S): FLOWEQ_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.02279	363917.08	3783132.55	0.02625
363917.08	3783157.55	0.03055	363917.08	3783182.55	0.03598
363917.08	3783207.55	0.04295	363918.68	3783233.09	0.05196
363918.68	3783258.09	0.06407	363918.68	3783283.09	0.08065
363918.68	3783308.09	0.10410	363919.21	3783332.28	0.13613
363919.21	3783357.28	0.18524	363919.21	3783382.28	0.26008
363919.21	3783407.28	0.37221	363468.40	3783096.50	0.00690
363480.32	3783096.24	0.00716	363505.32	3783096.24	0.00776
363530.32	3783096.24	0.00844	363555.32	3783096.24	0.00922
363580.32	3783096.24	0.01012	363605.32	3783096.24	0.01114
363629.81	3783096.24	0.01227	363654.81	3783096.24	0.01356
363679.81	3783093.68	0.01482	363704.81	3783093.68	0.01631
363729.81	3783093.56	0.01782	363754.81	3783093.56	0.01928
363779.81	3783092.66	0.02049	363804.81	3783092.66	0.02151
363829.81	3783092.66	0.02218	363854.81	3783092.66	0.02240
363879.81	3783092.66	0.02217	363587.82	3783466.38	0.04330
363601.35	3783480.91	0.04946	363601.35	3783505.91	0.04994
363601.35	3783530.91	0.04909	363601.35	3783555.91	0.04706
363601.35	3783580.91	0.04409	363601.35	3783605.91	0.04058
363573.32	3783452.30	0.03765	363561.08	3783441.85	0.03359
363551.24	3783438.12	0.03102	363550.94	3783426.26	0.03013
363551.19	3783411.48	0.02906	363550.94	3783395.93	0.02773
363550.68	3783381.66	0.02645	363550.43	3783363.30	0.02478
363536.92	3783363.05	0.02278	363528.51	3783363.30	0.02168
363528.25	3783357.44	0.02122	363513.72	3783357.44	0.01952

```
        363504.55    3783352.60        0.01827                     363507.18    3783337.93
        0.01769
        363501.43    3783331.08        0.01678                     363491.71    3783322.46
        0.01553
        363485.30    3783316.28        0.01476                     363478.89    3783311.41
        0.01409
        363470.66    3783132.66        0.00771                     363470.66    3783157.66
        0.00831
        363470.66    3783182.66        0.00897                     363469.56    3783203.46
        0.00955
        363469.56    3783228.46        0.01034                     363469.56    3783253.46
        0.01122
        363469.56    3783278.46        0.01217                     363469.56    3783303.46
        0.01316
        363798.94    3783066.77        0.01863                     363795.11    3783063.90
        0.01825
        363795.43    3783052.56        0.01727                     363798.62    3783048.73
        0.01704
        363811.08    3783048.73        0.01734                     363815.39    3783052.56
        0.01776
        363815.23    3783063.74        0.01877                     363811.24    3783067.41
        0.01903
        363298.29    3783861.01        0.00644                     363323.29    3783861.01
        0.00681
        363348.29    3783861.01        0.00721                     363373.29    3783861.01
        0.00764
        363398.29    3783861.01        0.00810                     363422.49    3783859.43
        0.00862
        363447.49    3783859.43        0.00915                     363472.49    3783859.43
        0.00972
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 15:39:12

PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF NOX      IN MICROGRAMS/M**3                         **

      X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.01026                     363517.73    3783858.63
        0.01086
        363542.73    3783858.63        0.01153                     363567.73    3783858.63
        0.01223
        363593.53    3783857.44        0.01305                     363618.53    3783857.44
        0.01380
        363643.53    3783857.44        0.01456                     363671.70    3783856.65
        0.01546
        363697.10    3783854.67        0.01635                     363722.10    3783854.67
        0.01701
        363746.70    3783854.27        0.01761                     363771.70    3783854.27
        0.01805
        363796.70    3783854.27        0.01833                     363821.70    3783854.27
        0.01844
        363846.70    3783854.27        0.01834                     363871.70    3783854.27
        0.01805
```

```
        363896.70    3783854.27        0.01758                       363921.70    3783854.27
        0.01695
        363946.70    3783854.27        0.01619                       363971.70    3783854.27
        0.01534
        363996.70    3783854.27        0.01443                       364021.70    3783854.27
        0.01346
        364046.70    3783854.27        0.01245                       364073.73    3783852.30
        0.01149
        364061.84    3783840.40
        0.01258
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                         ***
 15:39:12

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                      *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: MAINTB_V ***
                                     INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                           ** CONC OF NOX      IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363917.08    3783107.55        0.00823                       363917.08    3783132.55
        0.00845
        363917.08    3783157.55        0.00864                       363917.08    3783182.55
        0.00872
        363917.08    3783207.55        0.00872                       363918.68    3783233.09
        0.00855
        363918.68    3783258.09        0.00835                       363918.68    3783283.09
        0.00807
        363918.68    3783308.09        0.00774                       363919.21    3783332.28
        0.00738
        363919.21    3783357.28        0.00702                       363919.21    3783382.28
        0.00664
        363919.21    3783407.28        0.00626                       363468.40    3783096.50
        0.20240
        363480.32    3783096.24        0.24147                       363505.32    3783096.24
        0.32841
        363530.32    3783096.24        0.36746                       363555.32    3783096.24
        0.32162
        363580.32    3783096.24        0.23425                       363605.32    3783096.24
        0.15865
        363629.81    3783096.24        0.10852                       363654.81    3783096.24
        0.07636
        363679.81    3783093.68        0.05482                       363704.81    3783093.68
        0.04131
        363729.81    3783093.56        0.03194                       363754.81    3783093.56
        0.02525
        363779.81    3783092.66        0.02032                       363804.81    3783092.66
        0.01669
        363829.81    3783092.66        0.01389                       363854.81    3783092.66
        0.01172
        363879.81    3783092.66        0.01001                       363587.82    3783466.38
        0.01829
        363601.35    3783480.91        0.01601                       363601.35    3783505.91
        0.01359
        363601.35    3783530.91        0.01165                       363601.35    3783555.91
        0.01010
```

```
        363601.35    3783580.91        0.00884                        363601.35    3783605.91
        0.00781
        363573.32    3783452.30        0.02097                        363561.08    3783441.85
        0.02330
        363551.24    3783438.12        0.02440                        363550.94    3783426.26
        0.02701
        363551.19    3783411.48        0.03085                        363550.94    3783395.93
        0.03581
        363550.68    3783381.66        0.04143                        363550.43    3783363.30
        0.05071
        363536.92    3783363.05        0.05202                        363528.51    3783363.30
        0.05228
        363528.25    3783357.44        0.05604                        363513.72    3783357.44
        0.05616
        363504.55    3783352.60        0.05916                        363507.18    3783337.93
        0.07153
        363501.43    3783331.08        0.07778                        363491.71    3783322.46
        0.08569
        363485.30    3783316.28        0.09155                        363478.89    3783311.41
        0.09553
        363470.66    3783132.66        0.39808                        363470.66    3783157.66
        0.58084
        363470.66    3783182.66        0.64700                        363469.56    3783203.46
        0.52212
        363469.56    3783228.46        0.35178                        363469.56    3783253.46
        0.22565
        363469.56    3783278.46        0.14834                        363469.56    3783303.46
        0.10186
        363798.94    3783066.77        0.01622                        363795.11    3783063.90
        0.01654
        363795.43    3783052.56        0.01589                        363798.62    3783048.73
        0.01533
        363811.08    3783048.73        0.01407                        363815.39    3783052.56
        0.01383
        363815.23    3783063.74        0.01432                        363811.24    3783067.41
        0.01487
        363298.29    3783861.01        0.00297                        363323.29    3783861.01
        0.00302
        363348.29    3783861.01        0.00307                        363373.29    3783861.01
        0.00311
        363398.29    3783861.01        0.00315                        363422.49    3783859.43
        0.00318
        363447.49    3783859.43        0.00320                        363472.49    3783859.43
        0.00321
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                   ***
 15:39:12

PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: MAINTB_V ***
                                  INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF NOX      IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.00323                        363517.73    3783858.63
        0.00320
```

```
        363542.73    3783858.63        0.00318                        363567.73    3783858.63
        0.00314
        363593.53    3783857.44        0.00311                        363618.53    3783857.44
        0.00306
        363643.53    3783857.44        0.00300                        363671.70    3783856.65
        0.00293
        363697.10    3783854.67        0.00287                        363722.10    3783854.67
        0.00279
        363746.70    3783854.27        0.00271                        363771.70    3783854.27
        0.00263
        363796.70    3783854.27        0.00254                        363821.70    3783854.27
        0.00245
        363846.70    3783854.27        0.00237                        363871.70    3783854.27
        0.00228
        363896.70    3783854.27        0.00220                        363921.70    3783854.27
        0.00212
        363946.70    3783854.27        0.00204                        363971.70    3783854.27
        0.00196
        363996.70    3783854.27        0.00189                        364021.70    3783854.27
        0.00182
        364046.70    3783854.27        0.00174                        364073.73    3783852.30
        0.00168
        364061.84    3783840.40
        0.00174
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                         ***
 15:39:12

PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: WAREH_V  ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF NOX      IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363917.08    3783107.55        0.00758                        363917.08    3783132.55
        0.00815
        363917.08    3783157.55        0.00880                        363917.08    3783182.55
        0.00952
        363917.08    3783207.55        0.01034                        363918.68    3783233.09
        0.01122
        363918.68    3783258.09        0.01227                        363918.68    3783283.09
        0.01346
        363918.68    3783308.09        0.01482                        363919.21    3783332.28
        0.01627
        363919.21    3783357.28        0.01800                        363919.21    3783382.28
        0.01994
        363919.21    3783407.28        0.02207                        363468.40    3783096.50
        0.00855
        363480.32    3783096.24        0.00886                        363505.32    3783096.24
        0.00954
        363530.32    3783096.24        0.01021                        363555.32    3783096.24
        0.01086
        363580.32    3783096.24        0.01144                        363605.32    3783096.24
        0.01191
        363629.81    3783096.24        0.01225                        363654.81    3783096.24
        0.01244
```

```
        363679.81    3783093.68        0.01233                        363704.81    3783093.68
        0.01217
        363729.81    3783093.56        0.01185                        363754.81    3783093.56
        0.01140
        363779.81    3783092.66        0.01080                        363804.81    3783092.66
        0.01018
        363829.81    3783092.66        0.00951                        363854.81    3783092.66
        0.00884
        363879.81    3783092.66        0.00818                        363587.82    3783466.38
        0.15296
        363601.35    3783480.91        0.21436                        363601.35    3783505.91
        0.31449
        363601.35    3783530.91        0.47611                        363601.35    3783555.91
        0.72119
        363601.35    3783580.91        0.95364                        363601.35    3783605.91
        0.91353
        363573.32    3783452.30        0.11270                        363561.08    3783441.85
        0.09053
        363551.24    3783438.12        0.08012                        363550.94    3783426.26
        0.07193
        363551.19    3783411.48        0.06352                        363550.94    3783395.93
        0.05583
        363550.68    3783381.66        0.04984                        363550.43    3783363.30
        0.04339
        363536.92    3783363.05        0.03993                        363528.51    3783363.30
        0.03798
        363528.25    3783357.44        0.03647                        363513.72    3783357.44
        0.03339
        363504.55    3783352.60        0.03067                        363507.18    3783337.93
        0.02856
        363501.43    3783331.08        0.02659                        363491.71    3783322.46
        0.02404
        363485.30    3783316.28        0.02248                        363478.89    3783311.41
        0.02120
        363470.66    3783132.66        0.00971                        363470.66    3783157.66
        0.01061
        363470.66    3783182.66        0.01163                        363469.56    3783203.46
        0.01256
        363469.56    3783228.46        0.01389                        363469.56    3783253.46
        0.01545
        363469.56    3783278.46        0.01727                        363469.56    3783303.46
        0.01943
        363798.94    3783066.77        0.00944                        363795.11    3783063.90
        0.00943
        363795.43    3783052.56        0.00907                        363798.62    3783048.73
        0.00890
        363811.08    3783048.73        0.00865                        363815.39    3783052.56
        0.00867
        363815.23    3783063.74        0.00899                        363811.24    3783067.41
        0.00919
        363298.29    3783861.01        0.01384                        363323.29    3783861.01
        0.01512
        363348.29    3783861.01        0.01654                        363373.29    3783861.01
        0.01811
        363398.29    3783861.01        0.01984                        363422.49    3783859.43
        0.02182
        363447.49    3783859.43        0.02387                        363472.49    3783859.43
        0.02606
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                        ***
 15:39:12

PAGE  17
```

```
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: WAREH_V  ***
                                 INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF NOX      IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
         363491.94    3783857.05        0.02822                      363517.73    3783858.63
         0.03033
         363542.73    3783858.63        0.03256                      363567.73    3783858.63
         0.03459
         363593.53    3783857.44        0.03663                      363618.53    3783857.44
         0.03775
         363643.53    3783857.44        0.03817                      363671.70    3783856.65
         0.03794
         363697.10    3783854.67        0.03726                      363722.10    3783854.67
         0.03531
         363746.70    3783854.27        0.03301                      363771.70    3783854.27
         0.03030
         363796.70    3783854.27        0.02751                      363821.70    3783854.27
         0.02478
         363846.70    3783854.27        0.02223                      363871.70    3783854.27
         0.01989
         363896.70    3783854.27        0.01779                      363921.70    3783854.27
         0.01592
         363946.70    3783854.27        0.01428                      363971.70    3783854.27
         0.01283
         363996.70    3783854.27        0.01155                      364021.70    3783854.27
         0.01036
         364046.70    3783854.27        0.00931                      364073.73    3783852.30
         0.00839
         364061.84    3783840.40
         0.00908
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                         ***
 15:39:12

PAGE  18
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF NOX      IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
         363917.08    3783107.55        0.29949                      363917.08    3783132.55
         0.38630
         363917.08    3783157.55        0.47027                      363917.08    3783182.55
         0.50112
         363917.08    3783207.55        0.45868                      363918.68    3783233.09
         0.36966
         363918.68    3783258.09        0.30479                      363918.68    3783283.09
         0.26289
```

363918.68	3783308.09	0.24549	363919.21	3783332.28
0.25035				
363919.21	3783357.28	0.28055	363919.21	3783382.28
0.34241				
363919.21	3783407.28	0.44560	363468.40	3783096.50
0.23652				
363480.32	3783096.24	0.27743	363505.32	3783096.24
0.36884				
363530.32	3783096.24	0.41324	363555.32	3783096.24
0.37391				
363580.32	3783096.24	0.29458	363605.32	3783096.24
0.22916				
363629.81	3783096.24	0.19188	363654.81	3783096.24
0.17737				
363679.81	3783093.68	0.17836	363704.81	3783093.68
0.19933				
363729.81	3783093.56	0.24175	363754.81	3783093.56
0.31523				
363779.81	3783092.66	0.42199	363804.81	3783092.66
0.54648				
363829.81	3783092.66	0.60727	363854.81	3783092.66
0.54882				
363879.81	3783092.66	0.42091	363587.82	3783466.38
0.23538				
363601.35	3783480.91	0.30008	363601.35	3783505.91
0.39595				
363601.35	3783530.91	0.55280	363601.35	3783555.91
0.79259				
363601.35	3783580.91	1.01936	363601.35	3783605.91
0.97348				
363573.32	3783452.30	0.19250	363561.08	3783441.85
0.16864				
363551.24	3783438.12	0.15632	363550.94	3783426.26
0.15089				
363551.19	3783411.48	0.14668	363550.94	3783395.93
0.14415				
363550.68	3783381.66	0.14392	363550.43	3783363.30
0.14698				
363536.92	3783363.05	0.14097	363528.51	3783363.30
0.13708				
363528.25	3783357.44	0.13933	363513.72	3783357.44
0.13285				
363504.55	3783352.60	0.13115	363507.18	3783337.93
0.14210				
363501.43	3783331.08	0.14515	363491.71	3783322.46
0.14850				
363485.30	3783316.28	0.15155	363478.89	3783311.41
0.15301				
363470.66	3783132.66	0.43607	363470.66	3783157.66
0.62127				
363470.66	3783182.66	0.68986	363469.56	3783203.46
0.56670				
363469.56	3783228.46	0.39868	363469.56	3783253.46
0.27484				
363469.56	3783278.46	0.19987	363469.56	3783303.46
0.15584				
363798.94	3783066.77	0.32547	363795.11	3783063.90
0.30429				
363795.43	3783052.56	0.25860	363798.62	3783048.73
0.24903				
363811.08	3783048.73	0.26051	363815.39	3783052.56
0.27864				
363815.23	3783063.74	0.33247	363811.24	3783067.41
0.34907				

```
        363298.29    3783861.01        0.02698                     363323.29    3783861.01
        0.02879
        363348.29    3783861.01        0.03076                     363373.29    3783861.01
        0.03292
        363398.29    3783861.01        0.03525                     363422.49    3783859.43
        0.03791
        363447.49    3783859.43        0.04063                     363472.49    3783859.43
        0.04350
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                      ***
 15:39:12

PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF NOX      IN MICROGRAMS/M**3                         **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.04635                     363517.73    3783858.63
        0.04914
        363542.73    3783858.63        0.05213                     363567.73    3783858.63
        0.05494
        363593.53    3783857.44        0.05788                     363618.53    3783857.44
        0.05980
        363643.53    3783857.44        0.06101                     363671.70    3783856.65
        0.06171
        363697.10    3783854.67        0.06195                     363722.10    3783854.67
        0.06063
        363746.70    3783854.27        0.05889                     363771.70    3783854.27
        0.05654
        363796.70    3783854.27        0.05394                     363821.70    3783854.27
        0.05121
        363846.70    3783854.27        0.04843                     363871.70    3783854.27
        0.04566
        363896.70    3783854.27        0.04293                     363921.70    3783854.27
        0.04026
        363946.70    3783854.27        0.03767                     363971.70    3783854.27
        0.03518
        363996.70    3783854.27        0.03279                     364021.70    3783854.27
        0.03040
        364046.70    3783854.27        0.02812                     364073.73    3783852.30
        0.02601
        364061.84    3783840.40
        0.02808
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                      ***
 15:39:12

PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                 *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                 INCLUDING SOURCE(S):     AWPF_V      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***
```

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	7.60201	(10122616)	363917.08	3783132.55	9.98113	(10122616)
363917.08	3783157.55	9.36172	(10122616)	363917.08	3783182.55	10.31872	(12121716)
363917.08	3783207.55	15.14262	(12121716)	363918.68	3783233.09	15.25996	(12121716)
363918.68	3783258.09	12.95108	(12121716)	363918.68	3783283.09	9.47447	(12121716)
363918.68	3783308.09	6.12202	(12121716)	363919.21	3783332.28	3.72556	(12121716)
363919.21	3783357.28	3.30688	(12111716)	363919.21	3783382.28	2.89589	(12111716)
363919.21	3783407.28	2.50044	(12111716)	363468.40	3783096.50	0.82309	(09110816)
363480.32	3783096.24	0.86619	(09110816)	363505.32	3783096.24	0.96938	(09110816)
363530.32	3783096.24	1.08938	(09110816)	363555.32	3783096.24	1.23141	(09110816)
363580.32	3783096.24	1.39903	(09110816)	363605.32	3783096.24	1.59689	(09110816)
363629.81	3783096.24	1.89794	(09120216)	363654.81	3783096.24	2.37303	(09120216)
363679.81	3783093.68	2.92622	(09120216)	363704.81	3783093.68	3.58400	(09120216)
363729.81	3783093.56	4.44084	(11112816)	363754.81	3783093.56	6.05853	(11112816)
363779.81	3783092.66	8.73353	(11111216)	363804.81	3783092.66	13.17153	(11111216)
363829.81	3783092.66	14.16093	(11111216)	363854.81	3783092.66	10.23084	(11111216)
363879.81	3783092.66	7.09859	(08121916)	363587.82	3783466.38	1.03191	(08112816)
363601.35	3783480.91	0.91998	(08112816)	363601.35	3783505.91	0.77052	(09122016)
363601.35	3783530.91	0.77476	(09122016)	363601.35	3783555.91	0.76846	(09122016)
363601.35	3783580.91	0.75361	(09122016)	363601.35	3783605.91	0.75097	(12120116)
363573.32	3783452.30	1.12225	(08112816)	363561.08	3783441.85	1.17038	(08112816)
363551.24	3783438.12	1.16924	(08112816)	363550.94	3783426.26	1.23545	(08112816)
363551.19	3783411.48	1.31714	(08112816)	363550.94	3783395.93	1.39584	(08112816)
363550.68	3783381.66	1.47721	(12112816)	363550.43	3783363.30	1.73808	(12112816)
363536.92	3783363.05	1.70820	(12112816)	363528.51	3783363.30	1.67888	(12112816)
363528.25	3783357.44	1.73658	(12112816)	363513.72	3783357.44	1.66972	(12112816)
363504.55	3783352.60	1.65073	(12112816)	363507.18	3783337.93	1.75793	(09121216)
363501.43	3783331.08	1.82384	(09121216)	363491.71	3783322.46	1.86314	(09121216)
363485.30	3783316.28	1.86900	(09121216)	363478.89	3783311.41	1.85315	(09121216)
363470.66	3783132.66	1.06951	(12112916)	363470.66	3783157.66	1.36507	

```
        (12112916)
        363470.66   3783182.66        1.59961  (12112916)                363469.56   3783203.46        1.70138
        (12112916)
        363469.56   3783228.46        1.70798  (12112916)                363469.56   3783253.46        1.59564
        (09121216)
        363469.56   3783278.46        1.77288  (09121216)                363469.56   3783303.46        1.80855
        (09121216)
        363798.94   3783066.77        8.75351  (11111216)                363795.11   3783063.90        8.17328
        (11111216)
        363795.43   3783052.56        7.22898  (11111216)                363798.62   3783048.73        7.09883
        (11111216)
        363811.08   3783048.73        7.47972  (11111216)                363815.39   3783052.56        7.87764
        (11111216)
        363815.23   3783063.74        9.10834  (11111216)                363811.24   3783067.41        9.49863
        (11111216)
        363298.29   3783861.01        0.18926  (11122116)                363323.29   3783861.01        0.19143
        (11122116)
        363348.29   3783861.01        0.19030  (11122116)                363373.29   3783861.01        0.18843
        (12102216)
        363398.29   3783861.01        0.19710  (08121216)                363422.49   3783859.43        0.21958
        (09122016)
        363447.49   3783859.43        0.25390  (09122016)                363472.49   3783859.43        0.30111
        (12120116)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 15:39:12

PAGE  21
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                  INCLUDING SOURCE(S):     AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        0.34138  (12120116)                363517.73   3783858.63        0.39390
        (12120116)
        363542.73   3783858.63        0.44032  (12120116)                363567.73   3783858.63        0.47857
        (12120116)
        363593.53   3783857.44        0.50699  (12120116)                363618.53   3783857.44        0.51862
        (12120116)
        363643.53   3783857.44        0.51372  (12120116)                363671.70   3783856.65        0.48945
        (12120116)
        363697.10   3783854.67        0.45322  (12120116)                363722.10   3783854.67        0.42166
        (08121516)
        363746.70   3783854.27        0.44513  (08121516)                363771.70   3783854.27        0.46420
        (08121516)
        363796.70   3783854.27        0.47793  (08121516)                363821.70   3783854.27        0.48571
        (08121516)
        363846.70   3783854.27        0.48718  (08121516)                363871.70   3783854.27        0.48230
        (08121516)
        363896.70   3783854.27        0.47130  (08121516)                363921.70   3783854.27        0.45471
        (08121516)
        363946.70   3783854.27        0.43326  (08121516)                363971.70   3783854.27        0.40886
        (08121516)
        363996.70   3783854.27        0.40073  (12121416)                364021.70   3783854.27        0.45268
        (12121416)
```

```
        364046.70   3783854.27        0.50732  (12121416)                364073.73   3783852.30        0.56518
        (12121416)
        364061.84   3783840.40        0.55320
        (12121416)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:39:12

PAGE  22
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF NOX      IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55        0.77920  (12121016)                363917.08   3783132.55        0.88623
        (12121016)
        363917.08   3783157.55        1.01318  (12121016)                363917.08   3783182.55        1.16445
        (12121016)
        363917.08   3783207.55        1.34564  (12121016)                363918.68   3783233.09        1.56245
        (12121016)
        363918.68   3783258.09        1.82129  (12121016)                363918.68   3783283.09        2.13128
        (12121016)
        363918.68   3783308.09        2.50110  (12121016)                363919.21   3783332.28        2.94414
        (12121016)
        363919.21   3783357.28        3.98825  (08121916)                363919.21   3783382.28        5.33465
        (08121916)
        363919.21   3783407.28        8.74092  (10122616)                363468.40   3783096.50        0.36437
        (12121616)
        363480.32   3783096.24        0.37400  (12121616)                363505.32   3783096.24        0.40689
        (11112816)
        363530.32   3783096.24        0.43828  (11112816)                363555.32   3783096.24        0.46281
        (11112816)
        363580.32   3783096.24        0.47786  (11112816)                363605.32   3783096.24        0.49091
        (12121616)
        363629.81   3783096.24        0.51558  (12121616)                363654.81   3783096.24        0.59459
        (10120716)
        363679.81   3783093.68        0.65331  (10120716)                363704.81   3783093.68        0.79119
        (11111216)
        363729.81   3783093.56        0.92890  (11111216)                363754.81   3783093.56        1.04351
        (11111216)
        363779.81   3783092.66        1.11512  (11111216)                363804.81   3783092.66        1.13976
        (11111216)
        363829.81   3783092.66        1.10843  (11111216)                363854.81   3783092.66        1.02416
        (11111216)
        363879.81   3783092.66        0.89775  (11111216)                363587.82   3783466.38        2.53082
        (12112916)
        363601.35   3783480.91        3.00803  (12112916)                363601.35   3783505.91        3.14516
        (12112916)
        363601.35   3783530.91        3.18950  (09121216)                363601.35   3783555.91        3.36751
        (09121216)
        363601.35   3783580.91        3.10107  (09121216)                363601.35   3783605.91        2.60908
        (12112816)
        363573.32   3783452.30        2.05423  (12112916)                363561.08   3783441.85        1.72654
        (12112916)
        363551.24   3783438.12        1.57274  (12112916)                363550.94   3783426.26        1.36327
```

(12112916)
363551.19 3783411.48 1.18585 (09110816) 363550.94 3783395.93 1.09444
(09110816)
363550.68 3783381.66 0.99908 (09110816) 363550.43 3783363.30 0.87865
(09120216)
363536.92 3783363.05 0.82187 (09110816) 363528.51 3783363.30 0.79779
(09110816)
363528.25 3783357.44 0.77765 (12121616) 363513.72 3783357.44 0.72753
(12121616)
363504.55 3783352.60 0.69341 (12121616) 363507.18 3783337.93 0.69895
(09120216)
363501.43 3783331.08 0.68298 (09120216) 363491.71 3783322.46 0.65319
(09120216)
363485.30 3783316.28 0.63395 (09120216) 363478.89 3783311.41 0.61560
(09120216)
363470.66 3783132.66 0.39678 (12121616) 363470.66 3783157.66 0.41918
(12121616)
363470.66 3783182.66 0.44249 (12121616) 363469.56 3783203.46 0.46996
(09120216)
363469.56 3783228.46 0.51982 (09120216) 363469.56 3783253.46 0.55913
(09120216)
363469.56 3783278.46 0.58332 (09120216) 363469.56 3783303.46 0.58991
(09120216)
363798.94 3783066.77 1.01693 (11111216) 363795.11 3783063.90 1.00388
(11111216)
363795.43 3783052.56 0.95761 (11111216) 363798.62 3783048.73 0.94274
(11111216)
363811.08 3783048.73 0.93684 (11111216) 363815.39 3783052.56 0.94784
(11111216)
363815.23 3783063.74 0.99503 (11111216) 363811.24 3783067.41 1.01509
(11111216)
363298.29 3783861.01 0.42117 (12112816) 363323.29 3783861.01 0.42969
(08112816)
363348.29 3783861.01 0.45463 (08112816) 363373.29 3783861.01 0.47847
(08112816)
363398.29 3783861.01 0.50050 (08112816) 363422.49 3783859.43 0.52221
(08112816)
363447.49 3783859.43 0.53863 (08112816) 363472.49 3783859.43 0.55023
(08112816)

FF *** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project
*** 08/10/15
*** AERMET - VERSION 14134 *** *** ***
15:39:12

PAGE 23
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: FLOWEQ_V ***
INCLUDING SOURCE(S): FLOWEQ_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M) Y-COORD (M) CONC (YYMMDDHH) X-COORD (M) Y-COORD (M) CONC
(YYMMDDHH)
- -
- - - - - - -
363491.94 3783857.05 0.56199 (08112816) 363517.73 3783858.63 0.55866
(08112816)
363542.73 3783858.63 0.55093 (08112816) 363567.73 3783858.63 0.53337
(08112816)
363593.53 3783857.44 0.60381 (09122016) 363618.53 3783857.44 0.74255
(09122016)

```
        363643.53   3783857.44        0.90188  (12120116)                363671.70   3783856.65        1.11111
        (12120116)
        363697.10   3783854.67        1.27132  (12120116)                363722.10   3783854.67        1.36250
        (12120116)
        363746.70   3783854.27        1.37288  (12120116)                363771.70   3783854.27        1.28962
        (12120116)
        363796.70   3783854.27        1.12440  (12120116)                363821.70   3783854.27        1.02366
        (08010616)
        363846.70   3783854.27        0.98733  (08010616)                363871.70   3783854.27        0.97253
        (11111116)
        363896.70   3783854.27        1.04297  (11111116)                363921.70   3783854.27        1.05376
        (11111116)
        363946.70   3783854.27        1.00585  (11111116)                363971.70   3783854.27        1.04464
        (12111716)
        363996.70   3783854.27        1.04058  (12111716)                364021.70   3783854.27        0.97933
        (12111716)
        364046.70   3783854.27        0.98892  (12121416)                364073.73   3783852.30        1.07615
        (12121416)
        364061.84   3783840.40        1.04785
        (12121416)
   *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 15:39:12

PAGE  24
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                                  INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55        0.38488  (09012415)                363917.08   3783132.55        0.39707
        (09012415)
        363917.08   3783157.55        0.38788  (10112016)                363917.08   3783182.55        0.38643
        (10112016)
        363917.08   3783207.55        0.42641  (10020916)                363918.68   3783233.09        0.44551
        (10020916)
        363918.68   3783258.09        0.44756  (10020916)                363918.68   3783283.09        0.42712
        (10020916)
        363918.68   3783308.09        0.50944  (10121916)                363919.21   3783332.28        0.59681
        (10121916)
        363919.21   3783357.28        0.66608  (10121916)                363919.21   3783382.28        0.74955
        (12121716)
        363919.21   3783407.28        0.81982  (12121716)                363468.40   3783096.50        4.20859
        (11112816)
        363480.32   3783096.24        5.43705  (11111216)                363505.32   3783096.24        8.33697
        (11111216)
        363530.32   3783096.24        8.73395  (11111216)                363555.32   3783096.24        5.95496
        (11111216)
        363580.32   3783096.24        4.27392  (08121916)                363605.32   3783096.24        3.68159
        (10122616)
        363629.81   3783096.24        3.48822  (10122616)                363654.81   3783096.24        2.97441
        (10122616)
        363679.81   3783093.68        2.40003  (10122616)                363704.81   3783093.68        1.95076
        (10122616)
        363729.81   3783093.56        1.57211  (10122616)                363754.81   3783093.56        1.26859
```

```
       (10122616)
       363779.81   3783092.66        1.02536  (10122616)              363804.81   3783092.66        0.82792
       (10122616)
       363829.81   3783092.66        0.67325  (10122616)              363854.81   3783092.66        0.54962
       (10122616)
       363879.81   3783092.66        0.45086  (10122616)              363587.82   3783466.38        1.02463
       (11111116)
       363601.35   3783480.91        0.92161  (11111116)              363601.35   3783505.91        0.81711
       (11111116)
       363601.35   3783530.91        0.72723  (11111116)              363601.35   3783555.91        0.64868
       (11111116)
       363601.35   3783580.91        0.58060  (11111116)              363601.35   3783605.91        0.52046
       (11111116)
       363573.32   3783452.30        1.12337  (11111116)              363561.08   3783441.85        1.18892
       (11111116)
       363551.24   3783438.12        1.18986  (11111116)              363550.94   3783426.26        1.29262
       (11111116)
       363551.19   3783411.48        1.44065  (11111116)              363550.94   3783395.93        1.62347
       (11111116)
       363550.68   3783381.66        1.82541  (11111116)              363550.43   3783363.30        2.14566
       (11111116)
       363536.92   3783363.05        2.11312  (08010616)              363528.51   3783363.30        2.16233
       (08010616)
       363528.25   3783357.44        2.28952  (08010616)              363513.72   3783357.44        2.47041
       (09122016)
       363504.55   3783352.60        2.75088  (09122016)              363507.18   3783337.93        3.18371
       (09122016)
       363501.43   3783331.08        3.53644  (12120116)              363491.71   3783322.46        4.03683
       (12120116)
       363485.30   3783316.28        4.29472  (12120116)              363478.89   3783311.41        4.40468
       (12120116)
       363470.66   3783132.66        6.62551  (11112816)              363470.66   3783157.66       12.10788
       (12112916)
       363470.66   3783182.66       18.06699  (12112916)              363469.56   3783203.46       16.75376
       (09121216)
       363469.56   3783228.46       10.36595  (08112816)              363469.56   3783253.46        7.03405
       (08112816)
       363469.56   3783278.46        5.41038  (09122016)              363469.56   3783303.46        4.38110
       (12120116)
       363798.94   3783066.77        0.96258  (10122616)              363795.11   3783063.90        0.99238
       (10122616)
       363795.43   3783052.56        0.99861  (10122616)              363798.62   3783048.73        0.98046
       (10122616)
       363811.08   3783048.73        0.91118  (10122616)              363815.39   3783052.56        0.88379
       (10122616)
       363815.23   3783063.74        0.86585  (10122616)              363811.24   3783067.41        0.88234
       (10122616)
       363298.29   3783861.01        0.29531  (12120116)              363323.29   3783861.01        0.29925
       (12120116)
       363348.29   3783861.01        0.29363  (12120116)              363373.29   3783861.01        0.27851
       (12120116)
       363398.29   3783861.01        0.25501  (12120116)              363422.49   3783859.43        0.22761
       (12120116)
       363447.49   3783859.43        0.23448  (08121516)              363472.49   3783859.43        0.24304
       (08121516)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                 ***
 15:39:12

PAGE  25
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
```

INCLUDING SOURCE(S): MAINTBLD_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363491.94	3783857.05	0.24865	(08121516)	363517.73	3783858.63	0.25199	(08121516)
363542.73	3783858.63	0.25299	(08121516)	363567.73	3783858.63	0.25096	(08121516)
363593.53	3783857.44	0.24639	(08121516)	363618.53	3783857.44	0.23859	(08121516)
363643.53	3783857.44	0.22841	(08121516)	363671.70	3783856.65	0.21960	(08112616)
363697.10	3783854.67	0.22676	(08112616)	363722.10	3783854.67	0.23401	(12121416)
363746.70	3783854.27	0.24455	(12121416)	363771.70	3783854.27	0.25262	(12121416)
363796.70	3783854.27	0.25818	(12121416)	363821.70	3783854.27	0.26118	(12121416)
363846.70	3783854.27	0.26169	(12121416)	363871.70	3783854.27	0.25984	(12121416)
363896.70	3783854.27	0.25581	(12121416)	363921.70	3783854.27	0.24984	(12121416)
363946.70	3783854.27	0.24221	(12121416)	363971.70	3783854.27	0.23369	(12121416)
363996.70	3783854.27	0.22471	(12121416)	364021.70	3783854.27	0.23285	(12121416)
364046.70	3783854.27	0.23939	(12121416)	364073.73	3783852.30	0.23766	(12121416)
364061.84	3783840.40	0.23550	(12121416)				

FF *** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project *** 08/10/15
*** AERMET - VERSION 14134 *** *** *** 15:39:12

PAGE 26
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: WAREH_V ***
INCLUDING SOURCE(S): WAREHOUSE_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	0.33527	(12121616)	363917.08	3783132.55	0.35917	(12121616)
363917.08	3783157.55	0.38548	(12121616)	363917.08	3783182.55	0.42748	(08121916)
363917.08	3783207.55	0.47638	(08110216)	363918.68	3783233.09	0.53700	(08110216)
363918.68	3783258.09	0.59201	(08110216)	363918.68	3783283.09	0.63851	(08110216)
363918.68	3783308.09	0.67061	(08110216)	363919.21	3783332.28	0.68731	

(08121916)						
363919.21	3783357.28	0.82910	(10122616)	363919.21	3783382.28	1.05768
(10122616)						
363919.21	3783407.28	1.28712	(10122616)	363468.40	3783096.50	0.43087
(11111216)						
363480.32	3783096.24	0.46679	(11111216)	363505.32	3783096.24	0.54005
(11111216)						
363530.32	3783096.24	0.60511	(11111216)	363555.32	3783096.24	0.65579
(11111216)						
363580.32	3783096.24	0.68677	(11111216)	363605.32	3783096.24	0.69427
(11111216)						
363629.81	3783096.24	0.67738	(11111216)	363654.81	3783096.24	0.63674
(11111216)						
363679.81	3783093.68	0.57070	(11111216)	363704.81	3783093.68	0.49697
(11111216)						
363729.81	3783093.56	0.45326	(12122016)	363754.81	3783093.56	0.43554
(12121016)						
363779.81	3783092.66	0.44234	(12121016)	363804.81	3783092.66	0.43318
(12121016)						
363829.81	3783092.66	0.40831	(12121016)	363854.81	3783092.66	0.37116
(12121016)						
363879.81	3783092.66	0.33838	(12121616)	363587.82	3783466.38	3.85352
(11111216)						
363601.35	3783480.91	5.40793	(11111216)	363601.35	3783505.91	6.55164
(11112816)						
363601.35	3783530.91	9.47797	(11112816)	363601.35	3783555.91	13.30436
(09110816)						
363601.35	3783580.91	27.95049	(12112916)	363601.35	3783605.91	33.45594
(09121216)						
363573.32	3783452.30	2.83838	(11112816)	363561.08	3783441.85	2.47336
(11112816)						
363551.24	3783438.12	2.31473	(11112816)	363550.94	3783426.26	2.08950
(11112816)						
363551.19	3783411.48	1.83015	(11112816)	363550.94	3783395.93	1.68121
(11111216)						
363550.68	3783381.66	1.62253	(11111216)	363550.43	3783363.30	1.54163
(11111216)						
363536.92	3783363.05	1.30242	(10120716)	363528.51	3783363.30	1.21595
(10120716)						
363528.25	3783357.44	1.19509	(10120716)	363513.72	3783357.44	1.14074
(11112816)						
363504.55	3783352.60	1.09467	(11112816)	363507.18	3783337.93	0.98548
(11112816)						
363501.43	3783331.08	0.93816	(11112816)	363491.71	3783322.46	0.88328
(11112816)						
363485.30	3783316.28	0.84657	(11112816)	363478.89	3783311.41	0.81865
(11112816)						
363470.66	3783132.66	0.47051	(10120716)	363470.66	3783157.66	0.50685
(10120716)						
363470.66	3783182.66	0.54279	(10120716)	363469.56	3783203.46	0.56858
(10120716)						
363469.56	3783228.46	0.59904	(10120716)	363469.56	3783253.46	0.62396
(10120716)						
363469.56	3783278.46	0.66329	(11112816)	363469.56	3783303.46	0.77571
(11112816)						
363798.94	3783066.77	0.40150	(12121016)	363795.11	3783063.90	0.39873
(12121016)						
363795.43	3783052.56	0.38403	(12121016)	363798.62	3783048.73	0.37875
(12121016)						
363811.08	3783048.73	0.37487	(12121016)	363815.39	3783052.56	0.37704
(12121016)						
363815.23	3783063.74	0.38982	(12121016)	363811.24	3783067.41	0.39664
(12121016)						
363298.29	3783861.01	0.82288	(08112816)	363323.29	3783861.01	0.89121

```
       (08112816)
       363348.29   3783861.01        0.95583  (08112816)              363373.29   3783861.01        1.01260
       (08112816)
       363398.29   3783861.01        1.05647  (08112816)              363422.49   3783859.43        1.09399
       (08112816)
       363447.49   3783859.43        1.09848  (08112816)              363472.49   3783859.43        1.09269
       (09122016)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 15:39:12

PAGE  27
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF NOX      IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        1.33630  (09122016)              363517.73   3783858.63        1.66888
       (12120116)
       363542.73   3783858.63        2.03806  (12120116)              363567.73   3783858.63        2.28023
       (12120116)
       363593.53   3783857.44        2.32855  (12120116)              363618.53   3783857.44        2.11144
       (12120116)
       363643.53   3783857.44        1.83743  (08010616)              363671.70   3783856.65        1.74341
       (08010616)
       363697.10   3783854.67        1.86920  (11111116)              363722.10   3783854.67        1.83401
       (11111116)
       363746.70   3783854.27        1.81388  (12111716)              363771.70   3783854.27        1.75180
       (12111716)
       363796.70   3783854.27        1.52519  (12111716)              363821.70   3783854.27        1.21218
       (12111716)
       363846.70   3783854.27        1.38846  (12121716)              363871.70   3783854.27        1.61694
       (12121716)
       363896.70   3783854.27        1.76826  (12121716)              363921.70   3783854.27        1.83829
       (12121716)
       363946.70   3783854.27        1.83465  (12121716)              363971.70   3783854.27        1.77231
       (12121716)
       363996.70   3783854.27        1.66777  (12121716)              364021.70   3783854.27        1.56195
       (12121716)
       364046.70   3783854.27        1.43006  (12121716)              364073.73   3783852.30        1.26767
       (12121716)
       364061.84   3783840.40        1.31706
       (12121716)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 15:39:12

PAGE  28
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***
```

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	7.93965	(10122616)	363917.08	3783132.55	10.25426	(10122616)
363917.08	3783157.55	9.59156	(10122616)	363917.08	3783182.55	10.48936	(12121716)
363917.08	3783207.55	15.37344	(12121716)	363918.68	3783233.09	15.57915	(12121716)
363918.68	3783258.09	13.38701	(12121716)	363918.68	3783283.09	10.06306	(12121716)
363918.68	3783308.09	6.91091	(12121716)	363919.21	3783332.28	6.19775	(12121616)
363919.21	3783357.28	6.68062	(12121616)	363919.21	3783382.28	7.64115	(12121616)
363919.21	3783407.28	10.08774	(10122616)	363468.40	3783096.50	5.11117	(12121616)
363480.32	3783096.24	5.99197	(11111216)	363505.32	3783096.24	8.99349	(11111216)
363530.32	3783096.24	9.49654	(11111216)	363555.32	3783096.24	6.84095	(12121616)
363580.32	3783096.24	6.09415	(12121616)	363605.32	3783096.24	5.41286	(12121616)
363629.81	3783096.24	4.99880	(12121616)	363654.81	3783096.24	4.85429	(12121616)
363679.81	3783093.68	4.92145	(12121616)	363704.81	3783093.68	5.30933	(12121616)
363729.81	3783093.56	5.99432	(12121616)	363754.81	3783093.56	7.02793	(12121616)
363779.81	3783092.66	10.16546	(11111216)	363804.81	3783092.66	14.55130	(11111216)
363829.81	3783092.66	15.44684	(11111216)	363854.81	3783092.66	11.38415	(11111216)
363879.81	3783092.66	7.97749	(12121616)	363587.82	3783466.38	5.71422	(12121616)
363601.35	3783480.91	6.69152	(12121616)	363601.35	3783505.91	8.15006	(12121616)
363601.35	3783530.91	10.45411	(12121616)	363601.35	3783555.91	14.32138	(09110816)
363601.35	3783580.91	29.52908	(12112916)	363601.35	3783605.91	35.98973	(09121216)
363573.32	3783452.30	5.01983	(12121616)	363561.08	3783441.85	4.60577	(12121616)
363551.24	3783438.12	4.37988	(12121616)	363550.94	3783426.26	4.27612	(12121616)
363551.19	3783411.48	4.19094	(12121616)	363550.94	3783395.93	4.13413	(12121616)
363550.68	3783381.66	4.11926	(12121616)	363550.43	3783363.30	4.15787	(12121616)
363536.92	3783363.05	4.02104	(12121616)	363528.51	3783363.30	3.93228	(12121616)
363528.25	3783357.44	3.96482	(12121616)	363513.72	3783357.44	3.81319	(12121616)
363504.55	3783352.60	3.75188	(12121616)	363507.18	3783337.93	3.92622	(12121616)
363501.43	3783331.08	3.94991	(12121616)	363491.71	3783322.46	4.14645	(12120116)
363485.30	3783316.28	4.39867	(12120116)	363478.89	3783311.41	4.50365	(12120116)
363470.66	3783132.66	7.91820	(12121616)	363470.66	3783157.66	13.50743	

```
        (12112916)
        363470.66   3783182.66       19.70584  (12112916)                363469.56   3783203.46       17.77309
        (09121216)
        363469.56   3783228.46       11.04832  (08112816)                363469.56   3783253.46        7.85405
        (08112816)
        363469.56   3783278.46        5.54902  (09122016)                363469.56   3783303.46        4.49435
        (09122016)
        363798.94   3783066.77       10.01307  (11111216)                363795.11   3783063.90        9.42838
        (11111216)
        363795.43   3783052.56        8.43028  (11111216)                363798.62   3783048.73        8.27506
        (11111216)
        363811.08   3783048.73        8.62083  (11111216)                363815.39   3783052.56        9.02183
        (11111216)
        363815.23   3783063.74       10.30450  (11111216)                363811.24   3783067.41       10.72564
        (11111216)
        363298.29   3783861.01        1.41054  (08112816)                363323.29   3783861.01        1.49244
        (08112816)
        363348.29   3783861.01        1.56992  (08112816)                363373.29   3783861.01        1.63835
        (08112816)
        363398.29   3783861.01        1.69207  (08112816)                363422.49   3783859.43        1.74066
        (08112816)
        363447.49   3783859.43        1.74952  (08112816)                363472.49   3783859.43        1.72334
        (08112816)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:39:12

PAGE  29
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        2.00849  (09122016)                363517.73   3783858.63        2.41409
        (09122016)
        363542.73   3783858.63        2.82072  (12120116)                363567.73   3783858.63        3.19578
        (12120116)
        363593.53   3783857.44        3.40641  (12120116)                363618.53   3783857.44        3.36407
        (12120116)
        363643.53   3783857.44        3.17037  (09122016)                363671.70   3783856.65        2.87468
        (09122016)
        363697.10   3783854.67        2.76062  (08010616)                363722.10   3783854.67        2.60371
        (08010616)
        363746.70   3783854.27        2.41065  (08010616)                363771.70   3783854.27        2.19287
        (08010616)
        363796.70   3783854.27        1.97860  (08010616)                363821.70   3783854.27        1.85950
        (12121616)
        363846.70   3783854.27        1.79971  (12121616)                363871.70   3783854.27        1.73635
        (12121616)
        363896.70   3783854.27        1.84707  (12121716)                363921.70   3783854.27        1.93209
        (12121716)
        363946.70   3783854.27        1.95401  (12121716)                363971.70   3783854.27        1.93389
        (12121716)
        363996.70   3783854.27        1.89370  (12121716)                364021.70   3783854.27        1.86775
        (12121716)
```

```
        364046.70   3783854.27        1.98183  (12121416)                364073.73   3783852.30        2.22988
        (12121416)
        364061.84   3783840.40        2.19586
        (12121416)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 15:39:12

PAGE  30
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                    *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   5 YEARS ***


                                     ** CONC OF NOX      IN MICROGRAMS/M**3                         **

                                                                                                              NETWORK
GROUP ID                       AVERAGE CONC              RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


AWPF_V    1ST HIGHEST VALUE IS       0.56169 AT (  363829.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          2ND HIGHEST VALUE IS       0.50586 AT (  363854.81,  3783092.66,   215.15,   215.15,    2.00)  DC
          3RD HIGHEST VALUE IS       0.49810 AT (  363804.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          4TH HIGHEST VALUE IS       0.44689 AT (  363917.08,  3783182.55,   214.25,   214.25,    2.00)  DC
          5TH HIGHEST VALUE IS       0.42228 AT (  363917.08,  3783157.55,   214.50,   214.50,    2.00)  DC
          6TH HIGHEST VALUE IS       0.39667 AT (  363917.08,  3783207.55,   214.10,   214.10,    2.00)  DC
          7TH HIGHEST VALUE IS       0.38054 AT (  363879.81,  3783092.66,   215.09,   215.09,    2.00)  DC
          8TH HIGHEST VALUE IS       0.37038 AT (  363779.81,  3783092.66,   215.25,   215.25,    2.00)  DC
          9TH HIGHEST VALUE IS       0.34344 AT (  363917.08,  3783132.55,   214.83,   214.83,    2.00)  DC
         10TH HIGHEST VALUE IS       0.30598 AT (  363811.24,  3783067.41,   215.20,   215.20,    2.00)  DC

FLOWEQ_V  1ST HIGHEST VALUE IS       0.37221 AT (  363919.21,  3783407.28,   217.57,   217.57,    2.00)  DC
          2ND HIGHEST VALUE IS       0.26008 AT (  363919.21,  3783382.28,   217.33,   217.33,    2.00)  DC
          3RD HIGHEST VALUE IS       0.18524 AT (  363919.21,  3783357.28,   217.08,   217.08,    2.00)  DC
          4TH HIGHEST VALUE IS       0.13613 AT (  363919.21,  3783332.28,   216.70,   216.70,    2.00)  DC
          5TH HIGHEST VALUE IS       0.10410 AT (  363918.68,  3783308.09,   216.24,   216.24,    2.00)  DC
          6TH HIGHEST VALUE IS       0.08065 AT (  363918.68,  3783283.09,   215.48,   215.48,    2.00)  DC
          7TH HIGHEST VALUE IS       0.06407 AT (  363918.68,  3783258.09,   214.80,   214.80,    2.00)  DC
          8TH HIGHEST VALUE IS       0.05196 AT (  363918.68,  3783233.09,   214.34,   214.34,    2.00)  DC
          9TH HIGHEST VALUE IS       0.04994 AT (  363601.35,  3783505.91,   218.94,   218.94,    2.00)  DC
         10TH HIGHEST VALUE IS       0.04946 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC

MAINTB_V  1ST HIGHEST VALUE IS       0.64700 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
          2ND HIGHEST VALUE IS       0.58084 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
          3RD HIGHEST VALUE IS       0.52212 AT (  363469.56,  3783203.46,   216.05,   216.05,    2.00)  DC
          4TH HIGHEST VALUE IS       0.39808 AT (  363470.66,  3783132.66,   215.70,   215.70,    2.00)  DC
          5TH HIGHEST VALUE IS       0.36746 AT (  363530.32,  3783096.24,   215.37,   215.37,    2.00)  DC
          6TH HIGHEST VALUE IS       0.35178 AT (  363469.56,  3783228.46,   216.19,   216.19,    2.00)  DC
          7TH HIGHEST VALUE IS       0.32841 AT (  363505.32,  3783096.24,   215.45,   215.45,    2.00)  DC
          8TH HIGHEST VALUE IS       0.32162 AT (  363555.32,  3783096.24,   215.36,   215.36,    2.00)  DC
          9TH HIGHEST VALUE IS       0.24147 AT (  363480.32,  3783096.24,   215.48,   215.48,    2.00)  DC
         10TH HIGHEST VALUE IS       0.23425 AT (  363580.32,  3783096.24,   215.34,   215.34,    2.00)  DC

WAREH_V   1ST HIGHEST VALUE IS       0.95364 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
          2ND HIGHEST VALUE IS       0.91353 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
          3RD HIGHEST VALUE IS       0.72119 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
          4TH HIGHEST VALUE IS       0.47611 AT (  363601.35,  3783530.91,   219.52,   219.52,    2.00)  DC
          5TH HIGHEST VALUE IS       0.31449 AT (  363601.35,  3783505.91,   218.94,   218.94,    2.00)  DC
          6TH HIGHEST VALUE IS       0.21436 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC
          7TH HIGHEST VALUE IS       0.15296 AT (  363587.82,  3783466.38,   218.13,   218.13,    2.00)  DC
          8TH HIGHEST VALUE IS       0.11270 AT (  363573.32,  3783452.30,   217.83,   217.83,    2.00)  DC
          9TH HIGHEST VALUE IS       0.09053 AT (  363561.08,  3783441.85,   217.73,   217.73,    2.00)  DC
         10TH HIGHEST VALUE IS       0.08012 AT (  363551.24,  3783438.12,   217.69,   217.69,    2.00)  DC
```

```
*** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
 15:39:12

PAGE  31
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                   *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   5 YEARS ***


                                    ** CONC OF NOX      IN MICROGRAMS/M**3                         **

                                                                                                               NETWORK
GROUP ID                       AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


ALL       1ST HIGHEST VALUE IS       1.01936 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
          2ND HIGHEST VALUE IS       0.97348 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
          3RD HIGHEST VALUE IS       0.79259 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
          4TH HIGHEST VALUE IS       0.68986 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
          5TH HIGHEST VALUE IS       0.62127 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
          6TH HIGHEST VALUE IS       0.60727 AT (  363829.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          7TH HIGHEST VALUE IS       0.56670 AT (  363469.56,  3783203.46,   216.05,   216.05,    2.00)  DC
          8TH HIGHEST VALUE IS       0.55280 AT (  363601.35,  3783530.91,   219.52,   219.52,    2.00)  DC
          9TH HIGHEST VALUE IS       0.54882 AT (  363854.81,  3783092.66,   215.15,   215.15,    2.00)  DC
         10TH HIGHEST VALUE IS       0.54648 AT (  363804.81,  3783092.66,   215.18,   215.18,    2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
*** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
 15:39:12

PAGE  32
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                  *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                    ** CONC OF NOX      IN MICROGRAMS/M**3                         **


                                                      DATE
                                                           NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -


AWPF_V   HIGH   1ST HIGH VALUE IS      15.25996  ON 12121716: AT (  363918.68,  3783233.09,   214.34,   214.34,
2.00)  DC

FLOWEQ_V HIGH   1ST HIGH VALUE IS       8.74092  ON 10122616: AT (  363919.21,  3783407.28,   217.57,   217.57,
2.00)  DC

MAINTB_V HIGH   1ST HIGH VALUE IS      18.06699  ON 12112916: AT (  363470.66,  3783182.66,   215.94,   215.94,
2.00)  DC

WAREH_V  HIGH   1ST HIGH VALUE IS      33.45594  ON 09121216: AT (  363601.35,  3783605.91,   220.26,   220.26,
```

```
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS      35.98973  ON 09121216: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
 15:39:12

PAGE  33
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of         1173 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of            2 Calm Hours Identified

 A Total of         1171 Missing Hours Identified (  2.67 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

```
****************************************
** AERMOD CONTROL PATHWAY
****************************************
**
**
CO STARTING
   TITLEONE LA GROUND WATER REPLENISHMENT PROJECT
   TITLETWO PM2.5
   MODELOPT DFAULT CONC
   AVERTIME 24 PERIOD
   URBANOPT 9862049
   POLLUTID PM_10
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-PM10.ERR
CO FINISHED
**
****************************************
** AERMOD SOURCE PATHWAY
****************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
   LOCATION WAREHOUSE_A  AREAPOLY   363620.218  3783575.063      220.050
   LOCATION FLOWEQ_A     AREAPOLY   363806.468  3783509.252      218.180
   LOCATION MAINTBLD_A   AREAPOLY   363535.013  3783246.682      216.260
   LOCATION AWPF_A       AREAPOLY   363795.721  3783130.715      215.240
** SOURCE PARAMETERS **
   SRCPARAM WAREHOUSE_A  0.00002034     1.000         4
   AREAVERT WAREHOUSE_A  363620.218 3783575.063 363701.152 3783574.154
   AREAVERT WAREHOUSE_A  363701.698 3783600.889 363619.673 3783600.707
   SRCPARAM FLOWEQ_A     0.00001226     1.000         4
   AREAVERT FLOWEQ_A     363806.468 3783509.252 363807.165 3783434.338
   AREAVERT FLOWEQ_A     363889.396 3783433.293 363890.789 3783507.858
   SRCPARAM MAINTBLD_A   0.00001015     1.000         6
   AREAVERT MAINTBLD_A   363535.013 3783246.682 363555.349 3783246.117
   AREAVERT MAINTBLD_A   363554.220 3783139.354 363503.945 3783141.048
   AREAVERT MAINTBLD_A   363502.250 3783217.873 363532.754 3783216.743
   SRCPARAM AWPF_A       8.201E-06     1.000         5
   AREAVERT AWPF_A       363795.721 3783130.715 363864.412 3783129.674
   AREAVERT AWPF_A       363866.494 3783220.222 363795.027 3783220.916
   AREAVERT AWPF_A       363795.027 3783132.103
   URBANSRC ALL

** VARIABLE EMISSIONS TYPE: "BY HOUR-OF-DAY (HROFDY)"
** VARIABLE EMISSION SCENARIO: "WORKHOURS"
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT WAREHOUSE_A  HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_A     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT MAINTBLD_A   HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AWPF_A       HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
```

```
   SRCGROUP SRCGP1   WAREHOUSE_A
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD RECEPTOR PATHWAY
****************************************
**
**
RE STARTING
   INCLUDED GWRP-PM10.ROU
RE FINISHED
**
****************************************
** AERMOD METEOROLOGY PATHWAY
****************************************
**
**
ME STARTING
   SURFFILE ..\..\RESE8.SFC
   PROFFILE ..\..\RESE8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
** AERMOD OUTPUT PATHWAY
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   24 ALL 1ST GWRP-PM10.AD\24H1GALL.PLT 31
   PLOTFILE   24 SRCGP1 1ST GWRP-PM10.AD\24H1G001.PLT 32
   PLOTFILE   PERIOD ALL GWRP-PM10.AD\PE00GALL.PLT 33
   PLOTFILE   PERIOD SRCGP1 GWRP-PM10.AD\PE00G000.PLT 34
   SUMMFILE GWRP-PM10.SUM
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                 ***
 15:43:12

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
```

```
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     4 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:  24-HR
     and Calculates PERIOD Averages

 **This Run Includes:      4 Source(s);       2 Source Group(s); and     108 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-PM10.ERR
 **File for Summary of Results:
 GWRP-PM10.SUM
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                          ***
 15:43:12

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                  *** AREAPOLY SOURCE DATA ***

               NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE  NUMBER      INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X         Y      ELEV.    HEIGHT  OF VERTS.     SZ     SOURCE  SCALAR VARY
```

```
    ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)           (METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 WAREHOUSE_A      0   0.20340E-04  363620.2 3783575.1   220.1     1.00       4         0.00     YES   HROFDY
 FLOWEQ_A         0   0.12260E-04  363806.5 3783509.3   218.2     1.00       4         0.00     YES   HROFDY
 MAINTBLD_A       0   0.10150E-04  363535.0 3783246.7   216.3     1.00       6         0.00     YES   HROFDY
 AWPF_A           0   0.82010E-05  363795.7 3783130.7   215.2     1.00       5         0.00     YES   HROFDY
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 15:43:12

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                              SOURCE IDs
 -----------                                              ----------



  SRCGP1     WAREHOUSE_A ,

  ALL        WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 15:43:12

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                            *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                    SOURCE IDs
  --------   ---------                                    ----------



              9862049.   WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 15:43:12

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

    HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -



 SOURCE ID = WAREHOUSE_A  ; SOURCE TYPE = AREAPOLY :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00
```

```
 SOURCE ID = FLOWEQ_A     ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = MAINTBLD_A   ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = AWPF_A       ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 15:43:12

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);         ( 363917.1, 3783132.5,     214.8,
     214.8,       2.0);
     ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);         ( 363917.1, 3783182.5,     214.2,
     214.2,       2.0);
     ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);         ( 363918.7, 3783233.1,     214.3,
     214.3,       2.0);
     ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);         ( 363918.7, 3783283.1,     215.5,
     215.5,       2.0);
     ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);         ( 363919.2, 3783332.3,     216.7,
     216.7,       2.0);
     ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);         ( 363919.2, 3783382.3,     217.3,
     217.3,       2.0);
     ( 363919.2, 3783407.3,     217.6,     217.6,       2.0);         ( 363468.4, 3783096.5,     215.5,
     215.5,       2.0);
     ( 363480.3, 3783096.2,     215.5,     215.5,       2.0);         ( 363505.3, 3783096.2,     215.5,
     215.5,       2.0);
     ( 363530.3, 3783096.2,     215.4,     215.4,       2.0);         ( 363555.3, 3783096.2,     215.4,
     215.4,       2.0);
     ( 363580.3, 3783096.2,     215.3,     215.3,       2.0);         ( 363605.3, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363629.8, 3783096.2,     215.4,     215.4,       2.0);         ( 363654.8, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363679.8, 3783093.7,     215.2,     215.2,       2.0);         ( 363704.8, 3783093.7,     215.2,
     215.2,       2.0);
     ( 363729.8, 3783093.6,     215.2,     215.2,       2.0);         ( 363754.8, 3783093.6,     215.3,
     215.3,       2.0);
     ( 363779.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363804.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363829.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363854.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363879.8, 3783092.7,     215.1,     215.1,       2.0);         ( 363587.8, 3783466.4,     218.1,
     218.1,       2.0);
```

```
    ( 363601.3, 3783480.9,     218.4,     218.4,       2.0);         ( 363599.5, 3783505.7,     218.9,
    218.9,       2.0);
    ( 363573.3, 3783452.3,     217.8,     217.8,       2.0);         ( 363561.1, 3783441.8,     217.7,
    217.7,       2.0);
    ( 363551.2, 3783438.1,     217.7,     217.7,       2.0);         ( 363550.9, 3783426.3,     217.6,
    217.6,       2.0);
    ( 363551.2, 3783411.5,     217.3,     217.3,       2.0);         ( 363550.9, 3783395.9,     217.2,
    217.2,       2.0);
    ( 363550.7, 3783381.7,     217.1,     217.1,       2.0);         ( 363550.4, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363536.9, 3783363.0,     217.0,     217.0,       2.0);         ( 363528.5, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363528.2, 3783357.4,     217.0,     217.0,       2.0);         ( 363513.7, 3783357.4,     217.0,
    217.0,       2.0);
    ( 363504.5, 3783352.6,     216.9,     216.9,       2.0);         ( 363507.2, 3783337.9,     216.8,
    216.8,       2.0);
    ( 363501.4, 3783331.1,     216.8,     216.8,       2.0);         ( 363491.7, 3783322.5,     216.7,
    216.7,       2.0);
    ( 363485.3, 3783316.3,     216.7,     216.7,       2.0);         ( 363478.9, 3783311.4,     216.7,
    216.7,       2.0);
    ( 363470.7, 3783132.7,     215.7,     215.7,       2.0);         ( 363470.7, 3783157.7,     215.8,
    215.8,       2.0);
    ( 363470.7, 3783182.7,     215.9,     215.9,       2.0);         ( 363469.6, 3783203.5,     216.1,
    216.1,       2.0);
    ( 363469.6, 3783228.5,     216.2,     216.2,       2.0);         ( 363469.6, 3783253.5,     216.4,
    216.4,       2.0);
    ( 363469.6, 3783278.5,     216.5,     216.5,       2.0);         ( 363469.6, 3783303.5,     216.7,
    216.7,       2.0);
    ( 363798.9, 3783066.8,     215.2,     215.2,       2.0);         ( 363795.1, 3783063.9,     215.2,
    215.2,       2.0);
    ( 363795.4, 3783052.6,     215.2,     215.2,       2.0);         ( 363798.6, 3783048.7,     215.2,
    215.2,       2.0);
    ( 363811.1, 3783048.7,     215.2,     215.2,       2.0);         ( 363815.4, 3783052.6,     215.2,
    215.2,       2.0);
    ( 363815.2, 3783063.7,     215.2,     215.2,       2.0);         ( 363811.2, 3783067.4,     215.2,
    215.2,       2.0);
    ( 363298.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363323.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363348.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363373.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363422.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);         ( 363472.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);         ( 363517.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);         ( 363567.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363618.5, 3783857.4,     220.2,
    220.2,       2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363671.7, 3783856.6,     220.2,
    220.2,       2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);         ( 363722.1, 3783854.7,     220.2,
    220.2,       2.0);
    ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363771.7, 3783854.3,     220.2,
    220.2,       2.0);
    ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363821.7, 3783854.3,     220.2,
    220.2,       2.0);
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                     ***
 15:43:12

PAGE   7
```

```
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                         *** DISCRETE CARTESIAN RECEPTORS ***
                                        (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                       (METERS)

     ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363871.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363921.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363971.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);         ( 364021.7, 3783854.3,     221.2,
     221.2,       2.0);
     ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);         ( 364073.7, 3783852.3,     223.7,
     223.7,       2.0);
     ( 364061.8, 3783840.4,     222.8,     222.8,       2.0);         ( 363599.5, 3783520.9,     219.3,
     219.3,       2.0);
     ( 363599.5, 3783539.4,     219.6,     219.6,       2.0);         ( 363599.1, 3783552.3,     219.9,
     219.9,       2.0);
     ( 363599.3, 3783565.5,     220.1,     220.1,       2.0);         ( 363599.5, 3783584.2,     220.3,
     220.3,       2.0);
     ( 363599.7, 3783598.2,     220.3,     220.3,       2.0);         ( 363589.8, 3783607.5,     220.2,
     220.2,       2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                              ***
 15:43:12

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                        *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                           (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                            (METERS/SEC)

                                                    1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                              ***
 15:43:12

PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   ..\..\RESE8.SFC                                                                    Met Version:  14134
   Profile file:   ..\..\RESE8.PFL
```

```
   Surface format:
   FREE
   Profile format:
   FREE
   Surface station no.:        0                Upper air station no.:     3190
                  Name: UNKNOWN                                Name: UNKNOWN
                  Year:   2008                                 Year:   2008

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-
 08 01 01   1 01 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 02 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 03 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 06 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 07 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.56  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 09   22.6 -9.000 -9.000 -9.000   54. -999. -99999.0  0.50   1.00   0.32  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 10   71.8 -9.000 -9.000 -9.000  147. -999. -99999.0  0.50   1.00   0.24  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 11  111.2 -9.000 -9.000 -9.000  357. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 12  128.1 -9.000 -9.000 -9.000  571. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 13  127.4 -9.000 -9.000 -9.000  712. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 14  109.8 -9.000 -9.000 -9.000  763. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  290.9    5.5
 08 01 01   1 15   52.2 -9.000 -9.000 -9.000  786. -999. -99999.0  0.50   1.00   0.25  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 16   27.2 -9.000 -9.000 -9.000  796. -999. -99999.0  0.50   1.00   0.33  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 17 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.59  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 18 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 08 01 01 01    5.5 0 -999.  -99.00   287.1   99.0  -99.00  -99.00
 08 01 01 01    9.1 1 -999.  -99.00  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                       ***
 15:43:12

PAGE  10
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_10    IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363917.08    3783107.55        0.00551                      363917.08    3783132.55
        0.00580
```

363917.08	3783157.55	0.00613	363917.08	3783182.55	0.00651
363917.08	3783207.55	0.00695	363918.68	3783233.09	0.00742
363918.68	3783258.09	0.00802	363918.68	3783283.09	0.00873
363918.68	3783308.09	0.00958	363919.21	3783332.28	0.01053
363919.21	3783357.28	0.01173	363919.21	3783382.28	0.01314
363919.21	3783407.28	0.01477	363468.40	3783096.50	0.00738
363480.32	3783096.24	0.00781	363505.32	3783096.24	0.00879
363530.32	3783096.24	0.00986	363555.32	3783096.24	0.01095
363580.32	3783096.24	0.01200	363605.32	3783096.24	0.01292
363629.81	3783096.24	0.01361	363654.81	3783096.24	0.01402
363679.81	3783093.68	0.01394	363704.81	3783093.68	0.01364
363729.81	3783093.56	0.01300	363754.81	3783093.56	0.01210
363779.81	3783092.66	0.01098	363804.81	3783092.66	0.00981
363829.81	3783092.66	0.00864	363854.81	3783092.66	0.00754
363879.81	3783092.66	0.00656	363587.82	3783466.38	0.14936
363601.35	3783480.91	0.21515	363599.46	3783505.72	0.34045
363573.32	3783452.30	0.10716	363561.08	3783441.85	0.08425
363551.24	3783438.12	0.07386	363550.94	3783426.26	0.06513
363551.19	3783411.48	0.05672	363550.94	3783395.93	0.04947
363550.68	3783381.66	0.04405	363550.43	3783363.30	0.03842
363536.92	3783363.05	0.03455	363528.51	3783363.30	0.03245
363528.25	3783357.44	0.03115	363513.72	3783357.44	0.02799
363504.55	3783352.60	0.02544	363507.18	3783337.93	0.02372
363501.43	3783331.08	0.02193	363491.71	3783322.46	0.01961
363485.30	3783316.28	0.01822	363478.89	3783311.41	0.01708
363470.66	3783132.66	0.00827	363470.66	3783157.66	0.00892
363470.66	3783182.66	0.00966	363469.56	3783203.46	0.01030
363469.56	3783228.46	0.01127	363469.56	3783253.46	0.01242
363469.56	3783278.46	0.01381	363469.56	3783303.46	0.01552
363798.94	3783066.77	0.00935	363795.11	3783063.90	0.00943
363795.43	3783052.56	0.00912	363798.62	3783048.73	0.00890
363811.08	3783048.73	0.00843	363815.39	3783052.56	0.00835

```
        363815.23    3783063.74        0.00861                       363811.24    3783067.41
        0.00886
        363298.29    3783861.01        0.02452                       363323.29    3783861.01
        0.02658
        363348.29    3783861.01        0.02880                       363373.29    3783861.01
        0.03119
        363398.29    3783861.01        0.03375                       363422.49    3783859.43
        0.03665
        363447.49    3783859.43        0.03946                       363472.49    3783859.43
        0.04233
        363491.94    3783857.05        0.04528                       363517.73    3783858.63
        0.04760
        363542.73    3783858.63        0.05002                       363567.73    3783858.63
        0.05188
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                  ***
 15:43:12

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363593.53    3783857.44        0.05348                       363618.53    3783857.44
        0.05346
        363643.53    3783857.44        0.05226                       363671.70    3783856.65
        0.04985
        363697.10    3783854.67        0.04705                       363722.10    3783854.67
        0.04282
        363746.70    3783854.27        0.03846                       363771.70    3783854.27
        0.03392
        363796.70    3783854.27        0.02965                       363821.70    3783854.27
        0.02581
        363846.70    3783854.27        0.02246                       363871.70    3783854.27
        0.01961
        363896.70    3783854.27        0.01722                       363921.70    3783854.27
        0.01520
        363946.70    3783854.27        0.01350                       363971.70    3783854.27
        0.01205
        363996.70    3783854.27        0.01081                       364021.70    3783854.27
        0.00968
        364046.70    3783854.27        0.00870                       364073.73    3783852.30
        0.00782
        364061.84    3783840.40        0.00846                       363599.49    3783520.86
        0.48268
        363599.49    3783539.39        0.81532                       363599.11    3783552.26
        1.24095
        363599.30    3783565.50        1.95222                       363599.49    3783584.22
        3.09368
        363599.68    3783598.22        3.24153                       363589.84    3783607.49
        1.91950
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                  ***
 15:43:12
```

PAGE 12
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_A , FLOWEQ_A , MAINTBLD_A , AWPF_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.31100	363917.08	3783132.55	0.40328
363917.08	3783157.55	0.49571	363917.08	3783182.55	0.54959
363917.08	3783207.55	0.54426	363918.68	3783233.09	0.46727
363918.68	3783258.09	0.39851	363918.68	3783283.09	0.34930
363918.68	3783308.09	0.33060	363919.21	3783332.28	0.34216
363919.21	3783357.28	0.39071	363919.21	3783382.28	0.49494
363919.21	3783407.28	0.69244	363468.40	3783096.50	0.41989
363480.32	3783096.24	0.49212	363505.32	3783096.24	0.64505
363530.32	3783096.24	0.69723	363555.32	3783096.24	0.59684
363580.32	3783096.24	0.43529	363605.32	3783096.24	0.31640
363629.81	3783096.24	0.25726	363654.81	3783096.24	0.23878
363679.81	3783093.68	0.24227	363704.81	3783093.68	0.27559
363729.81	3783093.56	0.34102	363754.81	3783093.56	0.45908
363779.81	3783092.66	0.63583	363804.81	3783092.66	0.82843
363829.81	3783092.66	0.88717	363854.81	3783092.66	0.74974
363879.81	3783092.66	0.51635	363587.82	3783466.38	0.36355
363601.35	3783480.91	0.44522	363599.46	3783505.72	0.56441
363573.32	3783452.30	0.30949	363561.08	3783441.85	0.27994
363551.24	3783438.12	0.26476	363550.94	3783426.26	0.26080
363551.19	3783411.48	0.26073	363550.94	3783395.93	0.26521
363550.68	3783381.66	0.27461	363550.43	3783363.30	0.29655
363536.92	3783363.05	0.29386	363528.51	3783363.30	0.29089
363528.25	3783357.44	0.30265	363513.72	3783357.44	0.29745
363504.55	3783352.60	0.30493	363507.18	3783337.93	0.35353
363501.43	3783331.08	0.37821	363491.71	3783322.46	0.41077

363485.30	3783316.28	0.43598	363478.89	3783311.41	0.45226
363470.66	3783132.66	1.03764	363470.66	3783157.66	1.70979
363470.66	3783182.66	2.14178	363469.56	3783203.46	2.03795
363469.56	3783228.46	1.59303	363469.56	3783253.46	1.06232
363469.56	3783278.46	0.69792	363469.56	3783303.46	0.47793
363798.94	3783066.77	0.42577	363795.11	3783063.90	0.39426
363795.43	3783052.56	0.32650	363798.62	3783048.73	0.31344
363811.08	3783048.73	0.33051	363815.39	3783052.56	0.35560
363815.23	3783063.74	0.43255	363811.24	3783067.41	0.45837
363298.29	3783861.01	0.05643	363323.29	3783861.01	0.05970
363348.29	3783861.01	0.06316	363373.29	3783861.01	0.06684
363398.29	3783861.01	0.07072	363422.49	3783859.43	0.07511
363447.49	3783859.43	0.07930	363472.49	3783859.43	0.08357
363491.94	3783857.05	0.08798	363517.73	3783858.63	0.09155
363542.73	3783858.63	0.09541	363567.73	3783858.63	0.09872

FF *** AERMOD - VERSION 14134 *** *** LA GROUND WATER REPLENISHMENT PROJECT *** 08/10/15
*** AERMET - VERSION 14134 *** *** PM2.5 *** 15:43:12

PAGE 13
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_A , FLOWEQ_A , MAINTBLD_A , AWPF_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363593.53	3783857.44	0.10204	363618.53	3783857.44	0.10347
363643.53	3783857.44	0.10367	363671.70	3783856.65	0.10290
363697.10	3783854.67	0.10175	363722.10	3783854.67	0.09840
363746.70	3783854.27	0.09466	363771.70	3783854.27	0.09016
363796.70	3783854.27	0.08538	363821.70	3783854.27	0.08045
363846.70	3783854.27	0.07546	363871.70	3783854.27	0.07048
363896.70	3783854.27	0.06557	363921.70	3783854.27	0.06076
363946.70	3783854.27	0.05611	363971.70	3783854.27	0.05164

```
        363996.70    3783854.27        0.04740                          364021.70    3783854.27
        0.04321
        364046.70    3783854.27        0.03935                          364073.73    3783852.30
        0.03580
        364061.84    3783840.40        0.03885                          363599.49    3783520.86
        0.70221
        363599.49    3783539.39        1.02703                          363599.11    3783552.26
        1.44522
        363599.30    3783565.50        2.14852                          363599.49    3783584.22
        3.27731
        363599.68    3783598.22        3.41519                          363589.84    3783607.49
        2.07835
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                               ***
 15:43:12

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        0.10415m (10122624)            363917.08   3783132.55        0.10893m
       (10122624)
       363917.08   3783157.55        0.11273m (10122624)            363917.08   3783182.55        0.11536m
       (10122624)
       363917.08   3783207.55        0.11661m (10122624)            363918.68   3783233.09        0.11479m
       (10122624)
       363918.68   3783258.09        0.11368m (10122624)            363918.68   3783283.09        0.11269m
       (10122624)
       363918.68   3783308.09        0.11493  (10102124)            363919.21   3783332.28        0.12586
       (10102124)
       363919.21   3783357.28        0.13913  (10102124)            363919.21   3783382.28        0.15565
       (10102124)
       363919.21   3783407.28        0.18010m (10030724)            363468.40   3783096.50        0.09139
       (11121224)
       363480.32   3783096.24        0.09055m (10111124)            363505.32   3783096.24        0.09701m
       (10111124)
       363530.32   3783096.24        0.09961m (10111124)            363555.32   3783096.24        0.11645
       (11111024)
       363580.32   3783096.24        0.13275  (11111024)            363605.32   3783096.24        0.14027
       (11111024)
       363629.81   3783096.24        0.13739  (11111024)            363654.81   3783096.24        0.13078m
       (11011124)
       363679.81   3783093.68        0.13120m (11011124)            363704.81   3783093.68        0.12596m
       (11011124)
       363729.81   3783093.56        0.11457m (11011124)            363754.81   3783093.56        0.10908
       (10010224)
       363779.81   3783092.66        0.09999  (10010224)            363804.81   3783092.66        0.10457m
       (10122624)
       363829.81   3783092.66        0.11066m (10122624)            363854.81   3783092.66        0.11296m
       (10122624)
       363879.81   3783092.66        0.11105m (10122624)            363587.82   3783466.38        1.30568
       (11121224)
       363601.35   3783480.91        1.63177  (11121224)            363599.46   3783505.72        2.37893
```

```
       (11121224)
       363573.32   3783452.30       1.07419  (11121224)                363561.08   3783441.85       0.93729
       (11121224)
       363551.24   3783438.12       0.87989  (11121224)                363550.94   3783426.26       0.79350
       (11121224)
       363551.19   3783411.48       0.69651  (11121224)                363550.94   3783395.93       0.60570
       (11121224)
       363550.68   3783381.66       0.53248  (11121224)                363550.43   3783363.30       0.45111
       (11121224)
       363536.92   3783363.05       0.46146  (11121224)                363528.51   3783363.30       0.46537
       (11121224)
       363528.25   3783357.44       0.44467  (11121224)                363513.72   3783357.44       0.44577
       (11121224)
       363504.55   3783352.60       0.42902  (11121224)                363507.18   3783337.93       0.38942
       (11121224)
       363501.43   3783331.08       0.37221  (11121224)                363491.71   3783322.46       0.35228
       (11121224)
       363485.30   3783316.28       0.33881  (11121224)                363478.89   3783311.41       0.32853
       (11121224)
       363470.66   3783132.66       0.11224  (11121224)                363470.66   3783157.66       0.13072
       (11121224)
       363470.66   3783182.66       0.15235  (11121224)                363469.56   3783203.46       0.17365
       (11121224)
       363469.56   3783228.46       0.20212  (11121224)                363469.56   3783253.46       0.23485
       (11121224)
       363469.56   3783278.46       0.27182  (11121224)                363469.56   3783303.46       0.31286
       (11121224)
       363798.94   3783066.77       0.08979m (10122624)                363795.11   3783063.90       0.08720m
       (10122624)
       363795.43   3783052.56       0.08431  (10010224)                363798.62   3783048.73       0.08228
       (10010224)
       363811.08   3783048.73       0.08543m (10122624)                363815.39   3783052.56       0.08824m
       (10122624)
       363815.23   3783063.74       0.09317m (10122624)                363811.24   3783067.41       0.09380m
       (10122624)
       363298.29   3783861.01       0.19598  (12121624)                363323.29   3783861.01       0.20930
       (12121624)
       363348.29   3783861.01       0.22033  (12121624)                363373.29   3783861.01       0.22794
       (12121624)
       363398.29   3783861.01       0.23055  (12121624)                363422.49   3783859.43       0.22964
       (12121624)
       363447.49   3783859.43       0.24690  (12042324)                363472.49   3783859.43       0.26404
       (10090724)
       363491.94   3783857.05       0.30048  (10090724)                363517.73   3783858.63       0.33348
       (10090724)
       363542.73   3783858.63       0.34836  (10090724)                363567.73   3783858.63       0.36575
       (09101324)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                           ***
 15:43:12

PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_10    IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
```

```
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363593.53   3783857.44        0.37730  (09101324)              363618.53   3783857.44        0.39862
       (10111924)
       363643.53   3783857.44        0.39232  (10111924)              363671.70   3783856.65        0.38676
       (11022524)
       363697.10   3783854.67        0.42845  (11022524)              363722.10   3783854.67        0.42586
       (11022524)
       363746.70   3783854.27        0.42416  (12121424)              363771.70   3783854.27        0.39829
       (12121424)
       363796.70   3783854.27        0.35228  (12121424)              363821.70   3783854.27        0.29768
       (12121424)
       363846.70   3783854.27        0.24353  (12121424)              363871.70   3783854.27        0.19532
       (12121424)
       363896.70   3783854.27        0.20004m (12121724)              363921.70   3783854.27        0.20243m
       (12121724)
       363946.70   3783854.27        0.19896m (12121724)              363971.70   3783854.27        0.18952m
       (12121724)
       363996.70   3783854.27        0.17518m (12121724)              364021.70   3783854.27        0.15854m
       (12121724)
       364046.70   3783854.27        0.13925m (12121724)              364073.73   3783852.30        0.11640m
       (12121724)
       364061.84   3783840.40        0.12135m (12121724)              363599.49   3783520.86        3.03556
       (11121224)
       363599.49   3783539.39        4.11314  (11121224)              363599.11   3783552.26        5.19038
       (11111224)
       363599.30   3783565.50        7.71814m (08012524)              363599.49   3783584.22       11.95963m
       (08012524)
       363599.68   3783598.22       11.21495m (08012524)              363589.84   3783607.49        6.88434m
       (08012524)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                             ***
 15:43:12

PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        2.85218  (10102124)              363917.08   3783132.55        3.87896
       (10102124)
       363917.08   3783157.55        4.32786  (10102124)              363917.08   3783182.55        3.90309
       (10102124)
       363917.08   3783207.55        2.92745  (10101824)              363918.68   3783233.09        2.66116m
       (12121724)
       363918.68   3783258.09        2.24993m (12121724)              363918.68   3783283.09        1.73033m
       (12121724)
       363918.68   3783308.09        1.69453m (10122624)              363919.21   3783332.28        2.14729m
       (10122624)
       363919.21   3783357.28        2.81512m (10122624)              363919.21   3783382.28        3.73903m
       (10122624)
       363919.21   3783407.28        5.18638  (10102124)              363468.40   3783096.50        2.94649
       (11121224)
       363480.32   3783096.24        3.21892  (11121224)              363505.32   3783096.24        3.59088
```

(11111224)
363530.32 3783096.24 3.60813 (09021724) 363555.32 3783096.24 3.45361m
(10122624)
363580.32 3783096.24 2.93531m (10122624) 363605.32 3783096.24 2.00837m
(10122624)
363629.81 3783096.24 1.38978 (10102124) 363654.81 3783096.24 1.08624
(10102124)
363679.81 3783093.68 1.26478 (11121224) 363704.81 3783093.68 1.62825
(11121224)
363729.81 3783093.56 2.16459 (11121224) 363754.81 3783093.56 2.89183
(11121224)
363779.81 3783092.66 3.63473 (11121224) 363804.81 3783092.66 4.44499
(09021724)
363829.81 3783092.66 4.61102 (09021724) 363854.81 3783092.66 4.68694m
(10122624)
363879.81 3783092.66 4.05072m (10122624) 363587.82 3783466.38 1.38536
(11121224)
363601.35 3783480.91 1.70089 (11121224) 363599.46 3783505.72 2.41489
(11121224)
363573.32 3783452.30 1.16186 (11121224) 363561.08 3783441.85 1.02768
(11121224)
363551.24 3783438.12 0.96467 (11121224) 363550.94 3783426.26 0.89721
(11121224)
363551.19 3783411.48 0.82901 (11121224) 363550.94 3783395.93 0.77534
(08121524)
363550.68 3783381.66 0.86219 (11022524) 363550.43 3783363.30 1.04554
(11022524)
363536.92 3783363.05 0.97673 (10111924) 363528.51 3783363.30 1.01577
(10111924)
363528.25 3783357.44 1.09169 (10111924) 363513.72 3783357.44 1.11049
(10111924)
363504.55 3783352.60 1.14355 (10111924) 363507.18 3783337.93 1.36901
(09042424)
363501.43 3783331.08 1.46127 (09042424) 363491.71 3783322.46 1.55404
(10090724)
363485.30 3783316.28 1.68967 (10090724) 363478.89 3783311.41 1.76443
(10090724)
363470.66 3783132.66 4.65827 (11121224) 363470.66 3783157.66 6.25355m
(08012524)
363470.66 3783182.66 7.97028m (08012524) 363469.56 3783203.46 7.37995m
(08012524)
363469.56 3783228.46 5.36783m (08012524) 363469.56 3783253.46 3.50402
(08010424)
363469.56 3783278.46 2.41501 (08010424) 363469.56 3783303.46 1.82733
(10090724)
363798.94 3783066.77 2.51064 (09021724) 363795.11 3783063.90 2.32766
(09021724)
363795.43 3783052.56 2.01344 (11111024) 363798.62 3783048.73 2.00270
(11111024)
363811.08 3783048.73 2.18172 (11111024) 363815.39 3783052.56 2.31676
(11111024)
363815.23 3783063.74 2.67588 (11111024) 363811.24 3783067.41 2.75983
(11111024)
363298.29 3783861.01 0.45532 (12121624) 363323.29 3783861.01 0.47364
(12121624)
363348.29 3783861.01 0.48903 (12121624) 363373.29 3783861.01 0.49995
(12121624)
363398.29 3783861.01 0.50467 (12121624) 363422.49 3783859.43 0.50505
(12121624)
363447.49 3783859.43 0.49282 (12121624) 363472.49 3783859.43 0.46956
(12121624)
363491.94 3783857.05 0.49115 (10090724) 363517.73 3783858.63 0.54801
(10090724)
363542.73 3783858.63 0.58915 (10090724) 363567.73 3783858.63 0.60751

```
        (10090724)
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                         ***
 15:43:12

PAGE  17
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363593.53   3783857.44       0.60348  (10090724)             363618.53   3783857.44       0.61063
        (08030124)
        363643.53   3783857.44       0.61143  (09042424)             363671.70   3783856.65       0.61416
        (09042424)
        363697.10   3783854.67       0.61988  (08121524)             363722.10   3783854.67       0.64944
        (08121524)
        363746.70   3783854.27       0.65928  (08121524)             363771.70   3783854.27       0.64664
        (08121524)
        363796.70   3783854.27       0.61698  (08121524)             363821.70   3783854.27       0.58927
        (12121424)
        363846.70   3783854.27       0.60385  (12121424)             363871.70   3783854.27       0.62723
        (12121424)
        363896.70   3783854.27       0.65156  (12121424)             363921.70   3783854.27       0.66807
        (12121424)
        363946.70   3783854.27       0.66960  (12121424)             363971.70   3783854.27       0.65323
        (12121424)
        363996.70   3783854.27       0.62043  (12121424)             364021.70   3783854.27       0.57574
        (12121424)
        364046.70   3783854.27       0.54876  (12121424)             364073.73   3783852.30       0.49704
        (12121424)
        364061.84   3783840.40       0.52789  (12121424)             363599.49   3783520.86       3.05953
        (11121224)
        363599.49   3783539.39       4.18579  (11111224)             363599.11   3783552.26       5.25812
        (11111224)
        363599.30   3783565.50       8.48541m (08012524)             363599.49   3783584.22      12.64231m
        (08012524)
        363599.68   3783598.22      11.83247m (08012524)             363589.84   3783607.49       7.43564m
        (08012524)
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                         ***
 15:43:12

PAGE  18
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                          *** THE SUMMARY OF MAXIMUM PERIOD ( 43848 HRS) RESULTS ***


                                      ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

                                                                                                             NETWORK
GROUP ID                      AVERAGE CONC              RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

```
SRCGP1    1ST HIGHEST VALUE IS       3.24153 AT (  363599.68,  3783598.22,   220.28,   220.28,    2.00)  DC
          2ND HIGHEST VALUE IS       3.09368 AT (  363599.49,  3783584.22,   220.28,   220.28,    2.00)  DC
          3RD HIGHEST VALUE IS       1.95222 AT (  363599.30,  3783565.50,   220.09,   220.09,    2.00)  DC
          4TH HIGHEST VALUE IS       1.91950 AT (  363589.84,  3783607.49,   220.25,   220.25,    2.00)  DC
          5TH HIGHEST VALUE IS       1.24095 AT (  363599.11,  3783552.26,   219.88,   219.88,    2.00)  DC
          6TH HIGHEST VALUE IS       0.81532 AT (  363599.49,  3783539.39,   219.64,   219.64,    2.00)  DC
          7TH HIGHEST VALUE IS       0.48268 AT (  363599.49,  3783520.86,   219.30,   219.30,    2.00)  DC
          8TH HIGHEST VALUE IS       0.34045 AT (  363599.46,  3783505.72,   218.94,   218.94,    2.00)  DC
          9TH HIGHEST VALUE IS       0.21515 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC
         10TH HIGHEST VALUE IS       0.14936 AT (  363587.82,  3783466.38,   218.13,   218.13,    2.00)  DC

ALL       1ST HIGHEST VALUE IS       3.41519 AT (  363599.68,  3783598.22,   220.28,   220.28,    2.00)  DC
          2ND HIGHEST VALUE IS       3.27731 AT (  363599.49,  3783584.22,   220.28,   220.28,    2.00)  DC
          3RD HIGHEST VALUE IS       2.14852 AT (  363599.30,  3783565.50,   220.09,   220.09,    2.00)  DC
          4TH HIGHEST VALUE IS       2.14178 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
          5TH HIGHEST VALUE IS       2.07835 AT (  363589.84,  3783607.49,   220.25,   220.25,    2.00)  DC
          6TH HIGHEST VALUE IS       2.03795 AT (  363469.56,  3783203.46,   216.05,   216.05,    2.00)  DC
          7TH HIGHEST VALUE IS       1.70979 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
          8TH HIGHEST VALUE IS       1.59303 AT (  363469.56,  3783228.46,   216.19,   216.19,    2.00)  DC
          9TH HIGHEST VALUE IS       1.44522 AT (  363599.11,  3783552.26,   219.88,   219.88,    2.00)  DC
         10TH HIGHEST VALUE IS       1.06232 AT (  363469.56,  3783253.46,   216.35,   216.35,    2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                            ***
 15:43:12

PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                   *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                       ** CONC OF PM_10    IN MICROGRAMS/M**3                         **


                                                         DATE
                                                              NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

SRCGP1   HIGH   1ST HIGH VALUE IS      11.95963m ON 08012524: AT (  363599.49,  3783584.22,   220.28,   220.28,
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS      12.64231m ON 08012524: AT (  363599.49,  3783584.22,   220.28,   220.28,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                            ***
 15:43:12
```

```
PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of         1173 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of            2 Calm Hours Identified

 A Total of         1171 Missing Hours Identified (  2.67 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

```
***************************************
** AERMOD CONTROL PATHWAY
***************************************
**
**
CO STARTING
   TITLEONE LA GROUND WATER REPLENISHMENT PROJECT
   TITLETWO PM2.5
   MODELOPT DFAULT CONC
   AVERTIME 24 PERIOD
   URBANOPT 9862049
   POLLUTID PM_2.5
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-PM25.ERR
CO FINISHED
**
***************************************
** AERMOD SOURCE PATHWAY
***************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
   LOCATION WAREHOUSE_A  AREAPOLY   363620.218  3783575.063      220.050
   LOCATION FLOWEQ_A     AREAPOLY   363806.468  3783509.252      218.180
   LOCATION MAINTBLD_A   AREAPOLY   363535.013  3783246.682      216.260
   LOCATION AWPF_A       AREAPOLY   363795.721  3783130.715      215.240
** SOURCE PARAMETERS **
   SRCPARAM WAREHOUSE_A  9.3725E-06     1.000         4
   AREAVERT WAREHOUSE_A  363620.218 3783575.063 363701.152 3783574.154
   AREAVERT WAREHOUSE_A  363701.698 3783600.889 363619.673 3783600.707
   SRCPARAM FLOWEQ_A     4.0003E-06     1.000         4
   AREAVERT FLOWEQ_A     363806.468 3783509.252 363807.165 3783434.338
   AREAVERT FLOWEQ_A     363889.396 3783433.293 363890.789 3783507.858
   SRCPARAM MAINTBLD_A   3.4621E-06     1.000         6
   AREAVERT MAINTBLD_A   363535.013 3783246.682 363555.349 3783246.117
   AREAVERT MAINTBLD_A   363554.220 3783139.354 363503.945 3783141.048
   AREAVERT MAINTBLD_A   363502.250 3783217.873 363532.754 3783216.743
   SRCPARAM AWPF_A       3.5194E-06     1.000         5
   AREAVERT AWPF_A       363795.721 3783130.715 363864.412 3783129.674
   AREAVERT AWPF_A       363866.494 3783220.222 363795.027 3783220.916
   AREAVERT AWPF_A       363795.027 3783132.103
   URBANSRC ALL

** VARIABLE EMISSIONS TYPE: "BY HOUR-OF-DAY (HROFDY)"
** VARIABLE EMISSION SCENARIO: "WORKHOURS"
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT WAREHOUSE_A  HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_A     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT MAINTBLD_A   HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AWPF_A       HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
```

```
   SRCGROUP SRCGP1   WAREHOUSE_A
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD RECEPTOR PATHWAY
****************************************
**
**
RE STARTING
   INCLUDED GWRP-PM25.ROU
RE FINISHED
**
****************************************
** AERMOD METEOROLOGY PATHWAY
****************************************
**
**
ME STARTING
   SURFFILE ..\..\RESE8.SFC
   PROFFILE ..\..\RESE8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
** AERMOD OUTPUT PATHWAY
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   24 ALL 1ST GWRP-PM25.AD\24H1GALL.PLT 31
   PLOTFILE   24 SRCGP1 1ST GWRP-PM25.AD\24H1G001.PLT 32
   PLOTFILE   PERIOD ALL GWRP-PM25.AD\PE00GALL.PLT 33
   PLOTFILE   PERIOD SRCGP1 GWRP-PM25.AD\PE00G000.PLT 34
   SUMMFILE GWRP-PM25.SUM
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 15:47:27

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                             ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
```

```
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     4 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

 **Model Calculates  1 Short Term Average(s) of:  24-HR
     and Calculates PERIOD Averages

 **This Run Includes:      4 Source(s);       2 Source Group(s); and     108 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-PM25.ERR
 **File for Summary of Results:
 GWRP-PM25.SUM
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 15:47:27

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                  *** AREAPOLY SOURCE DATA ***

               NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE  NUMBER      INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X         Y      ELEV.    HEIGHT  OF VERTS.     SZ     SOURCE  SCALAR VARY
```

```
    ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)           (METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 WAREHOUSE_A      0   0.93725E-05  363620.2 3783575.1   220.1     1.00       4         0.00     YES   HROFDY
 FLOWEQ_A         0   0.40003E-05  363806.5 3783509.3   218.2     1.00       4         0.00     YES   HROFDY
 MAINTBLD_A       0   0.34621E-05  363535.0 3783246.7   216.3     1.00       6         0.00     YES   HROFDY
 AWPF_A           0   0.35194E-05  363795.7 3783130.7   215.2     1.00       5         0.00     YES   HROFDY
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                           ***
 15:47:27

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                             SOURCE IDs
 -----------                                             ----------


  SRCGP1     WAREHOUSE_A ,

  ALL        WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                           ***
 15:47:27

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                            *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                   SOURCE IDs
  --------   ---------                                   ----------


             9862049.   WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                           ***
 15:47:27

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

     HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -


 SOURCE ID = WAREHOUSE_A  ; SOURCE TYPE = AREAPOLY :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00
```

```
 SOURCE ID = FLOWEQ_A     ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = MAINTBLD_A   ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = AWPF_A       ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                     ***
 15:47:27

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                               *** DISCRETE CARTESIAN RECEPTORS ***
                                             (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                              (METERS)

     ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);         ( 363917.1, 3783132.5,     214.8,
     214.8,       2.0);
     ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);         ( 363917.1, 3783182.5,     214.2,
     214.2,       2.0);
     ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);         ( 363918.7, 3783233.1,     214.3,
     214.3,       2.0);
     ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);         ( 363918.7, 3783283.1,     215.5,
     215.5,       2.0);
     ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);         ( 363919.2, 3783332.3,     216.7,
     216.7,       2.0);
     ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);         ( 363919.2, 3783382.3,     217.3,
     217.3,       2.0);
     ( 363919.2, 3783407.3,     217.6,     217.6,       2.0);         ( 363468.4, 3783096.5,     215.5,
     215.5,       2.0);
     ( 363480.3, 3783096.2,     215.5,     215.5,       2.0);         ( 363505.3, 3783096.2,     215.5,
     215.5,       2.0);
     ( 363530.3, 3783096.2,     215.4,     215.4,       2.0);         ( 363555.3, 3783096.2,     215.4,
     215.4,       2.0);
     ( 363580.3, 3783096.2,     215.3,     215.3,       2.0);         ( 363605.3, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363629.8, 3783096.2,     215.4,     215.4,       2.0);         ( 363654.8, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363679.8, 3783093.7,     215.2,     215.2,       2.0);         ( 363704.8, 3783093.7,     215.2,
     215.2,       2.0);
     ( 363729.8, 3783093.6,     215.2,     215.2,       2.0);         ( 363754.8, 3783093.6,     215.3,
     215.3,       2.0);
     ( 363779.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363804.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363829.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363854.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363879.8, 3783092.7,     215.1,     215.1,       2.0);         ( 363587.8, 3783466.4,     218.1,
     218.1,       2.0);
```

```
    ( 363601.3, 3783480.9,     218.4,     218.4,       2.0);         ( 363599.5, 3783505.7,     218.9,
    218.9,       2.0);
    ( 363573.3, 3783452.3,     217.8,     217.8,       2.0);         ( 363561.1, 3783441.8,     217.7,
    217.7,       2.0);
    ( 363551.2, 3783438.1,     217.7,     217.7,       2.0);         ( 363550.9, 3783426.3,     217.6,
    217.6,       2.0);
    ( 363551.2, 3783411.5,     217.3,     217.3,       2.0);         ( 363550.9, 3783395.9,     217.2,
    217.2,       2.0);
    ( 363550.7, 3783381.7,     217.1,     217.1,       2.0);         ( 363550.4, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363536.9, 3783363.0,     217.0,     217.0,       2.0);         ( 363528.5, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363528.2, 3783357.4,     217.0,     217.0,       2.0);         ( 363513.7, 3783357.4,     217.0,
    217.0,       2.0);
    ( 363504.5, 3783352.6,     216.9,     216.9,       2.0);         ( 363507.2, 3783337.9,     216.8,
    216.8,       2.0);
    ( 363501.4, 3783331.1,     216.8,     216.8,       2.0);         ( 363491.7, 3783322.5,     216.7,
    216.7,       2.0);
    ( 363485.3, 3783316.3,     216.7,     216.7,       2.0);         ( 363478.9, 3783311.4,     216.7,
    216.7,       2.0);
    ( 363470.7, 3783132.7,     215.7,     215.7,       2.0);         ( 363470.7, 3783157.7,     215.8,
    215.8,       2.0);
    ( 363470.7, 3783182.7,     215.9,     215.9,       2.0);         ( 363469.6, 3783203.5,     216.1,
    216.1,       2.0);
    ( 363469.6, 3783228.5,     216.2,     216.2,       2.0);         ( 363469.6, 3783253.5,     216.4,
    216.4,       2.0);
    ( 363469.6, 3783278.5,     216.5,     216.5,       2.0);         ( 363469.6, 3783303.5,     216.7,
    216.7,       2.0);
    ( 363798.9, 3783066.8,     215.2,     215.2,       2.0);         ( 363795.1, 3783063.9,     215.2,
    215.2,       2.0);
    ( 363795.4, 3783052.6,     215.2,     215.2,       2.0);         ( 363798.6, 3783048.7,     215.2,
    215.2,       2.0);
    ( 363811.1, 3783048.7,     215.2,     215.2,       2.0);         ( 363815.4, 3783052.6,     215.2,
    215.2,       2.0);
    ( 363815.2, 3783063.7,     215.2,     215.2,       2.0);         ( 363811.2, 3783067.4,     215.2,
    215.2,       2.0);
    ( 363298.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363323.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363348.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363373.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363422.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);         ( 363472.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);         ( 363517.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);         ( 363567.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363618.5, 3783857.4,     220.2,
    220.2,       2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363671.7, 3783856.6,     220.2,
    220.2,       2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);         ( 363722.1, 3783854.7,     220.2,
    220.2,       2.0);
    ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363771.7, 3783854.3,     220.2,
    220.2,       2.0);
    ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363821.7, 3783854.3,     220.2,
    220.2,       2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                    ***
 15:47:27

PAGE   7
```

```
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                *** DISCRETE CARTESIAN RECEPTORS ***
                                              (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                              (METERS)

     ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363871.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363921.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363971.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);         ( 364021.7, 3783854.3,     221.2,
     221.2,       2.0);
     ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);         ( 364073.7, 3783852.3,     223.7,
     223.7,       2.0);
     ( 364061.8, 3783840.4,     222.8,     222.8,       2.0);         ( 363599.5, 3783520.9,     219.3,
     219.3,       2.0);
     ( 363599.5, 3783539.4,     219.6,     219.6,       2.0);         ( 363599.1, 3783552.3,     219.9,
     219.9,       2.0);
     ( 363599.3, 3783565.5,     220.1,     220.1,       2.0);         ( 363599.5, 3783584.2,     220.3,
     220.3,       2.0);
     ( 363599.7, 3783598.2,     220.3,     220.3,       2.0);         ( 363589.8, 3783607.5,     220.2,
     220.2,       2.0);
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 15:47:27

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                               *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.



                                     *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                             (METERS/SEC)

                                                    1.54,   3.09,   5.14,   8.23,  10.80,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 15:47:27

PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                       *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   ..\..\RESE8.SFC                                                                 Met Version:  14134
   Profile file:   ..\..\RESE8.PFL
```

```
   Surface format:
   FREE
   Profile format:
   FREE
   Surface station no.:        0                 Upper air station no.:     3190
                 Name: UNKNOWN                                Name: UNKNOWN
                 Year:   2008                                 Year:   2008

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-
 08 01 01   1 01 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 02 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 03 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 06 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 07 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.56  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 09   22.6 -9.000 -9.000 -9.000   54. -999. -99999.0  0.50   1.00   0.32  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 10   71.8 -9.000 -9.000 -9.000  147. -999. -99999.0  0.50   1.00   0.24  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 11  111.2 -9.000 -9.000 -9.000  357. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 12  128.1 -9.000 -9.000 -9.000  571. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 13  127.4 -9.000 -9.000 -9.000  712. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 14  109.8 -9.000 -9.000 -9.000  763. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  290.9    5.5
 08 01 01   1 15   52.2 -9.000 -9.000 -9.000  786. -999. -99999.0  0.50   1.00   0.25  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 16   27.2 -9.000 -9.000 -9.000  796. -999. -99999.0  0.50   1.00   0.33  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 17 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.59  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 18 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 08 01 01 01    5.5 0 -999.  -99.00   287.1   99.0  -99.00  -99.00
 08 01 01 01    9.1 1 -999.  -99.00  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                     ***
 15:47:27

PAGE  10
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_2.5   IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
         363917.08    3783107.55        0.00254                      363917.08    3783132.55
         0.00267
```

363917.08	3783157.55	0.00283	363917.08	3783182.55	0.00300
363917.08	3783207.55	0.00320	363918.68	3783233.09	0.00342
363918.68	3783258.09	0.00369	363918.68	3783283.09	0.00402
363918.68	3783308.09	0.00441	363919.21	3783332.28	0.00485
363919.21	3783357.28	0.00540	363919.21	3783382.28	0.00605
363919.21	3783407.28	0.00681	363468.40	3783096.50	0.00340
363480.32	3783096.24	0.00360	363505.32	3783096.24	0.00405
363530.32	3783096.24	0.00454	363555.32	3783096.24	0.00505
363580.32	3783096.24	0.00553	363605.32	3783096.24	0.00595
363629.81	3783096.24	0.00627	363654.81	3783096.24	0.00646
363679.81	3783093.68	0.00642	363704.81	3783093.68	0.00629
363729.81	3783093.56	0.00599	363754.81	3783093.56	0.00558
363779.81	3783092.66	0.00506	363804.81	3783092.66	0.00452
363829.81	3783092.66	0.00398	363854.81	3783092.66	0.00348
363879.81	3783092.66	0.00302	363587.82	3783466.38	0.06882
363601.35	3783480.91	0.09914	363599.46	3783505.72	0.15688
363573.32	3783452.30	0.04938	363561.08	3783441.85	0.03882
363551.24	3783438.12	0.03404	363550.94	3783426.26	0.03001
363551.19	3783411.48	0.02614	363550.94	3783395.93	0.02280
363550.68	3783381.66	0.02030	363550.43	3783363.30	0.01770
363536.92	3783363.05	0.01592	363528.51	3783363.30	0.01495
363528.25	3783357.44	0.01435	363513.72	3783357.44	0.01290
363504.55	3783352.60	0.01172	363507.18	3783337.93	0.01093
363501.43	3783331.08	0.01010	363491.71	3783322.46	0.00904
363485.30	3783316.28	0.00840	363478.89	3783311.41	0.00787
363470.66	3783132.66	0.00381	363470.66	3783157.66	0.00411
363470.66	3783182.66	0.00445	363469.56	3783203.46	0.00475
363469.56	3783228.46	0.00519	363469.56	3783253.46	0.00572
363469.56	3783278.46	0.00636	363469.56	3783303.46	0.00715
363798.94	3783066.77	0.00431	363795.11	3783063.90	0.00435
363795.43	3783052.56	0.00420	363798.62	3783048.73	0.00410
363811.08	3783048.73	0.00388	363815.39	3783052.56	0.00385

```
        363815.23    3783063.74        0.00397                        363811.24    3783067.41
        0.00408
        363298.29    3783861.01        0.01130                        363323.29    3783861.01
        0.01225
        363348.29    3783861.01        0.01327                        363373.29    3783861.01
        0.01437
        363398.29    3783861.01        0.01555                        363422.49    3783859.43
        0.01689
        363447.49    3783859.43        0.01819                        363472.49    3783859.43
        0.01950
        363491.94    3783857.05        0.02087                        363517.73    3783858.63
        0.02194
        363542.73    3783858.63        0.02305                        363567.73    3783858.63
        0.02391
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                        ***
 15:47:27

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363593.53    3783857.44        0.02464                        363618.53    3783857.44
        0.02463
        363643.53    3783857.44        0.02408                        363671.70    3783856.65
        0.02297
        363697.10    3783854.67        0.02168                        363722.10    3783854.67
        0.01973
        363746.70    3783854.27        0.01772                        363771.70    3783854.27
        0.01563
        363796.70    3783854.27        0.01366                        363821.70    3783854.27
        0.01189
        363846.70    3783854.27        0.01035                        363871.70    3783854.27
        0.00904
        363896.70    3783854.27        0.00793                        363921.70    3783854.27
        0.00700
        363946.70    3783854.27        0.00622                        363971.70    3783854.27
        0.00555
        363996.70    3783854.27        0.00498                        364021.70    3783854.27
        0.00446
        364046.70    3783854.27        0.00401                        364073.73    3783852.30
        0.00361
        364061.84    3783840.40        0.00390                        363599.49    3783520.86
        0.22241
        363599.49    3783539.39        0.37569                        363599.11    3783552.26
        0.57182
        363599.30    3783565.50        0.89957                        363599.49    3783584.22
        1.42554
        363599.68    3783598.22        1.49367                        363589.84    3783607.49
        0.88449
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                        ***
 15:47:27
```

PAGE 12
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_A , FLOWEQ_A , MAINTBLD_A , AWPF_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.12858	363917.08	3783132.55	0.16758
363917.08	3783157.55	0.20653	363917.08	3783182.55	0.22878
363917.08	3783207.55	0.22541	363918.68	3783233.09	0.19106
363918.68	3783258.09	0.15978	363918.68	3783283.09	0.13627
363918.68	3783308.09	0.12487	363919.21	3783332.28	0.12513
363919.21	3783357.28	0.13853	363919.21	3783382.28	0.17086
363919.21	3783407.28	0.23413	363468.40	3783096.50	0.14674
363480.32	3783096.24	0.17161	363505.32	3783096.24	0.22432
363530.32	3783096.24	0.24279	363555.32	3783096.24	0.20935
363580.32	3783096.24	0.15522	363605.32	3783096.24	0.11588
363629.81	3783096.24	0.09722	363654.81	3783096.24	0.09296
363679.81	3783093.68	0.09657	363704.81	3783093.68	0.11192
363729.81	3783093.56	0.14054	363754.81	3783093.56	0.19144
363779.81	3783092.66	0.26737	363804.81	3783092.66	0.35002
363829.81	3783092.66	0.37525	363854.81	3783092.66	0.31639
363879.81	3783092.66	0.21646	363587.82	3783466.38	0.14332
363601.35	3783480.91	0.17853	363599.46	3783505.72	0.23368
363573.32	3783452.30	0.12028	363561.08	3783441.85	0.10774
363551.24	3783438.12	0.10139	363550.94	3783426.26	0.09930
363551.19	3783411.48	0.09867	363550.94	3783395.93	0.09977
363550.68	3783381.66	0.10275	363550.43	3783363.30	0.11010
363536.92	3783363.05	0.10845	363528.51	3783363.30	0.10702
363528.25	3783357.44	0.11101	363513.72	3783357.44	0.10858
363504.55	3783352.60	0.11076	363507.18	3783337.93	0.12745
363501.43	3783331.08	0.13565	363491.71	3783322.46	0.14640

```
        363485.30    3783316.28        0.15478                       363478.89    3783311.41
        0.16011
        363470.66    3783132.66        0.35810                       363470.66    3783157.66
        0.58776
        363470.66    3783182.66        0.73546                       363469.56    3783203.46
        0.70025
        363469.56    3783228.46        0.54870                       363469.56    3783253.46
        0.36782
        363469.56    3783278.46        0.24359                       363469.56    3783303.46
        0.16856
        363798.94    3783066.77        0.17785                       363795.11    3783063.90
        0.16439
        363795.43    3783052.56        0.13555                       363798.62    3783048.73
        0.13003
        363811.08    3783048.73        0.13736                       363815.39    3783052.56
        0.14805
        363815.23    3783063.74        0.18083                       363811.24    3783067.41
        0.19183
        363298.29    3783861.01        0.02246                       363323.29    3783861.01
        0.02382
        363348.29    3783861.01        0.02526                       363373.29    3783861.01
        0.02680
        363398.29    3783861.01        0.02843                       363422.49    3783859.43
        0.03027
        363447.49    3783859.43        0.03203                       363472.49    3783859.43
        0.03382
        363491.94    3783857.05        0.03567                       363517.73    3783858.63
        0.03716
        363542.73    3783858.63        0.03876                       363567.73    3783858.63
        0.04010
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                     ***
 15:47:27

PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363593.53    3783857.44        0.04141                       363618.53    3783857.44
        0.04189
        363643.53    3783857.44        0.04180                       363671.70    3783856.65
        0.04123
        363697.10    3783854.67        0.04049                       363722.10    3783854.67
        0.03882
        363746.70    3783854.27        0.03701                       363771.70    3783854.27
        0.03492
        363796.70    3783854.27        0.03277                       363821.70    3783854.27
        0.03063
        363846.70    3783854.27        0.02853                       363871.70    3783854.27
        0.02649
        363896.70    3783854.27        0.02454                       363921.70    3783854.27
        0.02267
        363946.70    3783854.27        0.02090                       363971.70    3783854.27
        0.01921
```

```
        363996.70    3783854.27        0.01763                        364021.70    3783854.27
        0.01608
        364046.70    3783854.27        0.01466                        364073.73    3783852.30
        0.01335
        364061.84    3783840.40        0.01446                        363599.49    3783520.86
        0.29747
        363599.49    3783539.39        0.44787                        363599.11    3783552.26
        0.64136
        363599.30    3783565.50        0.96632                        363599.49    3783584.22
        1.48793
        363599.68    3783598.22        1.55265                        363589.84    3783607.49
        0.93852
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                          ***
 15:47:27

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        0.04799m (10122624)              363917.08   3783132.55        0.05019m
       (10122624)
       363917.08   3783157.55        0.05195m (10122624)              363917.08   3783182.55        0.05315m
       (10122624)
       363917.08   3783207.55        0.05373m (10122624)              363918.68   3783233.09        0.05290m
       (10122624)
       363918.68   3783258.09        0.05238m (10122624)              363918.68   3783283.09        0.05193m
       (10122624)
       363918.68   3783308.09        0.05296  (10102124)              363919.21   3783332.28        0.05799
       (10102124)
       363919.21   3783357.28        0.06411  (10102124)              363919.21   3783382.28        0.07172
       (10102124)
       363919.21   3783407.28        0.08299m (10030724)              363468.40   3783096.50        0.04211
       (11121224)
       363480.32   3783096.24        0.04172m (10111124)              363505.32   3783096.24        0.04470m
       (10111124)
       363530.32   3783096.24        0.04590m (10111124)              363555.32   3783096.24        0.05366
       (11111024)
       363580.32   3783096.24        0.06117  (11111024)              363605.32   3783096.24        0.06463
       (11111024)
       363629.81   3783096.24        0.06331  (11111024)              363654.81   3783096.24        0.06026m
       (11011124)
       363679.81   3783093.68        0.06046m (11011124)              363704.81   3783093.68        0.05804m
       (11011124)
       363729.81   3783093.56        0.05279m (11011124)              363754.81   3783093.56        0.05026
       (10010224)
       363779.81   3783092.66        0.04607  (10010224)              363804.81   3783092.66        0.04818m
       (10122624)
       363829.81   3783092.66        0.05099m (10122624)              363854.81   3783092.66        0.05205m
       (10122624)
       363879.81   3783092.66        0.05117m (10122624)              363587.82   3783466.38        0.60164
       (11121224)
       363601.35   3783480.91        0.75190  (11121224)              363599.46   3783505.72        1.09619
```

```
        (11121224)
        363573.32   3783452.30        0.49498  (11121224)                363561.08   3783441.85        0.43190
        (11121224)
        363551.24   3783438.12        0.40544  (11121224)                363550.94   3783426.26        0.36564
        (11121224)
        363551.19   3783411.48        0.32094  (11121224)                363550.94   3783395.93        0.27910
        (11121224)
        363550.68   3783381.66        0.24536  (11121224)                363550.43   3783363.30        0.20787
        (11121224)
        363536.92   3783363.05        0.21264  (11121224)                363528.51   3783363.30        0.21444
        (11121224)
        363528.25   3783357.44        0.20490  (11121224)                363513.72   3783357.44        0.20541
        (11121224)
        363504.55   3783352.60        0.19769  (11121224)                363507.18   3783337.93        0.17944
        (11121224)
        363501.43   3783331.08        0.17151  (11121224)                363491.71   3783322.46        0.16233
        (11121224)
        363485.30   3783316.28        0.15612  (11121224)                363478.89   3783311.41        0.15138
        (11121224)
        363470.66   3783132.66        0.05172  (11121224)                363470.66   3783157.66        0.06024
        (11121224)
        363470.66   3783182.66        0.07020  (11121224)                363469.56   3783203.46        0.08002
        (11121224)
        363469.56   3783228.46        0.09313  (11121224)                363469.56   3783253.46        0.10822
        (11121224)
        363469.56   3783278.46        0.12525  (11121224)                363469.56   3783303.46        0.14416
        (11121224)
        363798.94   3783066.77        0.04137m (10122624)                363795.11   3783063.90        0.04018m
        (10122624)
        363795.43   3783052.56        0.03885  (10010224)                363798.62   3783048.73        0.03791
        (10010224)
        363811.08   3783048.73        0.03936m (10122624)                363815.39   3783052.56        0.04066m
        (10122624)
        363815.23   3783063.74        0.04293m (10122624)                363811.24   3783067.41        0.04322m
        (10122624)
        363298.29   3783861.01        0.09031  (12121624)                363323.29   3783861.01        0.09644
        (12121624)
        363348.29   3783861.01        0.10153  (12121624)                363373.29   3783861.01        0.10503
        (12121624)
        363398.29   3783861.01        0.10623  (12121624)                363422.49   3783859.43        0.10582
        (12121624)
        363447.49   3783859.43        0.11377  (12042324)                363472.49   3783859.43        0.12167
        (10090724)
        363491.94   3783857.05        0.13846  (10090724)                363517.73   3783858.63        0.15367
        (10090724)
        363542.73   3783858.63        0.16052  (10090724)                363567.73   3783858.63        0.16853
        (09101324)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                            ***
 15:47:27

PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
```

```
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363593.53   3783857.44        0.17386  (09101324)              363618.53   3783857.44        0.18368
        (10111924)
        363643.53   3783857.44        0.18078  (10111924)              363671.70   3783856.65        0.17822
        (11022524)
        363697.10   3783854.67        0.19742  (11022524)              363722.10   3783854.67        0.19623
        (11022524)
        363746.70   3783854.27        0.19545  (12121424)              363771.70   3783854.27        0.18353
        (12121424)
        363796.70   3783854.27        0.16233  (12121424)              363821.70   3783854.27        0.13717
        (12121424)
        363846.70   3783854.27        0.11221  (12121424)              363871.70   3783854.27        0.09000
        (12121424)
        363896.70   3783854.27        0.09218m (12121724)              363921.70   3783854.27        0.09328m
        (12121724)
        363946.70   3783854.27        0.09168m (12121724)              363971.70   3783854.27        0.08733m
        (12121724)
        363996.70   3783854.27        0.08072m (12121724)              364021.70   3783854.27        0.07305m
        (12121724)
        364046.70   3783854.27        0.06416m (12121724)              364073.73   3783852.30        0.05363m
        (12121724)
        364061.84   3783840.40        0.05592m (12121724)              363599.49   3783520.86        1.39876
        (11121224)
        363599.49   3783539.39        1.89530  (11121224)              363599.11   3783552.26        2.39168
        (11111224)
        363599.30   3783565.50        3.55645m (08012524)              363599.49   3783584.22        5.51090m
        (08012524)
        363599.68   3783598.22        5.16775m (08012524)              363589.84   3783607.49        3.17224m
        (08012524)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                          ***
 15:47:27

PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55        1.20350  (10102124)              363917.08   3783132.55        1.64170
        (10102124)
        363917.08   3783157.55        1.83216  (10102124)              363917.08   3783182.55        1.64775
        (10102124)
        363917.08   3783207.55        1.24659  (10101824)              363918.68   3783233.09        1.13609m
        (12121724)
        363918.68   3783258.09        0.95761m (12121724)              363918.68   3783283.09        0.73174m
        (12121724)
        363918.68   3783308.09        0.56813m (10122624)              363919.21   3783332.28        0.71626m
        (10122624)
        363919.21   3783357.28        0.93528m (10122624)              363919.21   3783382.28        1.23849m
        (10122624)
        363919.21   3783407.28        1.71621  (10102124)              363468.40   3783096.50        1.01669
        (11121224)
        363480.32   3783096.24        1.10943  (11121224)              363505.32   3783096.24        1.24702
```

```
(11111224)
363530.32   3783096.24        1.24770  (09021724)             363555.32   3783096.24        1.17955m
(10122624)
363580.32   3783096.24        1.00342m (10122624)             363605.32   3783096.24        0.68804m
(10122624)
363629.81   3783096.24        0.47419  (10102124)             363654.81   3783096.24        0.40501
(11121224)
363679.81   3783093.68        0.50800  (11121224)             363704.81   3783093.68        0.66844
(11121224)
363729.81   3783093.56        0.90317  (11121224)             363754.81   3783093.56        1.21982
(11121224)
363779.81   3783092.66        1.54310  (11121224)             363804.81   3783092.66        1.88094
(09021724)
363829.81   3783092.66        1.95154  (09021724)             363854.81   3783092.66        1.99143m
(10122624)
363879.81   3783092.66        1.71546m (10122624)             363587.82   3783466.38        0.62767
(11121224)
363601.35   3783480.91        0.77448  (11121224)             363599.46   3783505.72        1.10793
(11121224)
363573.32   3783452.30        0.52361  (11121224)             363561.08   3783441.85        0.46141
(11121224)
363551.24   3783438.12        0.43312  (11121224)             363550.94   3783426.26        0.39950
(11121224)
363551.19   3783411.48        0.36422  (11121224)             363550.94   3783395.93        0.33312
(11121224)
363550.68   3783381.66        0.30997  (11121224)             363550.43   3783363.30        0.35671
(11022524)
363536.92   3783363.05        0.33798  (09042424)             363528.51   3783363.30        0.34749
(09042424)
363528.25   3783357.44        0.37249  (10111924)             363513.72   3783357.44        0.37886
(10111924)
363504.55   3783352.60        0.39276  (09042424)             363507.18   3783337.93        0.47148
(09042424)
363501.43   3783331.08        0.50274  (09042424)             363491.71   3783322.46        0.53358
(10090724)
363485.30   3783316.28        0.57956  (10090724)             363478.89   3783311.41        0.60483
(10090724)
363470.66   3783132.66        1.60117  (11121224)             363470.66   3783157.66        2.15880
(11121924)
363470.66   3783182.66        2.74053m (08012524)             363469.56   3783203.46        2.54039m
(08012524)
363469.56   3783228.46        1.85474m (08012524)             363469.56   3783253.46        1.20638
(08010424)
363469.56   3783278.46        0.83631  (08010424)             363469.56   3783303.46        0.62598
(10090724)
363798.94   3783066.77        1.05446  (09021724)             363795.11   3783063.90        0.97643
(09021724)
363795.43   3783052.56        0.83221  (11010324)             363798.62   3783048.73        0.82650
(11111024)
363811.08   3783048.73        0.90327  (11111024)             363815.39   3783052.56        0.96084
(11111024)
363815.23   3783063.74        1.11334  (11111024)             363811.24   3783067.41        1.14870
(11111024)
363298.29   3783861.01        0.18110  (12121624)             363323.29   3783861.01        0.18835
(12121624)
363348.29   3783861.01        0.19431  (12121624)             363373.29   3783861.01        0.19833
(12121624)
363398.29   3783861.01        0.19966  (12121624)             363422.49   3783859.43        0.19915
(12121624)
363447.49   3783859.43        0.19326  (12121624)             363472.49   3783859.43        0.19175
(12042324)
363491.94   3783857.05        0.20776  (10090724)             363517.73   3783858.63        0.23077
(10090724)
363542.73   3783858.63        0.24608  (10090724)             363567.73   3783858.63        0.25052
```

(10090724)

*** AERMOD - VERSION 14134 *** *** LA GROUND WATER REPLENISHMENT PROJECT *** 08/10/15
*** AERMET - VERSION 14134 *** *** PM2.5 *** 15:47:27

PAGE 17
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_A , FLOWEQ_A , MAINTBLD_A , AWPF_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363593.53	3783857.44	0.25122	(09101324)	363618.53	3783857.44	0.25068	(08030124)
363643.53	3783857.44	0.25387	(09042424)	363671.70	3783856.65	0.25057	(09042424)
363697.10	3783854.67	0.25525	(08121524)	363722.10	3783854.67	0.26539	(08121524)
363746.70	3783854.27	0.26633	(08121524)	363771.70	3783854.27	0.25707	(08121524)
363796.70	3783854.27	0.24201	(12121424)	363821.70	3783854.27	0.23699	(12121424)
363846.70	3783854.27	0.23543	(12121424)	363871.70	3783854.27	0.23767	(12121424)
363896.70	3783854.27	0.24133	(12121424)	363921.70	3783854.27	0.24348	(12121424)
363946.70	3783854.27	0.24157	(12121424)	363971.70	3783854.27	0.23438	(12121424)
363996.70	3783854.27	0.22218	(12121424)	364021.70	3783854.27	0.20630	(12121424)
364046.70	3783854.27	0.19638	(12121424)	364073.73	3783852.30	0.17777	(12121424)
364061.84	3783840.40	0.18914	(12121424)	363599.49	3783520.86	1.40659	(11121224)
363599.49	3783539.39	1.91685	(11111224)	363599.11	3783552.26	2.41379	(11111224)
363599.30	3783565.50	3.81027m	(08012524)	363599.49	3783584.22	5.73650m	(08012524)
363599.68	3783598.22	5.37171m	(08012524)	363589.84	3783607.49	3.35451m	(08012524)

*** AERMOD - VERSION 14134 *** *** LA GROUND WATER REPLENISHMENT PROJECT *** 08/10/15
*** AERMET - VERSION 14134 *** *** PM2.5 *** 15:47:27

PAGE 18
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE SUMMARY OF MAXIMUM PERIOD (43848 HRS) RESULTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

GROUP ID	AVERAGE CONC	RECEPTOR (XR, YR, ZELEV, ZHILL, ZFLAG) OF TYPE	NETWORK GRID-ID

```
SRCGP1    1ST HIGHEST VALUE IS       1.49367 AT (  363599.68,  3783598.22,   220.28,   220.28,    2.00)  DC
          2ND HIGHEST VALUE IS       1.42554 AT (  363599.49,  3783584.22,   220.28,   220.28,    2.00)  DC
          3RD HIGHEST VALUE IS       0.89957 AT (  363599.30,  3783565.50,   220.09,   220.09,    2.00)  DC
          4TH HIGHEST VALUE IS       0.88449 AT (  363589.84,  3783607.49,   220.25,   220.25,    2.00)  DC
          5TH HIGHEST VALUE IS       0.57182 AT (  363599.11,  3783552.26,   219.88,   219.88,    2.00)  DC
          6TH HIGHEST VALUE IS       0.37569 AT (  363599.49,  3783539.39,   219.64,   219.64,    2.00)  DC
          7TH HIGHEST VALUE IS       0.22241 AT (  363599.49,  3783520.86,   219.30,   219.30,    2.00)  DC
          8TH HIGHEST VALUE IS       0.15688 AT (  363599.46,  3783505.72,   218.94,   218.94,    2.00)  DC
          9TH HIGHEST VALUE IS       0.09914 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC
         10TH HIGHEST VALUE IS       0.06882 AT (  363587.82,  3783466.38,   218.13,   218.13,    2.00)  DC

ALL       1ST HIGHEST VALUE IS       1.55265 AT (  363599.68,  3783598.22,   220.28,   220.28,    2.00)  DC
          2ND HIGHEST VALUE IS       1.48793 AT (  363599.49,  3783584.22,   220.28,   220.28,    2.00)  DC
          3RD HIGHEST VALUE IS       0.96632 AT (  363599.30,  3783565.50,   220.09,   220.09,    2.00)  DC
          4TH HIGHEST VALUE IS       0.93852 AT (  363589.84,  3783607.49,   220.25,   220.25,    2.00)  DC
          5TH HIGHEST VALUE IS       0.73546 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
          6TH HIGHEST VALUE IS       0.70025 AT (  363469.56,  3783203.46,   216.05,   216.05,    2.00)  DC
          7TH HIGHEST VALUE IS       0.64136 AT (  363599.11,  3783552.26,   219.88,   219.88,    2.00)  DC
          8TH HIGHEST VALUE IS       0.58776 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
          9TH HIGHEST VALUE IS       0.54870 AT (  363469.56,  3783228.46,   216.19,   216.19,    2.00)  DC
         10TH HIGHEST VALUE IS       0.44787 AT (  363599.49,  3783539.39,   219.64,   219.64,    2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                           ***
 15:47:27

PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                    ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **


                                                      DATE
                                                           NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

SRCGP1   HIGH   1ST HIGH VALUE IS       5.51090m ON 08012524: AT (  363599.49,  3783584.22,   220.28,   220.28,
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS       5.73650m ON 08012524: AT (  363599.49,  3783584.22,   220.28,   220.28,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                           ***
 15:47:27
```

```
PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of         1173 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of            2 Calm Hours Identified

 A Total of         1171 Missing Hours Identified (  2.67 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

```
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE LA Ground Water Replenishment Project
   MODELOPT DFAULT CONC
   AVERTIME 1 8
   URBANOPT 9862049
   POLLUTID CO
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-CO.err
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION WAREHOUSE_V  VOLUME     363660.728  3783587.418      219.660
   LOCATION FLOWEQ_V     VOLUME     363848.668  3783471.040      217.970
   LOCATION MAINTBLD_V   VOLUME     363528.440  3783175.430      215.900
   LOCATION AWPF_V       VOLUME     363829.890  3783175.990      215.160
** Source Parameters **
   SRCPARAM WAREHOUSE_V     0.2704     5.000     5.863     1.400
   SRCPARAM FLOWEQ_V        0.2817     5.000    17.530     1.400
   SRCPARAM MAINTBLD_V      0.1932     5.000    12.065     1.400
   SRCPARAM AWPF_V          0.3414     5.000    16.379     1.400
   URBANSRC ALL

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "WORKHOURS"
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT WAREHOUSE_V  HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_V     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT MAINTBLD_V   HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AWPF_V       HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP AWPF_V   AWPF_V
   SRCGROUP FLOWEQ_V FLOWEQ_V
   SRCGROUP MAINTB_V MAINTBLD_V
   SRCGROUP WAREH_V  WAREHOUSE_V
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
```

```
**
RE STARTING
   INCLUDED GWRP-CO.rou
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE ..\..\rese8.sfc
   PROFFILE ..\..\rese8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST GWRP-CO.AD\01H1GALL.PLT 31
   PLOTFILE 8 ALL 1ST GWRP-CO.AD\08H1GALL.PLT 32
   PLOTFILE 1 AWPF_V 1ST GWRP-CO.AD\01H1G001.PLT 33
   PLOTFILE 8 AWPF_V 1ST GWRP-CO.AD\08H1G001.PLT 34
   PLOTFILE 1 FLOWEQ_V 1ST GWRP-CO.AD\01H1G002.PLT 35
   PLOTFILE 8 FLOWEQ_V 1ST GWRP-CO.AD\08H1G002.PLT 36
   PLOTFILE 1 MAINTB_V 1ST GWRP-CO.AD\01H1G003.PLT 37
   PLOTFILE 8 MAINTB_V 1ST GWRP-CO.AD\08H1G003.PLT 38
   PLOTFILE 1 WAREH_V 1ST GWRP-CO.AD\01H1G004.PLT 39
   PLOTFILE 8 WAREH_V 1ST GWRP-CO.AD\08H1G004.PLT 40
   SUMMFILE GWRP-CO.sum
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
 18:03:42

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                             ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F
```

```
 **Model Uses URBAN Dispersion Algorithm for the SBL for     4 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  CO

 **Model Calculates  2 Short Term Average(s) of:   1-HR   8-HR

 **This Run Includes:      4 Source(s);       5 Source Group(s); and     105 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-CO.err
 **File for Summary of Results:
 GWRP-CO.sum
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
 18:03:42

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                     *** VOLUME SOURCE DATA ***

               NUMBER EMISSION RATE                    BASE    RELEASE    INIT.    INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS) (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - -
```

```
 WAREHOUSE_V      0   0.27040E+00  363660.7 3783587.4   219.7     5.00     5.86     1.40     YES   HROFDY
 FLOWEQ_V         0   0.28170E+00  363848.7 3783471.0   218.0     5.00    17.53     1.40     YES   HROFDY
 MAINTBLD_V       0   0.19320E+00  363528.4 3783175.4   215.9     5.00    12.07     1.40     YES   HROFDY
 AWPF_V           0   0.34140E+00  363829.9 3783176.0   215.2     5.00    16.38     1.40     YES   HROFDY
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                 ***
 18:03:42

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                              *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                             SOURCE IDs
 -----------                                             ----------


  AWPF_V     AWPF_V      ,

  FLOWEQ_V   FLOWEQ_V    ,

  MAINTB_V   MAINTBLD_V  ,

  WAREH_V    WAREHOUSE_V ,

  ALL        WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                 ***
 18:03:42

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                   SOURCE IDs
  --------   ---------                                   ----------


             9862049.   WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                 ***
 18:03:42

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

    HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -


 SOURCE ID = WAREHOUSE_V  ; SOURCE TYPE = VOLUME   :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
```

```
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = FLOWEQ_V     ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = MAINTBLD_V   ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = AWPF_V       ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                               ***
 18:03:42

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);         ( 363917.1, 3783132.5,     214.8,
     214.8,       2.0);
     ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);         ( 363917.1, 3783182.5,     214.2,
     214.2,       2.0);
     ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);         ( 363918.7, 3783233.1,     214.3,
     214.3,       2.0);
     ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);         ( 363918.7, 3783283.1,     215.5,
     215.5,       2.0);
     ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);         ( 363919.2, 3783332.3,     216.7,
     216.7,       2.0);
     ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);         ( 363919.2, 3783382.3,     217.3,
     217.3,       2.0);
     ( 363919.2, 3783407.3,     217.6,     217.6,       2.0);         ( 363468.4, 3783096.5,     215.5,
     215.5,       2.0);
     ( 363480.3, 3783096.2,     215.5,     215.5,       2.0);         ( 363505.3, 3783096.2,     215.5,
     215.5,       2.0);
     ( 363530.3, 3783096.2,     215.4,     215.4,       2.0);         ( 363555.3, 3783096.2,     215.4,
     215.4,       2.0);
     ( 363580.3, 3783096.2,     215.3,     215.3,       2.0);         ( 363605.3, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363629.8, 3783096.2,     215.4,     215.4,       2.0);         ( 363654.8, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363679.8, 3783093.7,     215.2,     215.2,       2.0);         ( 363704.8, 3783093.7,     215.2,
     215.2,       2.0);
     ( 363729.8, 3783093.6,     215.2,     215.2,       2.0);         ( 363754.8, 3783093.6,     215.3,
     215.3,       2.0);
     ( 363779.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363804.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363829.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363854.8, 3783092.7,     215.2,
```

```
    215.2,       2.0);
    ( 363879.8, 3783092.7,     215.1,     215.1,       2.0);         ( 363587.8, 3783466.4,     218.1,
    218.1,       2.0);
    ( 363601.3, 3783480.9,     218.4,     218.4,       2.0);         ( 363601.3, 3783505.9,     218.9,
    218.9,       2.0);
    ( 363601.3, 3783530.9,     219.5,     219.5,       2.0);         ( 363601.3, 3783555.9,     219.9,
    219.9,       2.0);
    ( 363601.3, 3783580.9,     220.3,     220.3,       2.0);         ( 363601.3, 3783605.9,     220.3,
    220.3,       2.0);
    ( 363573.3, 3783452.3,     217.8,     217.8,       2.0);         ( 363561.1, 3783441.8,     217.7,
    217.7,       2.0);
    ( 363551.2, 3783438.1,     217.7,     217.7,       2.0);         ( 363550.9, 3783426.3,     217.6,
    217.6,       2.0);
    ( 363551.2, 3783411.5,     217.3,     217.3,       2.0);         ( 363550.9, 3783395.9,     217.2,
    217.2,       2.0);
    ( 363550.7, 3783381.7,     217.1,     217.1,       2.0);         ( 363550.4, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363536.9, 3783363.0,     217.0,     217.0,       2.0);         ( 363528.5, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363528.2, 3783357.4,     217.0,     217.0,       2.0);         ( 363513.7, 3783357.4,     217.0,
    217.0,       2.0);
    ( 363504.5, 3783352.6,     216.9,     216.9,       2.0);         ( 363507.2, 3783337.9,     216.8,
    216.8,       2.0);
    ( 363501.4, 3783331.1,     216.8,     216.8,       2.0);         ( 363491.7, 3783322.5,     216.7,
    216.7,       2.0);
    ( 363485.3, 3783316.3,     216.7,     216.7,       2.0);         ( 363478.9, 3783311.4,     216.7,
    216.7,       2.0);
    ( 363470.7, 3783132.7,     215.7,     215.7,       2.0);         ( 363470.7, 3783157.7,     215.8,
    215.8,       2.0);
    ( 363470.7, 3783182.7,     215.9,     215.9,       2.0);         ( 363469.6, 3783203.5,     216.1,
    216.1,       2.0);
    ( 363469.6, 3783228.5,     216.2,     216.2,       2.0);         ( 363469.6, 3783253.5,     216.4,
    216.4,       2.0);
    ( 363469.6, 3783278.5,     216.5,     216.5,       2.0);         ( 363469.6, 3783303.5,     216.7,
    216.7,       2.0);
    ( 363798.9, 3783066.8,     215.2,     215.2,       2.0);         ( 363795.1, 3783063.9,     215.2,
    215.2,       2.0);
    ( 363795.4, 3783052.6,     215.2,     215.2,       2.0);         ( 363798.6, 3783048.7,     215.2,
    215.2,       2.0);
    ( 363811.1, 3783048.7,     215.2,     215.2,       2.0);         ( 363815.4, 3783052.6,     215.2,
    215.2,       2.0);
    ( 363815.2, 3783063.7,     215.2,     215.2,       2.0);         ( 363811.2, 3783067.4,     215.2,
    215.2,       2.0);
    ( 363298.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363323.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363348.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363373.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363422.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);         ( 363472.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);         ( 363517.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);         ( 363567.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363618.5, 3783857.4,     220.2,
    220.2,       2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363671.7, 3783856.6,     220.2,
    220.2,       2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);         ( 363722.1, 3783854.7,     220.2,
    220.2,       2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
```

```
 18:03:42

PAGE   7
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                          (METERS)

     ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363771.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363821.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363871.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363921.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363971.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);         ( 364021.7, 3783854.3,     221.2,
     221.2,       2.0);
     ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);         ( 364073.7, 3783852.3,     223.7,
     223.7,       2.0);
     ( 364061.8, 3783840.4,     222.8,     222.8,
     2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 18:03:42

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                             *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                 (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                               (METERS/SEC)

                                                     1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 18:03:42

PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   ..\..\rese8.sfc                                                                     Met Version:  14134
```

Profile file: ..\..\rese8.PFL
Surface format:
FREE
Profile format:
FREE
Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2008 Year: 2008

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
08	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	03	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	0.56	999.00	999.	-9.0	285.4	5.5
08	01	01	1	09	22.6	-9.000	-9.000	-9.000	54.	-999.	-99999.0	0.50	1.00	0.32	999.00	999.	-9.0	285.9	5.5
08	01	01	1	10	71.8	-9.000	-9.000	-9.000	147.	-999.	-99999.0	0.50	1.00	0.24	999.00	999.	-9.0	288.1	5.5
08	01	01	1	11	111.2	-9.000	-9.000	-9.000	357.	-999.	-99999.0	0.50	1.00	0.21	999.00	999.	-9.0	289.2	5.5
08	01	01	1	12	128.1	-9.000	-9.000	-9.000	571.	-999.	-99999.0	0.50	1.00	0.20	999.00	999.	-9.0	290.4	5.5
08	01	01	1	13	127.4	-9.000	-9.000	-9.000	712.	-999.	-99999.0	0.50	1.00	0.20	999.00	999.	-9.0	290.4	5.5
08	01	01	1	14	109.8	-9.000	-9.000	-9.000	763.	-999.	-99999.0	0.50	1.00	0.21	999.00	999.	-9.0	290.9	5.5
08	01	01	1	15	52.2	-9.000	-9.000	-9.000	786.	-999.	-99999.0	0.50	1.00	0.25	999.00	999.	-9.0	290.4	5.5
08	01	01	1	16	27.2	-9.000	-9.000	-9.000	796.	-999.	-99999.0	0.50	1.00	0.33	999.00	999.	-9.0	289.2	5.5
08	01	01	1	17	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	0.59	999.00	999.	-9.0	288.1	5.5
08	01	01	1	18	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	19	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	20	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	21	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	22	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	23	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	24	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
08	01	01	01	5.5	0	-999.	-99.00	287.1	99.0	-99.00	-99.00
08	01	01	01	9.1	1	-999.	-99.00	-999.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project
*** 08/10/15
*** AERMET - VERSION 14134 *** *** ***
18:03:42

PAGE 10
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AWPF_V ***
INCLUDING SOURCE(S): AWPF_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)

363917.08	3783107.55	63.76720	(10122616)	363917.08	3783132.55	83.72378	(10122616)
363917.08	3783157.55	78.52803	(10122616)	363917.08	3783182.55	86.55552	(12121716)
363917.08	3783207.55	127.01942	(12121716)	363918.68	3783233.09	128.00371	(12121716)
363918.68	3783258.09	108.63635	(12121716)	363918.68	3783283.09	79.47379	(12121716)
363918.68	3783308.09	51.35274	(12121716)	363919.21	3783332.28	31.25079	(12121716)
363919.21	3783357.28	27.73877	(12111716)	363919.21	3783382.28	24.29130	(12111716)
363919.21	3783407.28	20.97418	(12111716)	363468.40	3783096.50	6.90426	(09110816)
363480.32	3783096.24	7.26576	(09110816)	363505.32	3783096.24	8.13135	(09110816)
363530.32	3783096.24	9.13796	(09110816)	363555.32	3783096.24	10.32934	(09110816)
363580.32	3783096.24	11.73535	(09110816)	363605.32	3783096.24	13.39505	(09110816)
363629.81	3783096.24	15.92030	(09120216)	363654.81	3783096.24	19.90545	(09120216)
363679.81	3783093.68	24.54574	(09120216)	363704.81	3783093.68	30.06331	(09120216)
363729.81	3783093.56	37.25064	(11112816)	363754.81	3783093.56	50.82023	(11112816)
363779.81	3783092.66	73.25861	(11111216)	363804.81	3783092.66	110.48555	(11111216)
363829.81	3783092.66	118.78483	(11111216)	363854.81	3783092.66	85.81840	(11111216)
363879.81	3783092.66	59.54445	(08121916)	363587.82	3783466.38	8.65587	(08112816)
363601.35	3783480.91	7.71702	(08112816)	363601.35	3783505.91	6.46328	(09122016)
363601.35	3783530.91	6.49887	(09122016)	363601.35	3783555.91	6.44601	(09122016)
363601.35	3783580.91	6.32140	(09122016)	363601.35	3783605.91	6.29932	(12120116)
363573.32	3783452.30	9.41369	(08112816)	363561.08	3783441.85	9.81736	(08112816)
363551.24	3783438.12	9.80786	(08112816)	363550.94	3783426.26	10.36321	(08112816)
363551.19	3783411.48	11.04843	(08112816)	363550.94	3783395.93	11.70862	(08112816)
363550.68	3783381.66	12.39115	(12112816)	363550.43	3783363.30	14.57935	(12112816)
363536.92	3783363.05	14.32876	(12112816)	363528.51	3783363.30	14.08276	(12112816)
363528.25	3783357.44	14.56677	(12112816)	363513.72	3783357.44	14.00595	(12112816)
363504.55	3783352.60	13.84664	(12112816)	363507.18	3783337.93	14.74589	(09121216)
363501.43	3783331.08	15.29873	(09121216)	363491.71	3783322.46	15.62840	(09121216)
363485.30	3783316.28	15.67754	(09121216)	363478.89	3783311.41	15.54461	(09121216)
363470.66	3783132.66	8.97131	(12112916)	363470.66	3783157.66	11.45050	(12112916)
363470.66	3783182.66	13.41789	(12112916)	363469.56	3783203.46	14.27153	(12112916)
363469.56	3783228.46	14.32690	(12112916)	363469.56	3783253.46	13.38456	(09121216)
363469.56	3783278.46	14.87130	(09121216)	363469.56	3783303.46	15.17046	(09121216)

```
        363798.94   3783066.77       73.42621  (11111216)                363795.11   3783063.90       68.55912
        (11111216)
        363795.43   3783052.56       60.63820  (11111216)                363798.62   3783048.73       59.54645
        (11111216)
        363811.08   3783048.73       62.74141  (11111216)                363815.39   3783052.56       66.07930
        (11111216)
        363815.23   3783063.74       76.40268  (11111216)                363811.24   3783067.41       79.67648
        (11111216)
        363298.29   3783861.01        1.58755  (11122116)                363323.29   3783861.01        1.60573
        (11122116)
        363348.29   3783861.01        1.59631  (11122116)                363373.29   3783861.01        1.58059
        (12102216)
        363398.29   3783861.01        1.65327  (08121216)                363422.49   3783859.43        1.84190
        (09122016)
        363447.49   3783859.43        2.12973  (09122016)                363472.49   3783859.43        2.52578
        (12120116)
```

```
*** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 18:03:42

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                  INCLUDING SOURCE(S):     AWPF_V      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        2.86356  (12120116)                363517.73   3783858.63        3.30410
        (12120116)
        363542.73   3783858.63        3.69349  (12120116)                363567.73   3783858.63        4.01433
        (12120116)
        363593.53   3783857.44        4.25272  (12120116)                363618.53   3783857.44        4.35033
        (12120116)
        363643.53   3783857.44        4.30918  (12120116)                363671.70   3783856.65        4.10558
        (12120116)
        363697.10   3783854.67        3.80171  (12120116)                363722.10   3783854.67        3.53693
        (08121516)
        363746.70   3783854.27        3.73385  (08121516)                363771.70   3783854.27        3.89380
        (08121516)
        363796.70   3783854.27        4.00897  (08121516)                363821.70   3783854.27        4.07420
        (08121516)
        363846.70   3783854.27        4.08658  (08121516)                363871.70   3783854.27        4.04563
        (08121516)
        363896.70   3783854.27        3.95338  (08121516)                363921.70   3783854.27        3.81416
        (08121516)
        363946.70   3783854.27        3.63428  (08121516)                363971.70   3783854.27        3.42960
        (08121516)
        363996.70   3783854.27        3.36143  (12121416)                364021.70   3783854.27        3.79720
        (12121416)
        364046.70   3783854.27        4.25550  (12121416)                364073.73   3783852.30        4.74081
        (12121416)
        364061.84   3783840.40        4.64033
        (12121416)
*** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
```

18:03:42

PAGE 12
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: FLOWEQ_V ***
INCLUDING SOURCE(S): FLOWEQ_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	5.47250	(12121016)	363917.08	3783132.55	6.22416	(12121016)
363917.08	3783157.55	7.11576	(12121016)	363917.08	3783182.55	8.17813	(12121016)
363917.08	3783207.55	9.45065	(12121016)	363918.68	3783233.09	10.97337	(12121016)
363918.68	3783258.09	12.79124	(12121016)	363918.68	3783283.09	14.96835	(12121016)
363918.68	3783308.09	17.56573	(12121016)	363919.21	3783332.28	20.67722	(12121016)
363919.21	3783357.28	28.01019	(08121916)	363919.21	3783382.28	37.46623	(08121916)
363919.21	3783407.28	61.38911	(10122616)	363468.40	3783096.50	2.55901	(12121616)
363480.32	3783096.24	2.62669	(12121616)	363505.32	3783096.24	2.85765	(11112816)
363530.32	3783096.24	3.07814	(11112816)	363555.32	3783096.24	3.25041	(11112816)
363580.32	3783096.24	3.35613	(11112816)	363605.32	3783096.24	3.44777	(12121616)
363629.81	3783096.24	3.62104	(12121616)	363654.81	3783096.24	4.17591	(10120716)
363679.81	3783093.68	4.58828	(10120716)	363704.81	3783093.68	5.55668	(11111216)
363729.81	3783093.56	6.52384	(11111216)	363754.81	3783093.56	7.32877	(11111216)
363779.81	3783092.66	7.83168	(11111216)	363804.81	3783092.66	8.00473	(11111216)
363829.81	3783092.66	7.78473	(11111216)	363854.81	3783092.66	7.19284	(11111216)
363879.81	3783092.66	6.30504	(11111216)	363587.82	3783466.38	17.77439	(12112916)
363601.35	3783480.91	21.12593	(12112916)	363601.35	3783505.91	22.08905	(12112916)
363601.35	3783530.91	22.40046	(09121216)	363601.35	3783555.91	23.65063	(09121216)
363601.35	3783580.91	21.77937	(09121216)	363601.35	3783605.91	18.32407	(12112816)
363573.32	3783452.30	14.42727	(12112916)	363561.08	3783441.85	12.12584	(12112916)
363551.24	3783438.12	11.04566	(12112916)	363550.94	3783426.26	9.57452	(12112916)
363551.19	3783411.48	8.32848	(09110816)	363550.94	3783395.93	7.68644	(09110816)
363550.68	3783381.66	7.01672	(09110816)	363550.43	3783363.30	6.17093	(09120216)
363536.92	3783363.05	5.77212	(09110816)	363528.51	3783363.30	5.60301	(09110816)

```
        363528.25   3783357.44        5.46156  (12121616)               363513.72   3783357.44        5.10956
        (12121616)
        363504.55   3783352.60        4.86997  (12121616)               363507.18   3783337.93        4.90886
        (09120216)
        363501.43   3783331.08        4.79670  (09120216)               363491.71   3783322.46        4.58749
        (09120216)
        363485.30   3783316.28        4.45237  (09120216)               363478.89   3783311.41        4.32346
        (09120216)
        363470.66   3783132.66        2.78665  (12121616)               363470.66   3783157.66        2.94397
        (12121616)
        363470.66   3783182.66        3.10772  (12121616)               363469.56   3783203.46        3.30059
        (09120216)
        363469.56   3783228.46        3.65076  (09120216)               363469.56   3783253.46        3.92689
        (09120216)
        363469.56   3783278.46        4.09675  (09120216)               363469.56   3783303.46        4.14302
        (09120216)
        363798.94   3783066.77        7.14209  (11111216)               363795.11   3783063.90        7.05044
        (11111216)
        363795.43   3783052.56        6.72549  (11111216)               363798.62   3783048.73        6.62104
        (11111216)
        363811.08   3783048.73        6.57961  (11111216)               363815.39   3783052.56        6.65684
        (11111216)
        363815.23   3783063.74        6.98829  (11111216)               363811.24   3783067.41        7.12915
        (11111216)
        363298.29   3783861.01        2.95792  (12112816)               363323.29   3783861.01        3.01779
        (08112816)
        363348.29   3783861.01        3.19292  (08112816)               363373.29   3783861.01        3.36042
        (08112816)
        363398.29   3783861.01        3.51511  (08112816)               363422.49   3783859.43        3.66760
        (08112816)
        363447.49   3783859.43        3.78290  (08112816)               363472.49   3783859.43        3.86436
        (08112816)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                           ***
 18:03:42

PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        3.94697  (08112816)               363517.73   3783858.63        3.92360
        (08112816)
        363542.73   3783858.63        3.86930  (08112816)               363567.73   3783858.63        3.74599
        (08112816)
        363593.53   3783857.44        4.24070  (09122016)               363618.53   3783857.44        5.21503
        (09122016)
        363643.53   3783857.44        6.33406  (12120116)               363671.70   3783856.65        7.80354
        (12120116)
        363697.10   3783854.67        8.92873  (12120116)               363722.10   3783854.67        9.56910
        (12120116)
        363746.70   3783854.27        9.64197  (12120116)               363771.70   3783854.27        9.05725
        (12120116)
        363796.70   3783854.27        7.89685  (12120116)               363821.70   3783854.27        7.18936
```

```
       (08010616)
       363846.70   3783854.27        6.93418  (08010616)                363871.70   3783854.27        6.83028
       (11111116)
       363896.70   3783854.27        7.32500  (11111116)                363921.70   3783854.27        7.40072
       (11111116)
       363946.70   3783854.27        7.06425  (11111116)                363971.70   3783854.27        7.33670
       (12111716)
       363996.70   3783854.27        7.30819  (12111716)                364021.70   3783854.27        6.87800
       (12111716)
       364046.70   3783854.27        6.94537  (12121416)                364073.73   3783852.30        7.55803
       (12121416)
       364061.84   3783840.40        7.35927
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 18:03:42

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                 *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                                     INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                           ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        3.12823  (09012415)                363917.08   3783132.55        3.22737
       (09012415)
       363917.08   3783157.55        3.15266  (10112016)                363917.08   3783182.55        3.14087
       (10112016)
       363917.08   3783207.55        3.46584  (10020916)                363918.68   3783233.09        3.62107
       (10020916)
       363918.68   3783258.09        3.63772  (10020916)                363918.68   3783283.09        3.47162
       (10020916)
       363918.68   3783308.09        4.14064  (10121916)                363919.21   3783332.28        4.85081
       (10121916)
       363919.21   3783357.28        5.41380  (10121916)                363919.21   3783382.28        6.09229
       (12121716)
       363919.21   3783407.28        6.66345  (12121716)                363468.40   3783096.50       34.20698
       (11112816)
       363480.32   3783096.24       44.19177  (11111216)                363505.32   3783096.24       67.76197
       (11111216)
       363530.32   3783096.24       70.98859  (11111216)                363555.32   3783096.24       48.40128
       (11111216)
       363580.32   3783096.24       34.73799  (08121916)                363605.32   3783096.24       29.92357
       (10122616)
       363629.81   3783096.24       28.35190  (10122616)                363654.81   3783096.24       24.17566
       (10122616)
       363679.81   3783093.68       19.50721  (10122616)                363704.81   3783093.68       15.85556
       (10122616)
       363729.81   3783093.56       12.77796  (10122616)                363754.81   3783093.56       10.31097
       (10122616)
       363779.81   3783092.66        8.33400  (10122616)                363804.81   3783092.66        6.72927
       (10122616)
       363829.81   3783092.66        5.47209  (10122616)                363854.81   3783092.66        4.46727
       (10122616)
       363879.81   3783092.66        3.66458  (10122616)                363587.82   3783466.38        8.32808
       (11111116)
```

363601.35	3783480.91	7.49075	(11111116)	363601.35	3783505.91	6.64138	(11111116)
363601.35	3783530.91	5.91084	(11111116)	363601.35	3783555.91	5.27237	(11111116)
363601.35	3783580.91	4.71903	(11111116)	363601.35	3783605.91	4.23027	(11111116)
363573.32	3783452.30	9.13064	(11111116)	363561.08	3783441.85	9.66341	(11111116)
363551.24	3783438.12	9.67103	(11111116)	363550.94	3783426.26	10.50624	(11111116)
363551.19	3783411.48	11.70947	(11111116)	363550.94	3783395.93	13.19540	(11111116)
363550.68	3783381.66	14.83670	(11111116)	363550.43	3783363.30	17.43972	(11111116)
363536.92	3783363.05	17.17520	(08010616)	363528.51	3783363.30	17.57522	(08010616)
363528.25	3783357.44	18.60899	(08010616)	363513.72	3783357.44	20.07920	(09122016)
363504.55	3783352.60	22.35886	(09122016)	363507.18	3783337.93	25.87683	(09122016)
363501.43	3783331.08	28.74383	(12120116)	363491.71	3783322.46	32.81092	(12120116)
363485.30	3783316.28	34.90706	(12120116)	363478.89	3783311.41	35.80078	(12120116)
363470.66	3783132.66	53.85141	(11112816)	363470.66	3783157.66	98.41151	(12112916)
363470.66	3783182.66	146.84658	(12112916)	363469.56	3783203.46	136.17277	(09121216)
363469.56	3783228.46	84.25329	(08112816)	363469.56	3783253.46	57.17203	(08112816)
363469.56	3783278.46	43.97498	(09122016)	363469.56	3783303.46	35.60909	(12120116)
363798.94	3783066.77	7.82376	(10122616)	363795.11	3783063.90	8.06593	(10122616)
363795.43	3783052.56	8.11658	(10122616)	363798.62	3783048.73	7.96911	(10122616)
363811.08	3783048.73	7.40598	(10122616)	363815.39	3783052.56	7.18334	(10122616)
363815.23	3783063.74	7.03757	(10122616)	363811.24	3783067.41	7.17156	(10122616)
363298.29	3783861.01	2.40027	(12120116)	363323.29	3783861.01	2.43225	(12120116)
363348.29	3783861.01	2.38657	(12120116)	363373.29	3783861.01	2.26372	(12120116)
363398.29	3783861.01	2.07265	(12120116)	363422.49	3783859.43	1.84997	(12120116)
363447.49	3783859.43	1.90581	(08121516)	363472.49	3783859.43	1.97541	(08121516)

FF *** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project *** 08/10/15
*** AERMET - VERSION 14134 *** *** *** 18:03:42

PAGE 15
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: MAINTB_V ***
INCLUDING SOURCE(S): MAINTBLD_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M) Y-COORD (M) CONC (YYMMDDHH) X-COORD (M) Y-COORD (M) CONC

```
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        2.02102  (08121516)                363517.73   3783858.63        2.04818
       (08121516)
       363542.73   3783858.63        2.05630  (08121516)                363567.73   3783858.63        2.03979
       (08121516)
       363593.53   3783857.44        2.00262  (08121516)                363618.53   3783857.44        1.93924
       (08121516)
       363643.53   3783857.44        1.85652  (08121516)                363671.70   3783856.65        1.78489
       (08112616)
       363697.10   3783854.67        1.84308  (08112616)                363722.10   3783854.67        1.90202
       (12121416)
       363746.70   3783854.27        1.98764  (12121416)                363771.70   3783854.27        2.05325
       (12121416)
       363796.70   3783854.27        2.09842  (12121416)                363821.70   3783854.27        2.12286
       (12121416)
       363846.70   3783854.27        2.12701  (12121416)                363871.70   3783854.27        2.11191
       (12121416)
       363896.70   3783854.27        2.07916  (12121416)                363921.70   3783854.27        2.03068
       (12121416)
       363946.70   3783854.27        1.96866  (12121416)                363971.70   3783854.27        1.89942
       (12121416)
       363996.70   3783854.27        1.82645  (12121416)                364021.70   3783854.27        1.89259
       (12121416)
       364046.70   3783854.27        1.94577  (12121416)                364073.73   3783852.30        1.93166
       (12121416)
       364061.84   3783840.40        1.91415
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 18:03:42

PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                    INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        2.37631  (12121616)                363917.08   3783132.55        2.54573
       (12121616)
       363917.08   3783157.55        2.73221  (12121616)                363917.08   3783182.55        3.02990
       (08121916)
       363917.08   3783207.55        3.37653  (08110216)                363918.68   3783233.09        3.80614
       (08110216)
       363918.68   3783258.09        4.19609  (08110216)                363918.68   3783283.09        4.52561
       (08110216)
       363918.68   3783308.09        4.75316  (08110216)                363919.21   3783332.28        4.87153
       (08121916)
       363919.21   3783357.28        5.87648  (10122616)                363919.21   3783382.28        7.49665
       (10122616)
       363919.21   3783407.28        9.12289  (10122616)                363468.40   3783096.50        3.05396
       (11111216)
       363480.32   3783096.24        3.30853  (11111216)                363505.32   3783096.24        3.82780
       (11111216)
```

363530.32	3783096.24	4.28888	(11111216)	363555.32	3783096.24	4.64814	(11111216)
363580.32	3783096.24	4.86771	(11111216)	363605.32	3783096.24	4.92089	(11111216)
363629.81	3783096.24	4.80115	(11111216)	363654.81	3783096.24	4.51311	(11111216)
363679.81	3783093.68	4.04502	(11111216)	363704.81	3783093.68	3.52242	(11111216)
363729.81	3783093.56	3.21262	(12122016)	363754.81	3783093.56	3.08703	(12121016)
363779.81	3783092.66	3.13520	(12121016)	363804.81	3783092.66	3.07028	(12121016)
363829.81	3783092.66	2.89404	(12121016)	363854.81	3783092.66	2.63073	(12121016)
363879.81	3783092.66	2.39835	(12121616)	363587.82	3783466.38	27.31303	(11111216)
363601.35	3783480.91	38.33035	(11111216)	363601.35	3783505.91	46.43677	(11112816)
363601.35	3783530.91	67.17804	(11112816)	363601.35	3783555.91	94.29882	(09110816)
363601.35	3783580.91	198.10779	(12112916)	363601.35	3783605.91	237.12938	(09121216)
363573.32	3783452.30	20.11788	(11112816)	363561.08	3783441.85	17.53070	(11112816)
363551.24	3783438.12	16.40637	(11112816)	363550.94	3783426.26	14.80997	(11112816)
363551.19	3783411.48	12.97178	(11112816)	363550.94	3783395.93	11.91610	(11111216)
363550.68	3783381.66	11.50021	(11111216)	363550.43	3783363.30	10.92681	(11111216)
363536.92	3783363.05	9.23130	(10120716)	363528.51	3783363.30	8.61841	(10120716)
363528.25	3783357.44	8.47058	(10120716)	363513.72	3783357.44	8.08537	(11112816)
363504.55	3783352.60	7.75881	(11112816)	363507.18	3783337.93	6.98490	(11112816)
363501.43	3783331.08	6.64947	(11112816)	363491.71	3783322.46	6.26051	(11112816)
363485.30	3783316.28	6.00032	(11112816)	363478.89	3783311.41	5.80242	(11112816)
363470.66	3783132.66	3.33485	(10120716)	363470.66	3783157.66	3.59247	(10120716)
363470.66	3783182.66	3.84720	(10120716)	363469.56	3783203.46	4.03000	(10120716)
363469.56	3783228.46	4.24590	(10120716)	363469.56	3783253.46	4.42252	(10120716)
363469.56	3783278.46	4.70126	(11112816)	363469.56	3783303.46	5.49812	(11112816)
363798.94	3783066.77	2.84572	(12121016)	363795.11	3783063.90	2.82614	(12121016)
363795.43	3783052.56	2.72192	(12121016)	363798.62	3783048.73	2.68451	(12121016)
363811.08	3783048.73	2.65701	(12121016)	363815.39	3783052.56	2.67239	(12121016)
363815.23	3783063.74	2.76299	(12121016)	363811.24	3783067.41	2.81130	(12121016)
363298.29	3783861.01	5.83241	(08112816)	363323.29	3783861.01	6.31671	(08112816)
363348.29	3783861.01	6.77478	(08112816)	363373.29	3783861.01	7.17710	(08112816)
363398.29	3783861.01	7.48807	(08112816)	363422.49	3783859.43	7.75400	(08112816)
363447.49	3783859.43	7.78585	(08112816)	363472.49	3783859.43	7.74478	(09122016)

```
*** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
 18:03:42

PAGE  17
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        9.47141  (09122016)                363517.73   3783858.63       11.82869
        (12120116)
        363542.73   3783858.63       14.44537  (12120116)                363567.73   3783858.63       16.16184
        (12120116)
        363593.53   3783857.44       16.50431  (12120116)                363618.53   3783857.44       14.96552
        (12120116)
        363643.53   3783857.44       13.02334  (08010616)                363671.70   3783856.65       12.35696
        (08010616)
        363697.10   3783854.67       13.24855  (11111116)                363722.10   3783854.67       12.99915
        (11111116)
        363746.70   3783854.27       12.85647  (12111716)                363771.70   3783854.27       12.41642
        (12111716)
        363796.70   3783854.27       10.81029  (12111716)                363821.70   3783854.27        8.59173
        (12111716)
        363846.70   3783854.27        9.84114  (12121716)                363871.70   3783854.27       11.46058
        (12121716)
        363896.70   3783854.27       12.53307  (12121716)                363921.70   3783854.27       13.02949
        (12121716)
        363946.70   3783854.27       13.00364  (12121716)                363971.70   3783854.27       12.56178
        (12121716)
        363996.70   3783854.27       11.82085  (12121716)                364021.70   3783854.27       11.07081
        (12121716)
        364046.70   3783854.27       10.13602  (12121716)                364073.73   3783852.30        8.98502
        (12121716)
        364061.84   3783840.40        9.33510
        (12121716)
*** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
 18:03:42

PAGE  18
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
```

363917.08	3783107.55	66.46007	(10122616)	363917.08	3783132.55	85.87649	(10122616)
363917.08	3783157.55	80.30528	(10122616)	363917.08	3783182.55	87.82035	(12121716)
363917.08	3783207.55	128.74663	(12121716)	363918.68	3783233.09	130.41331	(12121716)
363918.68	3783258.09	111.94580	(12121716)	363918.68	3783283.09	83.95460	(12121716)
363918.68	3783308.09	57.35990	(12121716)	363919.21	3783332.28	47.07175	(12121616)
363919.21	3783357.28	49.89311	(12121616)	363919.21	3783382.28	56.20284	(12121616)
363919.21	3783407.28	71.01076	(10122616)	363468.40	3783096.50	40.95084	(12121616)
363480.32	3783096.24	48.17916	(11111216)	363505.32	3783096.24	72.47928	(11111216)
363530.32	3783096.24	76.47024	(11111216)	363555.32	3783096.24	54.99088	(12121616)
363580.32	3783096.24	48.93141	(12121616)	363605.32	3783096.24	43.41693	(12121616)
363629.81	3783096.24	40.09082	(12121616)	363654.81	3783096.24	38.98070	(12121616)
363679.81	3783093.68	39.62713	(12121616)	363704.81	3783093.68	42.92374	(12121616)
363729.81	3783093.56	48.70014	(12121616)	363754.81	3783093.56	57.39328	(12121616)
363779.81	3783092.66	83.39610	(11111216)	363804.81	3783092.66	120.24007	(11111216)
363829.81	3783092.66	127.86718	(11111216)	363854.81	3783092.66	93.95958	(11111216)
363879.81	3783092.66	65.48727	(12121616)	363587.82	3783466.38	41.88138	(12121616)
363601.35	3783480.91	48.73224	(12121616)	363601.35	3783505.91	58.93376	(12121616)
363601.35	3783530.91	75.15033	(12121616)	363601.35	3783555.91	101.50352	(09110816)
363601.35	3783580.91	209.22755	(12112916)	363601.35	3783605.91	254.95331	(09121216)
363573.32	3783452.30	37.03146	(12121616)	363561.08	3783441.85	34.14912	(12121616)
363551.24	3783438.12	32.55670	(12121616)	363550.94	3783426.26	31.91081	(12121616)
363551.19	3783411.48	31.43286	(12121616)	363550.94	3783395.93	31.17971	(12121616)
363550.68	3783381.66	31.23179	(12121616)	363550.43	3783363.30	31.74519	(12121616)
363536.92	3783363.05	30.73881	(12121616)	363528.51	3783363.30	30.07739	(12121616)
363528.25	3783357.44	30.39324	(12121616)	363513.72	3783357.44	29.25896	(12121616)
363504.55	3783352.60	28.85336	(12121616)	363507.18	3783337.93	30.35264	(12121616)
363501.43	3783331.08	30.61818	(12121616)	363491.71	3783322.46	33.62474	(12120116)
363485.30	3783316.28	35.67966	(12120116)	363478.89	3783311.41	36.53705	(12120116)
363470.66	3783132.66	63.69317	(12121616)	363470.66	3783157.66	110.10530	(12112916)
363470.66	3783182.66	160.54131	(12112916)	363469.56	3783203.46	144.66723	(09121216)
363469.56	3783228.46	89.79451	(08112816)	363469.56	3783253.46	63.84554	(08112816)
363469.56	3783278.46	45.01653	(09122016)	363469.56	3783303.46	36.43198	(09122016)

```
       363798.94   3783066.77       82.33546  (11111216)                363795.11   3783063.90       77.43861
       (11111216)
       363795.43   3783052.56       69.13726  (11111216)                363798.62   3783048.73       67.86693
       (11111216)
       363811.08   3783048.73       70.80939  (11111216)                363815.39   3783052.56       74.16764
       (11111216)
       363815.23   3783063.74       84.85783  (11111216)                363811.24   3783067.41       88.35074
       (11111216)
       363298.29   3783861.01       10.20380  (08112816)                363323.29   3783861.01       10.76819
       (08112816)
       363348.29   3783861.01       11.30083  (08112816)                363373.29   3783861.01       11.76898
       (08112816)
       363398.29   3783861.01       12.13289  (08112816)                363422.49   3783859.43       12.46232
       (08112816)
       363447.49   3783859.43       12.50853  (08112816)                363472.49   3783859.43       12.68573
       (09122016)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 18:03:42

PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05       14.79564  (09122016)                363517.73   3783858.63       17.68213
       (09122016)
       363542.73   3783858.63       20.62351  (12120116)                363567.73   3783858.63       23.30133
       (12120116)
       363593.53   3783857.44       24.80389  (12120116)                363618.53   3783857.44       24.49536
       (12120116)
       363643.53   3783857.44       23.01619  (09122016)                363671.70   3783856.65       20.88661
       (09122016)
       363697.10   3783854.67       20.05013  (08010616)                363722.10   3783854.67       18.92789
       (08010616)
       363746.70   3783854.27       17.54575  (08010616)                363771.70   3783854.27       15.98371
       (08010616)
       363796.70   3783854.27       14.44303  (08010616)                363821.70   3783854.27       13.58882
       (12121616)
       363846.70   3783854.27       13.16177  (12121616)                363871.70   3783854.27       12.70890
       (12121616)
       363896.70   3783854.27       13.13314  (12121716)                363921.70   3783854.27       13.74565
       (12121716)
       363946.70   3783854.27       13.91223  (12121716)                363971.70   3783854.27       13.78171
       (12121716)
       363996.70   3783854.27       13.50917  (12121716)                364021.70   3783854.27       13.83846
       (12121416)
       364046.70   3783854.27       14.89164  (12121416)                364073.73   3783852.30       16.71753
       (12121416)
       364061.84   3783840.40       16.46041
       (12121416)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
```

18:03:42

PAGE 20

**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: AWPF_V ***
INCLUDING SOURCE(S): AWPF_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	23.26240m	(10122616)	363917.08	3783132.55	30.58735	(10102116)
363917.08	3783157.55	35.27330	(10102116)	363917.08	3783182.55	32.82277	(10102116)
363917.08	3783207.55	28.45973	(08012816)	363918.68	3783233.09	25.48658	(12121716)
363918.68	3783258.09	20.99602	(12121716)	363918.68	3783283.09	16.31342	(10121916)
363918.68	3783308.09	13.09972	(10121916)	363919.21	3783332.28	10.54660	(10121916)
363919.21	3783357.28	9.13184	(11022516)	363919.21	3783382.28	7.94992	(11022516)
363919.21	3783407.28	6.92046	(11022516)	363468.40	3783096.50	2.11531	(09120716)
363480.32	3783096.24	2.22674	(09120716)	363505.32	3783096.24	2.56567	(09120216)
363530.32	3783096.24	3.02766	(09120216)	363555.32	3783096.24	3.60419	(09120216)
363580.32	3783096.24	4.32746	(09120216)	363605.32	3783096.24	5.24276	(09120216)
363629.81	3783096.24	6.40699	(09120216)	363654.81	3783096.24	7.91652	(09120216)
363679.81	3783093.68	9.72804	(09120216)	363704.81	3783093.68	12.13863	(09120216)
363729.81	3783093.56	15.07894	(09120216)	363754.81	3783093.56	19.52910	(11111216)
363779.81	3783092.66	28.99184	(11111216)	363804.81	3783092.66	37.24692	(11111016)
363829.81	3783092.66	41.22936	(11111016)	363854.81	3783092.66	33.79475m	(10122616)
363879.81	3783092.66	31.41859m	(10122616)	363587.82	3783466.38	2.62277	(10100516)
363601.35	3783480.91	2.62222	(10100516)	363601.35	3783505.91	2.38190	(10100516)
363601.35	3783530.91	2.15595	(10100516)	363601.35	3783555.91	1.94666	(10100516)
363601.35	3783580.91	1.75581	(10100516)	363601.35	3783605.91	1.58484	(08052316)
363573.32	3783452.30	2.56475	(10100516)	363561.08	3783441.85	2.47639	(10100516)
363551.24	3783438.12	2.47266	(11021816)	363550.94	3783426.26	2.63712	(11021816)
363551.19	3783411.48	2.84826	(11021816)	363550.94	3783395.93	3.06317	(11021816)
363550.68	3783381.66	3.33099	(12112816)	363550.43	3783363.30	3.79000	(12112816)
363536.92	3783363.05	3.65940	(12112816)	363528.51	3783363.30	3.56356	(12112816)

```
        363528.25   3783357.44        3.66337  (12112816)                363513.72   3783357.44        3.47745
        (12112816)
        363504.55   3783352.60        3.40789  (12112816)                363507.18   3783337.93        3.56629
        (12112816)
        363501.43   3783331.08        3.49837  (12112816)                363491.71   3783322.46        3.54372
        (10020516)
        363485.30   3783316.28        3.58853  (10020516)                363478.89   3783311.41        3.59306
        (10020516)
        363470.66   3783132.66        2.32717  (09120716)                363470.66   3783157.66        2.37472
        (10020516)
        363470.66   3783182.66        2.92364  (10020516)                363469.56   3783203.46        3.30658
        (10020516)
        363469.56   3783228.46        3.66541  (10020516)                363469.56   3783253.46        3.84028
        (10020516)
        363469.56   3783278.46        3.80687  (10020516)                363469.56   3783303.46        3.58205
        (10020516)
        363798.94   3783066.77       24.11865  (11111016)                363795.11   3783063.90       22.36947
        (11111016)
        363795.43   3783052.56       19.67411  (11111016)                363798.62   3783048.73       19.36741
        (11111016)
        363811.08   3783048.73       20.74113  (11111016)                363815.39   3783052.56       22.00002
        (11111016)
        363815.23   3783063.74       25.57743  (11111016)                363811.24   3783067.41       26.59369
        (11111016)
        363298.29   3783861.01        0.52159  (12042316)                363323.29   3783861.01        0.53800
        (12042316)
        363348.29   3783861.01        0.55009  (12042316)                363373.29   3783861.01        0.55839
        (10100516)
        363398.29   3783861.01        0.57764  (10100516)                363422.49   3783859.43        0.59620
        (10100516)
        363447.49   3783859.43        0.61033  (10100516)                363472.49   3783859.43        0.62077
        (10100516)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 18:03:42

PAGE  21
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                  INCLUDING SOURCE(S):     AWPF_V      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        0.66228  (09101316)                363517.73   3783858.63        0.73769
        (09101316)
        363542.73   3783858.63        0.80730  (09101316)                363567.73   3783858.63        0.86897
        (09101316)
        363593.53   3783857.44        0.92277  (09101316)                363618.53   3783857.44        0.95764
        (09101316)
        363643.53   3783857.44        0.97456  (09101316)                363671.70   3783856.65        0.97231
        (09101316)
        363697.10   3783854.67        0.95239  (09101316)                363722.10   3783854.67        0.90770
        (09101316)
        363746.70   3783854.27        0.84854  (09101316)                363771.70   3783854.27        0.85137
        (09020616)
        363796.70   3783854.27        0.87512  (09020616)                363821.70   3783854.27        0.89822
```

```
       (11022516)
       363846.70   3783854.27        0.97568  (11022516)              363871.70   3783854.27        1.04054
       (11022516)
       363896.70   3783854.27        1.08937  (11022516)              363921.70   3783854.27        1.11964
       (11022516)
       363946.70   3783854.27        1.12993  (11022516)              363971.70   3783854.27        1.16278
       (12121416)
       363996.70   3783854.27        1.19305  (12121416)              364021.70   3783854.27        1.23332
       (12121416)
       364046.70   3783854.27        1.26226  (12121416)              364073.73   3783852.30        1.28088
       (12121416)
       364061.84   3783840.40        1.30648
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 18:03:42

PAGE  22
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        2.24536  (12121916)              363917.08   3783132.55        2.48852
       (12121916)
       363917.08   3783157.55        2.77396  (08122616)              363917.08   3783182.55        3.13290
       (08122616)
       363917.08   3783207.55        3.55957  (08122616)              363918.68   3783233.09        4.29763m
       (10122616)
       363918.68   3783258.09        5.24404m (10122616)              363918.68   3783283.09        6.49368m
       (10122616)
       363918.68   3783308.09        8.19362m (10122616)              363919.21   3783332.28       10.60766m
       (10122616)
       363919.21   3783357.28       14.32370m (10122616)              363919.21   3783382.28       19.50566m
       (10122616)
       363919.21   3783407.28       25.93284m (10122616)              363468.40   3783096.50        0.67044
       (09120216)
       363480.32   3783096.24        0.69014  (11122216)              363505.32   3783096.24        0.82782
       (11122216)
       363530.32   3783096.24        0.97979  (11122216)              363555.32   3783096.24        1.14182
       (11122216)
       363580.32   3783096.24        1.30727  (11122216)              363605.32   3783096.24        1.46687
       (11122216)
       363629.81   3783096.24        1.60638  (11122216)              363654.81   3783096.24        1.71886
       (11122216)
       363679.81   3783093.68        1.77804m (10111116)              363704.81   3783093.68        1.95834m
       (10111116)
       363729.81   3783093.56        2.08367m (10111116)              363754.81   3783093.56        2.15804
       (11111016)
       363779.81   3783092.66        2.37668  (11111016)              363804.81   3783092.66        2.49315
       (11111016)
       363829.81   3783092.66        2.47801  (11111016)              363854.81   3783092.66        2.41415
       (12121916)
       363879.81   3783092.66        2.36656  (12121916)              363587.82   3783466.38        4.16668
       (10020516)
```

```
        363601.35   3783480.91        5.20301  (10020516)             363601.35   3783505.91        5.97108
        (10020516)
        363601.35   3783530.91        6.24364  (10020516)             363601.35   3783555.91        5.93180
        (10020516)
        363601.35   3783580.91        5.16763  (10020516)             363601.35   3783605.91        4.67348
        (12112816)
        363573.32   3783452.30        3.26924  (10020516)             363561.08   3783441.85        2.84544
        (09120716)
        363551.24   3783438.12        2.66612  (09120716)             363550.94   3783426.26        2.59528
        (09120716)
        363551.19   3783411.48        2.47617  (09120716)             363550.94   3783395.93        2.47824
        (09120216)
        363550.68   3783381.66        2.50754  (09120216)             363550.43   3783363.30        2.50455
        (09120216)
        363536.92   3783363.05        2.30928  (09120216)             363528.51   3783363.30        2.19702
        (09120216)
        363528.25   3783357.44        2.19334  (09120216)             363513.72   3783357.44        2.01801
        (09120216)
        363504.55   3783352.60        1.91643  (09120216)             363507.18   3783337.93        1.93122
        (09120216)
        363501.43   3783331.08        1.86552  (09120216)             363491.71   3783322.46        1.76350
        (09120216)
        363485.30   3783316.28        1.69827  (09120216)             363478.89   3783311.41        1.64004
        (09120216)
        363470.66   3783132.66        0.82544  (09120216)             363470.66   3783157.66        0.94409
        (09120216)
        363470.66   3783182.66        1.06843  (09120216)             363469.56   3783203.46        1.17023
        (09120216)
        363469.56   3783228.46        1.29074  (09120216)             363469.56   3783253.46        1.39993
        (09120216)
        363469.56   3783278.46        1.49044  (09120216)             363469.56   3783303.46        1.55776
        (09120216)
        363798.94   3783066.77        2.20876  (11111016)             363795.11   3783063.90        2.17212
        (11111016)
        363795.43   3783052.56        2.07265  (11111016)             363798.62   3783048.73        2.04662
        (11111016)
        363811.08   3783048.73        2.05659  (11111016)             363815.39   3783052.56        2.08847
        (11111016)
        363815.23   3783063.74        2.19285  (11111016)             363811.24   3783067.41        2.22991
        (11111016)
        363298.29   3783861.01        0.75497  (12112816)             363323.29   3783861.01        0.75845
        (12112816)
        363348.29   3783861.01        0.78047  (11021816)             363373.29   3783861.01        0.81221
        (11021816)
        363398.29   3783861.01        0.84183  (11021816)             363422.49   3783859.43        0.88534
        (12050116)
        363447.49   3783859.43        0.94727  (12050116)             363472.49   3783859.43        1.01132
        (10100516)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 18:03:42

PAGE  23
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
```

```
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        1.09039  (10100516)                363517.73   3783858.63        1.18808
       (10100516)
       363542.73   3783858.63        1.28606  (10100516)                363567.73   3783858.63        1.38048
       (10100516)
       363593.53   3783857.44        1.47575  (10100516)                363618.53   3783857.44        1.54921
       (10100516)
       363643.53   3783857.44        1.62653  (08052316)                363671.70   3783856.65        1.85153
       (09101316)
       363697.10   3783854.67        2.09072  (09101316)                363722.10   3783854.67        2.25705
       (09101316)
       363746.70   3783854.27        2.34239  (09101316)                363771.70   3783854.27        2.32451
       (09101316)
       363796.70   3783854.27        2.20187  (09101316)                363821.70   3783854.27        2.14023
       (10041116)
       363846.70   3783854.27        2.34521  (11022516)                363871.70   3783854.27        2.55549
       (11022516)
       363896.70   3783854.27        2.67313  (11022516)                363921.70   3783854.27        2.68660
       (11022516)
       363946.70   3783854.27        2.59832  (11022516)                363971.70   3783854.27        2.42354
       (11022516)
       363996.70   3783854.27        2.18543  (11022516)                364021.70   3783854.27        2.18193
       (12121416)
       364046.70   3783854.27        2.06751  (12121416)                364073.73   3783852.30        1.92326
       (12121416)
       364061.84   3783840.40        2.01080
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 18:03:42

PAGE  24
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                 *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                                     INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                           ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        1.30117  (10102116)                363917.08   3783132.55        1.30351
       (10102116)
       363917.08   3783157.55        1.26444  (10102116)                363917.08   3783182.55        1.19293
       (10102116)
       363917.08   3783207.55        1.27534  (08012816)                363918.68   3783233.09        1.42471
       (08012816)
       363918.68   3783258.09        1.53878  (08012816)                363918.68   3783283.09        1.59465
       (08012816)
       363918.68   3783308.09        1.56957  (08012816)                363919.21   3783332.28        1.45856
       (08012816)
       363919.21   3783357.28        1.29433  (08012816)                363919.21   3783382.28        1.10566
       (08012816)
       363919.21   3783407.28        1.06719  (12121716)                363468.40   3783096.50       14.66553
       (11111216)
       363480.32   3783096.24       17.68549  (11111216)                363505.32   3783096.24       23.11033
       (11111016)
```

363530.32	3783096.24	25.00527	(11111016)	363555.32	3783096.24	20.18964m	(10122616)
363580.32	3783096.24	18.33507m	(10122616)	363605.32	3783096.24	13.96530m	(10122616)
363629.81	3783096.24	9.85963m	(10122616)	363654.81	3783096.24	7.68614	(10102116)
363679.81	3783093.68	6.07951	(10102116)	363704.81	3783093.68	4.96022	(10102116)
363729.81	3783093.56	4.07426	(10102116)	363754.81	3783093.56	3.38560	(10102116)
363779.81	3783092.66	2.83304	(10102116)	363804.81	3783092.66	2.40330	(10102116)
363829.81	3783092.66	2.06100	(10102116)	363854.81	3783092.66	1.78276	(10102116)
363879.81	3783092.66	1.55416	(10102116)	363587.82	3783466.38	3.06059	(11022516)
363601.35	3783480.91	2.76169	(11022516)	363601.35	3783505.91	2.42634	(11022516)
363601.35	3783530.91	2.14371	(11022516)	363601.35	3783555.91	1.90186	(11022516)
363601.35	3783580.91	1.69546	(11022516)	363601.35	3783605.91	1.51628	(11022516)
363573.32	3783452.30	3.36084	(11022516)	363561.08	3783441.85	3.57867	(11022516)
363551.24	3783438.12	3.61365	(11022516)	363550.94	3783426.26	3.93067	(11022516)
363551.19	3783411.48	4.38661	(11022516)	363550.94	3783395.93	4.95382	(11022516)
363550.68	3783381.66	5.58222	(11022516)	363550.43	3783363.30	6.58290	(11022516)
363536.92	3783363.05	6.38699	(11022516)	363528.51	3783363.30	6.13889	(11022516)
363528.25	3783357.44	6.49306	(11022516)	363513.72	3783357.44	5.88907	(11022516)
363504.55	3783352.60	6.23900	(09101316)	363507.18	3783337.93	7.23201	(09101316)
363501.43	3783331.08	7.92882	(09101316)	363491.71	3783322.46	8.73618	(09101316)
363485.30	3783316.28	9.17729	(09101316)	363478.89	3783311.41	9.41960	(08052316)
363470.66	3783132.66	23.91345	(09120216)	363470.66	3783157.66	32.51201	(11121916)
363470.66	3783182.66	45.53283	(12112916)	363469.56	3783203.46	39.00996	(12112816)
363469.56	3783228.46	26.60034	(11021816)	363469.56	3783253.46	17.09509	(11021816)
363469.56	3783278.46	12.50500	(08052316)	363469.56	3783303.46	9.70297	(08052316)
363798.94	3783066.77	2.27672	(10102116)	363795.11	3783063.90	2.29883	(10102116)
363795.43	3783052.56	2.17637	(10102116)	363798.62	3783048.73	2.09947	(10102116)
363811.08	3783048.73	1.96537	(10102116)	363815.39	3783052.56	1.95432	(10102116)
363815.23	3783063.74	2.04928	(10102116)	363811.24	3783067.41	2.12670	(10102116)
363298.29	3783861.01	0.52317	(09101316)	363323.29	3783861.01	0.53974	(09101316)
363348.29	3783861.01	0.54604	(09101316)	363373.29	3783861.01	0.54124	(09101316)
363398.29	3783861.01	0.52532	(09101316)	363422.49	3783859.43	0.50277	(09101316)
363447.49	3783859.43	0.46786	(09101316)	363472.49	3783859.43	0.47536	(09020616)

```
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 18:03:42

PAGE  25
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                                  INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05       0.48890  (09020616)              363517.73   3783858.63       0.49661
        (11022516)
        363542.73   3783858.63       0.54013  (11022516)              363567.73   3783858.63       0.57694
        (11022516)
        363593.53   3783857.44       0.60803  (11022516)              363618.53   3783857.44       0.62582
        (11022516)
        363643.53   3783857.44       0.63259  (11022516)              363671.70   3783856.65       0.64298
        (12121416)
        363697.10   3783854.67       0.66039  (12121416)              363722.10   3783854.67       0.66345
        (12121416)
        363746.70   3783854.27       0.65761  (12121416)              363771.70   3783854.27       0.64243
        (12121416)
        363796.70   3783854.27       0.62003  (12121416)              363821.70   3783854.27       0.59199
        (12121416)
        363846.70   3783854.27       0.55991  (12121416)              363871.70   3783854.27       0.52528
        (12121416)
        363896.70   3783854.27       0.48940  (12121416)              363921.70   3783854.27       0.45336
        (12121416)
        363946.70   3783854.27       0.41801  (12121416)              363971.70   3783854.27       0.38446
        (12121416)
        363996.70   3783854.27       0.35326  (12121416)              364021.70   3783854.27       0.34154
        (12121416)
        364046.70   3783854.27       0.33085  (12121416)              364073.73   3783852.30       0.31300
        (12121416)
        364061.84   3783840.40       0.31611
        (12121416)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 18:03:42

PAGE  26
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
```

```
363917.08   3783107.55        1.03311m (10122616)               363917.08   3783132.55        1.10079m
(10122616)
363917.08   3783157.55        1.17105m (10122616)               363917.08   3783182.55        1.24404m
(10122616)
363917.08   3783207.55        1.32071m (10122616)               363918.68   3783233.09        1.39339m
(10122616)
363918.68   3783258.09        1.48144m (10122616)               363918.68   3783283.09        1.57959m
(10122616)
363918.68   3783308.09        1.69009m (10122616)               363919.21   3783332.28        1.80391m
(10122616)
363919.21   3783357.28        1.93547m (10122616)               363919.21   3783382.28        2.06596m
(10122616)
363919.21   3783407.28        2.25796  (10102116)               363468.40   3783096.50        1.17511m
(10111116)
363480.32   3783096.24        1.21366m (10111116)               363505.32   3783096.24        1.27687m
(10111116)
363530.32   3783096.24        1.30869m (10111116)               363555.32   3783096.24        1.35748
(11111016)
363580.32   3783096.24        1.46207  (11111016)               363605.32   3783096.24        1.51452
(11111016)
363629.81   3783096.24        1.50792  (11111016)               363654.81   3783096.24        1.48081
(12121916)
363679.81   3783093.68        1.47384  (12121916)               363704.81   3783093.68        1.43396
(12121916)
363729.81   3783093.56        1.35201  (12121916)               363754.81   3783093.56        1.26217
(08122616)
363779.81   3783092.66        1.19588  (08122616)               363804.81   3783092.66        1.10210
(08122616)
363829.81   3783092.66        1.10383m (10122616)               363854.81   3783092.66        1.10086m
(10122616)
363879.81   3783092.66        1.07309m (10122616)               363587.82   3783466.38       10.62497
(11111216)
363601.35   3783480.91       14.46894  (11111216)               363601.35   3783505.91       19.89026
(11111216)
363601.35   3783530.91       26.40033  (09120216)               363601.35   3783555.91       40.18441
(09120216)
363601.35   3783580.91       54.58379  (10020516)               363601.35   3783605.91       64.57126
(10020516)
363573.32   3783452.30        8.05578  (11122216)               363561.08   3783441.85        6.82647
(11122216)
363551.24   3783438.12        6.14140  (11122216)               363550.94   3783426.26        5.79321
(11122216)
363551.19   3783411.48        5.37214  (11122216)               363550.94   3783395.93        4.91517
(11122216)
363550.68   3783381.66        4.51577  (11122216)               363550.43   3783363.30        4.04101
(11122216)
363536.92   3783363.05        3.85720  (11122216)               363528.51   3783363.30        3.72306
(11122216)
363528.25   3783357.44        3.61744  (11122216)               363513.72   3783357.44        3.36510
(11122216)
363504.55   3783352.60        3.13766  (11122216)               363507.18   3783337.93        3.01892
(11122216)
363501.43   3783331.08        2.86186  (11122216)               363491.71   3783322.46        2.64734
(11122216)
363485.30   3783316.28        2.51280  (11122216)               363478.89   3783311.41        2.39597
(11122216)
363470.66   3783132.66        1.29403m (10111116)               363470.66   3783157.66        1.37388m
(10111116)
363470.66   3783182.66        1.50016  (11122216)               363469.56   3783203.46        1.61679
(11122216)
363469.56   3783228.46        1.76762  (11122216)               363469.56   3783253.46        1.92441
(11122216)
363469.56   3783278.46        2.08190  (11122216)               363469.56   3783303.46        2.23172
(11122216)
```

```
       363798.94   3783066.77        1.05279  (08122616)                363795.11   3783063.90        1.05724
       (08122616)
       363795.43   3783052.56        1.02510  (08122616)                363798.62   3783048.73        1.00570
       (08122616)
       363811.08   3783048.73        0.96677  (08122616)                363815.39   3783052.56        0.96075
       (08122616)
       363815.23   3783063.74        0.98681  (08122616)                363811.24   3783067.41        1.01061
       (08122616)
       363298.29   3783861.01        1.50071  (12112816)                363323.29   3783861.01        1.60007
       (11021816)
       363348.29   3783861.01        1.70288  (11021816)                363373.29   3783861.01        1.79834
       (11021816)
       363398.29   3783861.01        1.97301  (10100516)                363422.49   3783859.43        2.21882
       (10100516)
       363447.49   3783859.43        2.46540  (10100516)                363472.49   3783859.43        2.69786
       (10100516)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 18:03:42

PAGE  27
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        2.89167  (10100516)                363517.73   3783858.63        3.14524
       (08052316)
       363542.73   3783858.63        3.56545  (09101316)                363567.73   3783858.63        3.98558
       (09101316)
       363593.53   3783857.44        4.21341  (09101316)                363618.53   3783857.44        4.11055
       (09101316)
       363643.53   3783857.44        3.97628  (11022516)                363671.70   3783856.65        4.59114
       (11022516)
       363697.10   3783854.67        4.90134  (11022516)                363722.10   3783854.67        4.82802
       (11022516)
       363746.70   3783854.27        4.49177  (11022516)                363771.70   3783854.27        3.93995
       (11022516)
       363796.70   3783854.27        3.29042  (11022516)                363821.70   3783854.27        2.78280
       (10121916)
       363846.70   3783854.27        2.44242  (10121916)                363871.70   3783854.27        2.20415
       (12121716)
       363896.70   3783854.27        2.26090  (12121716)                363921.70   3783854.27        2.24798
       (12121716)
       363946.70   3783854.27        2.17420  (12121716)                363971.70   3783854.27        2.05410
       (12121716)
       363996.70   3783854.27        1.90328  (12121716)                364021.70   3783854.27        1.75787
       (12121716)
       364046.70   3783854.27        1.59601  (12121716)                364073.73   3783852.30        1.41198
       (12121716)
       364061.84   3783840.40        1.47443
       (12121716)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
```

18:03:42

PAGE 28
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_V , FLOWEQ_V , MAINTBLD_V , AWPF_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	26.54246m	(10122616)	363917.08	3783132.55	33.23374	(10102116)
363917.08	3783157.55	38.11741	(10102116)	363917.08	3783182.55	35.89118	(10102116)
363917.08	3783207.55	30.12551	(08012816)	363918.68	3783233.09	27.11035	(12121716)
363918.68	3783258.09	23.00027	(12121716)	363918.68	3783283.09	18.15827	(12121716)
363918.68	3783308.09	14.89419	(10121916)	363919.21	3783332.28	13.47946m	(10122616)
363919.21	3783357.28	17.06294m	(10122616)	363919.21	3783382.28	22.19561m	(10122616)
363919.21	3783407.28	28.60507m	(10122616)	363468.40	3783096.50	17.18121	(11111216)
363480.32	3783096.24	20.35216	(11111216)	363505.32	3783096.24	25.83517	(11111216)
363530.32	3783096.24	26.83211	(11111016)	363555.32	3783096.24	21.12660	(09021716)
363580.32	3783096.24	19.21410m	(10122616)	363605.32	3783096.24	15.05348m	(10122616)
363629.81	3783096.24	11.29334	(10102116)	363654.81	3783096.24	11.14490	(09120216)
363679.81	3783093.68	12.18282	(09120216)	363704.81	3783093.68	14.11199	(09120216)
363729.81	3783093.56	16.71699	(09120216)	363754.81	3783093.56	22.52835	(11111216)
363779.81	3783092.66	31.81790	(11111216)	363804.81	3783092.66	40.55811	(11111016)
363829.81	3783092.66	44.34921	(11111016)	363854.81	3783092.66	36.86143m	(10122616)
363879.81	3783092.66	34.52530m	(10122616)	363587.82	3783466.38	12.85875	(11111216)
363601.35	3783480.91	16.69724	(11111216)	363601.35	3783505.91	21.75928	(11111216)
363601.35	3783530.91	28.76238	(09120216)	363601.35	3783555.91	42.10901	(09120216)
363601.35	3783580.91	59.97042	(10020516)	363601.35	3783605.91	68.91936	(10020516)
363573.32	3783452.30	10.24732	(11111216)	363561.08	3783441.85	8.70697	(11111216)
363551.24	3783438.12	8.05961	(11121916)	363550.94	3783426.26	7.78455	(11121916)
363551.19	3783411.48	7.65499	(12121416)	363550.94	3783395.93	7.85856	(12121416)
363550.68	3783381.66	8.16894	(12121416)	363550.43	3783363.30	8.77373	(12121416)
363536.92	3783363.05	8.33725	(12121416)	363528.51	3783363.30	7.98060	(12121416)

```
        363528.25   3783357.44        8.20722  (12121416)               363513.72   3783357.44        7.49602
        (10041116)
        363504.55   3783352.60        7.68736  (12120116)               363507.18   3783337.93        8.64093
        (12120116)
        363501.43   3783331.08        9.18682  (12120116)               363491.71   3783322.46        9.79143
        (12120116)
        363485.30   3783316.28       10.12174  (12120116)               363478.89   3783311.41       10.29491
        (08052316)
        363470.66   3783132.66       26.86224  (09120216)               363470.66   3783157.66       35.77873
        (11121916)
        363470.66   3783182.66       48.36792  (12112916)               363469.56   3783203.46       41.69632
        (12112916)
        363469.56   3783228.46       28.27522  (11021816)               363469.56   3783253.46       19.08548
        (11021816)
        363469.56   3783278.46       13.55803  (10100516)               363469.56   3783303.46       10.49314
        (08052316)
        363798.94   3783066.77       27.14761  (11111016)               363795.11   3783063.90       25.38612
        (11111016)
        363795.43   3783052.56       22.56659  (11111016)               363798.62   3783048.73       22.20316
        (11111016)
        363811.08   3783048.73       23.50287  (11111016)               363815.39   3783052.56       24.77228
        (11111016)
        363815.23   3783063.74       28.47070  (11111016)               363811.24   3783067.41       29.55564
        (11111016)
        363298.29   3783861.01        2.70946  (11021816)               363323.29   3783861.01        2.84858
        (11021816)
        363348.29   3783861.01        2.99316  (10100516)               363373.29   3783861.01        3.27493
        (10100516)
        363398.29   3783861.01        3.57636  (10100516)               363422.49   3783859.43        3.89906
        (10100516)
        363447.49   3783859.43        4.22263  (10100516)               363472.49   3783859.43        4.53337
        (10100516)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 18:03:42

PAGE  29
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        4.79922  (10100516)               363517.73   3783858.63        5.01500
        (08052316)
        363542.73   3783858.63        5.54002  (08052316)               363567.73   3783858.63        5.97169
        (08052316)
        363593.53   3783857.44        6.40357  (09101316)               363618.53   3783857.44        6.54152
        (09101316)
        363643.53   3783857.44        6.38898  (09101316)               363671.70   3783856.65        6.09907
        (11022516)
        363697.10   3783854.67        6.63710  (11022516)               363722.10   3783854.67        6.82941
        (11022516)
        363746.70   3783854.27        6.80341  (11022516)               363771.70   3783854.27        6.60250
        (11022516)
        363796.70   3783854.27        6.32172  (11022516)               363821.70   3783854.27        6.02435
```

```
        (11022516)
        363846.70   3783854.27        5.74199  (11022516)               363871.70   3783854.27        5.47624
        (11022516)
        363896.70   3783854.27        5.21011  (11022516)               363921.70   3783854.27        4.92192
        (11022516)
        363946.70   3783854.27        4.59624  (11022516)               363971.70   3783854.27        4.41010
        (10121916)
        363996.70   3783854.27        4.20847  (10121916)               364021.70   3783854.27        4.19072
        (12121416)
        364046.70   3783854.27        4.03423  (12121416)               364073.73   3783852.30        3.95216
        (12121416)
        364061.84   3783840.40        4.08637
        (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
 18:03:42

PAGE  30
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                  *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                    ** CONC OF CO       IN MICROGRAMS/M**3                          **


                                                         DATE
                                                              NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -


AWPF_V   HIGH   1ST HIGH VALUE IS     128.00371  ON 12121716: AT (  363918.68,  3783233.09,   214.34,   214.34,
2.00)  DC

FLOWEQ_V HIGH   1ST HIGH VALUE IS      61.38911  ON 10122616: AT (  363919.21,  3783407.28,   217.57,   217.57,
2.00)  DC

MAINTB_V HIGH   1ST HIGH VALUE IS     146.84658  ON 12112916: AT (  363470.66,  3783182.66,   215.94,   215.94,
2.00)  DC

WAREH_V  HIGH   1ST HIGH VALUE IS     237.12938  ON 09121216: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS     254.95331  ON 09121216: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
 18:03:42

PAGE  31
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                  *** THE SUMMARY OF HIGHEST  8-HR RESULTS ***
```

```
                                        ** CONC OF CO       IN MICROGRAMS/M**3                         **


                                                          DATE
                                                               NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

AWPF_V   HIGH   1ST HIGH VALUE IS      41.22936  ON 11111016: AT (  363829.81,  3783092.66,   215.18,   215.18,
2.00)  DC

FLOWEQ_V HIGH   1ST HIGH VALUE IS      25.93284m ON 10122616: AT (  363919.21,  3783407.28,   217.57,   217.57,
2.00)  DC

MAINTB_V HIGH   1ST HIGH VALUE IS      45.53283  ON 12112916: AT (  363470.66,  3783182.66,   215.94,   215.94,
2.00)  DC

WAREH_V  HIGH   1ST HIGH VALUE IS      64.57126  ON 10020516: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS      68.91936  ON 10020516: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
 18:03:42

PAGE  32
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of         1173 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of            2 Calm Hours Identified

 A Total of         1171 Missing Hours Identified (  2.67 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
```

****

```
****************************************
**
** AERMOD Input Produced by:
** AERMOD View Ver. 8.8.9
** Lakes Environmental Software Inc.
** Date: 8/11/2015
** File: C:\AERMOD\GWRP\GWRP-CO\GWRP-CO.ADI
**
****************************************
**
**
****************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE LA Ground Water Replenishment Project
   MODELOPT DFAULT CONC
   AVERTIME 1 8 ANNUAL
   URBANOPT 9862049
   POLLUTID CO
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-CO.err
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION WAREHOUSE_V  VOLUME     363660.728  3783587.418      219.660
   LOCATION FLOWEQ_V     VOLUME     363848.668  3783471.040      217.970
   LOCATION MAINTBLD_V   VOLUME     363528.440  3783175.430      215.900
   LOCATION AWPF_V       VOLUME     363829.890  3783175.990      215.160
** Source Parameters **
   SRCPARAM WAREHOUSE_V     0.2219     5.000     5.863     1.400
   SRCPARAM FLOWEQ_V        0.2214     5.000    17.530     1.400
   SRCPARAM MAINTBLD_V      0.1331     5.000    12.065     1.400
   SRCPARAM AWPF_V          0.3187     5.000    16.379     1.400
   URBANSRC ALL

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "WORKHOURS"
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT WAREHOUSE_V  HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_V     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT MAINTBLD_V   HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AWPF_V       HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
```

```
   SRCGROUP AWPF_V   AWPF_V
   SRCGROUP FLOWEQ_V FLOWEQ_V
   SRCGROUP MAINTB_V MAINTBLD_V
   SRCGROUP WAREH_V  WAREHOUSE_V
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED GWRP-CO.rou
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE ..\..\rese8.sfc
   PROFFILE ..\..\rese8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
   RECTABLE 8 1ST
** Auto-Generated Plotfiles
   PLOTFILE 1 ALL 1ST GWRP-CO.AD\01H1GALL.PLT 31
   PLOTFILE 8 ALL 1ST GWRP-CO.AD\08H1GALL.PLT 32
   PLOTFILE 1 AWPF_V 1ST GWRP-CO.AD\01H1G001.PLT 33
   PLOTFILE 8 AWPF_V 1ST GWRP-CO.AD\08H1G001.PLT 34
   PLOTFILE 1 FLOWEQ_V 1ST GWRP-CO.AD\01H1G002.PLT 35
   PLOTFILE 8 FLOWEQ_V 1ST GWRP-CO.AD\08H1G002.PLT 36
   PLOTFILE 1 MAINTB_V 1ST GWRP-CO.AD\01H1G003.PLT 37
   PLOTFILE 8 MAINTB_V 1ST GWRP-CO.AD\08H1G003.PLT 38
   PLOTFILE 1 WAREH_V 1ST GWRP-CO.AD\01H1G004.PLT 39
   PLOTFILE 8 WAREH_V 1ST GWRP-CO.AD\08H1G004.PLT 40
   PLOTFILE ANNUAL ALL GWRP-CO.AD\AN00GALL.PLT 41
   PLOTFILE ANNUAL AWPF_V GWRP-CO.AD\AN00G001.PLT 42
   PLOTFILE ANNUAL FLOWEQ_V GWRP-CO.AD\AN00G002.PLT 43
   PLOTFILE ANNUAL MAINTB_V GWRP-CO.AD\AN00G003.PLT 44
   PLOTFILE ANNUAL WAREH_V GWRP-CO.AD\AN00G004.PLT 45
   SUMMFILE GWRP-CO.sum
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
```

```
 08:50:21

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     4 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  CO

 **Model Calculates  2 Short Term Average(s) of:   1-HR   8-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      4 Source(s);       5 Source Group(s); and     105 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-CO.err
```

```
 **File for Summary of Results:
 GWRP-CO.sum
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                                ***
 08:50:21

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                   *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                   BASE    RELEASE    INIT.    INIT.   URBAN  EMISSION RATE
  SOURCE       PART.  (GRAMS/SEC)     X        Y      ELEV.   HEIGHT      SY       SZ     SOURCE  SCALAR VARY
    ID         CATS.              (METERS) (METERS) (METERS) (METERS) (METERS) (METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - -

 WAREHOUSE_V      0   0.22190E+00  363660.7 3783587.4   219.7     5.00     5.86     1.40     YES   HROFDY
 FLOWEQ_V         0   0.22140E+00  363848.7 3783471.0   218.0     5.00    17.53     1.40     YES   HROFDY
 MAINTBLD_V       0   0.13310E+00  363528.4 3783175.4   215.9     5.00    12.07     1.40     YES   HROFDY
 AWPF_V           0   0.31870E+00  363829.9 3783176.0   215.2     5.00    16.38     1.40     YES   HROFDY
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                                ***
 08:50:21

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                             SOURCE IDs
 -----------                                             ----------


  AWPF_V     AWPF_V      ,

  FLOWEQ_V   FLOWEQ_V    ,

  MAINTB_V   MAINTBLD_V  ,

  WAREH_V    WAREHOUSE_V ,

  ALL        WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                                ***
 08:50:21

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                            *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                   SOURCE IDs
  --------   ---------                                   ----------


            9862049.   WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
```

```
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
 08:50:21

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

     HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -


 SOURCE ID = WAREHOUSE_V  ; SOURCE TYPE = VOLUME   :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = FLOWEQ_V     ; SOURCE TYPE = VOLUME   :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = MAINTBLD_V   ; SOURCE TYPE = VOLUME   :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = AWPF_V       ; SOURCE TYPE = VOLUME   :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
 08:50:21

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

    ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);         ( 363917.1, 3783132.5,     214.8,
    214.8,       2.0);
    ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);         ( 363917.1, 3783182.5,     214.2,
    214.2,       2.0);
    ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);         ( 363918.7, 3783233.1,     214.3,
    214.3,       2.0);
    ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);         ( 363918.7, 3783283.1,     215.5,
    215.5,       2.0);
    ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);         ( 363919.2, 3783332.3,     216.7,
    216.7,       2.0);
    ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);         ( 363919.2, 3783382.3,     217.3,
```

```
217.3,       2.0);
( 363919.2, 3783407.3,     217.6,     217.6,       2.0);        ( 363468.4, 3783096.5,     215.5,
215.5,       2.0);
( 363480.3, 3783096.2,     215.5,     215.5,       2.0);        ( 363505.3, 3783096.2,     215.5,
215.5,       2.0);
( 363530.3, 3783096.2,     215.4,     215.4,       2.0);        ( 363555.3, 3783096.2,     215.4,
215.4,       2.0);
( 363580.3, 3783096.2,     215.3,     215.3,       2.0);        ( 363605.3, 3783096.2,     215.3,
215.3,       2.0);
( 363629.8, 3783096.2,     215.4,     215.4,       2.0);        ( 363654.8, 3783096.2,     215.3,
215.3,       2.0);
( 363679.8, 3783093.7,     215.2,     215.2,       2.0);        ( 363704.8, 3783093.7,     215.2,
215.2,       2.0);
( 363729.8, 3783093.6,     215.2,     215.2,       2.0);        ( 363754.8, 3783093.6,     215.3,
215.3,       2.0);
( 363779.8, 3783092.7,     215.2,     215.2,       2.0);        ( 363804.8, 3783092.7,     215.2,
215.2,       2.0);
( 363829.8, 3783092.7,     215.2,     215.2,       2.0);        ( 363854.8, 3783092.7,     215.2,
215.2,       2.0);
( 363879.8, 3783092.7,     215.1,     215.1,       2.0);        ( 363587.8, 3783466.4,     218.1,
218.1,       2.0);
( 363601.3, 3783480.9,     218.4,     218.4,       2.0);        ( 363601.3, 3783505.9,     218.9,
218.9,       2.0);
( 363601.3, 3783530.9,     219.5,     219.5,       2.0);        ( 363601.3, 3783555.9,     219.9,
219.9,       2.0);
( 363601.3, 3783580.9,     220.3,     220.3,       2.0);        ( 363601.3, 3783605.9,     220.3,
220.3,       2.0);
( 363573.3, 3783452.3,     217.8,     217.8,       2.0);        ( 363561.1, 3783441.8,     217.7,
217.7,       2.0);
( 363551.2, 3783438.1,     217.7,     217.7,       2.0);        ( 363550.9, 3783426.3,     217.6,
217.6,       2.0);
( 363551.2, 3783411.5,     217.3,     217.3,       2.0);        ( 363550.9, 3783395.9,     217.2,
217.2,       2.0);
( 363550.7, 3783381.7,     217.1,     217.1,       2.0);        ( 363550.4, 3783363.3,     217.0,
217.0,       2.0);
( 363536.9, 3783363.0,     217.0,     217.0,       2.0);        ( 363528.5, 3783363.3,     217.0,
217.0,       2.0);
( 363528.2, 3783357.4,     217.0,     217.0,       2.0);        ( 363513.7, 3783357.4,     217.0,
217.0,       2.0);
( 363504.5, 3783352.6,     216.9,     216.9,       2.0);        ( 363507.2, 3783337.9,     216.8,
216.8,       2.0);
( 363501.4, 3783331.1,     216.8,     216.8,       2.0);        ( 363491.7, 3783322.5,     216.7,
216.7,       2.0);
( 363485.3, 3783316.3,     216.7,     216.7,       2.0);        ( 363478.9, 3783311.4,     216.7,
216.7,       2.0);
( 363470.7, 3783132.7,     215.7,     215.7,       2.0);        ( 363470.7, 3783157.7,     215.8,
215.8,       2.0);
( 363470.7, 3783182.7,     215.9,     215.9,       2.0);        ( 363469.6, 3783203.5,     216.1,
216.1,       2.0);
( 363469.6, 3783228.5,     216.2,     216.2,       2.0);        ( 363469.6, 3783253.5,     216.4,
216.4,       2.0);
( 363469.6, 3783278.5,     216.5,     216.5,       2.0);        ( 363469.6, 3783303.5,     216.7,
216.7,       2.0);
( 363798.9, 3783066.8,     215.2,     215.2,       2.0);        ( 363795.1, 3783063.9,     215.2,
215.2,       2.0);
( 363795.4, 3783052.6,     215.2,     215.2,       2.0);        ( 363798.6, 3783048.7,     215.2,
215.2,       2.0);
( 363811.1, 3783048.7,     215.2,     215.2,       2.0);        ( 363815.4, 3783052.6,     215.2,
215.2,       2.0);
( 363815.2, 3783063.7,     215.2,     215.2,       2.0);        ( 363811.2, 3783067.4,     215.2,
215.2,       2.0);
( 363298.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363323.3, 3783861.0,     220.2,
220.2,       2.0);
( 363348.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363373.3, 3783861.0,     220.2,
```

```
    220.2,      2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363422.5, 3783859.4,     220.2,
    220.2,      2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);        ( 363472.5, 3783859.4,     220.2,
    220.2,      2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);        ( 363517.7, 3783858.6,     220.2,
    220.2,      2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);        ( 363567.7, 3783858.6,     220.2,
    220.2,      2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);        ( 363618.5, 3783857.4,     220.2,
    220.2,      2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);        ( 363671.7, 3783856.6,     220.2,
    220.2,      2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);        ( 363722.1, 3783854.7,     220.2,
    220.2,      2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 08:50:21

PAGE   7
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

    ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);        ( 363771.7, 3783854.3,     220.2,
    220.2,      2.0);
    ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);        ( 363821.7, 3783854.3,     220.2,
    220.2,      2.0);
    ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);        ( 363871.7, 3783854.3,     220.2,
    220.2,      2.0);
    ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);        ( 363921.7, 3783854.3,     220.2,
    220.2,      2.0);
    ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);        ( 363971.7, 3783854.3,     220.2,
    220.2,      2.0);
    ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);        ( 364021.7, 3783854.3,     221.2,
    221.2,      2.0);
    ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);        ( 364073.7, 3783852.3,     223.7,
    223.7,      2.0);
    ( 364061.8, 3783840.4,     222.8,     222.8,
    2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 08:50:21

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                             *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                               (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.
```

*** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
(METERS/SEC)

1.54, 3.09, 5.14, 8.23, 10.80,

FF *** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project
*** 08/11/15
*** AERMET - VERSION 14134 *** *** ***
08:50:21

PAGE 9
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\rese8.sfc Met Version: 14134
Profile file: ..\..\rese8.PFL
Surface format:
FREE
Profile format:
FREE
Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2008 Year: 2008

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
08	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	03	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	0.56	999.00	999.	-9.0	285.4	5.5
08	01	01	1	09	22.6	-9.000	-9.000	-9.000	54.	-999.	-99999.0	0.50	1.00	0.32	999.00	999.	-9.0	285.9	5.5
08	01	01	1	10	71.8	-9.000	-9.000	-9.000	147.	-999.	-99999.0	0.50	1.00	0.24	999.00	999.	-9.0	288.1	5.5
08	01	01	1	11	111.2	-9.000	-9.000	-9.000	357.	-999.	-99999.0	0.50	1.00	0.21	999.00	999.	-9.0	289.2	5.5
08	01	01	1	12	128.1	-9.000	-9.000	-9.000	571.	-999.	-99999.0	0.50	1.00	0.20	999.00	999.	-9.0	290.4	5.5
08	01	01	1	13	127.4	-9.000	-9.000	-9.000	712.	-999.	-99999.0	0.50	1.00	0.20	999.00	999.	-9.0	290.4	5.5
08	01	01	1	14	109.8	-9.000	-9.000	-9.000	763.	-999.	-99999.0	0.50	1.00	0.21	999.00	999.	-9.0	290.9	5.5
08	01	01	1	15	52.2	-9.000	-9.000	-9.000	786.	-999.	-99999.0	0.50	1.00	0.25	999.00	999.	-9.0	290.4	5.5
08	01	01	1	16	27.2	-9.000	-9.000	-9.000	796.	-999.	-99999.0	0.50	1.00	0.33	999.00	999.	-9.0	289.2	5.5
08	01	01	1	17	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	0.59	999.00	999.	-9.0	288.1	5.5
08	01	01	1	18	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	19	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	20	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	21	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	22	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	23	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	24	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
08	01	01	01	5.5	0	-999.	-99.00	287.1	99.0	-99.00	-99.00
08	01	01	01	9.1	1	-999.	-99.00	-999.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

FF *** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project

```
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                              ***
 08:50:21

PAGE  10
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: AWPF_V   ***
                                 INCLUDING SOURCE(S):     AWPF_V      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF CO       IN MICROGRAMS/M**3                         **

       X-COORD (M)   Y-COORD (M)        CONC                          X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
         363917.08    3783107.55        2.04285                         363917.08    3783132.55
         2.68931
         363917.08    3783157.55        3.30662                         363917.08    3783182.55
         3.49938
         363917.08    3783207.55        3.10608                         363918.68    3783233.09
         2.33286
         363918.68    3783258.09        1.72348                         363918.68    3783283.09
         1.25840
         363918.68    3783308.09        0.93051                         363919.21    3783332.28
         0.70920
         363919.21    3783357.28        0.55043                         363919.21    3783382.28
         0.43666
         363919.21    3783407.28        0.35289                         363468.40    3783096.50
         0.14613
         363480.32    3783096.24        0.15616                         363505.32    3783096.24
         0.18112
         363530.32    3783096.24        0.21247                         363555.32    3783096.24
         0.25222
         363580.32    3783096.24        0.30366                         363605.32    3783096.24
         0.37162
         363629.81    3783096.24        0.46073                         363654.81    3783096.24
         0.58733
         363679.81    3783093.68        0.75476                         363704.81    3783093.68
         1.01435
         363729.81    3783093.56        1.41056                         363754.81    3783093.56
         2.03045
         363779.81    3783092.66        2.90025                         363804.81    3783092.66
         3.90033
         363829.81    3783092.66        4.39826                         363854.81    3783092.66
         3.96111
         363879.81    3783092.66        2.97982                         363587.82    3783466.38
         0.16312
         363601.35    3783480.91        0.15864                         363601.35    3783505.91
         0.14046
         363601.35    3783530.91        0.12488                         363601.35    3783555.91
         0.11161
         363601.35    3783580.91        0.10023                         363601.35    3783605.91
         0.09056
         363573.32    3783452.30        0.16581                         363561.08    3783441.85
         0.16616
         363551.24    3783438.12        0.16271                         363550.94    3783426.26
         0.17089
         363551.19    3783411.48        0.18207                         363550.94    3783395.93
         0.19396
         363550.68    3783381.66        0.20518                         363550.43    3783363.30
         0.22004
         363536.92    3783363.05        0.20557                         363528.51    3783363.30
```

```
        0.19688
        363528.25    3783357.44        0.20047                       363513.72    3783357.44
        0.18627
        363504.55    3783352.60        0.18046                       363507.18    3783337.93
        0.19045
        363501.43    3783331.08        0.18797                       363491.71    3783322.46
        0.18205
        363485.30    3783316.28        0.17817                       363478.89    3783311.41
        0.17373
        363470.66    3783132.66        0.16103                       363470.66    3783157.66
        0.16853
        363470.66    3783182.66        0.17419                       363469.56    3783203.46
        0.17605
        363469.56    3783228.46        0.17747                       363469.56    3783253.46
        0.17641
        363469.56    3783278.46        0.17299                       363469.56    3783303.46
        0.16747
        363798.94    3783066.77        2.20172                       363795.11    3783063.90
        2.03649
        363795.43    3783052.56        1.69425                       363798.62    3783048.73
        1.62686
        363811.08    3783048.73        1.72626                       363815.39    3783052.56
        1.86662
        363815.23    3783063.74        2.27390                       363811.24    3783067.41
        2.39600
        363298.29    3783861.01        0.02921                       363323.29    3783861.01
        0.03003
        363348.29    3783861.01        0.03087                       363373.29    3783861.01
        0.03173
        363398.29    3783861.01        0.03262                       363422.49    3783859.43
        0.03359
        363447.49    3783859.43        0.03451                       363472.49    3783859.43
        0.03543
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
 08:50:21

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: AWPF_V   ***
                                 INCLUDING SOURCE(S):     AWPF_V      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF CO       IN MICROGRAMS/M**3                         **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.03635                       363517.73    3783858.63
        0.03716
        363542.73    3783858.63        0.03805                       363567.73    3783858.63
        0.03892
        363593.53    3783857.44        0.03989                       363618.53    3783857.44
        0.04066
        363643.53    3783857.44        0.04135                       363671.70    3783856.65
        0.04212
        363697.10    3783854.67        0.04285                       363722.10    3783854.67
        0.04322
        363746.70    3783854.27        0.04351                       363771.70    3783854.27
        0.04361
        363796.70    3783854.27        0.04357                       363821.70    3783854.27
```

```
        0.04339
        363846.70    3783854.27        0.04307                      363871.70    3783854.27
        0.04260
        363896.70    3783854.27        0.04201                      363921.70    3783854.27
        0.04130
        363946.70    3783854.27        0.04048                      363971.70    3783854.27
        0.03956
        363996.70    3783854.27        0.03855                      364021.70    3783854.27
        0.03737
        364046.70    3783854.27        0.03611                      364073.73    3783852.30
        0.03487
        364061.84    3783840.40
        0.03659
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                        ***
 08:50:21

PAGE  12
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: FLOWEQ_V ***
                                 INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                         **

      X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363917.08    3783107.55        0.12581                      363917.08    3783132.55
        0.14488
        363917.08    3783157.55        0.16864                      363917.08    3783182.55
        0.19862
        363917.08    3783207.55        0.23708                      363918.68    3783233.09
        0.28682
        363918.68    3783258.09        0.35364                      363918.68    3783283.09
        0.44518
        363918.68    3783308.09        0.57461                      363919.21    3783332.28
        0.75141
        363919.21    3783357.28        1.02252                      363919.21    3783382.28
        1.43557
        363919.21    3783407.28        2.05451                      363468.40    3783096.50
        0.03810
        363480.32    3783096.24        0.03951                      363505.32    3783096.24
        0.04282
        363530.32    3783096.24        0.04660                      363555.32    3783096.24
        0.05091
        363580.32    3783096.24        0.05584                      363605.32    3783096.24
        0.06147
        363629.81    3783096.24        0.06772                      363654.81    3783096.24
        0.07487
        363679.81    3783093.68        0.08182                      363704.81    3783093.68
        0.09003
        363729.81    3783093.56        0.09835                      363754.81    3783093.56
        0.10642
        363779.81    3783092.66        0.11308                      363804.81    3783092.66
        0.11876
        363829.81    3783092.66        0.12240                      363854.81    3783092.66
        0.12366
        363879.81    3783092.66        0.12239                      363587.82    3783466.38
        0.23903
        363601.35    3783480.91        0.27300                      363601.35    3783505.91
```

```
        0.27564
        363601.35    3783530.91        0.27099                       363601.35    3783555.91
        0.25974
        363601.35    3783580.91        0.24334                       363601.35    3783605.91
        0.22397
        363573.32    3783452.30        0.20783                       363561.08    3783441.85
        0.18542
        363551.24    3783438.12        0.17125                       363550.94    3783426.26
        0.16631
        363551.19    3783411.48        0.16040                       363550.94    3783395.93
        0.15308
        363550.68    3783381.66        0.14599                       363550.43    3783363.30
        0.13679
        363536.92    3783363.05        0.12572                       363528.51    3783363.30
        0.11964
        363528.25    3783357.44        0.11711                       363513.72    3783357.44
        0.10774
        363504.55    3783352.60        0.10087                       363507.18    3783337.93
        0.09766
        363501.43    3783331.08        0.09262                       363491.71    3783322.46
        0.08571
        363485.30    3783316.28        0.08145                       363478.89    3783311.41
        0.07776
        363470.66    3783132.66        0.04255                       363470.66    3783157.66
        0.04585
        363470.66    3783182.66        0.04953                       363469.56    3783203.46
        0.05269
        363469.56    3783228.46        0.05710                       363469.56    3783253.46
        0.06194
        363469.56    3783278.46        0.06716                       363469.56    3783303.46
        0.07262
        363798.94    3783066.77        0.10282                       363795.11    3783063.90
        0.10072
        363795.43    3783052.56        0.09534                       363798.62    3783048.73
        0.09408
        363811.08    3783048.73        0.09572                       363815.39    3783052.56
        0.09802
        363815.23    3783063.74        0.10360                       363811.24    3783067.41
        0.10502
        363298.29    3783861.01        0.03557                       363323.29    3783861.01
        0.03762
        363348.29    3783861.01        0.03982                       363373.29    3783861.01
        0.04219
        363398.29    3783861.01        0.04474                       363422.49    3783859.43
        0.04757
        363447.49    3783859.43        0.05050                       363472.49    3783859.43
        0.05363
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                          ***
 08:50:21

PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

```
 - - - - - -
         363491.94    3783857.05        0.05663                        363517.73    3783858.63
         0.05996
         363542.73    3783858.63        0.06365                        363567.73    3783858.63
         0.06752
         363593.53    3783857.44        0.07201                        363618.53    3783857.44
         0.07617
         363643.53    3783857.44        0.08036                        363671.70    3783856.65
         0.08533
         363697.10    3783854.67        0.09022                        363722.10    3783854.67
         0.09389
         363746.70    3783854.27        0.09718                        363771.70    3783854.27
         0.09963
         363796.70    3783854.27        0.10119                        363821.70    3783854.27
         0.10176
         363846.70    3783854.27        0.10125                        363871.70    3783854.27
         0.09965
         363896.70    3783854.27        0.09705                        363921.70    3783854.27
         0.09356
         363946.70    3783854.27        0.08937                        363971.70    3783854.27
         0.08467
         363996.70    3783854.27        0.07965                        364021.70    3783854.27
         0.07427
         364046.70    3783854.27        0.06873                        364073.73    3783852.30
         0.06345
         364061.84    3783840.40
         0.06946
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                      ***
 08:50:21

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                      *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: MAINTB_V ***
                                     INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
         363917.08    3783107.55        0.04607                        363917.08    3783132.55
         0.04732
         363917.08    3783157.55        0.04837                        363917.08    3783182.55
         0.04885
         363917.08    3783207.55        0.04882                        363918.68    3783233.09
         0.04789
         363918.68    3783258.09        0.04678                        363918.68    3783283.09
         0.04519
         363918.68    3783308.09        0.04333                        363919.21    3783332.28
         0.04134
         363919.21    3783357.28        0.03928                        363919.21    3783382.28
         0.03717
         363919.21    3783407.28        0.03503                        363468.40    3783096.50
         1.13336
         363480.32    3783096.24        1.35210                        363505.32    3783096.24
         1.83896
         363530.32    3783096.24        2.05757                        363555.32    3783096.24
         1.80092
         363580.32    3783096.24        1.31170                        363605.32    3783096.24
```

```
        0.88835
        363629.81    3783096.24        0.60766                       363654.81    3783096.24
        0.42759
        363679.81    3783093.68        0.30695                       363704.81    3783093.68
        0.23129
        363729.81    3783093.56        0.17885                       363754.81    3783093.56
        0.14137
        363779.81    3783092.66        0.11378                       363804.81    3783092.66
        0.09345
        363829.81    3783092.66        0.07779                       363854.81    3783092.66
        0.06564
        363879.81    3783092.66        0.05605                       363587.82    3783466.38
        0.10241
        363601.35    3783480.91        0.08963                       363601.35    3783505.91
        0.07607
        363601.35    3783530.91        0.06522                       363601.35    3783555.91
        0.05654
        363601.35    3783580.91        0.04948                       363601.35    3783605.91
        0.04374
        363573.32    3783452.30        0.11744                       363561.08    3783441.85
        0.13049
        363551.24    3783438.12        0.13662                       363550.94    3783426.26
        0.15124
        363551.19    3783411.48        0.17275                       363550.94    3783395.93
        0.20054
        363550.68    3783381.66        0.23198                       363550.43    3783363.30
        0.28392
        363536.92    3783363.05        0.29126                       363528.51    3783363.30
        0.29274
        363528.25    3783357.44        0.31378                       363513.72    3783357.44
        0.31444
        363504.55    3783352.60        0.33129                       363507.18    3783337.93
        0.40051
        363501.43    3783331.08        0.43551                       363491.71    3783322.46
        0.47980
        363485.30    3783316.28        0.51266                       363478.89    3783311.41
        0.53493
        363470.66    3783132.66        2.22907                       363470.66    3783157.66
        3.25239
        363470.66    3783182.66        3.62290                       363469.56    3783203.46
        2.92361
        363469.56    3783228.46        1.96980                       363469.56    3783253.46
        1.26351
        363469.56    3783278.46        0.83063                       363469.56    3783303.46
        0.57038
        363798.94    3783066.77        0.09083                       363795.11    3783063.90
        0.09260
        363795.43    3783052.56        0.08896                       363798.62    3783048.73
        0.08582
        363811.08    3783048.73        0.07878                       363815.39    3783052.56
        0.07746
        363815.23    3783063.74        0.08017                       363811.24    3783067.41
        0.08328
        363298.29    3783861.01        0.01660                       363323.29    3783861.01
        0.01691
        363348.29    3783861.01        0.01718                       363373.29    3783861.01
        0.01742
        363398.29    3783861.01        0.01761                       363422.49    3783859.43
        0.01783
        363447.49    3783859.43        0.01792                       363472.49    3783859.43
        0.01796
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                     ***
```

08:50:21

PAGE 15
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: MAINTB_V ***
INCLUDING SOURCE(S): MAINTBLD_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363491.94	3783857.05	0.01807	363517.73	3783858.63	0.01792
363542.73	3783858.63	0.01779	363567.73	3783858.63	0.01761
363593.53	3783857.44	0.01742	363618.53	3783857.44	0.01713
363643.53	3783857.44	0.01680	363671.70	3783856.65	0.01641
363697.10	3783854.67	0.01607	363722.10	3783854.67	0.01563
363746.70	3783854.27	0.01519	363771.70	3783854.27	0.01471
363796.70	3783854.27	0.01422	363821.70	3783854.27	0.01373
363846.70	3783854.27	0.01324	363871.70	3783854.27	0.01276
363896.70	3783854.27	0.01230	363921.70	3783854.27	0.01184
363946.70	3783854.27	0.01141	363971.70	3783854.27	0.01099
363996.70	3783854.27	0.01058	364021.70	3783854.27	0.01017
364046.70	3783854.27	0.00977	364073.73	3783852.30	0.00938
364061.84	3783840.40	0.00975			

*** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project *** 08/11/15
*** AERMET - VERSION 14134 *** *** *** 08:50:21

PAGE 16
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: WAREH_V ***
INCLUDING SOURCE(S): WAREHOUSE_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.04411	363917.08	3783132.55	0.04743
363917.08	3783157.55	0.05117	363917.08	3783182.55	0.05539
363917.08	3783207.55	0.06016	363918.68	3783233.09	

0.06527				
363918.68	3783258.09	0.07137	363918.68	3783283.09
0.07831				
363918.68	3783308.09	0.08620	363919.21	3783332.28
0.09461				
363919.21	3783357.28	0.10468	363919.21	3783382.28
0.11596				
363919.21	3783407.28	0.12838	363468.40	3783096.50
0.04973				
363480.32	3783096.24	0.05153	363505.32	3783096.24
0.05547				
363530.32	3783096.24	0.05940	363555.32	3783096.24
0.06315				
363580.32	3783096.24	0.06651	363605.32	3783096.24
0.06929				
363629.81	3783096.24	0.07126	363654.81	3783096.24
0.07236				
363679.81	3783093.68	0.07169	363704.81	3783093.68
0.07079				
363729.81	3783093.56	0.06893	363754.81	3783093.56
0.06630				
363779.81	3783092.66	0.06284	363804.81	3783092.66
0.05920				
363829.81	3783092.66	0.05533	363854.81	3783092.66
0.05142				
363879.81	3783092.66	0.04760	363587.82	3783466.38
0.88967				
363601.35	3783480.91	1.24683	363601.35	3783505.91
1.82925				
363601.35	3783530.91	2.76933	363601.35	3783555.91
4.19479				
363601.35	3783580.91	5.54684	363601.35	3783605.91
5.31356				
363573.32	3783452.30	0.65553	363561.08	3783441.85
0.52655				
363551.24	3783438.12	0.46602	363550.94	3783426.26
0.41838				
363551.19	3783411.48	0.36949	363550.94	3783395.93
0.32475				
363550.68	3783381.66	0.28990	363550.43	3783363.30
0.25237				
363536.92	3783363.05	0.23224	363528.51	3783363.30
0.22091				
363528.25	3783357.44	0.21214	363513.72	3783357.44
0.19421				
363504.55	3783352.60	0.17840	363507.18	3783337.93
0.16614				
363501.43	3783331.08	0.15465	363491.71	3783322.46
0.13982				
363485.30	3783316.28	0.13077	363478.89	3783311.41
0.12332				
363470.66	3783132.66	0.05649	363470.66	3783157.66
0.06169				
363470.66	3783182.66	0.06767	363469.56	3783203.46
0.07303				
363469.56	3783228.46	0.08079	363469.56	3783253.46
0.08984				
363469.56	3783278.46	0.10047	363469.56	3783303.46
0.11302				
363798.94	3783066.77	0.05492	363795.11	3783063.90
0.05486				
363795.43	3783052.56	0.05278	363798.62	3783048.73
0.05175				
363811.08	3783048.73	0.05031	363815.39	3783052.56

```
        0.05041
        363815.23    3783063.74        0.05228                      363811.24    3783067.41
        0.05344
        363298.29    3783861.01        0.08049                      363323.29    3783861.01
        0.08795
        363348.29    3783861.01        0.09621                      363373.29    3783861.01
        0.10534
        363398.29    3783861.01        0.11539                      363422.49    3783859.43
        0.12691
        363447.49    3783859.43        0.13886                      363472.49    3783859.43
        0.15155
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                          ***
 08:50:21

PAGE  17
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: WAREH_V  ***
                                 INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                         **

      X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.16414                      363517.73    3783858.63
        0.17641
        363542.73    3783858.63        0.18940                      363567.73    3783858.63
        0.20118
        363593.53    3783857.44        0.21303                      363618.53    3783857.44
        0.21955
        363643.53    3783857.44        0.22199                      363671.70    3783856.65
        0.22070
        363697.10    3783854.67        0.21675                      363722.10    3783854.67
        0.20538
        363746.70    3783854.27        0.19203                      363771.70    3783854.27
        0.17624
        363796.70    3783854.27        0.15999                      363821.70    3783854.27
        0.14415
        363846.70    3783854.27        0.12928                      363871.70    3783854.27
        0.11569
        363896.70    3783854.27        0.10347                      363921.70    3783854.27
        0.09262
        363946.70    3783854.27        0.08304                      363971.70    3783854.27
        0.07460
        363996.70    3783854.27        0.06718                      364021.70    3783854.27
        0.06025
        364046.70    3783854.27        0.05417                      364073.73    3783852.30
        0.04880
        364061.84    3783840.40
        0.05282
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                          ***
 08:50:21

PAGE  18
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
```

INCLUDING SOURCE(S): WAREHOUSE_V , FLOWEQ_V , MAINTBLD_V , AWPF_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	2.25884	363917.08	3783132.55	2.92895
363917.08	3783157.55	3.57481	363917.08	3783182.55	3.80224
363917.08	3783207.55	3.45215	363918.68	3783233.09	2.73283
363918.68	3783258.09	2.19527	363918.68	3783283.09	1.82708
363918.68	3783308.09	1.63464	363919.21	3783332.28	1.59656
363919.21	3783357.28	1.71691	363919.21	3783382.28	2.02536
363919.21	3783407.28	2.57082	363468.40	3783096.50	1.36731
363480.32	3783096.24	1.59930	363505.32	3783096.24	2.11837
363530.32	3783096.24	2.37604	363555.32	3783096.24	2.16719
363580.32	3783096.24	1.73772	363605.32	3783096.24	1.39074
363629.81	3783096.24	1.20738	363654.81	3783096.24	1.16216
363679.81	3783093.68	1.21524	363704.81	3783093.68	1.40647
363729.81	3783093.56	1.75669	363754.81	3783093.56	2.34454
363779.81	3783092.66	3.18995	363804.81	3783092.66	4.17174
363829.81	3783092.66	4.65378	363854.81	3783092.66	4.20182
363879.81	3783092.66	3.20586	363587.82	3783466.38	1.39423
363601.35	3783480.91	1.76810	363601.35	3783505.91	2.32143
363601.35	3783530.91	3.23041	363601.35	3783555.91	4.62268
363601.35	3783580.91	5.93989	363601.35	3783605.91	5.67182
363573.32	3783452.30	1.14661	363561.08	3783441.85	1.00862
363551.24	3783438.12	0.93660	363550.94	3783426.26	0.90681
363551.19	3783411.48	0.88470	363550.94	3783395.93	0.87232
363550.68	3783381.66	0.87304	363550.43	3783363.30	0.89313
363536.92	3783363.05	0.85479	363528.51	3783363.30	0.83017
363528.25	3783357.44	0.84350	363513.72	3783357.44	0.80267
363504.55	3783352.60	0.79102	363507.18	3783337.93	0.85475
363501.43	3783331.08	0.87074	363491.71	3783322.46	0.88738
363485.30	3783316.28	0.90305	363478.89	3783311.41	

```
        0.90974
        363470.66    3783132.66        2.48913                        363470.66    3783157.66
        3.52847
        363470.66    3783182.66        3.91429                        363469.56    3783203.46
        3.22537
        363469.56    3783228.46        2.28516                        363469.56    3783253.46
        1.59169
        363469.56    3783278.46        1.17125                        363469.56    3783303.46
        0.92350
        363798.94    3783066.77        2.45030                        363795.11    3783063.90
        2.28467
        363795.43    3783052.56        1.93133                        363798.62    3783048.73
        1.85852
        363811.08    3783048.73        1.95107                        363815.39    3783052.56
        2.09251
        363815.23    3783063.74        2.50995                        363811.24    3783067.41
        2.63775
        363298.29    3783861.01        0.16187                        363323.29    3783861.01
        0.17250
        363348.29    3783861.01        0.18408                        363373.29    3783861.01
        0.19668
        363398.29    3783861.01        0.21036                        363422.49    3783859.43
        0.22590
        363447.49    3783859.43        0.24179                        363472.49    3783859.43
        0.25857
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***       08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 08:50:21

PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                 INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                       ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.27519                        363517.73    3783858.63
        0.29144
        363542.73    3783858.63        0.30890                        363567.73    3783858.63
        0.32523
        363593.53    3783857.44        0.34236                        363618.53    3783857.44
        0.35351
        363643.53    3783857.44        0.36051                        363671.70    3783856.65
        0.36455
        363697.10    3783854.67        0.36589                        363722.10    3783854.67
        0.35812
        363746.70    3783854.27        0.34790                        363771.70    3783854.27
        0.33418
        363796.70    3783854.27        0.31898                        363821.70    3783854.27
        0.30303
        363846.70    3783854.27        0.28684                        363871.70    3783854.27
        0.27071
        363896.70    3783854.27        0.25483                        363921.70    3783854.27
        0.23932
        363946.70    3783854.27        0.22429                        363971.70    3783854.27
        0.20981
        363996.70    3783854.27        0.19597                        364021.70    3783854.27
```

```
        0.18205
        364046.70    3783854.27        0.16877                      364073.73    3783852.30
        0.15649
        364061.84    3783840.40
        0.16861
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 08:50:21

PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                    INCLUDING SOURCE(S):     AWPF_V      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55       59.52726  (10122616)              363917.08   3783132.55       78.15691
        (10122616)
        363917.08   3783157.55       73.30663  (10122616)              363917.08   3783182.55       80.80037
        (12121716)
        363917.08   3783207.55      118.57379  (12121716)              363918.68   3783233.09      119.49262
        (12121716)
        363918.68   3783258.09      101.41302  (12121716)              363918.68   3783283.09       74.18950
        (12121716)
        363918.68   3783308.09       47.93825  (12121716)              363919.21   3783332.28       29.17289
        (12121716)
        363919.21   3783357.28       25.89440  (12111716)              363919.21   3783382.28       22.67615
        (12111716)
        363919.21   3783407.28       19.57959  (12111716)              363468.40   3783096.50        6.44519
        (09110816)
        363480.32   3783096.24        6.78265  (09110816)              363505.32   3783096.24        7.59069
        (09110816)
        363530.32   3783096.24        8.53037  (09110816)              363555.32   3783096.24        9.64253
        (09110816)
        363580.32   3783096.24       10.95505  (09110816)              363605.32   3783096.24       12.50440
        (09110816)
        363629.81   3783096.24       14.86174  (09120216)              363654.81   3783096.24       18.58192
        (09120216)
        363679.81   3783093.68       22.91367  (09120216)              363704.81   3783093.68       28.06437
        (09120216)
        363729.81   3783093.56       34.77381  (11112816)              363754.81   3783093.56       47.44115
        (11112816)
        363779.81   3783092.66       68.38758  (11111216)              363804.81   3783092.66      103.13926
        (11111216)
        363829.81   3783092.66      110.88672  (11111216)              363854.81   3783092.66       80.11226
        (11111216)
        363879.81   3783092.66       55.58529  (08121916)              363587.82   3783466.38        8.08033
        (08112816)
        363601.35   3783480.91        7.20391  (08112816)              363601.35   3783505.91        6.03353
        (09122016)
        363601.35   3783530.91        6.06676  (09122016)              363601.35   3783555.91        6.01741
        (09122016)
        363601.35   3783580.91        5.90109  (09122016)              363601.35   3783605.91        5.88047
        (12120116)
        363573.32   3783452.30        8.78777  (08112816)              363561.08   3783441.85        9.16459
        (08112816)
```

```
        363551.24   3783438.12        9.15572  (08112816)                363550.94   3783426.26        9.67415
        (08112816)
        363551.19   3783411.48       10.31381  (08112816)                363550.94   3783395.93       10.93011
        (08112816)
        363550.68   3783381.66       11.56725  (12112816)                363550.43   3783363.30       13.60995
        (12112816)
        363536.92   3783363.05       13.37602  (12112816)                363528.51   3783363.30       13.14639
        (12112816)
        363528.25   3783357.44       13.59821  (12112816)                363513.72   3783357.44       13.07468
        (12112816)
        363504.55   3783352.60       12.92597  (12112816)                363507.18   3783337.93       13.76543
        (09121216)
        363501.43   3783331.08       14.28151  (09121216)                363491.71   3783322.46       14.58925
        (09121216)
        363485.30   3783316.28       14.63513  (09121216)                363478.89   3783311.41       14.51103
        (09121216)
        363470.66   3783132.66        8.37480  (12112916)                363470.66   3783157.66       10.68915
        (12112916)
        363470.66   3783182.66       12.52572  (12112916)                363469.56   3783203.46       13.32260
        (12112916)
        363469.56   3783228.46       13.37429  (12112916)                363469.56   3783253.46       12.49460
        (09121216)
        363469.56   3783278.46       13.88250  (09121216)                363469.56   3783303.46       14.16176
        (09121216)
        363798.94   3783066.77       68.54404  (11111216)                363795.11   3783063.90       64.00056
        (11111216)
        363795.43   3783052.56       56.60631  (11111216)                363798.62   3783048.73       55.58716
        (11111216)
        363811.08   3783048.73       58.56968  (11111216)                363815.39   3783052.56       61.68562
        (11111216)
        363815.23   3783063.74       71.32259  (11111216)                363811.24   3783067.41       74.37872
        (11111216)
        363298.29   3783861.01        1.48199  (11122116)                363323.29   3783861.01        1.49897
        (11122116)
        363348.29   3783861.01        1.49017  (11122116)                363373.29   3783861.01        1.47550
        (12102216)
        363398.29   3783861.01        1.54335  (08121216)                363422.49   3783859.43        1.71943
        (09122016)
        363447.49   3783859.43        1.98812  (09122016)                363472.49   3783859.43        2.35784
        (12120116)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                       ***
 08:50:21

PAGE  21
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                  INCLUDING SOURCE(S):     AWPF_V      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        2.67316  (12120116)                363517.73   3783858.63        3.08441
        (12120116)
        363542.73   3783858.63        3.44790  (12120116)                363567.73   3783858.63        3.74741
        (12120116)
        363593.53   3783857.44        3.96995  (12120116)                363618.53   3783857.44        4.06108
```

```
        (12120116)
        363643.53   3783857.44        4.02266  (12120116)             363671.70   3783856.65        3.83260
        (12120116)
        363697.10   3783854.67        3.54893  (12120116)             363722.10   3783854.67        3.30176
        (08121516)
        363746.70   3783854.27        3.48558  (08121516)             363771.70   3783854.27        3.63490
        (08121516)
        363796.70   3783854.27        3.74241  (08121516)             363821.70   3783854.27        3.80331
        (08121516)
        363846.70   3783854.27        3.81486  (08121516)             363871.70   3783854.27        3.77664
        (08121516)
        363896.70   3783854.27        3.69052  (08121516)             363921.70   3783854.27        3.56055
        (08121516)
        363946.70   3783854.27        3.39263  (08121516)             363971.70   3783854.27        3.20156
        (08121516)
        363996.70   3783854.27        3.13792  (12121416)             364021.70   3783854.27        3.54472
        (12121416)
        364046.70   3783854.27        3.97255  (12121416)             364073.73   3783852.30        4.42559
        (12121416)
        364061.84   3783840.40        4.33179
        (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 08:50:21

PAGE  22
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55        4.30107  (12121016)             363917.08   3783132.55        4.89183
        (12121016)
        363917.08   3783157.55        5.59258  (12121016)             363917.08   3783182.55        6.42754
        (12121016)
        363917.08   3783207.55        7.42766  (12121016)             363918.68   3783233.09        8.62444
        (12121016)
        363918.68   3783258.09       10.05318  (12121016)             363918.68   3783283.09       11.76426
        (12121016)
        363918.68   3783308.09       13.80565  (12121016)             363919.21   3783332.28       16.25110
        (12121016)
        363919.21   3783357.28       22.01440  (08121916)             363919.21   3783382.28       29.44630
        (08121916)
        363919.21   3783407.28       48.24831  (10122616)             363468.40   3783096.50        2.01123
        (12121616)
        363480.32   3783096.24        2.06442  (12121616)             363505.32   3783096.24        2.24595
        (11112816)
        363530.32   3783096.24        2.41924  (11112816)             363555.32   3783096.24        2.55464
        (11112816)
        363580.32   3783096.24        2.63773  (11112816)             363605.32   3783096.24        2.70975
        (12121616)
        363629.81   3783096.24        2.84593  (12121616)             363654.81   3783096.24        3.28202
        (10120716)
        363679.81   3783093.68        3.60613  (10120716)             363704.81   3783093.68        4.36723
        (11111216)
```

363729.81	3783093.56	5.12737	(11111216)	363754.81	3783093.56	5.75999	(11111216)
363779.81	3783092.66	6.15525	(11111216)	363804.81	3783092.66	6.29126	(11111216)
363829.81	3783092.66	6.11835	(11111216)	363854.81	3783092.66	5.65316	(11111216)
363879.81	3783092.66	4.95540	(11111216)	363587.82	3783466.38	13.96965	(12112916)
363601.35	3783480.91	16.60376	(12112916)	363601.35	3783505.91	17.36073	(12112916)
363601.35	3783530.91	17.60548	(09121216)	363601.35	3783555.91	18.58803	(09121216)
363601.35	3783580.91	17.11733	(09121216)	363601.35	3783605.91	14.40167	(12112816)
363573.32	3783452.30	11.33901	(12112916)	363561.08	3783441.85	9.53021	(12112916)
363551.24	3783438.12	8.68125	(12112916)	363550.94	3783426.26	7.52502	(12112916)
363551.19	3783411.48	6.54570	(09110816)	363550.94	3783395.93	6.04110	(09110816)
363550.68	3783381.66	5.51474	(09110816)	363550.43	3783363.30	4.85000	(09120216)
363536.92	3783363.05	4.53656	(09110816)	363528.51	3783363.30	4.40364	(09110816)
363528.25	3783357.44	4.29247	(12121616)	363513.72	3783357.44	4.01582	(12121616)
363504.55	3783352.60	3.82752	(12121616)	363507.18	3783337.93	3.85808	(09120216)
363501.43	3783331.08	3.76993	(09120216)	363491.71	3783322.46	3.60550	(09120216)
363485.30	3783316.28	3.49930	(09120216)	363478.89	3783311.41	3.39799	(09120216)
363470.66	3783132.66	2.19014	(12121616)	363470.66	3783157.66	2.31379	(12121616)
363470.66	3783182.66	2.44249	(12121616)	363469.56	3783203.46	2.59407	(09120216)
363469.56	3783228.46	2.86929	(09120216)	363469.56	3783253.46	3.08631	(09120216)
363469.56	3783278.46	3.21981	(09120216)	363469.56	3783303.46	3.25618	(09120216)
363798.94	3783066.77	5.61328	(11111216)	363795.11	3783063.90	5.54124	(11111216)
363795.43	3783052.56	5.28585	(11111216)	363798.62	3783048.73	5.20376	(11111216)
363811.08	3783048.73	5.17120	(11111216)	363815.39	3783052.56	5.23190	(11111216)
363815.23	3783063.74	5.49239	(11111216)	363811.24	3783067.41	5.60311	(11111216)
363298.29	3783861.01	2.32476	(12112816)	363323.29	3783861.01	2.37181	(08112816)
363348.29	3783861.01	2.50945	(08112816)	363373.29	3783861.01	2.64110	(08112816)
363398.29	3783861.01	2.76268	(08112816)	363422.49	3783859.43	2.88253	(08112816)
363447.49	3783859.43	2.97314	(08112816)	363472.49	3783859.43	3.03717	(08112816)

FF *** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project *** 08/11/15
*** AERMET - VERSION 14134 *** *** *** 08:50:21

PAGE 23
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

```
                        *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                            INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                   *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                               ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        3.10209  (08112816)              363517.73   3783858.63        3.08372
       (08112816)
       363542.73   3783858.63        3.04104  (08112816)              363567.73   3783858.63        2.94413
       (08112816)
       363593.53   3783857.44        3.33295  (09122016)              363618.53   3783857.44        4.09872
       (09122016)
       363643.53   3783857.44        4.97820  (12120116)              363671.70   3783856.65        6.13313
       (12120116)
       363697.10   3783854.67        7.01747  (12120116)              363722.10   3783854.67        7.52076
       (12120116)
       363746.70   3783854.27        7.57804  (12120116)              363771.70   3783854.27        7.11848
       (12120116)
       363796.70   3783854.27        6.20647  (12120116)              363821.70   3783854.27        5.65043
       (08010616)
       363846.70   3783854.27        5.44987  (08010616)              363871.70   3783854.27        5.36820
       (11111116)
       363896.70   3783854.27        5.75703  (11111116)              363921.70   3783854.27        5.81654
       (11111116)
       363946.70   3783854.27        5.55209  (11111116)              363971.70   3783854.27        5.76622
       (12111716)
       363996.70   3783854.27        5.74382  (12111716)              364021.70   3783854.27        5.40571
       (12111716)
       364046.70   3783854.27        5.45866  (12121416)              364073.73   3783852.30        5.94018
       (12121416)
       364061.84   3783840.40        5.78397
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 08:50:21

PAGE  24
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                        *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                            INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                   *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                               ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        2.15511  (09012415)              363917.08   3783132.55        2.22341
       (09012415)
       363917.08   3783157.55        2.17194  (10112016)              363917.08   3783182.55        2.16382
       (10112016)
       363917.08   3783207.55        2.38770  (10020916)              363918.68   3783233.09        2.49464
       (10020916)
       363918.68   3783258.09        2.50611  (10020916)              363918.68   3783283.09        2.39168
       (10020916)
```

363918.68	3783308.09	2.85259	(10121916)	363919.21	3783332.28	3.34184	(10121916)
363919.21	3783357.28	3.72969	(10121916)	363919.21	3783382.28	4.19712	(12121716)
363919.21	3783407.28	4.59060	(12121716)	363468.40	3783096.50	23.56599	(11112816)
363480.32	3783096.24	30.44475	(11111216)	363505.32	3783096.24	46.68281	(11111216)
363530.32	3783096.24	48.90570	(11111216)	363555.32	3783096.24	33.34477	(11111216)
363580.32	3783096.24	23.93181	(08121916)	363605.32	3783096.24	20.61505	(10122616)
363629.81	3783096.24	19.53229	(10122616)	363654.81	3783096.24	16.65518	(10122616)
363679.81	3783093.68	13.43897	(10122616)	363704.81	3783093.68	10.92327	(10122616)
363729.81	3783093.56	8.80304	(10122616)	363754.81	3783093.56	7.10347	(10122616)
363779.81	3783092.66	5.74148	(10122616)	363804.81	3783092.66	4.63595	(10122616)
363829.81	3783092.66	3.76985	(10122616)	363854.81	3783092.66	3.07761	(10122616)
363879.81	3783092.66	2.52461	(10122616)	363587.82	3783466.38	5.73741	(11111116)
363601.35	3783480.91	5.16055	(11111116)	363601.35	3783505.91	4.57540	(11111116)
363601.35	3783530.91	4.07212	(11111116)	363601.35	3783555.91	3.63226	(11111116)
363601.35	3783580.91	3.25105	(11111116)	363601.35	3783605.91	2.91433	(11111116)
363573.32	3783452.30	6.29031	(11111116)	363561.08	3783441.85	6.65735	(11111116)
363551.24	3783438.12	6.66260	(11111116)	363550.94	3783426.26	7.23800	(11111116)
363551.19	3783411.48	8.06693	(11111116)	363550.94	3783395.93	9.09062	(11111116)
363550.68	3783381.66	10.22135	(11111116)	363550.43	3783363.30	12.01463	(11111116)
363536.92	3783363.05	11.83240	(08010616)	363528.51	3783363.30	12.10798	(08010616)
363528.25	3783357.44	12.82017	(08010616)	363513.72	3783357.44	13.83303	(09122016)
363504.55	3783352.60	15.40354	(09122016)	363507.18	3783337.93	17.82716	(09122016)
363501.43	3783331.08	19.80229	(12120116)	363491.71	3783322.46	22.60421	(12120116)
363485.30	3783316.28	24.04829	(12120116)	363478.89	3783311.41	24.66400	(12120116)
363470.66	3783132.66	37.09949	(11112816)	363470.66	3783157.66	67.79799	(12112916)
363470.66	3783182.66	101.16604	(12112916)	363469.56	3783203.46	93.81261	(09121216)
363469.56	3783228.46	58.04406	(08112816)	363469.56	3783253.46	39.38715	(08112816)
363469.56	3783278.46	30.29539	(09122016)	363469.56	3783303.46	24.53194	(12120116)
363798.94	3783066.77	5.38997	(10122616)	363795.11	3783063.90	5.55681	(10122616)
363795.43	3783052.56	5.59170	(10122616)	363798.62	3783048.73	5.49011	(10122616)
363811.08	3783048.73	5.10215	(10122616)	363815.39	3783052.56	4.94877	(10122616)
363815.23	3783063.74	4.84835	(10122616)	363811.24	3783067.41	4.94065	(10122616)

```
       363298.29   3783861.01       1.65360  (12120116)              363323.29   3783861.01       1.67563
       (12120116)
       363348.29   3783861.01       1.64417  (12120116)              363373.29   3783861.01       1.55953
       (12120116)
       363398.29   3783861.01       1.42790  (12120116)              363422.49   3783859.43       1.27449
       (12120116)
       363447.49   3783859.43       1.31295  (08121516)              363472.49   3783859.43       1.36090
       (08121516)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 08:50:21

PAGE  25
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                                  INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05       1.39233  (08121516)              363517.73   3783858.63       1.41104
       (08121516)
       363542.73   3783858.63       1.41663  (08121516)              363567.73   3783858.63       1.40526
       (08121516)
       363593.53   3783857.44       1.37965  (08121516)              363618.53   3783857.44       1.33598
       (08121516)
       363643.53   3783857.44       1.27900  (08121516)              363671.70   3783856.65       1.22965
       (08112616)
       363697.10   3783854.67       1.26974  (08112616)              363722.10   3783854.67       1.31035
       (12121416)
       363746.70   3783854.27       1.36933  (12121416)              363771.70   3783854.27       1.41453
       (12121416)
       363796.70   3783854.27       1.44565  (12121416)              363821.70   3783854.27       1.46249
       (12121416)
       363846.70   3783854.27       1.46534  (12121416)              363871.70   3783854.27       1.45495
       (12121416)
       363896.70   3783854.27       1.43238  (12121416)              363921.70   3783854.27       1.39898
       (12121416)
       363946.70   3783854.27       1.35625  (12121416)              363971.70   3783854.27       1.30855
       (12121416)
       363996.70   3783854.27       1.25828  (12121416)              364021.70   3783854.27       1.30385
       (12121416)
       364046.70   3783854.27       1.34049  (12121416)              364073.73   3783852.30       1.33077
       (12121416)
       364061.84   3783840.40       1.31870
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 08:50:21

PAGE  26
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	1.95009	(12121616)	363917.08	3783132.55	2.08912	(12121616)
363917.08	3783157.55	2.24215	(12121616)	363917.08	3783182.55	2.48644	(08121916)
363917.08	3783207.55	2.77090	(08110216)	363918.68	3783233.09	3.12345	(08110216)
363918.68	3783258.09	3.44346	(08110216)	363918.68	3783283.09	3.71387	(08110216)
363918.68	3783308.09	3.90061	(08110216)	363919.21	3783332.28	3.99776	(08121916)
363919.21	3783357.28	4.82245	(10122616)	363919.21	3783382.28	6.15202	(10122616)
363919.21	3783407.28	7.48657	(10122616)	363468.40	3783096.50	2.50619	(11111216)
363480.32	3783096.24	2.71510	(11111216)	363505.32	3783096.24	3.14123	(11111216)
363530.32	3783096.24	3.51961	(11111216)	363555.32	3783096.24	3.81443	(11111216)
363580.32	3783096.24	3.99462	(11111216)	363605.32	3783096.24	4.03826	(11111216)
363629.81	3783096.24	3.94000	(11111216)	363654.81	3783096.24	3.70362	(11111216)
363679.81	3783093.68	3.31949	(11111216)	363704.81	3783093.68	2.89062	(11111216)
363729.81	3783093.56	2.63639	(12122016)	363754.81	3783093.56	2.53332	(12121016)
363779.81	3783092.66	2.57286	(12121016)	363804.81	3783092.66	2.51958	(12121016)
363829.81	3783092.66	2.37496	(12121016)	363854.81	3783092.66	2.15888	(12121016)
363879.81	3783092.66	1.96817	(12121616)	363587.82	3783466.38	22.41406	(11111216)
363601.35	3783480.91	31.45527	(11111216)	363601.35	3783505.91	38.10769	(11112816)
363601.35	3783530.91	55.12873	(11112816)	363601.35	3783555.91	77.38501	(09110816)
363601.35	3783580.91	162.57441	(12112916)	363601.35	3783605.91	194.59693	(09121216)
363573.32	3783452.30	16.50946	(11112816)	363561.08	3783441.85	14.38633	(11112816)
363551.24	3783438.12	13.46366	(11112816)	363550.94	3783426.26	12.15360	(11112816)
363551.19	3783411.48	10.64511	(11112816)	363550.94	3783395.93	9.77878	(11111216)
363550.68	3783381.66	9.43748	(11111216)	363550.43	3783363.30	8.96693	(11111216)
363536.92	3783363.05	7.57554	(10120716)	363528.51	3783363.30	7.07258	(10120716)
363528.25	3783357.44	6.95126	(10120716)	363513.72	3783357.44	6.63515	(11112816)
363504.55	3783352.60	6.36716	(11112816)	363507.18	3783337.93	5.73206	(11112816)
363501.43	3783331.08	5.45680	(11112816)	363491.71	3783322.46	5.13760	(11112816)
363485.30	3783316.28	4.92408	(11112816)	363478.89	3783311.41	4.76168	(11112816)

```
       363470.66   3783132.66        2.73670  (10120716)                363470.66   3783157.66        2.94811
       (10120716)
       363470.66   3783182.66        3.15715  (10120716)                363469.56   3783203.46        3.30716
       (10120716)
       363469.56   3783228.46        3.48434  (10120716)                363469.56   3783253.46        3.62928
       (10120716)
       363469.56   3783278.46        3.85802  (11112816)                363469.56   3783303.46        4.51195
       (11112816)
       363798.94   3783066.77        2.33530  (12121016)                363795.11   3783063.90        2.31923
       (12121016)
       363795.43   3783052.56        2.23370  (12121016)                363798.62   3783048.73        2.20300
       (12121016)
       363811.08   3783048.73        2.18044  (12121016)                363815.39   3783052.56        2.19306
       (12121016)
       363815.23   3783063.74        2.26741  (12121016)                363811.24   3783067.41        2.30705
       (12121016)
       363298.29   3783861.01        4.78629  (08112816)                363323.29   3783861.01        5.18372
       (08112816)
       363348.29   3783861.01        5.55963  (08112816)                363373.29   3783861.01        5.88979
       (08112816)
       363398.29   3783861.01        6.14498  (08112816)                363422.49   3783859.43        6.36321
       (08112816)
       363447.49   3783859.43        6.38935  (08112816)                363472.49   3783859.43        6.35564
       (09122016)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 08:50:21

PAGE  27
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                    INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        7.77258  (09122016)                363517.73   3783858.63        9.70705
       (12120116)
       363542.73   3783858.63       11.85439  (12120116)                363567.73   3783858.63       13.26299
       (12120116)
       363593.53   3783857.44       13.54403  (12120116)                363618.53   3783857.44       12.28124
       (12120116)
       363643.53   3783857.44       10.68742  (08010616)                363671.70   3783856.65       10.14057
       (08010616)
       363697.10   3783854.67       10.87224  (11111116)                363722.10   3783854.67       10.66757
       (11111116)
       363746.70   3783854.27       10.55048  (12111716)                363771.70   3783854.27       10.18937
       (12111716)
       363796.70   3783854.27        8.87132  (12111716)                363821.70   3783854.27        7.05069
       (12111716)
       363846.70   3783854.27        8.07600  (12121716)                363871.70   3783854.27        9.40497
       (12121716)
       363896.70   3783854.27       10.28509  (12121716)                363921.70   3783854.27       10.69247
       (12121716)
       363946.70   3783854.27       10.67126  (12121716)                363971.70   3783854.27       10.30865
       (12121716)
       363996.70   3783854.27        9.70062  (12121716)                364021.70   3783854.27        9.08511
```

```
        (12121716)
        364046.70   3783854.27        8.31798  (12121716)                364073.73   3783852.30        7.37343
        (12121716)
        364061.84   3783840.40        7.66072
        (12121716)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                          ***
 08:50:21

PAGE  28
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                 *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                     INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                           ** CONC OF CO       IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55       61.42049  (10122616)                363917.08   3783132.55       79.69041
        (10122616)
        363917.08   3783157.55       74.60015  (10122616)                363917.08   3783182.55       81.75421
        (12121716)
        363917.08   3783207.55      119.86352  (12121716)                363918.68   3783233.09      121.27552
        (12121716)
        363918.68   3783258.09      103.84723  (12121716)                363918.68   3783283.09       77.47482
        (12121716)
        363918.68   3783308.09       52.33931  (12121716)                363919.21   3783332.28       39.75756
        (12121616)
        363919.21   3783357.28       41.49088  (12121616)                363919.21   3783382.28       46.08882
        (12121616)
        363919.21   3783407.28       56.18568  (10122616)                363468.40   3783096.50       30.19310
        (12121616)
        363480.32   3783096.24       33.74771  (11111216)                363505.32   3783096.24       50.58800
        (11111216)
        363530.32   3783096.24       53.44137  (11111216)                363555.32   3783096.24       40.70975
        (12121616)
        363580.32   3783096.24       36.90122  (12121616)                363605.32   3783096.24       33.55877
        (12121616)
        363629.81   3783096.24       31.83543  (12121616)                363654.81   3783096.24       31.82405
        (12121616)
        363679.81   3783093.68       33.20390  (12121616)                363704.81   3783093.68       36.80048
        (12121616)
        363729.81   3783093.56       42.58008  (12121616)                363754.81   3783093.56       50.98927
        (12121616)
        363779.81   3783092.66       76.37302  (11111216)                363804.81   3783092.66      110.81636
        (11111216)
        363829.81   3783092.66      118.02904  (11111216)                363854.81   3783092.66       86.50977
        (11111216)
        363879.81   3783092.66       59.36514  (12121616)                363587.82   3783466.38       34.07871
        (12121616)
        363601.35   3783480.91       39.71844  (12121616)                363601.35   3783505.91       48.11228
        (12121616)
        363601.35   3783530.91       61.43908  (12121616)                363601.35   3783555.91       83.06318
        (09110816)
        363601.35   3783580.91      171.32288  (12112916)                363601.35   3783605.91      208.61378
        (09121216)
        363573.32   3783452.30       30.06577  (12121616)                363561.08   3783441.85       27.66536
        (12121616)
```

```
        363551.24   3783438.12       26.33804  (12121616)                363550.94   3783426.26       25.77103
        (12121616)
        363551.19   3783411.48       25.32363  (12121616)                363550.94   3783395.93       25.04164
        (12121616)
        363550.68   3783381.66       24.99770  (12121616)                363550.43   3783363.30       25.27236
        (12121616)
        363536.92   3783363.05       24.40357  (12121616)                363528.51   3783363.30       23.84471
        (12121616)
        363528.25   3783357.44       24.04155  (12121616)                363513.72   3783357.44       23.09050
        (12121616)
        363504.55   3783352.60       22.69759  (12121616)                363507.18   3783337.93       23.72620
        (12121616)
        363501.43   3783331.08       23.83473  (12121616)                363491.71   3783322.46       23.84922
        (12121616)
        363485.30   3783316.28       24.70279  (12120116)                363478.89   3783311.41       25.28818
        (12120116)
        363470.66   3783132.66       45.97687  (12121616)                363470.66   3783157.66       78.68267
        (12112916)
        363470.66   3783182.66      113.91426  (12112916)                363469.56   3783203.46      101.70405
        (09121216)
        363469.56   3783228.46       63.09242  (08112816)                363469.56   3783253.46       45.47795
        (08112816)
        363469.56   3783278.46       32.43523  (08112816)                363469.56   3783303.46       25.27780
        (09122016)
        363798.94   3783066.77       75.55872  (11111216)                363795.11   3783063.90       70.99293
        (11111216)
        363795.43   3783052.56       63.29990  (11111216)                363798.62   3783048.73       62.13971
        (11111216)
        363811.08   3783048.73       64.92059  (11111216)                363815.39   3783052.56       68.05131
        (11111216)
        363815.23   3783063.74       77.97622  (11111216)                363811.24   3783067.41       81.20550
        (11111216)
        363298.29   3783861.01        8.40097  (08112816)                363323.29   3783861.01        8.85403
        (08112816)
        363348.29   3783861.01        9.27946  (08112816)                363373.29   3783861.01        9.65072
        (08112816)
        363398.29   3783861.01        9.93562  (08112816)                363422.49   3783859.43       10.19252
        (08112816)
        363447.49   3783859.43       10.21642  (08112816)                363472.49   3783859.43       10.46079
        (09122016)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 08:50:21

PAGE  29
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                 *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                     INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                           ** CONC OF CO       IN MICROGRAMS/M**3                        **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05       12.22735  (09122016)                363517.73   3783858.63       14.63844
        (09122016)
        363542.73   3783858.63       17.19777  (12120116)                363567.73   3783858.63       19.42649
        (12120116)
        363593.53   3783857.44       20.66781  (12120116)                363618.53   3783857.44       20.39563
```

```
       (12120116)
       363643.53   3783857.44       19.04802  (09122016)                363671.70   3783856.65       17.26526
       (09122016)
       363697.10   3783854.67       16.49171  (08010616)                363722.10   3783854.67       15.57040
       (08010616)
       363746.70   3783854.27       14.43313  (08010616)                363771.70   3783854.27       13.14695
       (08010616)
       363796.70   3783854.27       11.87849  (08010616)                363821.70   3783854.27       11.09713
       (12121616)
       363846.70   3783854.27       10.74899  (12121616)                363871.70   3783854.27       10.38032
       (12121616)
       363896.70   3783854.27       10.74271  (12121716)                363921.70   3783854.27       11.23341
       (12121716)
       363946.70   3783854.27       11.35408  (12121716)                363971.70   3783854.27       11.22560
       (12121716)
       363996.70   3783854.27       10.97426  (12121716)                364021.70   3783854.27       11.31824
       (12121416)
       364046.70   3783854.27       12.20370  (12121416)                364073.73   3783852.30       13.73748
       (12121416)
       364061.84   3783840.40       13.52434
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
 08:50:21

PAGE  30
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                    INCLUDING SOURCE(S):     AWPF_V      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55       21.71566m (10122616)                363917.08   3783132.55       28.55357
       (10102116)
       363917.08   3783157.55       32.92795  (10102116)                363917.08   3783182.55       30.64036
       (10102116)
       363917.08   3783207.55       26.56742  (08012816)                363918.68   3783233.09       23.79196
       (12121716)
       363918.68   3783258.09       19.59997  (12121716)                363918.68   3783283.09       15.22872
       (10121916)
       363918.68   3783308.09       12.22871  (10121916)                363919.21   3783332.28        9.84534
       (10121916)
       363919.21   3783357.28        8.52465  (11022516)                363919.21   3783382.28        7.42132
       (11022516)
       363919.21   3783407.28        6.46032  (11022516)                363468.40   3783096.50        1.97466
       (09120716)
       363480.32   3783096.24        2.07868  (09120716)                363505.32   3783096.24        2.39508
       (09120216)
       363530.32   3783096.24        2.82635  (09120216)                363555.32   3783096.24        3.36455
       (09120216)
       363580.32   3783096.24        4.03972  (09120216)                363605.32   3783096.24        4.89416
       (09120216)
       363629.81   3783096.24        5.98098  (09120216)                363654.81   3783096.24        7.39014
       (09120216)
       363679.81   3783093.68        9.08121  (09120216)                363704.81   3783093.68       11.33152
       (09120216)
```

```
       363729.81   3783093.56       14.07633  (09120216)                363754.81   3783093.56       18.23059
       (11111216)
       363779.81   3783092.66       27.06415  (11111216)                363804.81   3783092.66       34.77033
       (11111016)
       363829.81   3783092.66       38.48798  (11111016)                363854.81   3783092.66       31.54770m
       (10122616)
       363879.81   3783092.66       29.32954m (10122616)                363587.82   3783466.38        2.44838
       (10100516)
       363601.35   3783480.91        2.44786  (10100516)                363601.35   3783505.91        2.22352
       (10100516)
       363601.35   3783530.91        2.01260  (10100516)                363601.35   3783555.91        1.81722
       (10100516)
       363601.35   3783580.91        1.63907  (10100516)                363601.35   3783605.91        1.47946
       (08052316)
       363573.32   3783452.30        2.39421  (10100516)                363561.08   3783441.85        2.31173
       (10100516)
       363551.24   3783438.12        2.30825  (11021816)                363550.94   3783426.26        2.46177
       (11021816)
       363551.19   3783411.48        2.65888  (11021816)                363550.94   3783395.93        2.85950
       (11021816)
       363550.68   3783381.66        3.10951  (12112816)                363550.43   3783363.30        3.53800
       (12112816)
       363536.92   3783363.05        3.41608  (12112816)                363528.51   3783363.30        3.32662
       (12112816)
       363528.25   3783357.44        3.41979  (12112816)                363513.72   3783357.44        3.24623
       (12112816)
       363504.55   3783352.60        3.18129  (12112816)                363507.18   3783337.93        3.32916
       (12112816)
       363501.43   3783331.08        3.26576  (12112816)                363491.71   3783322.46        3.30810
       (10020516)
       363485.30   3783316.28        3.34992  (10020516)                363478.89   3783311.41        3.35415
       (10020516)
       363470.66   3783132.66        2.17243  (09120716)                363470.66   3783157.66        2.21683
       (10020516)
       363470.66   3783182.66        2.72924  (10020516)                363469.56   3783203.46        3.08672
       (10020516)
       363469.56   3783228.46        3.42170  (10020516)                363469.56   3783253.46        3.58494
       (10020516)
       363469.56   3783278.46        3.55375  (10020516)                363469.56   3783303.46        3.34388
       (10020516)
       363798.94   3783066.77       22.51497  (11111016)                363795.11   3783063.90       20.88210
       (11111016)
       363795.43   3783052.56       18.36596  (11111016)                363798.62   3783048.73       18.07965
       (11111016)
       363811.08   3783048.73       19.36203  (11111016)                363815.39   3783052.56       20.53722
       (11111016)
       363815.23   3783063.74       23.87676  (11111016)                363811.24   3783067.41       24.82545
       (11111016)
       363298.29   3783861.01        0.48691  (12042316)                363323.29   3783861.01        0.50223
       (12042316)
       363348.29   3783861.01        0.51352  (12042316)                363373.29   3783861.01        0.52127
       (10100516)
       363398.29   3783861.01        0.53923  (10100516)                363422.49   3783859.43        0.55656
       (10100516)
       363447.49   3783859.43        0.56975  (10100516)                363472.49   3783859.43        0.57950
       (10100516)
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 08:50:21

PAGE  31
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL
```

```
                                *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                    INCLUDING SOURCE(S):     AWPF_V      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        0.61824  (09101316)               363517.73   3783858.63        0.68864
        (09101316)
        363542.73   3783858.63        0.75362  (09101316)               363567.73   3783858.63        0.81119
        (09101316)
        363593.53   3783857.44        0.86141  (09101316)               363618.53   3783857.44        0.89396
        (09101316)
        363643.53   3783857.44        0.90976  (09101316)               363671.70   3783856.65        0.90766
        (09101316)
        363697.10   3783854.67        0.88907  (09101316)               363722.10   3783854.67        0.84734
        (09101316)
        363746.70   3783854.27        0.79212  (09101316)               363771.70   3783854.27        0.79477
        (09020616)
        363796.70   3783854.27        0.81693  (09020616)               363821.70   3783854.27        0.83850
        (11022516)
        363846.70   3783854.27        0.91080  (11022516)               363871.70   3783854.27        0.97136
        (11022516)
        363896.70   3783854.27        1.01694  (11022516)               363921.70   3783854.27        1.04519
        (11022516)
        363946.70   3783854.27        1.05480  (11022516)               363971.70   3783854.27        1.08547
        (12121416)
        363996.70   3783854.27        1.11372  (12121416)               364021.70   3783854.27        1.15132
        (12121416)
        364046.70   3783854.27        1.17834  (12121416)               364073.73   3783852.30        1.19572
        (12121416)
        364061.84   3783840.40        1.21961
        (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
 08:50:21

PAGE  32
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                                    INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55        1.76472  (12121916)               363917.08   3783132.55        1.95584
        (12121916)
        363917.08   3783157.55        2.18017  (08122616)               363917.08   3783182.55        2.46228
        (08122616)
        363917.08   3783207.55        2.79762  (08122616)               363918.68   3783233.09        3.37769m
        (10122616)
        363918.68   3783258.09        4.12151m (10122616)               363918.68   3783283.09        5.10366m
        (10122616)
```

363918.68	3783308.09	6.43971m	(10122616)	363919.21	3783332.28	8.33701m	(10122616)
363919.21	3783357.28	11.25761m	(10122616)	363919.21	3783382.28	15.33033m	(10122616)
363919.21	3783407.28	20.38172m	(10122616)	363468.40	3783096.50	0.52693	(09120216)
363480.32	3783096.24	0.54241	(11122216)	363505.32	3783096.24	0.65062	(11122216)
363530.32	3783096.24	0.77006	(11122216)	363555.32	3783096.24	0.89740	(11122216)
363580.32	3783096.24	1.02744	(11122216)	363605.32	3783096.24	1.15288	(11122216)
363629.81	3783096.24	1.26252	(11122216)	363654.81	3783096.24	1.35092	(11122216)
363679.81	3783093.68	1.39743m	(10111116)	363704.81	3783093.68	1.53914m	(10111116)
363729.81	3783093.56	1.63764m	(10111116)	363754.81	3783093.56	1.69609	(11111016)
363779.81	3783092.66	1.86794	(11111016)	363804.81	3783092.66	1.95947	(11111016)
363829.81	3783092.66	1.94758	(11111016)	363854.81	3783092.66	1.89738	(12121916)
363879.81	3783092.66	1.85998	(12121916)	363587.82	3783466.38	3.27477	(10020516)
363601.35	3783480.91	4.08927	(10020516)	363601.35	3783505.91	4.69293	(10020516)
363601.35	3783530.91	4.90715	(10020516)	363601.35	3783555.91	4.66205	(10020516)
363601.35	3783580.91	4.06146	(10020516)	363601.35	3783605.91	3.67309	(12112816)
363573.32	3783452.30	2.56943	(10020516)	363561.08	3783441.85	2.23635	(09120716)
363551.24	3783438.12	2.09542	(09120716)	363550.94	3783426.26	2.03974	(09120716)
363551.19	3783411.48	1.94612	(09120716)	363550.94	3783395.93	1.94776	(09120216)
363550.68	3783381.66	1.97078	(09120216)	363550.43	3783363.30	1.96844	(09120216)
363536.92	3783363.05	1.81496	(09120216)	363528.51	3783363.30	1.72674	(09120216)
363528.25	3783357.44	1.72384	(09120216)	363513.72	3783357.44	1.58604	(09120216)
363504.55	3783352.60	1.50620	(09120216)	363507.18	3783337.93	1.51783	(09120216)
363501.43	3783331.08	1.46619	(09120216)	363491.71	3783322.46	1.38601	(09120216)
363485.30	3783316.28	1.33474	(09120216)	363478.89	3783311.41	1.28897	(09120216)
363470.66	3783132.66	0.64874	(09120216)	363470.66	3783157.66	0.74200	(09120216)
363470.66	3783182.66	0.83973	(09120216)	363469.56	3783203.46	0.91973	(09120216)
363469.56	3783228.46	1.01445	(09120216)	363469.56	3783253.46	1.10026	(09120216)
363469.56	3783278.46	1.17140	(09120216)	363469.56	3783303.46	1.22431	(09120216)
363798.94	3783066.77	1.73596	(11111016)	363795.11	3783063.90	1.70716	(11111016)
363795.43	3783052.56	1.62898	(11111016)	363798.62	3783048.73	1.60852	(11111016)
363811.08	3783048.73	1.61636	(11111016)	363815.39	3783052.56	1.64142	(11111016)
363815.23	3783063.74	1.72345	(11111016)	363811.24	3783067.41	1.75258	(11111016)

```
       363298.29   3783861.01        0.59336  (12112816)               363323.29   3783861.01        0.59610
       (12112816)
       363348.29   3783861.01        0.61341  (11021816)               363373.29   3783861.01        0.63835
       (11021816)
       363398.29   3783861.01        0.66163  (11021816)               363422.49   3783859.43        0.69582
       (12050116)
       363447.49   3783859.43        0.74450  (12050116)               363472.49   3783859.43        0.79484
       (10100516)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 08:50:21

PAGE  33
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        0.85699  (10100516)               363517.73   3783858.63        0.93376
       (10100516)
       363542.73   3783858.63        1.01077  (10100516)               363567.73   3783858.63        1.08498
       (10100516)
       363593.53   3783857.44        1.15986  (10100516)               363618.53   3783857.44        1.21759
       (10100516)
       363643.53   3783857.44        1.27836  (08052316)               363671.70   3783856.65        1.45520
       (09101316)
       363697.10   3783854.67        1.64319  (09101316)               363722.10   3783854.67        1.77392
       (09101316)
       363746.70   3783854.27        1.84098  (09101316)               363771.70   3783854.27        1.82693
       (09101316)
       363796.70   3783854.27        1.73055  (09101316)               363821.70   3783854.27        1.68210
       (10041116)
       363846.70   3783854.27        1.84320  (11022516)               363871.70   3783854.27        2.00847
       (11022516)
       363896.70   3783854.27        2.10092  (11022516)               363921.70   3783854.27        2.11151
       (11022516)
       363946.70   3783854.27        2.04213  (11022516)               363971.70   3783854.27        1.90476
       (11022516)
       363996.70   3783854.27        1.71762  (11022516)               364021.70   3783854.27        1.71487
       (12121416)
       364046.70   3783854.27        1.62494  (12121416)               364073.73   3783852.30        1.51157
       (12121416)
       364061.84   3783840.40        1.58037
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 08:50:21

PAGE  34
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                                  INCLUDING SOURCE(S):     MAINTBLD_V  ,
```

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	0.89641	(10102116)	363917.08	3783132.55	0.89802	(10102116)
363917.08	3783157.55	0.87110	(10102116)	363917.08	3783182.55	0.82184	(10102116)
363917.08	3783207.55	0.87861	(08012816)	363918.68	3783233.09	0.98152	(08012816)
363918.68	3783258.09	1.06010	(08012816)	363918.68	3783283.09	1.09859	(08012816)
363918.68	3783308.09	1.08131	(08012816)	363919.21	3783332.28	1.00483	(08012816)
363919.21	3783357.28	0.89169	(08012816)	363919.21	3783382.28	0.76171	(08012816)
363919.21	3783407.28	0.73521	(12121716)	363468.40	3783096.50	10.10343	(11111216)
363480.32	3783096.24	12.18395	(11111216)	363505.32	3783096.24	15.92125	(11111016)
363530.32	3783096.24	17.22672	(11111016)	363555.32	3783096.24	13.90911m	(10122616)
363580.32	3783096.24	12.63146m	(10122616)	363605.32	3783096.24	9.62102m	(10122616)
363629.81	3783096.24	6.79253m	(10122616)	363654.81	3783096.24	5.29516	(10102116)
363679.81	3783093.68	4.18832	(10102116)	363704.81	3783093.68	3.41721	(10102116)
363729.81	3783093.56	2.80685	(10102116)	363754.81	3783093.56	2.33242	(10102116)
363779.81	3783092.66	1.95175	(10102116)	363804.81	3783092.66	1.65569	(10102116)
363829.81	3783092.66	1.41987	(10102116)	363854.81	3783092.66	1.22818	(10102116)
363879.81	3783092.66	1.07070	(10102116)	363587.82	3783466.38	2.10851	(11022516)
363601.35	3783480.91	1.90259	(11022516)	363601.35	3783505.91	1.67156	(11022516)
363601.35	3783530.91	1.47685	(11022516)	363601.35	3783555.91	1.31024	(11022516)
363601.35	3783580.91	1.16805	(11022516)	363601.35	3783605.91	1.04460	(11022516)
363573.32	3783452.30	2.31536	(11022516)	363561.08	3783441.85	2.46543	(11022516)
363551.24	3783438.12	2.48953	(11022516)	363550.94	3783426.26	2.70793	(11022516)
363551.19	3783411.48	3.02204	(11022516)	363550.94	3783395.93	3.41280	(11022516)
363550.68	3783381.66	3.84572	(11022516)	363550.43	3783363.30	4.53512	(11022516)
363536.92	3783363.05	4.40015	(11022516)	363528.51	3783363.30	4.22923	(11022516)
363528.25	3783357.44	4.47322	(11022516)	363513.72	3783357.44	4.05712	(11022516)
363504.55	3783352.60	4.29819	(09101316)	363507.18	3783337.93	4.98230	(09101316)
363501.43	3783331.08	5.46235	(09101316)	363491.71	3783322.46	6.01856	(09101316)
363485.30	3783316.28	6.32245	(09101316)	363478.89	3783311.41	6.48939	(08052316)

```
        363470.66   3783132.66       16.47453  (09120216)              363470.66   3783157.66       22.39828
        (11121916)
        363470.66   3783182.66       31.36863  (12112916)              363469.56   3783203.46       26.87488
        (12112816)
        363469.56   3783228.46       18.32560  (11021816)              363469.56   3783253.46       11.77721
        (11021816)
        363469.56   3783278.46        8.61499  (08052316)              363469.56   3783303.46        6.68460
        (08052316)
        363798.94   3783066.77        1.56848  (10102116)              363795.11   3783063.90        1.58372
        (10102116)
        363795.43   3783052.56        1.49935  (10102116)              363798.62   3783048.73        1.44637
        (10102116)
        363811.08   3783048.73        1.35399  (10102116)              363815.39   3783052.56        1.34638
        (10102116)
        363815.23   3783063.74        1.41180  (10102116)              363811.24   3783067.41        1.46513
        (10102116)
        363298.29   3783861.01        0.36042  (09101316)              363323.29   3783861.01        0.37184
        (09101316)
        363348.29   3783861.01        0.37618  (09101316)              363373.29   3783861.01        0.37288
        (09101316)
        363398.29   3783861.01        0.36191  (09101316)              363422.49   3783859.43        0.34637
        (09101316)
        363447.49   3783859.43        0.32232  (09101316)              363472.49   3783859.43        0.32749
        (09020616)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 08:50:21

PAGE  35
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                                    INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        0.33682  (09020616)              363517.73   3783858.63        0.34212
        (11022516)
        363542.73   3783858.63        0.37211  (11022516)              363567.73   3783858.63        0.39747
        (11022516)
        363593.53   3783857.44        0.41889  (11022516)              363618.53   3783857.44        0.43114
        (11022516)
        363643.53   3783857.44        0.43581  (11022516)              363671.70   3783856.65        0.44296
        (12121416)
        363697.10   3783854.67        0.45496  (12121416)              363722.10   3783854.67        0.45706
        (12121416)
        363746.70   3783854.27        0.45304  (12121416)              363771.70   3783854.27        0.44258
        (12121416)
        363796.70   3783854.27        0.42715  (12121416)              363821.70   3783854.27        0.40784
        (12121416)
        363846.70   3783854.27        0.38574  (12121416)              363871.70   3783854.27        0.36188
        (12121416)
        363896.70   3783854.27        0.33716  (12121416)              363921.70   3783854.27        0.31233
        (12121416)
        363946.70   3783854.27        0.28797  (12121416)              363971.70   3783854.27        0.26486
        (12121416)
        363996.70   3783854.27        0.24337  (12121416)              364021.70   3783854.27        0.23529
```

```
        (12121416)
        364046.70   3783854.27        0.22793  (12121416)                364073.73   3783852.30        0.21564
        (12121416)
        364061.84   3783840.40        0.21777
        (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 08:50:21

PAGE  36
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                 *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                     INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                                *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                           ** CONC OF CO       IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55        0.84780m (10122616)                363917.08   3783132.55        0.90335m
        (10122616)
        363917.08   3783157.55        0.96100m (10122616)                363917.08   3783182.55        1.02090m
        (10122616)
        363917.08   3783207.55        1.08382m (10122616)                363918.68   3783233.09        1.14346m
        (10122616)
        363918.68   3783258.09        1.21573m (10122616)                363918.68   3783283.09        1.29627m
        (10122616)
        363918.68   3783308.09        1.38695m (10122616)                363919.21   3783332.28        1.48035m
        (10122616)
        363919.21   3783357.28        1.58831m (10122616)                363919.21   3783382.28        1.69540m
        (10122616)
        363919.21   3783407.28        1.85297  (10102116)                363468.40   3783096.50        0.96434m
        (10111116)
        363480.32   3783096.24        0.99597m (10111116)                363505.32   3783096.24        1.04785m
        (10111116)
        363530.32   3783096.24        1.07396m (10111116)                363555.32   3783096.24        1.11399
        (11111016)
        363580.32   3783096.24        1.19983  (11111016)                363605.32   3783096.24        1.24287
        (11111016)
        363629.81   3783096.24        1.23745  (11111016)                363654.81   3783096.24        1.21521
        (12121916)
        363679.81   3783093.68        1.20949  (12121916)                363704.81   3783093.68        1.17676
        (12121916)
        363729.81   3783093.56        1.10951  (12121916)                363754.81   3783093.56        1.03578
        (08122616)
        363779.81   3783092.66        0.98138  (08122616)                363804.81   3783092.66        0.90443
        (08122616)
        363829.81   3783092.66        0.90584m (10122616)                363854.81   3783092.66        0.90341m
        (10122616)
        363879.81   3783092.66        0.88062m (10122616)                363587.82   3783466.38        8.71923
        (11111216)
        363601.35   3783480.91       11.87373  (11111216)                363601.35   3783505.91       16.32267
        (11111216)
        363601.35   3783530.91       21.66506  (09120216)                363601.35   3783555.91       32.97678
        (09120216)
        363601.35   3783580.91       44.79343  (10020516)                363601.35   3783605.91       52.98950
        (10020516)
        363573.32   3783452.30        6.61086  (11122216)                363561.08   3783441.85        5.60204
        (11122216)
```

363551.24 3783438.12 5.03986 (11122216) 363550.94 3783426.26 4.75412
(11122216)
363551.19 3783411.48 4.40857 (11122216) 363550.94 3783395.93 4.03356
(11122216)
363550.68 3783381.66 3.70580 (11122216) 363550.43 3783363.30 3.31620
(11122216)
363536.92 3783363.05 3.16535 (11122216) 363528.51 3783363.30 3.05528
(11122216)
363528.25 3783357.44 2.96860 (11122216) 363513.72 3783357.44 2.76153
(11122216)
363504.55 3783352.60 2.57488 (11122216) 363507.18 3783337.93 2.47744
(11122216)
363501.43 3783331.08 2.34854 (11122216) 363491.71 3783322.46 2.17251
(11122216)
363485.30 3783316.28 2.06210 (11122216) 363478.89 3783311.41 1.96622
(11122216)
363470.66 3783132.66 1.06193m (10111116) 363470.66 3783157.66 1.12746m
(10111116)
363470.66 3783182.66 1.23109 (11122216) 363469.56 3783203.46 1.32679
(11122216)
363469.56 3783228.46 1.45057 (11122216) 363469.56 3783253.46 1.57924
(11122216)
363469.56 3783278.46 1.70848 (11122216) 363469.56 3783303.46 1.83143
(11122216)
363798.94 3783066.77 0.86396 (08122616) 363795.11 3783063.90 0.86761
(08122616)
363795.43 3783052.56 0.84123 (08122616) 363798.62 3783048.73 0.82531
(08122616)
363811.08 3783048.73 0.79337 (08122616) 363815.39 3783052.56 0.78843
(08122616)
363815.23 3783063.74 0.80981 (08122616) 363811.24 3783067.41 0.82934
(08122616)
363298.29 3783861.01 1.23154 (12112816) 363323.29 3783861.01 1.31308
(11021816)
363348.29 3783861.01 1.39744 (11021816) 363373.29 3783861.01 1.47578
(11021816)
363398.29 3783861.01 1.61912 (10100516) 363422.49 3783859.43 1.82084
(10100516)
363447.49 3783859.43 2.02319 (10100516) 363472.49 3783859.43 2.21396
(10100516)

*** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project
*** 08/11/15
*** AERMET - VERSION 14134 *** *** ***
08:50:21

PAGE 37
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: WAREH_V ***
INCLUDING SOURCE(S): WAREHOUSE_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M) Y-COORD (M) CONC (YYMMDDHH) X-COORD (M) Y-COORD (M) CONC
(YYMMDDHH)
- -
- - - - - - -
363491.94 3783857.05 2.37301 (10100516) 363517.73 3783858.63 2.58109
(08052316)
363542.73 3783858.63 2.92594 (09101316) 363567.73 3783858.63 3.27071
(09101316)
363593.53 3783857.44 3.45767 (09101316) 363618.53 3783857.44 3.37327

(09101316)
363643.53 3783857.44 3.26308 (11022516) 363671.70 3783856.65 3.76766
(11022516)
363697.10 3783854.67 4.02221 (11022516) 363722.10 3783854.67 3.96205
(11022516)
363746.70 3783854.27 3.68611 (11022516) 363771.70 3783854.27 3.23326
(11022516)
363796.70 3783854.27 2.70024 (11022516) 363821.70 3783854.27 2.28366
(10121916)
363846.70 3783854.27 2.00434 (10121916) 363871.70 3783854.27 1.80881
(12121716)
363896.70 3783854.27 1.85537 (12121716) 363921.70 3783854.27 1.84477
(12121716)
363946.70 3783854.27 1.78423 (12121716) 363971.70 3783854.27 1.68567
(12121716)
363996.70 3783854.27 1.56190 (12121716) 364021.70 3783854.27 1.44257
(12121716)
364046.70 3783854.27 1.30974 (12121716) 364073.73 3783852.30 1.15872
(12121716)
364061.84 3783840.40 1.20997
(12121716)

FF *** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project
*** 08/11/15
*** AERMET - VERSION 14134 *** *** ***
08:50:21

PAGE 38
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 8-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_V , FLOWEQ_V , MAINTBLD_V , AWPF_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF CO IN MICROGRAMS/M**3 **

X-COORD (M) Y-COORD (M) CONC (YYMMDDHH) X-COORD (M) Y-COORD (M) CONC
(YYMMDDHH)
- -
- - - - - - -
363917.08 3783107.55 24.28914m (10122616) 363917.08 3783132.55 30.52440
(10102116)
363917.08 3783157.55 35.06008 (10102116) 363917.08 3783182.55 32.95815
(10102116)
363917.08 3783207.55 27.75549 (08012816) 363918.68 3783233.09 25.03939
(12121716)
363918.68 3783258.09 21.14010 (12121716) 363918.68 3783283.09 16.53605
(12121716)
363918.68 3783308.09 13.58771 (10121916) 363919.21 3783332.28 11.68281
(11022516)
363919.21 3783357.28 13.58026m (10122616) 363919.21 3783382.28 17.59338m
(10122616)
363919.21 3783407.28 22.61678m (10122616) 363468.40 3783096.50 12.28206
(11111216)
363480.32 3783096.24 14.49647 (11111216) 363505.32 3783096.24 18.34448
(11111216)
363530.32 3783096.24 18.76601 (11111016) 363555.32 3783096.24 14.94952
(09021716)
363580.32 3783096.24 13.39700m (10122616) 363605.32 3783096.24 10.57055m
(10122616)
363629.81 3783096.24 9.04967 (09120216) 363654.81 3783096.24 9.69150
(09120216)
363679.81 3783093.68 10.84548 (09120216) 363704.81 3783093.68 12.76159
(09120216)

```
        363729.81   3783093.56       15.27316  (09120216)             363754.81   3783093.56       20.54531
        (11111216)
        363779.81   3783092.66       29.25184  (11111216)             363804.81   3783092.66       37.35915
        (11111016)
        363829.81   3783092.66       40.92844  (11111016)             363854.81   3783092.66       33.92137m
        (10122616)
        363879.81   3783092.66       31.74738m (10122616)             363587.82   3783466.38       10.49211
        (11111216)
        363601.35   3783480.91       13.64561  (11111216)             363601.35   3783505.91       17.81123
        (11111216)
        363601.35   3783530.91       23.54452  (09120216)             363601.35   3783555.91       34.51087
        (09120216)
        363601.35   3783580.91       49.03880  (10020516)             363601.35   3783605.91       56.41659
        (10020516)
        363573.32   3783452.30        8.34502  (11111216)             363561.08   3783441.85        7.07726
        (11111216)
        363551.24   3783438.12        6.54324  (11121916)             363550.94   3783426.26        6.32356
        (11121916)
        363551.19   3783411.48        6.15317  (11121916)             363550.94   3783395.93        6.07026
        (11121916)
        363550.68   3783381.66        6.23806  (12121416)             363550.43   3783363.30        6.64929
        (12121416)
        363536.92   3783363.05        6.31719  (12121416)             363528.51   3783363.30        6.05241
        (12121416)
        363528.25   3783357.44        6.20803  (12121416)             363513.72   3783357.44        5.81231
        (11121916)
        363504.55   3783352.60        5.75270  (11121916)             363507.18   3783337.93        6.25777
        (12120116)
        363501.43   3783331.08        6.61803  (12120116)             363491.71   3783322.46        7.01208
        (12120116)
        363485.30   3783316.28        7.22607  (12120116)             363478.89   3783311.41        7.27710
        (12120116)
        363470.66   3783132.66       19.07425  (09120216)             363470.66   3783157.66       25.31433
        (11121916)
        363470.66   3783182.66       33.96248  (12112916)             363469.56   3783203.46       29.42068
        (12112916)
        363469.56   3783228.46       19.85400  (11021816)             363469.56   3783253.46       13.59646
        (11021816)
        363469.56   3783278.46        9.65011  (10100516)             363469.56   3783303.46        7.54423
        (10100516)
        363798.94   3783066.77       24.88175  (11111016)             363795.11   3783063.90       23.23887
        (11111016)
        363795.43   3783052.56       20.62555  (11111016)             363798.62   3783048.73       20.29511
        (11111016)
        363811.08   3783048.73       21.52033  (11111016)             363815.39   3783052.56       22.70397
        (11111016)
        363815.23   3783063.74       26.13837  (11111016)             363811.24   3783067.41       27.14067
        (11111016)
        363298.29   3783861.01        2.20863  (11021816)             363323.29   3783861.01        2.32254
        (11021816)
        363348.29   3783861.01        2.45498  (10100516)             363373.29   3783861.01        2.68866
        (10100516)
        363398.29   3783861.01        2.93833  (10100516)             363422.49   3783859.43        3.20513
        (10100516)
        363447.49   3783859.43        3.47232  (10100516)             363472.49   3783859.43        3.72843
        (10100516)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 08:50:21

PAGE  39
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL
```

```
                         *** THE   1ST HIGHEST  8-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                             INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                        *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                   ** CONC OF CO       IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        3.94710  (10100516)               363517.73   3783858.63        4.11658
       (10100516)
       363542.73   3783858.63        4.54778  (08052316)               363567.73   3783858.63        4.91370
       (09101316)
       363593.53   3783857.44        5.29526  (09101316)               363618.53   3783857.44        5.40883
       (09101316)
       363643.53   3783857.44        5.28072  (09101316)               363671.70   3783856.65        4.97937
       (10041116)
       363697.10   3783854.67        5.39512  (11022516)               363722.10   3783854.67        5.55831
       (11022516)
       363746.70   3783854.27        5.54223  (11022516)               363771.70   3783854.27        5.38248
       (11022516)
       363796.70   3783854.27        5.15690  (11022516)               363821.70   3783854.27        4.91766
       (11022516)
       363846.70   3783854.27        4.69111  (11022516)               363871.70   3783854.27        4.47899
       (11022516)
       363896.70   3783854.27        4.26763  (11022516)               363921.70   3783854.27        4.03925
       (11022516)
       363946.70   3783854.27        3.78087  (11022516)               363971.70   3783854.27        3.60493
       (10121916)
       363996.70   3783854.27        3.44777  (10121916)               364021.70   3783854.27        3.45758
       (12121416)
       364046.70   3783854.27        3.33780  (12121416)               364073.73   3783852.30        3.27991
       (12121416)
       364061.84   3783840.40        3.38949
       (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***       08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 08:50:21

PAGE  40
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   5 YEARS ***


                                ** CONC OF CO       IN MICROGRAMS/M**3                          **

                                                                                                              NETWORK
GROUP ID                       AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


AWPF_V    1ST HIGHEST VALUE IS       4.39826 AT (  363829.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          2ND HIGHEST VALUE IS       3.96111 AT (  363854.81,  3783092.66,   215.15,   215.15,    2.00)  DC
          3RD HIGHEST VALUE IS       3.90033 AT (  363804.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          4TH HIGHEST VALUE IS       3.49938 AT (  363917.08,  3783182.55,   214.25,   214.25,    2.00)  DC
          5TH HIGHEST VALUE IS       3.30662 AT (  363917.08,  3783157.55,   214.50,   214.50,    2.00)  DC
          6TH HIGHEST VALUE IS       3.10608 AT (  363917.08,  3783207.55,   214.10,   214.10,    2.00)  DC
          7TH HIGHEST VALUE IS       2.97982 AT (  363879.81,  3783092.66,   215.09,   215.09,    2.00)  DC
          8TH HIGHEST VALUE IS       2.90025 AT (  363779.81,  3783092.66,   215.25,   215.25,    2.00)  DC
          9TH HIGHEST VALUE IS       2.68931 AT (  363917.08,  3783132.55,   214.83,   214.83,    2.00)  DC
         10TH HIGHEST VALUE IS       2.39600 AT (  363811.24,  3783067.41,   215.20,   215.20,    2.00)  DC
```

```
FLOWEQ_V  1ST HIGHEST VALUE IS       2.05451 AT (  363919.21,  3783407.28,   217.57,   217.57,    2.00)  DC
          2ND HIGHEST VALUE IS       1.43557 AT (  363919.21,  3783382.28,   217.33,   217.33,    2.00)  DC
          3RD HIGHEST VALUE IS       1.02252 AT (  363919.21,  3783357.28,   217.08,   217.08,    2.00)  DC
          4TH HIGHEST VALUE IS       0.75141 AT (  363919.21,  3783332.28,   216.70,   216.70,    2.00)  DC
          5TH HIGHEST VALUE IS       0.57461 AT (  363918.68,  3783308.09,   216.24,   216.24,    2.00)  DC
          6TH HIGHEST VALUE IS       0.44518 AT (  363918.68,  3783283.09,   215.48,   215.48,    2.00)  DC
          7TH HIGHEST VALUE IS       0.35364 AT (  363918.68,  3783258.09,   214.80,   214.80,    2.00)  DC
          8TH HIGHEST VALUE IS       0.28682 AT (  363918.68,  3783233.09,   214.34,   214.34,    2.00)  DC
          9TH HIGHEST VALUE IS       0.27564 AT (  363601.35,  3783505.91,   218.94,   218.94,    2.00)  DC
         10TH HIGHEST VALUE IS       0.27300 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC

MAINTB_V  1ST HIGHEST VALUE IS       3.62290 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
          2ND HIGHEST VALUE IS       3.25239 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
          3RD HIGHEST VALUE IS       2.92361 AT (  363469.56,  3783203.46,   216.05,   216.05,    2.00)  DC
          4TH HIGHEST VALUE IS       2.22907 AT (  363470.66,  3783132.66,   215.70,   215.70,    2.00)  DC
          5TH HIGHEST VALUE IS       2.05757 AT (  363530.32,  3783096.24,   215.37,   215.37,    2.00)  DC
          6TH HIGHEST VALUE IS       1.96980 AT (  363469.56,  3783228.46,   216.19,   216.19,    2.00)  DC
          7TH HIGHEST VALUE IS       1.83896 AT (  363505.32,  3783096.24,   215.45,   215.45,    2.00)  DC
          8TH HIGHEST VALUE IS       1.80092 AT (  363555.32,  3783096.24,   215.36,   215.36,    2.00)  DC
          9TH HIGHEST VALUE IS       1.35210 AT (  363480.32,  3783096.24,   215.48,   215.48,    2.00)  DC
         10TH HIGHEST VALUE IS       1.31170 AT (  363580.32,  3783096.24,   215.34,   215.34,    2.00)  DC

WAREH_V   1ST HIGHEST VALUE IS       5.54684 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
          2ND HIGHEST VALUE IS       5.31356 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
          3RD HIGHEST VALUE IS       4.19479 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
          4TH HIGHEST VALUE IS       2.76933 AT (  363601.35,  3783530.91,   219.52,   219.52,    2.00)  DC
          5TH HIGHEST VALUE IS       1.82925 AT (  363601.35,  3783505.91,   218.94,   218.94,    2.00)  DC
          6TH HIGHEST VALUE IS       1.24683 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC
          7TH HIGHEST VALUE IS       0.88967 AT (  363587.82,  3783466.38,   218.13,   218.13,    2.00)  DC
          8TH HIGHEST VALUE IS       0.65553 AT (  363573.32,  3783452.30,   217.83,   217.83,    2.00)  DC
          9TH HIGHEST VALUE IS       0.52655 AT (  363561.08,  3783441.85,   217.73,   217.73,    2.00)  DC
         10TH HIGHEST VALUE IS       0.46602 AT (  363551.24,  3783438.12,   217.69,   217.69,    2.00)  DC
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 08:50:21

PAGE  41
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                   *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   5 YEARS ***


                                    ** CONC OF CO       IN MICROGRAMS/M**3                         **

                                                                                                            NETWORK
GROUP ID                        AVERAGE CONC                RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


ALL       1ST HIGHEST VALUE IS       5.93989 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
          2ND HIGHEST VALUE IS       5.67182 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
          3RD HIGHEST VALUE IS       4.65378 AT (  363829.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          4TH HIGHEST VALUE IS       4.62268 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
          5TH HIGHEST VALUE IS       4.20182 AT (  363854.81,  3783092.66,   215.15,   215.15,    2.00)  DC
          6TH HIGHEST VALUE IS       4.17174 AT (  363804.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          7TH HIGHEST VALUE IS       3.91429 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
          8TH HIGHEST VALUE IS       3.80224 AT (  363917.08,  3783182.55,   214.25,   214.25,    2.00)  DC
          9TH HIGHEST VALUE IS       3.57481 AT (  363917.08,  3783157.55,   214.50,   214.50,    2.00)  DC
         10TH HIGHEST VALUE IS       3.52847 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
```

```
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 08:50:21

PAGE  42
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                    ** CONC OF CO       IN MICROGRAMS/M**3                          **


                                                        DATE
                                                             NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -


AWPF_V   HIGH   1ST HIGH VALUE IS     119.49262  ON 12121716: AT (  363918.68,  3783233.09,   214.34,   214.34,
2.00)  DC

FLOWEQ_V HIGH   1ST HIGH VALUE IS      48.24831  ON 10122616: AT (  363919.21,  3783407.28,   217.57,   217.57,
2.00)  DC

MAINTB_V HIGH   1ST HIGH VALUE IS     101.16604  ON 12112916: AT (  363470.66,  3783182.66,   215.94,   215.94,
2.00)  DC

WAREH_V  HIGH   1ST HIGH VALUE IS     194.59693  ON 09121216: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS     208.61378  ON 09121216: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 08:50:21

PAGE  43
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                *** THE SUMMARY OF HIGHEST  8-HR RESULTS ***


                                    ** CONC OF CO       IN MICROGRAMS/M**3                          **


                                                        DATE
                                                             NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -
```

```
AWPF_V   HIGH   1ST HIGH VALUE IS      38.48798  ON 11111016: AT (  363829.81,  3783092.66,   215.18,   215.18,
2.00)  DC

FLOWEQ_V HIGH   1ST HIGH VALUE IS      20.38172m ON 10122616: AT (  363919.21,  3783407.28,   217.57,   217.57,
2.00)  DC

MAINTB_V HIGH   1ST HIGH VALUE IS      31.36863  ON 12112916: AT (  363470.66,  3783182.66,   215.94,   215.94,
2.00)  DC

WAREH_V  HIGH   1ST HIGH VALUE IS      52.98950  ON 10020516: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS      56.41659  ON 10020516: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/11/15
 *** AERMET - VERSION  14134 ***   ***                                                                   ***
 08:50:21

PAGE  44
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of         1173 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of            2 Calm Hours Identified

 A Total of         1171 Missing Hours Identified (  2.67 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ***********************************
    *** AERMOD Finishes Successfully ***
    ***********************************
```

```
***************************************
** AERMOD CONTROL PATHWAY
***************************************
**
**
CO STARTING
   TITLEONE LA GROUND WATER REPLENISHMENT PROJECT
   MODELOPT DFAULT CONC
   AVERTIME 1 ANNUAL
   URBANOPT 9862049
   POLLUTID NOX
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-NO2.ERR
CO FINISHED
**
***************************************
** AERMOD SOURCE PATHWAY
***************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
   LOCATION WAREHOUSE_V  VOLUME     363660.728  3783587.418      219.660
   LOCATION FLOWEQ_V     VOLUME     363848.668  3783471.040      217.970
   LOCATION MAINTBLD_V   VOLUME     363528.440  3783175.430      215.900
   LOCATION AWPF_V       VOLUME     363829.890  3783175.990      215.160
** SOURCE PARAMETERS **
   SRCPARAM WAREHOUSE_V     0.0175     5.000     5.863     1.400
   SRCPARAM FLOWEQ_V        0.0196     5.000    17.530     1.400
   SRCPARAM MAINTBLD_V      0.0111     5.000    12.065     1.400
   SRCPARAM AWPF_V          0.0249     5.000    16.379     1.400
   URBANSRC ALL

** VARIABLE EMISSIONS TYPE: "BY HOUR-OF-DAY (HROFDY)"
** VARIABLE EMISSION SCENARIO: "WORKHOURS"
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT WAREHOUSE_V  HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT WAREHOUSE_V  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_V     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_V     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT MAINTBLD_V   HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT MAINTBLD_V   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AWPF_V       HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AWPF_V       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP AWPF_V   AWPF_V
   SRCGROUP FLOWEQ_V FLOWEQ_V
   SRCGROUP MAINTB_V MAINTBLD_V
   SRCGROUP WAREH_V  WAREHOUSE_V
   SRCGROUP ALL
SO FINISHED
**
***************************************
** AERMOD RECEPTOR PATHWAY
***************************************
**
```

```
**
RE STARTING
   INCLUDED GWRP-NO2.ROU
RE FINISHED
**
****************************************
** AERMOD METEOROLOGY PATHWAY
****************************************
**
**
ME STARTING
   SURFFILE ..\..\RESE8.SFC
   PROFFILE ..\..\RESE8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
** AERMOD OUTPUT PATHWAY
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 1 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   1 ALL 1ST GWRP-NO2.AD\01H1GALL.PLT 31
   PLOTFILE   1 AWPF_V 1ST GWRP-NO2.AD\01H1G001.PLT 32
   PLOTFILE   1 FLOWEQ_V 1ST GWRP-NO2.AD\01H1G002.PLT 33
   PLOTFILE   1 MAINTB_V 1ST GWRP-NO2.AD\01H1G003.PLT 34
   PLOTFILE   1 WAREH_V 1ST GWRP-NO2.AD\01H1G004.PLT 35
   PLOTFILE   ANNUAL ALL GWRP-NO2.AD\AN00GALL.PLT 36
   PLOTFILE   ANNUAL AWPF_V GWRP-NO2.AD\AN00G001.PLT 37
   PLOTFILE   ANNUAL FLOWEQ_V GWRP-NO2.AD\AN00G002.PLT 38
   PLOTFILE   ANNUAL MAINTB_V GWRP-NO2.AD\AN00G003.PLT 39
   PLOTFILE   ANNUAL WAREH_V GWRP-NO2.AD\AN00G004.PLT 40
   SUMMFILE GWRP-NO2.SUM
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 15:06:12

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F
```

```
 **Model Uses URBAN Dispersion Algorithm for the SBL for     4 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  NOX

 **Model Calculates  1 Short Term Average(s) of:   1-HR
     and Calculates ANNUAL Averages

 **This Run Includes:      4 Source(s);       5 Source Group(s); and     105 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of ANNUAL Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-NO2.ERR
 **File for Summary of Results:
 GWRP-NO2.SUM
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                         ***
 15:06:12

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                    *** VOLUME SOURCE DATA ***

              NUMBER EMISSION RATE                    BASE    RELEASE    INIT.    INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC)     X         Y      ELEV.   HEIGHT      SY       SZ     SOURCE  SCALAR VARY
     ID         CATS.               (METERS) (METERS) (METERS) (METERS) (METERS) (METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
```

```
 - -

 WAREHOUSE_V      0   0.17500E-01  363660.7 3783587.4   219.7     5.00     5.86     1.40     YES   HROFDY
 FLOWEQ_V         0   0.19600E-01  363848.7 3783471.0   218.0     5.00    17.53     1.40     YES   HROFDY
 MAINTBLD_V       0   0.11100E-01  363528.4 3783175.4   215.9     5.00    12.07     1.40     YES   HROFDY
 AWPF_V           0   0.24900E-01  363829.9 3783176.0   215.2     5.00    16.38     1.40     YES   HROFDY
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 15:06:12

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                              SOURCE IDs
 -----------                                              ----------


  AWPF_V     AWPF_V      ,

  FLOWEQ_V   FLOWEQ_V    ,

  MAINTB_V   MAINTBLD_V  ,

  WAREH_V    WAREHOUSE_V ,

  ALL        WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 15:06:12

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                            *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                    SOURCE IDs
  --------   ---------                                    ----------


              9862049.   WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 15:06:12

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

     HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -


 SOURCE ID = WAREHOUSE_V  ; SOURCE TYPE = VOLUME   :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
```

```
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = FLOWEQ_V     ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = MAINTBLD_V   ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = AWPF_V       ; SOURCE TYPE = VOLUME   :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 15:06:12

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);         ( 363917.1, 3783132.5,     214.8,
     214.8,       2.0);
     ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);         ( 363917.1, 3783182.5,     214.2,
     214.2,       2.0);
     ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);         ( 363918.7, 3783233.1,     214.3,
     214.3,       2.0);
     ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);         ( 363918.7, 3783283.1,     215.5,
     215.5,       2.0);
     ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);         ( 363919.2, 3783332.3,     216.7,
     216.7,       2.0);
     ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);         ( 363919.2, 3783382.3,     217.3,
     217.3,       2.0);
     ( 363919.2, 3783407.3,     217.6,     217.6,       2.0);         ( 363468.4, 3783096.5,     215.5,
     215.5,       2.0);
     ( 363480.3, 3783096.2,     215.5,     215.5,       2.0);         ( 363505.3, 3783096.2,     215.5,
     215.5,       2.0);
     ( 363530.3, 3783096.2,     215.4,     215.4,       2.0);         ( 363555.3, 3783096.2,     215.4,
     215.4,       2.0);
     ( 363580.3, 3783096.2,     215.3,     215.3,       2.0);         ( 363605.3, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363629.8, 3783096.2,     215.4,     215.4,       2.0);         ( 363654.8, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363679.8, 3783093.7,     215.2,     215.2,       2.0);         ( 363704.8, 3783093.7,     215.2,
     215.2,       2.0);
     ( 363729.8, 3783093.6,     215.2,     215.2,       2.0);         ( 363754.8, 3783093.6,     215.3,
     215.3,       2.0);
     ( 363779.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363804.8, 3783092.7,     215.2,
     215.2,       2.0);
```

```
    ( 363829.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363854.8, 3783092.7,     215.2,
    215.2,       2.0);
    ( 363879.8, 3783092.7,     215.1,     215.1,       2.0);         ( 363587.8, 3783466.4,     218.1,
    218.1,       2.0);
    ( 363601.3, 3783480.9,     218.4,     218.4,       2.0);         ( 363601.3, 3783505.9,     218.9,
    218.9,       2.0);
    ( 363601.3, 3783530.9,     219.5,     219.5,       2.0);         ( 363601.3, 3783555.9,     219.9,
    219.9,       2.0);
    ( 363601.3, 3783580.9,     220.3,     220.3,       2.0);         ( 363601.3, 3783605.9,     220.3,
    220.3,       2.0);
    ( 363573.3, 3783452.3,     217.8,     217.8,       2.0);         ( 363561.1, 3783441.8,     217.7,
    217.7,       2.0);
    ( 363551.2, 3783438.1,     217.7,     217.7,       2.0);         ( 363550.9, 3783426.3,     217.6,
    217.6,       2.0);
    ( 363551.2, 3783411.5,     217.3,     217.3,       2.0);         ( 363550.9, 3783395.9,     217.2,
    217.2,       2.0);
    ( 363550.7, 3783381.7,     217.1,     217.1,       2.0);         ( 363550.4, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363536.9, 3783363.0,     217.0,     217.0,       2.0);         ( 363528.5, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363528.2, 3783357.4,     217.0,     217.0,       2.0);         ( 363513.7, 3783357.4,     217.0,
    217.0,       2.0);
    ( 363504.5, 3783352.6,     216.9,     216.9,       2.0);         ( 363507.2, 3783337.9,     216.8,
    216.8,       2.0);
    ( 363501.4, 3783331.1,     216.8,     216.8,       2.0);         ( 363491.7, 3783322.5,     216.7,
    216.7,       2.0);
    ( 363485.3, 3783316.3,     216.7,     216.7,       2.0);         ( 363478.9, 3783311.4,     216.7,
    216.7,       2.0);
    ( 363470.7, 3783132.7,     215.7,     215.7,       2.0);         ( 363470.7, 3783157.7,     215.8,
    215.8,       2.0);
    ( 363470.7, 3783182.7,     215.9,     215.9,       2.0);         ( 363469.6, 3783203.5,     216.1,
    216.1,       2.0);
    ( 363469.6, 3783228.5,     216.2,     216.2,       2.0);         ( 363469.6, 3783253.5,     216.4,
    216.4,       2.0);
    ( 363469.6, 3783278.5,     216.5,     216.5,       2.0);         ( 363469.6, 3783303.5,     216.7,
    216.7,       2.0);
    ( 363798.9, 3783066.8,     215.2,     215.2,       2.0);         ( 363795.1, 3783063.9,     215.2,
    215.2,       2.0);
    ( 363795.4, 3783052.6,     215.2,     215.2,       2.0);         ( 363798.6, 3783048.7,     215.2,
    215.2,       2.0);
    ( 363811.1, 3783048.7,     215.2,     215.2,       2.0);         ( 363815.4, 3783052.6,     215.2,
    215.2,       2.0);
    ( 363815.2, 3783063.7,     215.2,     215.2,       2.0);         ( 363811.2, 3783067.4,     215.2,
    215.2,       2.0);
    ( 363298.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363323.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363348.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363373.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363422.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);         ( 363472.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);         ( 363517.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);         ( 363567.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363618.5, 3783857.4,     220.2,
    220.2,       2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363671.7, 3783856.6,     220.2,
    220.2,       2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);         ( 363722.1, 3783854.7,     220.2,
    220.2,       2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
```

```
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 15:06:12

PAGE   7
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363771.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363821.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363871.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363921.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363971.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);         ( 364021.7, 3783854.3,     221.2,
     221.2,       2.0);
     ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);         ( 364073.7, 3783852.3,     223.7,
     223.7,       2.0);
     ( 364061.8, 3783840.4,     222.8,     222.8,
     2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 15:06:12

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                             *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                          (METERS/SEC)

                                                    1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 15:06:12

PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***
```

Surface file: ..\..\RESE8.SFC Met Version: 14134
Profile file: ..\..\RESE8.PFL
Surface format:
FREE
Profile format:
FREE
Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2008 Year: 2008

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
08	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	03	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	0.56	999.00	999.	-9.0	285.4	5.5
08	01	01	1	09	22.6	-9.000	-9.000	-9.000	54.	-999.	-99999.0	0.50	1.00	0.32	999.00	999.	-9.0	285.9	5.5
08	01	01	1	10	71.8	-9.000	-9.000	-9.000	147.	-999.	-99999.0	0.50	1.00	0.24	999.00	999.	-9.0	288.1	5.5
08	01	01	1	11	111.2	-9.000	-9.000	-9.000	357.	-999.	-99999.0	0.50	1.00	0.21	999.00	999.	-9.0	289.2	5.5
08	01	01	1	12	128.1	-9.000	-9.000	-9.000	571.	-999.	-99999.0	0.50	1.00	0.20	999.00	999.	-9.0	290.4	5.5
08	01	01	1	13	127.4	-9.000	-9.000	-9.000	712.	-999.	-99999.0	0.50	1.00	0.20	999.00	999.	-9.0	290.4	5.5
08	01	01	1	14	109.8	-9.000	-9.000	-9.000	763.	-999.	-99999.0	0.50	1.00	0.21	999.00	999.	-9.0	290.9	5.5
08	01	01	1	15	52.2	-9.000	-9.000	-9.000	786.	-999.	-99999.0	0.50	1.00	0.25	999.00	999.	-9.0	290.4	5.5
08	01	01	1	16	27.2	-9.000	-9.000	-9.000	796.	-999.	-99999.0	0.50	1.00	0.33	999.00	999.	-9.0	289.2	5.5
08	01	01	1	17	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	0.59	999.00	999.	-9.0	288.1	5.5
08	01	01	1	18	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	19	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	20	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	21	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	22	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	23	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	24	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
08	01	01	01	5.5	0	-999.	-99.00	287.1	99.0	-99.00	-99.00
08	01	01	01	9.1	1	-999.	-99.00	-999.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION 14134 *** *** LA GROUND WATER REPLENISHMENT PROJECT
*** 08/10/15
*** AERMET - VERSION 14134 *** *** ***
15:06:12

PAGE 10
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: AWPF_V ***
INCLUDING SOURCE(S): AWPF_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M) Y-COORD (M) CONC X-COORD (M) Y-COORD (M) CONC

363917.08	3783107.55	0.15961	363917.08	3783132.55	0.21012
363917.08	3783157.55	0.25835	363917.08	3783182.55	0.27341
363917.08	3783207.55	0.24268	363918.68	3783233.09	0.18227
363918.68	3783258.09	0.13466	363918.68	3783283.09	0.09832
363918.68	3783308.09	0.07270	363919.21	3783332.28	0.05541
363919.21	3783357.28	0.04300	363919.21	3783382.28	0.03412
363919.21	3783407.28	0.02757	363468.40	3783096.50	0.01142
363480.32	3783096.24	0.01220	363505.32	3783096.24	0.01415
363530.32	3783096.24	0.01660	363555.32	3783096.24	0.01971
363580.32	3783096.24	0.02373	363605.32	3783096.24	0.02903
363629.81	3783096.24	0.03600	363654.81	3783096.24	0.04589
363679.81	3783093.68	0.05897	363704.81	3783093.68	0.07925
363729.81	3783093.56	0.11021	363754.81	3783093.56	0.15864
363779.81	3783092.66	0.22660	363804.81	3783092.66	0.30473
363829.81	3783092.66	0.34364	363854.81	3783092.66	0.30948
363879.81	3783092.66	0.23281	363587.82	3783466.38	0.01274
363601.35	3783480.91	0.01239	363601.35	3783505.91	0.01097
363601.35	3783530.91	0.00976	363601.35	3783555.91	0.00872
363601.35	3783580.91	0.00783	363601.35	3783605.91	0.00708
363573.32	3783452.30	0.01296	363561.08	3783441.85	0.01298
363551.24	3783438.12	0.01271	363550.94	3783426.26	0.01335
363551.19	3783411.48	0.01422	363550.94	3783395.93	0.01515
363550.68	3783381.66	0.01603	363550.43	3783363.30	0.01719
363536.92	3783363.05	0.01606	363528.51	3783363.30	0.01538
363528.25	3783357.44	0.01566	363513.72	3783357.44	0.01455
363504.55	3783352.60	0.01410	363507.18	3783337.93	0.01488
363501.43	3783331.08	0.01469	363491.71	3783322.46	0.01422
363485.30	3783316.28	0.01392	363478.89	3783311.41	0.01357
363470.66	3783132.66	0.01258	363470.66	3783157.66	0.01317
363470.66	3783182.66	0.01361	363469.56	3783203.46	0.01375
363469.56	3783228.46	0.01387	363469.56	3783253.46	0.01378
363469.56	3783278.46	0.01352	363469.56	3783303.46	0.01308

```
        363798.94    3783066.77        0.17202                        363795.11    3783063.90
        0.15911
        363795.43    3783052.56        0.13237                        363798.62    3783048.73
        0.12711
        363811.08    3783048.73        0.13487                        363815.39    3783052.56
        0.14584
        363815.23    3783063.74        0.17766                        363811.24    3783067.41
        0.18720
        363298.29    3783861.01        0.00228                        363323.29    3783861.01
        0.00235
        363348.29    3783861.01        0.00241                        363373.29    3783861.01
        0.00248
        363398.29    3783861.01        0.00255                        363422.49    3783859.43
        0.00262
        363447.49    3783859.43        0.00270                        363472.49    3783859.43
        0.00277
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                        ***
 15:06:12

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: AWPF_V   ***
                                 INCLUDING SOURCE(S):     AWPF_V      ,

                                            *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF NOX      IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.00284                        363517.73    3783858.63
        0.00290
        363542.73    3783858.63        0.00297                        363567.73    3783858.63
        0.00304
        363593.53    3783857.44        0.00312                        363618.53    3783857.44
        0.00318
        363643.53    3783857.44        0.00323                        363671.70    3783856.65
        0.00329
        363697.10    3783854.67        0.00335                        363722.10    3783854.67
        0.00338
        363746.70    3783854.27        0.00340                        363771.70    3783854.27
        0.00341
        363796.70    3783854.27        0.00340                        363821.70    3783854.27
        0.00339
        363846.70    3783854.27        0.00336                        363871.70    3783854.27
        0.00333
        363896.70    3783854.27        0.00328                        363921.70    3783854.27
        0.00323
        363946.70    3783854.27        0.00316                        363971.70    3783854.27
        0.00309
        363996.70    3783854.27        0.00301                        364021.70    3783854.27
        0.00292
        364046.70    3783854.27        0.00282                        364073.73    3783852.30
        0.00272
        364061.84    3783840.40
        0.00286
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                        ***
 15:06:12
```

PAGE 12
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: FLOWEQ_V ***
INCLUDING SOURCE(S): FLOWEQ_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.01114	363917.08	3783132.55	0.01283
363917.08	3783157.55	0.01493	363917.08	3783182.55	0.01758
363917.08	3783207.55	0.02099	363918.68	3783233.09	0.02539
363918.68	3783258.09	0.03131	363918.68	3783283.09	0.03941
363918.68	3783308.09	0.05087	363919.21	3783332.28	0.06652
363919.21	3783357.28	0.09052	363919.21	3783382.28	0.12709
363919.21	3783407.28	0.18188	363468.40	3783096.50	0.00337
363480.32	3783096.24	0.00350	363505.32	3783096.24	0.00379
363530.32	3783096.24	0.00413	363555.32	3783096.24	0.00451
363580.32	3783096.24	0.00494	363605.32	3783096.24	0.00544
363629.81	3783096.24	0.00600	363654.81	3783096.24	0.00663
363679.81	3783093.68	0.00724	363704.81	3783093.68	0.00797
363729.81	3783093.56	0.00871	363754.81	3783093.56	0.00942
363779.81	3783092.66	0.01001	363804.81	3783092.66	0.01051
363829.81	3783092.66	0.01084	363854.81	3783092.66	0.01095
363879.81	3783092.66	0.01084	363587.82	3783466.38	0.02116
363601.35	3783480.91	0.02417	363601.35	3783505.91	0.02440
363601.35	3783530.91	0.02399	363601.35	3783555.91	0.02299
363601.35	3783580.91	0.02154	363601.35	3783605.91	0.01983
363573.32	3783452.30	0.01840	363561.08	3783441.85	0.01641
363551.24	3783438.12	0.01516	363550.94	3783426.26	0.01472
363551.19	3783411.48	0.01420	363550.94	3783395.93	0.01355
363550.68	3783381.66	0.01292	363550.43	3783363.30	0.01211
363536.92	3783363.05	0.01113	363528.51	3783363.30	0.01059
363528.25	3783357.44	0.01037	363513.72	3783357.44	0.00954

```
        363504.55    3783352.60        0.00893                       363507.18    3783337.93
        0.00865
        363501.43    3783331.08        0.00820                       363491.71    3783322.46
        0.00759
        363485.30    3783316.28        0.00721                       363478.89    3783311.41
        0.00688
        363470.66    3783132.66        0.00377                       363470.66    3783157.66
        0.00406
        363470.66    3783182.66        0.00438                       363469.56    3783203.46
        0.00466
        363469.56    3783228.46        0.00506                       363469.56    3783253.46
        0.00548
        363469.56    3783278.46        0.00595                       363469.56    3783303.46
        0.00643
        363798.94    3783066.77        0.00910                       363795.11    3783063.90
        0.00892
        363795.43    3783052.56        0.00844                       363798.62    3783048.73
        0.00833
        363811.08    3783048.73        0.00847                       363815.39    3783052.56
        0.00868
        363815.23    3783063.74        0.00917                       363811.24    3783067.41
        0.00930
        363298.29    3783861.01        0.00315                       363323.29    3783861.01
        0.00333
        363348.29    3783861.01        0.00352                       363373.29    3783861.01
        0.00373
        363398.29    3783861.01        0.00396                       363422.49    3783859.43
        0.00421
        363447.49    3783859.43        0.00447                       363472.49    3783859.43
        0.00475
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 15:06:12

PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: FLOWEQ_V ***
                                 INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF NOX      IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.00501                       363517.73    3783858.63
        0.00531
        363542.73    3783858.63        0.00563                       363567.73    3783858.63
        0.00598
        363593.53    3783857.44        0.00638                       363618.53    3783857.44
        0.00674
        363643.53    3783857.44        0.00711                       363671.70    3783856.65
        0.00755
        363697.10    3783854.67        0.00799                       363722.10    3783854.67
        0.00831
        363746.70    3783854.27        0.00860                       363771.70    3783854.27
        0.00882
        363796.70    3783854.27        0.00896                       363821.70    3783854.27
        0.00901
        363846.70    3783854.27        0.00896                       363871.70    3783854.27
        0.00882
```

```
        363896.70    3783854.27        0.00859                      363921.70    3783854.27
        0.00828
        363946.70    3783854.27        0.00791                      363971.70    3783854.27
        0.00750
        363996.70    3783854.27        0.00705                      364021.70    3783854.27
        0.00658
        364046.70    3783854.27        0.00608                      364073.73    3783852.30
        0.00562
        364061.84    3783840.40
        0.00615
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                          ***
 15:06:12

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                  *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: MAINTB_V ***
                                 INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                                  *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                             ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363917.08    3783107.55        0.00384                      363917.08    3783132.55
        0.00395
        363917.08    3783157.55        0.00403                      363917.08    3783182.55
        0.00407
        363917.08    3783207.55        0.00407                      363918.68    3783233.09
        0.00399
        363918.68    3783258.09        0.00390                      363918.68    3783283.09
        0.00377
        363918.68    3783308.09        0.00361                      363919.21    3783332.28
        0.00345
        363919.21    3783357.28        0.00328                      363919.21    3783382.28
        0.00310
        363919.21    3783407.28        0.00292                      363468.40    3783096.50
        0.09452
        363480.32    3783096.24        0.11276                      363505.32    3783096.24
        0.15336
        363530.32    3783096.24        0.17159                      363555.32    3783096.24
        0.15019
        363580.32    3783096.24        0.10939                      363605.32    3783096.24
        0.07408
        363629.81    3783096.24        0.05068                      363654.81    3783096.24
        0.03566
        363679.81    3783093.68        0.02560                      363704.81    3783093.68
        0.01929
        363729.81    3783093.56        0.01492                      363754.81    3783093.56
        0.01179
        363779.81    3783092.66        0.00949                      363804.81    3783092.66
        0.00779
        363829.81    3783092.66        0.00649                      363854.81    3783092.66
        0.00547
        363879.81    3783092.66        0.00467                      363587.82    3783466.38
        0.00854
        363601.35    3783480.91        0.00747                      363601.35    3783505.91
        0.00634
        363601.35    3783530.91        0.00544                      363601.35    3783555.91
        0.00472
```

```
        363601.35    3783580.91        0.00413                      363601.35    3783605.91
        0.00365
        363573.32    3783452.30        0.00979                      363561.08    3783441.85
        0.01088
        363551.24    3783438.12        0.01139                      363550.94    3783426.26
        0.01261
        363551.19    3783411.48        0.01441                      363550.94    3783395.93
        0.01672
        363550.68    3783381.66        0.01935                      363550.43    3783363.30
        0.02368
        363536.92    3783363.05        0.02429                      363528.51    3783363.30
        0.02441
        363528.25    3783357.44        0.02617                      363513.72    3783357.44
        0.02622
        363504.55    3783352.60        0.02763                      363507.18    3783337.93
        0.03340
        363501.43    3783331.08        0.03632                      363491.71    3783322.46
        0.04001
        363485.30    3783316.28        0.04275                      363478.89    3783311.41
        0.04461
        363470.66    3783132.66        0.18590                      363470.66    3783157.66
        0.27124
        363470.66    3783182.66        0.30213                      363469.56    3783203.46
        0.24382
        363469.56    3783228.46        0.16427                      363469.56    3783253.46
        0.10537
        363469.56    3783278.46        0.06927                      363469.56    3783303.46
        0.04757
        363798.94    3783066.77        0.00758                      363795.11    3783063.90
        0.00772
        363795.43    3783052.56        0.00742                      363798.62    3783048.73
        0.00716
        363811.08    3783048.73        0.00657                      363815.39    3783052.56
        0.00646
        363815.23    3783063.74        0.00669                      363811.24    3783067.41
        0.00695
        363298.29    3783861.01        0.00138                      363323.29    3783861.01
        0.00141
        363348.29    3783861.01        0.00143                      363373.29    3783861.01
        0.00145
        363398.29    3783861.01        0.00147                      363422.49    3783859.43
        0.00149
        363447.49    3783859.43        0.00149                      363472.49    3783859.43
        0.00150
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 15:06:12

PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: MAINTB_V ***
                                  INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF NOX      IN MICROGRAMS/M**3                         **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.00151                      363517.73    3783858.63
        0.00149
```

```
        363542.73    3783858.63        0.00148                      363567.73    3783858.63
        0.00147
        363593.53    3783857.44        0.00145                      363618.53    3783857.44
        0.00143
        363643.53    3783857.44        0.00140                      363671.70    3783856.65
        0.00137
        363697.10    3783854.67        0.00134                      363722.10    3783854.67
        0.00130
        363746.70    3783854.27        0.00127                      363771.70    3783854.27
        0.00123
        363796.70    3783854.27        0.00119                      363821.70    3783854.27
        0.00115
        363846.70    3783854.27        0.00110                      363871.70    3783854.27
        0.00106
        363896.70    3783854.27        0.00103                      363921.70    3783854.27
        0.00099
        363946.70    3783854.27        0.00095                      363971.70    3783854.27
        0.00092
        363996.70    3783854.27        0.00088                      364021.70    3783854.27
        0.00085
        364046.70    3783854.27        0.00081                      364073.73    3783852.30
        0.00078
        364061.84    3783840.40
        0.00081
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                        ***
 15:06:12

PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                    *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: WAREH_V  ***
                                   INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363917.08    3783107.55        0.00348                      363917.08    3783132.55
        0.00374
        363917.08    3783157.55        0.00404                      363917.08    3783182.55
        0.00437
        363917.08    3783207.55        0.00474                      363918.68    3783233.09
        0.00515
        363918.68    3783258.09        0.00563                      363918.68    3783283.09
        0.00618
        363918.68    3783308.09        0.00680                      363919.21    3783332.28
        0.00746
        363919.21    3783357.28        0.00826                      363919.21    3783382.28
        0.00914
        363919.21    3783407.28        0.01012                      363468.40    3783096.50
        0.00392
        363480.32    3783096.24        0.00406                      363505.32    3783096.24
        0.00437
        363530.32    3783096.24        0.00468                      363555.32    3783096.24
        0.00498
        363580.32    3783096.24        0.00525                      363605.32    3783096.24
        0.00546
        363629.81    3783096.24        0.00562                      363654.81    3783096.24
        0.00571
```

363679.81	3783093.68	0.00565	363704.81	3783093.68	0.00558
363729.81	3783093.56	0.00544	363754.81	3783093.56	0.00523
363779.81	3783092.66	0.00496	363804.81	3783092.66	0.00467
363829.81	3783092.66	0.00436	363854.81	3783092.66	0.00405
363879.81	3783092.66	0.00375	363587.82	3783466.38	0.07016
363601.35	3783480.91	0.09833	363601.35	3783505.91	0.14426
363601.35	3783530.91	0.21840	363601.35	3783555.91	0.33082
363601.35	3783580.91	0.43745	363601.35	3783605.91	0.41905
363573.32	3783452.30	0.05170	363561.08	3783441.85	0.04153
363551.24	3783438.12	0.03675	363550.94	3783426.26	0.03299
363551.19	3783411.48	0.02914	363550.94	3783395.93	0.02561
363550.68	3783381.66	0.02286	363550.43	3783363.30	0.01990
363536.92	3783363.05	0.01832	363528.51	3783363.30	0.01742
363528.25	3783357.44	0.01673	363513.72	3783357.44	0.01532
363504.55	3783352.60	0.01407	363507.18	3783337.93	0.01310
363501.43	3783331.08	0.01220	363491.71	3783322.46	0.01103
363485.30	3783316.28	0.01031	363478.89	3783311.41	0.00973
363470.66	3783132.66	0.00445	363470.66	3783157.66	0.00487
363470.66	3783182.66	0.00534	363469.56	3783203.46	0.00576
363469.56	3783228.46	0.00637	363469.56	3783253.46	0.00709
363469.56	3783278.46	0.00792	363469.56	3783303.46	0.00891
363798.94	3783066.77	0.00433	363795.11	3783063.90	0.00433
363795.43	3783052.56	0.00416	363798.62	3783048.73	0.00408
363811.08	3783048.73	0.00397	363815.39	3783052.56	0.00398
363815.23	3783063.74	0.00412	363811.24	3783067.41	0.00421
363298.29	3783861.01	0.00635	363323.29	3783861.01	0.00694
363348.29	3783861.01	0.00759	363373.29	3783861.01	0.00831
363398.29	3783861.01	0.00910	363422.49	3783859.43	0.01001
363447.49	3783859.43	0.01095	363472.49	3783859.43	0.01195

*** AERMOD - VERSION 14134 *** *** LA GROUND WATER REPLENISHMENT PROJECT *** 08/10/15
*** AERMET - VERSION 14134 *** *** *** 15:06:12

PAGE 17

**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: WAREH_V ***
INCLUDING SOURCE(S): WAREHOUSE_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363491.94	3783857.05	0.01294	363517.73	3783858.63	0.01391
363542.73	3783858.63	0.01494	363567.73	3783858.63	0.01587
363593.53	3783857.44	0.01680	363618.53	3783857.44	0.01731
363643.53	3783857.44	0.01751	363671.70	3783856.65	0.01740
363697.10	3783854.67	0.01709	363722.10	3783854.67	0.01620
363746.70	3783854.27	0.01514	363771.70	3783854.27	0.01390
363796.70	3783854.27	0.01262	363821.70	3783854.27	0.01137
363846.70	3783854.27	0.01020	363871.70	3783854.27	0.00912
363896.70	3783854.27	0.00816	363921.70	3783854.27	0.00730
363946.70	3783854.27	0.00655	363971.70	3783854.27	0.00588
363996.70	3783854.27	0.00530	364021.70	3783854.27	0.00475
364046.70	3783854.27	0.00427	364073.73	3783852.30	0.00385
364061.84	3783840.40	0.00417			

*** AERMOD - VERSION 14134 *** *** LA GROUND WATER REPLENISHMENT PROJECT *** 08/10/15
*** AERMET - VERSION 14134 *** *** *** 15:06:12

PAGE 18
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE ANNUAL AVERAGE CONCENTRATION VALUES AVERAGED OVER 5 YEARS FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_V , FLOWEQ_V , MAINTBLD_V , AWPF_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.17807	363917.08	3783132.55	0.23063
363917.08	3783157.55	0.28135	363917.08	3783182.55	0.29943
363917.08	3783207.55	0.27248	363918.68	3783233.09	0.21680
363918.68	3783258.09	0.17549	363918.68	3783283.09	0.14767

363918.68	3783308.09	0.13398	363919.21	3783332.28	0.13284
363919.21	3783357.28	0.14506	363919.21	3783382.28	0.17345
363919.21	3783407.28	0.22250	363468.40	3783096.50	0.11323
363480.32	3783096.24	0.13252	363505.32	3783096.24	0.17568
363530.32	3783096.24	0.19700	363555.32	3783096.24	0.17938
363580.32	3783096.24	0.14330	363605.32	3783096.24	0.11403
363629.81	3783096.24	0.09829	363654.81	3783096.24	0.09388
363679.81	3783093.68	0.09747	363704.81	3783093.68	0.11209
363729.81	3783093.56	0.13927	363754.81	3783093.56	0.18508
363779.81	3783092.66	0.25105	363804.81	3783092.66	0.32771
363829.81	3783092.66	0.36532	363854.81	3783092.66	0.32996
363879.81	3783092.66	0.25208	363587.82	3783466.38	0.11261
363601.35	3783480.91	0.14237	363601.35	3783505.91	0.18598
363601.35	3783530.91	0.25759	363601.35	3783555.91	0.36725
363601.35	3783580.91	0.47095	363601.35	3783605.91	0.44960
363573.32	3783452.30	0.09285	363561.08	3783441.85	0.08181
363551.24	3783438.12	0.07602	363550.94	3783426.26	0.07368
363551.19	3783411.48	0.07197	363550.94	3783395.93	0.07104
363550.68	3783381.66	0.07116	363550.43	3783363.30	0.07288
363536.92	3783363.05	0.06980	363528.51	3783363.30	0.06781
363528.25	3783357.44	0.06893	363513.72	3783357.44	0.06563
363504.55	3783352.60	0.06473	363507.18	3783337.93	0.07003
363501.43	3783331.08	0.07140	363491.71	3783322.46	0.07285
363485.30	3783316.28	0.07420	363478.89	3783311.41	0.07479
363470.66	3783132.66	0.20670	363470.66	3783157.66	0.29333
363470.66	3783182.66	0.32547	363469.56	3783203.46	0.26800
363469.56	3783228.46	0.18957	363469.56	3783253.46	0.13172
363469.56	3783278.46	0.09666	363469.56	3783303.46	0.07599
363798.94	3783066.77	0.19303	363795.11	3783063.90	0.18008
363795.43	3783052.56	0.15239	363798.62	3783048.73	0.14667
363811.08	3783048.73	0.15388	363815.39	3783052.56	0.16495
363815.23	3783063.74	0.19764	363811.24	3783067.41	0.20766

```
        363298.29    3783861.01        0.01316                      363323.29    3783861.01
        0.01402
        363348.29    3783861.01        0.01496                      363373.29    3783861.01
        0.01597
        363398.29    3783861.01        0.01708                      363422.49    3783859.43
        0.01833
        363447.49    3783859.43        0.01961                      363472.49    3783859.43
        0.02097
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:06:12

PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                   *** THE ANNUAL AVERAGE CONCENTRATION    VALUES AVERAGED OVER   5 YEARS FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF NOX      IN MICROGRAMS/M**3                         **

       X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.02231                      363517.73    3783858.63
        0.02362
        363542.73    3783858.63        0.02503                      363567.73    3783858.63
        0.02635
        363593.53    3783857.44        0.02775                      363618.53    3783857.44
        0.02866
        363643.53    3783857.44        0.02925                      363671.70    3783856.65
        0.02962
        363697.10    3783854.67        0.02977                      363722.10    3783854.67
        0.02919
        363746.70    3783854.27        0.02841                      363771.70    3783854.27
        0.02735
        363796.70    3783854.27        0.02617                      363821.70    3783854.27
        0.02491
        363846.70    3783854.27        0.02363                      363871.70    3783854.27
        0.02234
        363896.70    3783854.27        0.02106                      363921.70    3783854.27
        0.01980
        363946.70    3783854.27        0.01857                      363971.70    3783854.27
        0.01739
        363996.70    3783854.27        0.01624                      364021.70    3783854.27
        0.01509
        364046.70    3783854.27        0.01399                      364073.73    3783852.30
        0.01297
        364061.84    3783840.40
        0.01399
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:06:12

PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                  INCLUDING SOURCE(S):     AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***
```

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	4.65086	(10122616)	363917.08	3783132.55	6.10639	(10122616)
363917.08	3783157.55	5.72744	(10122616)	363917.08	3783182.55	6.31292	(12121716)
363917.08	3783207.55	9.26416	(12121716)	363918.68	3783233.09	9.33595	(12121716)
363918.68	3783258.09	7.92339	(12121716)	363918.68	3783283.09	5.79642	(12121716)
363918.68	3783308.09	3.74541	(12121716)	363919.21	3783332.28	2.27928	(12121716)
363919.21	3783357.28	2.02313	(12111716)	363919.21	3783382.28	1.77169	(12111716)
363919.21	3783407.28	1.52975	(12111716)	363468.40	3783096.50	0.50356	(09110816)
363480.32	3783096.24	0.52993	(09110816)	363505.32	3783096.24	0.59306	(09110816)
363530.32	3783096.24	0.66648	(09110816)	363555.32	3783096.24	0.75337	(09110816)
363580.32	3783096.24	0.85592	(09110816)	363605.32	3783096.24	0.97697	(09110816)
363629.81	3783096.24	1.16115	(09120216)	363654.81	3783096.24	1.45180	(09120216)
363679.81	3783093.68	1.79024	(09120216)	363704.81	3783093.68	2.19267	(09120216)
363729.81	3783093.56	2.71687	(11112816)	363754.81	3783093.56	3.70657	(11112816)
363779.81	3783092.66	5.34311	(11111216)	363804.81	3783092.66	8.05826	(11111216)
363829.81	3783092.66	8.66357	(11111216)	363854.81	3783092.66	6.25916	(11111216)
363879.81	3783092.66	4.34287	(08121916)	363587.82	3783466.38	0.63132	(08112816)
363601.35	3783480.91	0.56284	(08112816)	363601.35	3783505.91	0.47140	(09122016)
363601.35	3783530.91	0.47400	(09122016)	363601.35	3783555.91	0.47014	(09122016)
363601.35	3783580.91	0.46105	(09122016)	363601.35	3783605.91	0.45944	(12120116)
363573.32	3783452.30	0.68659	(08112816)	363561.08	3783441.85	0.71603	(08112816)
363551.24	3783438.12	0.71534	(08112816)	363550.94	3783426.26	0.75584	(08112816)
363551.19	3783411.48	0.80582	(08112816)	363550.94	3783395.93	0.85397	(08112816)
363550.68	3783381.66	0.90375	(12112816)	363550.43	3783363.30	1.06334	(12112816)
363536.92	3783363.05	1.04507	(12112816)	363528.51	3783363.30	1.02713	(12112816)
363528.25	3783357.44	1.06243	(12112816)	363513.72	3783357.44	1.02152	(12112816)
363504.55	3783352.60	1.00990	(12112816)	363507.18	3783337.93	1.07549	(09121216)
363501.43	3783331.08	1.11581	(09121216)	363491.71	3783322.46	1.13986	(09121216)
363485.30	3783316.28	1.14344	(09121216)	363478.89	3783311.41	1.13375	(09121216)
363470.66	3783132.66	0.65432	(12112916)	363470.66	3783157.66	0.83514	

```
       (12112916)
        363470.66   3783182.66        0.97863  (12112916)                363469.56   3783203.46        1.04089
       (12112916)
        363469.56   3783228.46        1.04493  (12112916)                363469.56   3783253.46        0.97620
       (09121216)
        363469.56   3783278.46        1.08464  (09121216)                363469.56   3783303.46        1.10646
       (09121216)
        363798.94   3783066.77        5.35534  (11111216)                363795.11   3783063.90        5.00036
       (11111216)
        363795.43   3783052.56        4.42265  (11111216)                363798.62   3783048.73        4.34302
       (11111216)
        363811.08   3783048.73        4.57604  (11111216)                363815.39   3783052.56        4.81949
       (11111216)
        363815.23   3783063.74        5.57243  (11111216)                363811.24   3783067.41        5.81120
       (11111216)
        363298.29   3783861.01        0.11579  (11122116)                363323.29   3783861.01        0.11711
       (11122116)
        363348.29   3783861.01        0.11643  (11122116)                363373.29   3783861.01        0.11528
       (12102216)
        363398.29   3783861.01        0.12058  (08121216)                363422.49   3783859.43        0.13434
       (09122016)
        363447.49   3783859.43        0.15533  (09122016)                363472.49   3783859.43        0.18422
       (12120116)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                    ***
 15:06:12

PAGE  21
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  AWPF_V   ***
                                  INCLUDING SOURCE(S):     AWPF_V      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        0.20885  (12120116)                363517.73   3783858.63        0.24098
       (12120116)
        363542.73   3783858.63        0.26938  (12120116)                363567.73   3783858.63        0.29278
       (12120116)
        363593.53   3783857.44        0.31017  (12120116)                363618.53   3783857.44        0.31729
       (12120116)
        363643.53   3783857.44        0.31429  (12120116)                363671.70   3783856.65        0.29944
       (12120116)
        363697.10   3783854.67        0.27728  (12120116)                363722.10   3783854.67        0.25797
       (08121516)
        363746.70   3783854.27        0.27233  (08121516)                363771.70   3783854.27        0.28399
       (08121516)
        363796.70   3783854.27        0.29239  (08121516)                363821.70   3783854.27        0.29715
       (08121516)
        363846.70   3783854.27        0.29805  (08121516)                363871.70   3783854.27        0.29507
       (08121516)
        363896.70   3783854.27        0.28834  (08121516)                363921.70   3783854.27        0.27819
       (08121516)
        363946.70   3783854.27        0.26507  (08121516)                363971.70   3783854.27        0.25014
       (08121516)
        363996.70   3783854.27        0.24517  (12121416)                364021.70   3783854.27        0.27695
       (12121416)
```

364046.70 3783854.27 0.31037 (12121416) 364073.73 3783852.30 0.34577
(12121416)
364061.84 3783840.40 0.33844
(12121416)

*** AERMOD - VERSION 14134 *** *** LA GROUND WATER REPLENISHMENT PROJECT
*** 08/10/15
*** AERMET - VERSION 14134 *** *** ***
15:06:12

PAGE 22
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 1-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: FLOWEQ_V ***
INCLUDING SOURCE(S): FLOWEQ_V ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M) Y-COORD (M) CONC (YYMMDDHH) X-COORD (M) Y-COORD (M) CONC
(YYMMDDHH)
- -
363917.08 3783107.55 0.38076 (12121016) 363917.08 3783132.55 0.43306
(12121016)
363917.08 3783157.55 0.49510 (12121016) 363917.08 3783182.55 0.56901
(12121016)
363917.08 3783207.55 0.65755 (12121016) 363918.68 3783233.09 0.76350
(12121016)
363918.68 3783258.09 0.88998 (12121016) 363918.68 3783283.09 1.04146
(12121016)
363918.68 3783308.09 1.22218 (12121016) 363919.21 3783332.28 1.43867
(12121016)
363919.21 3783357.28 1.94888 (08121916) 363919.21 3783382.28 2.60681
(08121916)
363919.21 3783407.28 4.27130 (10122616) 363468.40 3783096.50 0.17805
(12121616)
363480.32 3783096.24 0.18276 (12121616) 363505.32 3783096.24 0.19883
(11112816)
363530.32 3783096.24 0.21417 (11112816) 363555.32 3783096.24 0.22616
(11112816)
363580.32 3783096.24 0.23351 (11112816) 363605.32 3783096.24 0.23989
(12121616)
363629.81 3783096.24 0.25194 (12121616) 363654.81 3783096.24 0.29055
(10120716)
363679.81 3783093.68 0.31924 (10120716) 363704.81 3783093.68 0.38662
(11111216)
363729.81 3783093.56 0.45391 (11111216) 363754.81 3783093.56 0.50992
(11111216)
363779.81 3783092.66 0.54491 (11111216) 363804.81 3783092.66 0.55695
(11111216)
363829.81 3783092.66 0.54164 (11111216) 363854.81 3783092.66 0.50046
(11111216)
363879.81 3783092.66 0.43869 (11111216) 363587.82 3783466.38 1.23670
(12112916)
363601.35 3783480.91 1.46989 (12112916) 363601.35 3783505.91 1.53690
(12112916)
363601.35 3783530.91 1.55857 (09121216) 363601.35 3783555.91 1.64555
(09121216)
363601.35 3783580.91 1.51536 (09121216) 363601.35 3783605.91 1.27494
(12112816)
363573.32 3783452.30 1.00381 (12112916) 363561.08 3783441.85 0.84369
(12112916)
363551.24 3783438.12 0.76853 (12112916) 363550.94 3783426.26 0.66617

```
       (12112916)
       363551.19   3783411.48        0.57948  (09110816)                363550.94   3783395.93        0.53480
       (09110816)
       363550.68   3783381.66        0.48821  (09110816)                363550.43   3783363.30        0.42936
       (09120216)
       363536.92   3783363.05        0.40161  (09110816)                363528.51   3783363.30        0.38984
       (09110816)
       363528.25   3783357.44        0.38000  (12121616)                363513.72   3783357.44        0.35551
       (12121616)
       363504.55   3783352.60        0.33884  (12121616)                363507.18   3783337.93        0.34155
       (09120216)
       363501.43   3783331.08        0.33374  (09120216)                363491.71   3783322.46        0.31919
       (09120216)
       363485.30   3783316.28        0.30978  (09120216)                363478.89   3783311.41        0.30082
       (09120216)
       363470.66   3783132.66        0.19389  (12121616)                363470.66   3783157.66        0.20483
       (12121616)
       363470.66   3783182.66        0.21623  (12121616)                363469.56   3783203.46        0.22965
       (09120216)
       363469.56   3783228.46        0.25401  (09120216)                363469.56   3783253.46        0.27322
       (09120216)
       363469.56   3783278.46        0.28504  (09120216)                363469.56   3783303.46        0.28826
       (09120216)
       363798.94   3783066.77        0.49693  (11111216)                363795.11   3783063.90        0.49055
       (11111216)
       363795.43   3783052.56        0.46794  (11111216)                363798.62   3783048.73        0.46068
       (11111216)
       363811.08   3783048.73        0.45779  (11111216)                363815.39   3783052.56        0.46317
       (11111216)
       363815.23   3783063.74        0.48623  (11111216)                363811.24   3783067.41        0.49603
       (11111216)
       363298.29   3783861.01        0.20581  (12112816)                363323.29   3783861.01        0.20997
       (08112816)
       363348.29   3783861.01        0.22216  (08112816)                363373.29   3783861.01        0.23381
       (08112816)
       363398.29   3783861.01        0.24457  (08112816)                363422.49   3783859.43        0.25518
       (08112816)
       363447.49   3783859.43        0.26321  (08112816)                363472.49   3783859.43        0.26887
       (08112816)
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 15:06:12

PAGE  23
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  FLOWEQ_V ***
                                  INCLUDING SOURCE(S):     FLOWEQ_V    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF NOX      IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        0.27462  (08112816)                363517.73   3783858.63        0.27299
       (08112816)
       363542.73   3783858.63        0.26922  (08112816)                363567.73   3783858.63        0.26064
       (08112816)
       363593.53   3783857.44        0.29506  (09122016)                363618.53   3783857.44        0.36285
       (09122016)
```

```
      363643.53   3783857.44       0.44071  (12120116)           363671.70   3783856.65       0.54295
      (12120116)
      363697.10   3783854.67       0.62124  (12120116)           363722.10   3783854.67       0.66579
      (12120116)
      363746.70   3783854.27       0.67086  (12120116)           363771.70   3783854.27       0.63018
      (12120116)
      363796.70   3783854.27       0.54944  (12120116)           363821.70   3783854.27       0.50022
      (08010616)
      363846.70   3783854.27       0.48246  (08010616)           363871.70   3783854.27       0.47523
      (11111116)
      363896.70   3783854.27       0.50966  (11111116)           363921.70   3783854.27       0.51492
      (11111116)
      363946.70   3783854.27       0.49151  (11111116)           363971.70   3783854.27       0.51047
      (12111716)
      363996.70   3783854.27       0.50849  (12111716)           364021.70   3783854.27       0.47855
      (12111716)
      364046.70   3783854.27       0.48324  (12121416)           364073.73   3783852.30       0.52587
      (12121416)
      364061.84   3783840.40       0.51204
      (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                         ***
 15:06:12

PAGE  24
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                         *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
                             INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                         *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                    ** CONC OF NOX      IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
      363917.08   3783107.55       0.17973  (09012415)           363917.08   3783132.55       0.18542
      (09012415)
      363917.08   3783157.55       0.18113  (10112016)           363917.08   3783182.55       0.18045
      (10112016)
      363917.08   3783207.55       0.19912  (10020916)           363918.68   3783233.09       0.20804
      (10020916)
      363918.68   3783258.09       0.20900  (10020916)           363918.68   3783283.09       0.19946
      (10020916)
      363918.68   3783308.09       0.23789  (10121916)           363919.21   3783332.28       0.27870
      (10121916)
      363919.21   3783357.28       0.31104  (10121916)           363919.21   3783382.28       0.35002
      (12121716)
      363919.21   3783407.28       0.38284  (12121716)           363468.40   3783096.50       1.96531
      (11112816)
      363480.32   3783096.24       2.53897  (11111216)           363505.32   3783096.24       3.89316
      (11111216)
      363530.32   3783096.24       4.07854  (11111216)           363555.32   3783096.24       2.78082
      (11111216)
      363580.32   3783096.24       1.99582  (08121916)           363605.32   3783096.24       1.71921
      (10122616)
      363629.81   3783096.24       1.62891  (10122616)           363654.81   3783096.24       1.38897
      (10122616)
      363679.81   3783093.68       1.12076  (10122616)           363704.81   3783093.68       0.91096
      (10122616)
      363729.81   3783093.56       0.73414  (10122616)           363754.81   3783093.56       0.59240
```

```
       (10122616)
       363779.81   3783092.66       0.47882  (10122616)            363804.81   3783092.66       0.38662
       (10122616)
       363829.81   3783092.66       0.31439  (10122616)            363854.81   3783092.66       0.25666
       (10122616)
       363879.81   3783092.66       0.21054  (10122616)            363587.82   3783466.38       0.47848
       (11111116)
       363601.35   3783480.91       0.43037  (11111116)            363601.35   3783505.91       0.38157
       (11111116)
       363601.35   3783530.91       0.33960  (11111116)            363601.35   3783555.91       0.30292
       (11111116)
       363601.35   3783580.91       0.27112  (11111116)            363601.35   3783605.91       0.24304
       (11111116)
       363573.32   3783452.30       0.52459  (11111116)            363561.08   3783441.85       0.55520
       (11111116)
       363551.24   3783438.12       0.55563  (11111116)            363550.94   3783426.26       0.60362
       (11111116)
       363551.19   3783411.48       0.67275  (11111116)            363550.94   3783395.93       0.75812
       (11111116)
       363550.68   3783381.66       0.85242  (11111116)            363550.43   3783363.30       1.00197
       (11111116)
       363536.92   3783363.05       0.98677  (08010616)            363528.51   3783363.30       1.00976
       (08010616)
       363528.25   3783357.44       1.06915  (08010616)            363513.72   3783357.44       1.15362
       (09122016)
       363504.55   3783352.60       1.28459  (09122016)            363507.18   3783337.93       1.48671
       (09122016)
       363501.43   3783331.08       1.65143  (12120116)            363491.71   3783322.46       1.88510
       (12120116)
       363485.30   3783316.28       2.00553  (12120116)            363478.89   3783311.41       2.05688
       (12120116)
       363470.66   3783132.66       3.09395  (11112816)            363470.66   3783157.66       5.65408
       (12112916)
       363470.66   3783182.66       8.43684  (12112916)            363469.56   3783203.46       7.82359
       (09121216)
       363469.56   3783228.46       4.84064  (08112816)            363469.56   3783253.46       3.28473
       (08112816)
       363469.56   3783278.46       2.52651  (09122016)            363469.56   3783303.46       2.04586
       (12120116)
       363798.94   3783066.77       0.44950  (10122616)            363795.11   3783063.90       0.46342
       (10122616)
       363795.43   3783052.56       0.46633  (10122616)            363798.62   3783048.73       0.45785
       (10122616)
       363811.08   3783048.73       0.42550  (10122616)            363815.39   3783052.56       0.41271
       (10122616)
       363815.23   3783063.74       0.40433  (10122616)            363811.24   3783067.41       0.41203
       (10122616)
       363298.29   3783861.01       0.13790  (12120116)            363323.29   3783861.01       0.13974
       (12120116)
       363348.29   3783861.01       0.13712  (12120116)            363373.29   3783861.01       0.13006
       (12120116)
       363398.29   3783861.01       0.11908  (12120116)            363422.49   3783859.43       0.10629
       (12120116)
       363447.49   3783859.43       0.10950  (08121516)            363472.49   3783859.43       0.11349
       (08121516)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 15:06:12

PAGE  25
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                 *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  MAINTB_V ***
```

```
                                    INCLUDING SOURCE(S):     MAINTBLD_V  ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        0.11611  (08121516)              363517.73   3783858.63        0.11768
        (08121516)
        363542.73   3783858.63        0.11814  (08121516)              363567.73   3783858.63        0.11719
        (08121516)
        363593.53   3783857.44        0.11506  (08121516)              363618.53   3783857.44        0.11142
        (08121516)
        363643.53   3783857.44        0.10666  (08121516)              363671.70   3783856.65        0.10255
        (08112616)
        363697.10   3783854.67        0.10589  (08112616)              363722.10   3783854.67        0.10928
        (12121416)
        363746.70   3783854.27        0.11420  (12121416)              363771.70   3783854.27        0.11797
        (12121416)
        363796.70   3783854.27        0.12056  (12121416)              363821.70   3783854.27        0.12197
        (12121416)
        363846.70   3783854.27        0.12220  (12121416)              363871.70   3783854.27        0.12134
        (12121416)
        363896.70   3783854.27        0.11945  (12121416)              363921.70   3783854.27        0.11667
        (12121416)
        363946.70   3783854.27        0.11311  (12121416)              363971.70   3783854.27        0.10913
        (12121416)
        363996.70   3783854.27        0.10494  (12121416)              364021.70   3783854.27        0.10874
        (12121416)
        364046.70   3783854.27        0.11179  (12121416)              364073.73   3783852.30        0.11098
        (12121416)
        364061.84   3783840.40        0.10997
        (12121416)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                        ***
 15:06:12

PAGE  26
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                    INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF NOX      IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363917.08   3783107.55        0.15379  (12121616)              363917.08   3783132.55        0.16476
        (12121616)
        363917.08   3783157.55        0.17683  (12121616)              363917.08   3783182.55        0.19609
        (08121916)
        363917.08   3783207.55        0.21853  (08110216)              363918.68   3783233.09        0.24633
        (08110216)
        363918.68   3783258.09        0.27157  (08110216)              363918.68   3783283.09        0.29289
        (08110216)
        363918.68   3783308.09        0.30762  (08110216)              363919.21   3783332.28        0.31528
```

(08121916)
363919.21 3783357.28 0.38032 (10122616) 363919.21 3783382.28 0.48518
(10122616)
363919.21 3783407.28 0.59042 (10122616) 363468.40 3783096.50 0.19765
(11111216)
363480.32 3783096.24 0.21412 (11111216) 363505.32 3783096.24 0.24773
(11111216)
363530.32 3783096.24 0.27757 (11111216) 363555.32 3783096.24 0.30082
(11111216)
363580.32 3783096.24 0.31503 (11111216) 363605.32 3783096.24 0.31847
(11111216)
363629.81 3783096.24 0.31073 (11111216) 363654.81 3783096.24 0.29208
(11111216)
363679.81 3783093.68 0.26179 (11111216) 363704.81 3783093.68 0.22797
(11111216)
363729.81 3783093.56 0.20792 (12122016) 363754.81 3783093.56 0.19979
(12121016)
363779.81 3783092.66 0.20291 (12121016) 363804.81 3783092.66 0.19871
(12121016)
363829.81 3783092.66 0.18730 (12121016) 363854.81 3783092.66 0.17026
(12121016)
363879.81 3783092.66 0.15522 (12121616) 363587.82 3783466.38 1.76767
(11111216)
363601.35 3783480.91 2.48070 (11111216) 363601.35 3783505.91 3.00534
(11112816)
363601.35 3783530.91 4.34769 (11112816) 363601.35 3783555.91 6.10292
(09110816)
363601.35 3783580.91 12.82133 (12112916) 363601.35 3783605.91 15.34676
(09121216)
363573.32 3783452.30 1.30201 (11112816) 363561.08 3783441.85 1.13457
(11112816)
363551.24 3783438.12 1.06180 (11112816) 363550.94 3783426.26 0.95849
(11112816)
363551.19 3783411.48 0.83952 (11112816) 363550.94 3783395.93 0.77120
(11111216)
363550.68 3783381.66 0.74428 (11111216) 363550.43 3783363.30 0.70717
(11111216)
363536.92 3783363.05 0.59744 (10120716) 363528.51 3783363.30 0.55777
(10120716)
363528.25 3783357.44 0.54821 (10120716) 363513.72 3783357.44 0.52328
(11112816)
363504.55 3783352.60 0.50214 (11112816) 363507.18 3783337.93 0.45206
(11112816)
363501.43 3783331.08 0.43035 (11112816) 363491.71 3783322.46 0.40517
(11112816)
363485.30 3783316.28 0.38833 (11112816) 363478.89 3783311.41 0.37553
(11112816)
363470.66 3783132.66 0.21583 (10120716) 363470.66 3783157.66 0.23250
(10120716)
363470.66 3783182.66 0.24899 (10120716) 363469.56 3783203.46 0.26082
(10120716)
363469.56 3783228.46 0.27479 (10120716) 363469.56 3783253.46 0.28622
(10120716)
363469.56 3783278.46 0.30426 (11112816) 363469.56 3783303.46 0.35583
(11112816)
363798.94 3783066.77 0.18417 (12121016) 363795.11 3783063.90 0.18290
(12121016)
363795.43 3783052.56 0.17616 (12121016) 363798.62 3783048.73 0.17374
(12121016)
363811.08 3783048.73 0.17196 (12121016) 363815.39 3783052.56 0.17295
(12121016)
363815.23 3783063.74 0.17882 (12121016) 363811.24 3783067.41 0.18194
(12121016)
363298.29 3783861.01 0.37747 (08112816) 363323.29 3783861.01 0.40881

```
(08112816)
363348.29   3783861.01        0.43846  (08112816)              363373.29   3783861.01        0.46449
(08112816)
363398.29   3783861.01        0.48462  (08112816)              363422.49   3783859.43        0.50183
(08112816)
363447.49   3783859.43        0.50389  (08112816)              363472.49   3783859.43        0.50123
(09122016)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 15:06:12

PAGE  27
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  WAREH_V  ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF NOX      IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
363491.94   3783857.05        0.61298  (09122016)              363517.73   3783858.63        0.76554
(12120116)
363542.73   3783858.63        0.93489  (12120116)              363567.73   3783858.63        1.04598
(12120116)
363593.53   3783857.44        1.06814  (12120116)              363618.53   3783857.44        0.96855
(12120116)
363643.53   3783857.44        0.84286  (08010616)              363671.70   3783856.65        0.79973
(08010616)
363697.10   3783854.67        0.85743  (11111116)              363722.10   3783854.67        0.84129
(11111116)
363746.70   3783854.27        0.83206  (12111716)              363771.70   3783854.27        0.80358
(12111716)
363796.70   3783854.27        0.69963  (12111716)              363821.70   3783854.27        0.55605
(12111716)
363846.70   3783854.27        0.63691  (12121716)              363871.70   3783854.27        0.74172
(12121716)
363896.70   3783854.27        0.81113  (12121716)              363921.70   3783854.27        0.84325
(12121716)
363946.70   3783854.27        0.84158  (12121716)              363971.70   3783854.27        0.81299
(12121716)
363996.70   3783854.27        0.76503  (12121716)              364021.70   3783854.27        0.71649
(12121716)
364046.70   3783854.27        0.65599  (12121716)              364073.73   3783852.30        0.58150
(12121716)
364061.84   3783840.40        0.60416
(12121716)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                ***
 15:06:12

PAGE  28
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***
```

** CONC OF NOX IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	4.80892	(10122616)	363917.08	3783132.55	6.23438	(10122616)
363917.08	3783157.55	5.83527	(10122616)	363917.08	3783182.55	6.39431	(12121716)
363917.08	3783207.55	9.37409	(12121716)	363918.68	3783233.09	9.48775	(12121716)
363918.68	3783258.09	8.13056	(12121716)	363918.68	3783283.09	6.07611	(12121716)
363918.68	3783308.09	4.12048	(12121716)	363919.21	3783332.28	3.28558	(12121616)
363919.21	3783357.28	3.46963	(12121616)	363919.21	3783382.28	3.89907	(12121616)
363919.21	3783407.28	4.89717	(10122616)	363468.40	3783096.50	2.49079	(12121616)
363480.32	3783096.24	2.80156	(11111216)	363505.32	3783096.24	4.20425	(11111216)
363530.32	3783096.24	4.44089	(11111216)	363555.32	3783096.24	3.35389	(12121616)
363580.32	3783096.24	3.02990	(12121616)	363605.32	3783096.24	2.74299	(12121616)
363629.81	3783096.24	2.58886	(12121616)	363654.81	3783096.24	2.57381	(12121616)
363679.81	3783093.68	2.67093	(12121616)	363704.81	3783093.68	2.94518	(12121616)
363729.81	3783093.56	3.39188	(12121616)	363754.81	3783093.56	4.04531	(12121616)
363779.81	3783092.66	6.03383	(11111216)	363804.81	3783092.66	8.72569	(11111216)
363829.81	3783092.66	9.28694	(11111216)	363854.81	3783092.66	6.81913	(11111216)
363879.81	3783092.66	4.68897	(12121616)	363587.82	3783466.38	2.76325	(12121616)
363601.35	3783480.91	3.21278	(12121616)	363601.35	3783505.91	3.87235	(12121616)
363601.35	3783530.91	4.92016	(12121616)	363601.35	3783555.91	6.60274	(09110816)
363601.35	3783580.91	13.59427	(12112916)	363601.35	3783605.91	16.58630	(09121216)
363573.32	3783452.30	2.44238	(12121616)	363561.08	3783441.85	2.24991	(12121616)
363551.24	3783438.12	2.14275	(12121616)	363550.94	3783426.26	2.09883	(12121616)
363551.19	3783411.48	2.06479	(12121616)	363550.94	3783395.93	2.04395	(12121616)
363550.68	3783381.66	2.04209	(12121616)	363550.43	3783363.30	2.06653	(12121616)
363536.92	3783363.05	1.99563	(12121616)	363528.51	3783363.30	1.94999	(12121616)
363528.25	3783357.44	1.96676	(12121616)	363513.72	3783357.44	1.88914	(12121616)
363504.55	3783352.60	1.85766	(12121616)	363507.18	3783337.93	1.94366	(12121616)
363501.43	3783331.08	1.95355	(12121616)	363491.71	3783322.46	1.95604	(12121616)
363485.30	3783316.28	2.05851	(12120116)	363478.89	3783311.41	2.10739	(12120116)
363470.66	3783132.66	3.80580	(12121616)	363470.66	3783157.66	6.50554	

```
       (12112916)
       363470.66   3783182.66        9.43405  (12112916)                363469.56   3783203.46        8.44136
       (09121216)
       363469.56   3783228.46        5.23891  (08112816)                363469.56   3783253.46        3.76477
       (08112816)
       363469.56   3783278.46        2.67224  (08112816)                363469.56   3783303.46        2.10567
       (09122016)
       363798.94   3783066.77        5.96395  (11111216)                363795.11   3783063.90        5.60653
       (11111216)
       363795.43   3783052.56        5.00274  (11111216)                363798.62   3783048.73        4.91115
       (11111216)
       363811.08   3783048.73        5.12786  (11111216)                363815.39   3783052.56        5.37304
       (11111216)
       363815.23   3783063.74        6.15124  (11111216)                363811.24   3783067.41        6.40479
       (11111216)
       363298.29   3783861.01        0.68378  (08112816)                363323.29   3783861.01        0.72082
       (08112816)
       363348.29   3783861.01        0.75568  (08112816)                363373.29   3783861.01        0.78624
       (08112816)
       363398.29   3783861.01        0.80990  (08112816)                363422.49   3783859.43        0.83135
       (08112816)
       363447.49   3783859.43        0.83416  (08112816)                363472.49   3783859.43        0.83616
       (09122016)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                  ***
 15:06:12

PAGE  29
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST  1-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_V , FLOWEQ_V    , MAINTBLD_V  , AWPF_V      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF NOX      IN MICROGRAMS/M**3                         **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        0.97711  (09122016)                363517.73   3783858.63        1.17039
       (09122016)
       363542.73   3783858.63        1.36999  (12120116)                363567.73   3783858.63        1.55119
       (12120116)
       363593.53   3783857.44        1.65654  (12120116)                363618.53   3783857.44        1.64404
       (12120116)
       363643.53   3783857.44        1.54779  (09122016)                363671.70   3783856.65        1.41511
       (09122016)
       363697.10   3783854.67        1.34131  (08010616)                363722.10   3783854.67        1.27341
       (08010616)
       363746.70   3783854.27        1.18776  (08010616)                363771.70   3783854.27        1.08924
       (08010616)
       363796.70   3783854.27        0.99064  (08010616)                363821.70   3783854.27        0.91065
       (12121616)
       363846.70   3783854.27        0.88327  (12121616)                363871.70   3783854.27        0.86634
       (11111116)
       363896.70   3783854.27        0.85180  (11111116)                363921.70   3783854.27        0.88925
       (12121716)
       363946.70   3783854.27        0.89981  (12121716)                363971.70   3783854.27        0.89155
       (12121716)
       363996.70   3783854.27        0.87474  (12121716)                364021.70   3783854.27        0.94351
       (12121416)
```

```
       364046.70   3783854.27        1.01834  (12121416)                364073.73   3783852.30        1.14358
       (12121416)
       364061.84   3783840.40        1.12527
       (12121416)
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                     ***
 15:06:12

PAGE  30
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                   *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   5 YEARS ***


                                    ** CONC OF NOX      IN MICROGRAMS/M**3                         **

                                                                                                              NETWORK
GROUP ID                       AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


AWPF_V    1ST HIGHEST VALUE IS       0.34364 AT (  363829.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          2ND HIGHEST VALUE IS       0.30948 AT (  363854.81,  3783092.66,   215.15,   215.15,    2.00)  DC
          3RD HIGHEST VALUE IS       0.30473 AT (  363804.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          4TH HIGHEST VALUE IS       0.27341 AT (  363917.08,  3783182.55,   214.25,   214.25,    2.00)  DC
          5TH HIGHEST VALUE IS       0.25835 AT (  363917.08,  3783157.55,   214.50,   214.50,    2.00)  DC
          6TH HIGHEST VALUE IS       0.24268 AT (  363917.08,  3783207.55,   214.10,   214.10,    2.00)  DC
          7TH HIGHEST VALUE IS       0.23281 AT (  363879.81,  3783092.66,   215.09,   215.09,    2.00)  DC
          8TH HIGHEST VALUE IS       0.22660 AT (  363779.81,  3783092.66,   215.25,   215.25,    2.00)  DC
          9TH HIGHEST VALUE IS       0.21012 AT (  363917.08,  3783132.55,   214.83,   214.83,    2.00)  DC
         10TH HIGHEST VALUE IS       0.18720 AT (  363811.24,  3783067.41,   215.20,   215.20,    2.00)  DC

FLOWEQ_V  1ST HIGHEST VALUE IS       0.18188 AT (  363919.21,  3783407.28,   217.57,   217.57,    2.00)  DC
          2ND HIGHEST VALUE IS       0.12709 AT (  363919.21,  3783382.28,   217.33,   217.33,    2.00)  DC
          3RD HIGHEST VALUE IS       0.09052 AT (  363919.21,  3783357.28,   217.08,   217.08,    2.00)  DC
          4TH HIGHEST VALUE IS       0.06652 AT (  363919.21,  3783332.28,   216.70,   216.70,    2.00)  DC
          5TH HIGHEST VALUE IS       0.05087 AT (  363918.68,  3783308.09,   216.24,   216.24,    2.00)  DC
          6TH HIGHEST VALUE IS       0.03941 AT (  363918.68,  3783283.09,   215.48,   215.48,    2.00)  DC
          7TH HIGHEST VALUE IS       0.03131 AT (  363918.68,  3783258.09,   214.80,   214.80,    2.00)  DC
          8TH HIGHEST VALUE IS       0.02539 AT (  363918.68,  3783233.09,   214.34,   214.34,    2.00)  DC
          9TH HIGHEST VALUE IS       0.02440 AT (  363601.35,  3783505.91,   218.94,   218.94,    2.00)  DC
         10TH HIGHEST VALUE IS       0.02417 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC

MAINTB_V  1ST HIGHEST VALUE IS       0.30213 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
          2ND HIGHEST VALUE IS       0.27124 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
          3RD HIGHEST VALUE IS       0.24382 AT (  363469.56,  3783203.46,   216.05,   216.05,    2.00)  DC
          4TH HIGHEST VALUE IS       0.18590 AT (  363470.66,  3783132.66,   215.70,   215.70,    2.00)  DC
          5TH HIGHEST VALUE IS       0.17159 AT (  363530.32,  3783096.24,   215.37,   215.37,    2.00)  DC
          6TH HIGHEST VALUE IS       0.16427 AT (  363469.56,  3783228.46,   216.19,   216.19,    2.00)  DC
          7TH HIGHEST VALUE IS       0.15336 AT (  363505.32,  3783096.24,   215.45,   215.45,    2.00)  DC
          8TH HIGHEST VALUE IS       0.15019 AT (  363555.32,  3783096.24,   215.36,   215.36,    2.00)  DC
          9TH HIGHEST VALUE IS       0.11276 AT (  363480.32,  3783096.24,   215.48,   215.48,    2.00)  DC
         10TH HIGHEST VALUE IS       0.10939 AT (  363580.32,  3783096.24,   215.34,   215.34,    2.00)  DC

WAREH_V   1ST HIGHEST VALUE IS       0.43745 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
          2ND HIGHEST VALUE IS       0.41905 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
          3RD HIGHEST VALUE IS       0.33082 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
          4TH HIGHEST VALUE IS       0.21840 AT (  363601.35,  3783530.91,   219.52,   219.52,    2.00)  DC
          5TH HIGHEST VALUE IS       0.14426 AT (  363601.35,  3783505.91,   218.94,   218.94,    2.00)  DC
          6TH HIGHEST VALUE IS       0.09833 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC
          7TH HIGHEST VALUE IS       0.07016 AT (  363587.82,  3783466.38,   218.13,   218.13,    2.00)  DC
          8TH HIGHEST VALUE IS       0.05170 AT (  363573.32,  3783452.30,   217.83,   217.83,    2.00)  DC
          9TH HIGHEST VALUE IS       0.04153 AT (  363561.08,  3783441.85,   217.73,   217.73,    2.00)  DC
         10TH HIGHEST VALUE IS       0.03675 AT (  363551.24,  3783438.12,   217.69,   217.69,    2.00)  DC
```

```
*** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                             ***
 15:06:12

PAGE  31
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                   *** THE SUMMARY OF MAXIMUM ANNUAL RESULTS AVERAGED OVER   5 YEARS ***


                                    ** CONC OF NOX      IN MICROGRAMS/M**3                         **

                                                                                                            NETWORK
GROUP ID                       AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


ALL       1ST HIGHEST VALUE IS       0.47095 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
          2ND HIGHEST VALUE IS       0.44960 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
          3RD HIGHEST VALUE IS       0.36725 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
          4TH HIGHEST VALUE IS       0.36532 AT (  363829.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          5TH HIGHEST VALUE IS       0.32996 AT (  363854.81,  3783092.66,   215.15,   215.15,    2.00)  DC
          6TH HIGHEST VALUE IS       0.32771 AT (  363804.81,  3783092.66,   215.18,   215.18,    2.00)  DC
          7TH HIGHEST VALUE IS       0.32547 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
          8TH HIGHEST VALUE IS       0.29943 AT (  363917.08,  3783182.55,   214.25,   214.25,    2.00)  DC
          9TH HIGHEST VALUE IS       0.29333 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
         10TH HIGHEST VALUE IS       0.28135 AT (  363917.08,  3783157.55,   214.50,   214.50,    2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
*** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                             ***
 15:06:12

PAGE  32
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                  *** THE SUMMARY OF HIGHEST  1-HR RESULTS ***


                                    ** CONC OF NOX      IN MICROGRAMS/M**3                         **


                                                       DATE
                                                            NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -


AWPF_V   HIGH   1ST HIGH VALUE IS       9.33595  ON 12121716: AT (  363918.68,  3783233.09,   214.34,   214.34,
2.00)  DC

FLOWEQ_V HIGH   1ST HIGH VALUE IS       4.27130  ON 10122616: AT (  363919.21,  3783407.28,   217.57,   217.57,
2.00)  DC

MAINTB_V HIGH   1ST HIGH VALUE IS       8.43684  ON 12112916: AT (  363470.66,  3783182.66,   215.94,   215.94,
2.00)  DC

WAREH_V  HIGH   1ST HIGH VALUE IS      15.34676  ON 09121216: AT (  363601.35,  3783605.91,   220.26,   220.26,
```

```
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS      16.58630  ON 09121216: AT (  363601.35,  3783605.91,   220.26,   220.26,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   ***                                                                      ***
 15:06:12

PAGE  33
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of           0 Fatal Error Message(s)
 A Total of           0 Warning Message(s)
 A Total of        1173 Informational Message(s)

 A Total of       43848 Hours Were Processed

 A Total of           2 Calm Hours Identified

 A Total of        1171 Missing Hours Identified (  2.67 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

```
***************************************
** AERMOD CONTROL PATHWAY
***************************************
**
**
CO STARTING
   TITLEONE LA GROUND WATER REPLENISHMENT PROJECT
   TITLETWO PM2.5
   MODELOPT DFAULT CONC
   AVERTIME 24 PERIOD
   URBANOPT 9862049
   POLLUTID PM_10
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-PM10.ERR
CO FINISHED
**
***************************************
** AERMOD SOURCE PATHWAY
***************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
   LOCATION WAREHOUSE_A  AREAPOLY   363620.218  3783575.063      220.050
   LOCATION FLOWEQ_A     AREAPOLY   363806.468  3783509.252      218.180
   LOCATION MAINTBLD_A   AREAPOLY   363535.013  3783246.682      216.260
   LOCATION AWPF_A       AREAPOLY   363795.721  3783130.715      215.240
** SOURCE PARAMETERS **
   SRCPARAM WAREHOUSE_A  0.0000154178     1.000         4
   AREAVERT WAREHOUSE_A  363620.218 3783575.063 363701.152 3783574.154
   AREAVERT WAREHOUSE_A  363701.698 3783600.889 363619.673 3783600.707
   SRCPARAM FLOWEQ_A     0.0000106836     1.000         4
   AREAVERT FLOWEQ_A     363806.468 3783509.252 363807.165 3783434.338
   AREAVERT FLOWEQ_A     363889.396 3783433.293 363890.789 3783507.858
   SRCPARAM MAINTBLD_A   8.6661E-06     1.000         6
   AREAVERT MAINTBLD_A   363535.013 3783246.682 363555.349 3783246.117
   AREAVERT MAINTBLD_A   363554.220 3783139.354 363503.945 3783141.048
   AREAVERT MAINTBLD_A   363502.250 3783217.873 363532.754 3783216.743
   SRCPARAM AWPF_A       6.9916E-06     1.000         5
   AREAVERT AWPF_A       363795.721 3783130.715 363864.412 3783129.674
   AREAVERT AWPF_A       363866.494 3783220.222 363795.027 3783220.916
   AREAVERT AWPF_A       363795.027 3783132.103
   URBANSRC ALL

** VARIABLE EMISSIONS TYPE: "BY HOUR-OF-DAY (HROFDY)"
** VARIABLE EMISSION SCENARIO: "WORKHOURS"
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT WAREHOUSE_A  HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_A     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT MAINTBLD_A   HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AWPF_A       HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
```

```
   SRCGROUP SRCGP1   WAREHOUSE_A
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD RECEPTOR PATHWAY
****************************************
**
**
RE STARTING
   INCLUDED GWRP-PM10.ROU
RE FINISHED
**
****************************************
** AERMOD METEOROLOGY PATHWAY
****************************************
**
**
ME STARTING
   SURFFILE ..\..\RESE8.SFC
   PROFFILE ..\..\RESE8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
** AERMOD OUTPUT PATHWAY
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   24 ALL 1ST GWRP-PM10.AD\24H1GALL.PLT 31
   PLOTFILE   24 SRCGP1 1ST GWRP-PM10.AD\24H1G001.PLT 32
   PLOTFILE   PERIOD ALL GWRP-PM10.AD\PE00GALL.PLT 33
   PLOTFILE   PERIOD SRCGP1 GWRP-PM10.AD\PE00G000.PLT 34
   SUMMFILE GWRP-PM10.SUM
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                             ***
 14:56:09

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
```

```
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     4 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:  24-HR
     and Calculates PERIOD Averages

 **This Run Includes:      4 Source(s);       2 Source Group(s); and     105 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-PM10.ERR
 **File for Summary of Results:
 GWRP-PM10.SUM
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                ***
 14:56:09

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                  *** AREAPOLY SOURCE DATA ***

               NUMBER EMISSION RATE   LOCATION OF AREA  BASE      RELEASE  NUMBER      INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X         Y      ELEV.     HEIGHT  OF VERTS.     SZ     SOURCE  SCALAR VARY
```

```
    ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)           (METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 WAREHOUSE_A      0   0.15418E-04  363620.2 3783575.1   220.1     1.00       4         0.00     YES   HROFDY
 FLOWEQ_A         0   0.10684E-04  363806.5 3783509.3   218.2     1.00       4         0.00     YES   HROFDY
 MAINTBLD_A       0   0.86661E-05  363535.0 3783246.7   216.3     1.00       6         0.00     YES   HROFDY
 AWPF_A           0   0.69916E-05  363795.7 3783130.7   215.2     1.00       5         0.00     YES   HROFDY
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:56:09

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                              SOURCE IDs
 -----------                                              ----------



  SRCGP1     WAREHOUSE_A ,

  ALL        WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:56:09

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                            *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                    SOURCE IDs
  --------   ---------                                    ----------



             9862049.   WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:56:09

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

     HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -


 SOURCE ID = WAREHOUSE_A  ; SOURCE TYPE = AREAPOLY :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00
```

```
 SOURCE ID = FLOWEQ_A     ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = MAINTBLD_A   ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = AWPF_A       ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                    ***
 14:56:09

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);        ( 363917.1, 3783132.5,     214.8,
     214.8,       2.0);
     ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);        ( 363917.1, 3783182.5,     214.2,
     214.2,       2.0);
     ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);        ( 363918.7, 3783233.1,     214.3,
     214.3,       2.0);
     ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);        ( 363918.7, 3783283.1,     215.5,
     215.5,       2.0);
     ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);        ( 363919.2, 3783332.3,     216.7,
     216.7,       2.0);
     ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);        ( 363919.2, 3783382.3,     217.3,
     217.3,       2.0);
     ( 363919.2, 3783407.3,     217.6,     217.6,       2.0);        ( 363468.4, 3783096.5,     215.5,
     215.5,       2.0);
     ( 363480.3, 3783096.2,     215.5,     215.5,       2.0);        ( 363505.3, 3783096.2,     215.5,
     215.5,       2.0);
     ( 363530.3, 3783096.2,     215.4,     215.4,       2.0);        ( 363555.3, 3783096.2,     215.4,
     215.4,       2.0);
     ( 363580.3, 3783096.2,     215.3,     215.3,       2.0);        ( 363605.3, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363629.8, 3783096.2,     215.4,     215.4,       2.0);        ( 363654.8, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363679.8, 3783093.7,     215.2,     215.2,       2.0);        ( 363704.8, 3783093.7,     215.2,
     215.2,       2.0);
     ( 363729.8, 3783093.6,     215.2,     215.2,       2.0);        ( 363754.8, 3783093.6,     215.3,
     215.3,       2.0);
     ( 363779.8, 3783092.7,     215.2,     215.2,       2.0);        ( 363804.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363829.8, 3783092.7,     215.2,     215.2,       2.0);        ( 363854.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363879.8, 3783092.7,     215.1,     215.1,       2.0);        ( 363587.8, 3783466.4,     218.1,
     218.1,       2.0);
```

```
    ( 363601.3, 3783480.9,     218.4,     218.4,       2.0);        ( 363601.3, 3783505.9,     218.9,
    218.9,       2.0);
    ( 363601.3, 3783530.9,     219.5,     219.5,       2.0);        ( 363601.3, 3783555.9,     219.9,
    219.9,       2.0);
    ( 363601.3, 3783580.9,     220.3,     220.3,       2.0);        ( 363601.3, 3783605.9,     220.3,
    220.3,       2.0);
    ( 363573.3, 3783452.3,     217.8,     217.8,       2.0);        ( 363561.1, 3783441.8,     217.7,
    217.7,       2.0);
    ( 363551.2, 3783438.1,     217.7,     217.7,       2.0);        ( 363550.9, 3783426.3,     217.6,
    217.6,       2.0);
    ( 363551.2, 3783411.5,     217.3,     217.3,       2.0);        ( 363550.9, 3783395.9,     217.2,
    217.2,       2.0);
    ( 363550.7, 3783381.7,     217.1,     217.1,       2.0);        ( 363550.4, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363536.9, 3783363.0,     217.0,     217.0,       2.0);        ( 363528.5, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363528.2, 3783357.4,     217.0,     217.0,       2.0);        ( 363513.7, 3783357.4,     217.0,
    217.0,       2.0);
    ( 363504.5, 3783352.6,     216.9,     216.9,       2.0);        ( 363507.2, 3783337.9,     216.8,
    216.8,       2.0);
    ( 363501.4, 3783331.1,     216.8,     216.8,       2.0);        ( 363491.7, 3783322.5,     216.7,
    216.7,       2.0);
    ( 363485.3, 3783316.3,     216.7,     216.7,       2.0);        ( 363478.9, 3783311.4,     216.7,
    216.7,       2.0);
    ( 363470.7, 3783132.7,     215.7,     215.7,       2.0);        ( 363470.7, 3783157.7,     215.8,
    215.8,       2.0);
    ( 363470.7, 3783182.7,     215.9,     215.9,       2.0);        ( 363469.6, 3783203.5,     216.1,
    216.1,       2.0);
    ( 363469.6, 3783228.5,     216.2,     216.2,       2.0);        ( 363469.6, 3783253.5,     216.4,
    216.4,       2.0);
    ( 363469.6, 3783278.5,     216.5,     216.5,       2.0);        ( 363469.6, 3783303.5,     216.7,
    216.7,       2.0);
    ( 363798.9, 3783066.8,     215.2,     215.2,       2.0);        ( 363795.1, 3783063.9,     215.2,
    215.2,       2.0);
    ( 363795.4, 3783052.6,     215.2,     215.2,       2.0);        ( 363798.6, 3783048.7,     215.2,
    215.2,       2.0);
    ( 363811.1, 3783048.7,     215.2,     215.2,       2.0);        ( 363815.4, 3783052.6,     215.2,
    215.2,       2.0);
    ( 363815.2, 3783063.7,     215.2,     215.2,       2.0);        ( 363811.2, 3783067.4,     215.2,
    215.2,       2.0);
    ( 363298.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363323.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363348.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363373.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363422.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);        ( 363472.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);        ( 363517.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);        ( 363567.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);        ( 363618.5, 3783857.4,     220.2,
    220.2,       2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);        ( 363671.7, 3783856.6,     220.2,
    220.2,       2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);        ( 363722.1, 3783854.7,     220.2,
    220.2,       2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                        ***
 14:56:09

PAGE   7
```

```
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363771.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363821.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363871.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363921.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363971.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);         ( 364021.7, 3783854.3,     221.2,
     221.2,       2.0);
     ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);         ( 364073.7, 3783852.3,     223.7,
     223.7,       2.0);
     ( 364061.8, 3783840.4,     222.8,     222.8,
     2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:56:09

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                             (METERS/SEC)

                                                    1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:56:09

PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   ..\..\RESE8.SFC                                                           Met Version:  14134
   Profile file:   ..\..\RESE8.PFL
   Surface format:
   FREE
```

```
   Profile format:
   FREE
   Surface station no.:        0                  Upper air station no.:     3190
                  Name: UNKNOWN                                  Name: UNKNOWN
                  Year:   2008                                   Year:   2008

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-
 08 01 01   1 01 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 02 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 03 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 06 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 07 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.56  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 09   22.6 -9.000 -9.000 -9.000   54. -999. -99999.0  0.50   1.00   0.32  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 10   71.8 -9.000 -9.000 -9.000  147. -999. -99999.0  0.50   1.00   0.24  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 11  111.2 -9.000 -9.000 -9.000  357. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 12  128.1 -9.000 -9.000 -9.000  571. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 13  127.4 -9.000 -9.000 -9.000  712. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 14  109.8 -9.000 -9.000 -9.000  763. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  290.9    5.5
 08 01 01   1 15   52.2 -9.000 -9.000 -9.000  786. -999. -99999.0  0.50   1.00   0.25  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 16   27.2 -9.000 -9.000 -9.000  796. -999. -99999.0  0.50   1.00   0.33  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 17 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.59  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 18 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 08 01 01 01    5.5 0 -999.  -99.00   287.1   99.0  -99.00  -99.00
 08 01 01 01    9.1 1 -999.  -99.00  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                      ***
 14:56:09

PAGE  10
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

       X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
         363917.08    3783107.55        0.00417                      363917.08    3783132.55
         0.00440
         363917.08    3783157.55        0.00465                      363917.08    3783182.55
         0.00494
```

363917.08	3783207.55	0.00527	363918.68	3783233.09	0.00562
363918.68	3783258.09	0.00608	363918.68	3783283.09	0.00662
363918.68	3783308.09	0.00726	363919.21	3783332.28	0.00798
363919.21	3783357.28	0.00889	363919.21	3783382.28	0.00996
363919.21	3783407.28	0.01120	363468.40	3783096.50	0.00560
363480.32	3783096.24	0.00592	363505.32	3783096.24	0.00667
363530.32	3783096.24	0.00747	363555.32	3783096.24	0.00830
363580.32	3783096.24	0.00910	363605.32	3783096.24	0.00979
363629.81	3783096.24	0.01032	363654.81	3783096.24	0.01063
363679.81	3783093.68	0.01057	363704.81	3783093.68	0.01034
363729.81	3783093.56	0.00986	363754.81	3783093.56	0.00917
363779.81	3783092.66	0.00832	363804.81	3783092.66	0.00744
363829.81	3783092.66	0.00655	363854.81	3783092.66	0.00572
363879.81	3783092.66	0.00497	363587.82	3783466.38	0.11322
363601.35	3783480.91	0.16308	363601.35	3783505.91	0.26496
363601.35	3783530.91	0.49300	363601.35	3783555.91	1.14228
363601.35	3783580.91	2.46262	363601.35	3783605.91	2.40663
363573.32	3783452.30	0.08123	363561.08	3783441.85	0.06386
363551.24	3783438.12	0.05599	363550.94	3783426.26	0.04937
363551.19	3783411.48	0.04300	363550.94	3783395.93	0.03750
363550.68	3783381.66	0.03339	363550.43	3783363.30	0.02912
363536.92	3783363.05	0.02619	363528.51	3783363.30	0.02460
363528.25	3783357.44	0.02361	363513.72	3783357.44	0.02122
363504.55	3783352.60	0.01929	363507.18	3783337.93	0.01798
363501.43	3783331.08	0.01662	363491.71	3783322.46	0.01486
363485.30	3783316.28	0.01381	363478.89	3783311.41	0.01294
363470.66	3783132.66	0.00627	363470.66	3783157.66	0.00676
363470.66	3783182.66	0.00732	363469.56	3783203.46	0.00781
363469.56	3783228.46	0.00854	363469.56	3783253.46	0.00941
363469.56	3783278.46	0.01047	363469.56	3783303.46	0.01176
363798.94	3783066.77	0.00709	363795.11	3783063.90	0.00715
363795.43	3783052.56	0.00691	363798.62	3783048.73	0.00674

```
        363811.08    3783048.73        0.00639                        363815.39    3783052.56
        0.00633
        363815.23    3783063.74        0.00653                        363811.24    3783067.41
        0.00672
        363298.29    3783861.01        0.01859                        363323.29    3783861.01
        0.02015
        363348.29    3783861.01        0.02183                        363373.29    3783861.01
        0.02365
        363398.29    3783861.01        0.02558                        363422.49    3783859.43
        0.02778
        363447.49    3783859.43        0.02991                        363472.49    3783859.43
        0.03208
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:56:09

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                          **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.03433                        363517.73    3783858.63
        0.03608
        363542.73    3783858.63        0.03791                        363567.73    3783858.63
        0.03933
        363593.53    3783857.44        0.04053                        363618.53    3783857.44
        0.04052
        363643.53    3783857.44        0.03961                        363671.70    3783856.65
        0.03779
        363697.10    3783854.67        0.03566                        363722.10    3783854.67
        0.03246
        363746.70    3783854.27        0.02916                        363771.70    3783854.27
        0.02571
        363796.70    3783854.27        0.02248                        363821.70    3783854.27
        0.01956
        363846.70    3783854.27        0.01703                        363871.70    3783854.27
        0.01487
        363896.70    3783854.27        0.01305                        363921.70    3783854.27
        0.01152
        363946.70    3783854.27        0.01023                        363971.70    3783854.27
        0.00913
        363996.70    3783854.27        0.00819                        364021.70    3783854.27
        0.00734
        364046.70    3783854.27        0.00660                        364073.73    3783852.30
        0.00593
        364061.84    3783840.40
        0.00641
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:56:09

PAGE  12
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL
```

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_A , FLOWEQ_A , MAINTBLD_A , AWPF_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.26539	363917.08	3783132.55	0.34413
363917.08	3783157.55	0.42303	363917.08	3783182.55	0.46909
363917.08	3783207.55	0.46470	363918.68	3783233.09	0.39926
363918.68	3783258.09	0.34091	363918.68	3783283.09	0.29933
363918.68	3783308.09	0.28394	363919.21	3783332.28	0.29458
363919.21	3783357.28	0.33723	363919.21	3783382.28	0.42825
363919.21	3783407.28	0.60044	363468.40	3783096.50	0.35792
363480.32	3783096.24	0.41955	363505.32	3783096.24	0.55003
363530.32	3783096.24	0.59449	363555.32	3783096.24	0.50868
363580.32	3783096.24	0.37065	363605.32	3783096.24	0.26906
363629.81	3783096.24	0.21852	363654.81	3783096.24	0.20271
363679.81	3783093.68	0.20571	363704.81	3783093.68	0.23418
363729.81	3783093.56	0.29008	363754.81	3783093.56	0.39088
363779.81	3783092.66	0.54173	363804.81	3783092.66	0.70609
363829.81	3783092.66	0.75632	363854.81	3783092.66	0.63927
363879.81	3783092.66	0.44038	363587.82	3783466.38	0.29837
363601.35	3783480.91	0.36223	363601.35	3783505.91	0.46131
363601.35	3783530.91	0.68211	363601.35	3783555.91	1.31999
363601.35	3783580.91	2.62564	363601.35	3783605.91	2.55356
363573.32	3783452.30	0.25588	363561.08	3783441.85	0.23259
363551.24	3783438.12	0.22048	363550.94	3783426.26	0.21784
363551.19	3783411.48	0.21847	363550.94	3783395.93	0.22286
363550.68	3783381.66	0.23129	363550.43	3783363.30	0.25042
363536.92	3783363.05	0.24842	363528.51	3783363.30	0.24605
363528.25	3783357.44	0.25618	363513.72	3783357.44	0.25199
363504.55	3783352.60	0.25857	363507.18	3783337.93	0.30017
363501.43	3783331.08	0.32137	363491.71	3783322.46	0.34934

```
        363485.30   3783316.28        0.37096                          363478.89   3783311.41
        0.38494
        363470.66   3783132.66        0.88529                          363470.66   3783157.66
        1.45912
        363470.66   3783182.66        1.82791                          363469.56   3783203.46
        1.73922
        363469.56   3783228.46        1.35928                          363469.56   3783253.46
        0.90610
        363469.56   3783278.46        0.59489                          363469.56   3783303.46
        0.40697
        363798.94   3783066.77        0.36275                          363795.11   3783063.90
        0.33587
        363795.43   3783052.56        0.27810                          363798.62   3783048.73
        0.26698
        363811.08   3783048.73        0.28160                          363815.39   3783052.56
        0.30301
        363815.23   3783063.74        0.36862                          363811.24   3783067.41
        0.39062
        363298.29   3783861.01        0.04615                          363323.29   3783861.01
        0.04875
        363348.29   3783861.01        0.05152                          363373.29   3783861.01
        0.05445
        363398.29   3783861.01        0.05754                          363422.49   3783859.43
        0.06102
        363447.49   3783859.43        0.06436                          363472.49   3783859.43
        0.06775
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                ***
 14:56:09

PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                          **

      X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94   3783857.05        0.07126                          363517.73   3783858.63
        0.07411
        363542.73   3783858.63        0.07719                          363567.73   3783858.63
        0.07987
        363593.53   3783857.44        0.08259                          363618.53   3783857.44
        0.08383
        363643.53   3783857.44        0.08414                          363671.70   3783856.65
        0.08375
        363697.10   3783854.67        0.08307                          363722.10   3783854.67
        0.08063
        363746.70   3783854.27        0.07787                          363771.70   3783854.27
        0.07447
        363796.70   3783854.27        0.07080                          363821.70   3783854.27
        0.06694
        363846.70   3783854.27        0.06298                          363871.70   3783854.27
        0.05898
        363896.70   3783854.27        0.05497                          363921.70   3783854.27
        0.05102
        363946.70   3783854.27        0.04717                          363971.70   3783854.27
        0.04345
```

```
        363996.70    3783854.27        0.03990                      364021.70    3783854.27
        0.03638
        364046.70    3783854.27        0.03314                      364073.73    3783852.30
        0.03016
        364061.84    3783840.40
        0.03273
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***       08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                  ***
 14:56:09

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55       0.07895m (10122624)              363917.08   3783132.55       0.08257m
       (10122624)
       363917.08   3783157.55       0.08545m (10122624)              363917.08   3783182.55       0.08744m
       (10122624)
       363917.08   3783207.55       0.08839m (10122624)              363918.68   3783233.09       0.08701m
       (10122624)
       363918.68   3783258.09       0.08617m (10122624)              363918.68   3783283.09       0.08542m
       (10122624)
       363918.68   3783308.09       0.08712  (10102124)              363919.21   3783332.28       0.09540
       (10102124)
       363919.21   3783357.28       0.10546  (10102124)              363919.21   3783382.28       0.11798
       (10102124)
       363919.21   3783407.28       0.13651m (10030724)              363468.40   3783096.50       0.06927
       (11121224)
       363480.32   3783096.24       0.06864m (10111124)              363505.32   3783096.24       0.07354m
       (10111124)
       363530.32   3783096.24       0.07551m (10111124)              363555.32   3783096.24       0.08827
       (11111024)
       363580.32   3783096.24       0.10062  (11111024)              363605.32   3783096.24       0.10632
       (11111024)
       363629.81   3783096.24       0.10414  (11111024)              363654.81   3783096.24       0.09913m
       (11011124)
       363679.81   3783093.68       0.09945m (11011124)              363704.81   3783093.68       0.09548m
       (11011124)
       363729.81   3783093.56       0.08685m (11011124)              363754.81   3783093.56       0.08268
       (10010224)
       363779.81   3783092.66       0.07579  (10010224)              363804.81   3783092.66       0.07926m
       (10122624)
       363829.81   3783092.66       0.08388m (10122624)              363854.81   3783092.66       0.08562m
       (10122624)
       363879.81   3783092.66       0.08418m (10122624)              363587.82   3783466.38       0.98971
       (11121224)
       363601.35   3783480.91       1.23688  (11121224)              363601.35   3783505.91       1.83063
       (11121224)
       363601.35   3783530.91       2.78250  (11121224)              363601.35   3783555.91       4.49713
       (11111224)
       363601.35   3783580.91       9.61087m (08012524)              363601.35   3783605.91       7.97500m
       (08012524)
       363573.32   3783452.30       0.81424  (11121224)              363561.08   3783441.85       0.71047
```

(11121224)

363551.24	3783438.12	0.66696	(11121224)	363550.94	3783426.26	0.60148	(11121224)
363551.19	3783411.48	0.52795	(11121224)	363550.94	3783395.93	0.45912	(11121224)
363550.68	3783381.66	0.40362	(11121224)	363550.43	3783363.30	0.34194	(11121224)
363536.92	3783363.05	0.34979	(11121224)	363528.51	3783363.30	0.35275	(11121224)
363528.25	3783357.44	0.33707	(11121224)	363513.72	3783357.44	0.33789	(11121224)
363504.55	3783352.60	0.32520	(11121224)	363507.18	3783337.93	0.29519	(11121224)
363501.43	3783331.08	0.28214	(11121224)	363491.71	3783322.46	0.26703	(11121224)
363485.30	3783316.28	0.25682	(11121224)	363478.89	3783311.41	0.24903	(11121224)
363470.66	3783132.66	0.08508	(11121224)	363470.66	3783157.66	0.09909	(11121224)
363470.66	3783182.66	0.11548	(11121224)	363469.56	3783203.46	0.13163	(11121224)
363469.56	3783228.46	0.15320	(11121224)	363469.56	3783253.46	0.17802	(11121224)
363469.56	3783278.46	0.20604	(11121224)	363469.56	3783303.46	0.23715	(11121224)
363798.94	3783066.77	0.06806m	(10122624)	363795.11	3783063.90	0.06610m	(10122624)
363795.43	3783052.56	0.06391	(10010224)	363798.62	3783048.73	0.06237	(10010224)
363811.08	3783048.73	0.06475m	(10122624)	363815.39	3783052.56	0.06688m	(10122624)
363815.23	3783063.74	0.07063m	(10122624)	363811.24	3783067.41	0.07110m	(10122624)
363298.29	3783861.01	0.14856	(12121624)	363323.29	3783861.01	0.15865	(12121624)
363348.29	3783861.01	0.16701	(12121624)	363373.29	3783861.01	0.17278	(12121624)
363398.29	3783861.01	0.17476	(12121624)	363422.49	3783859.43	0.17407	(12121624)
363447.49	3783859.43	0.18715	(12042324)	363472.49	3783859.43	0.20014	(10090724)

*** AERMOD - VERSION 14134 *** *** LA GROUND WATER REPLENISHMENT PROJECT *** 08/10/15

*** AERMET - VERSION 14134 *** *** PM10 *** 14:56:09

PAGE 15

**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: SRCGP1 ***
INCLUDING SOURCE(S): WAREHOUSE_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363491.94	3783857.05	0.22777	(10090724)	363517.73	3783858.63	0.25278	(10090724)
363542.73	3783858.63	0.26405	(10090724)	363567.73	3783858.63	0.27724	(09101324)

```
       363593.53   3783857.44        0.28599  (09101324)             363618.53   3783857.44        0.30215
       (10111924)
       363643.53   3783857.44        0.29738  (10111924)             363671.70   3783856.65        0.29317
       (11022524)
       363697.10   3783854.67        0.32476  (11022524)             363722.10   3783854.67        0.32281
       (11022524)
       363746.70   3783854.27        0.32152  (12121424)             363771.70   3783854.27        0.30190
       (12121424)
       363796.70   3783854.27        0.26703  (12121424)             363821.70   3783854.27        0.22564
       (12121424)
       363846.70   3783854.27        0.18459  (12121424)             363871.70   3783854.27        0.14805
       (12121424)
       363896.70   3783854.27        0.15163m (12121724)             363921.70   3783854.27        0.15344m
       (12121724)
       363946.70   3783854.27        0.15081m (12121724)             363971.70   3783854.27        0.14366m
       (12121724)
       363996.70   3783854.27        0.13279m (12121724)             364021.70   3783854.27        0.12017m
       (12121724)
       364046.70   3783854.27        0.10555m (12121724)             364073.73   3783852.30        0.08823m
       (12121724)
       364061.84   3783840.40        0.09198m
       (12121724)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:56:09

PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                              *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                         ** CONC OF PM_10    IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55        2.42871  (10102124)             363917.08   3783132.55        3.30379
       (10102124)
       363917.08   3783157.55        3.68625  (10102124)             363917.08   3783182.55        3.32398
       (10102124)
       363917.08   3783207.55        2.49588  (10101824)             363918.68   3783233.09        2.26846m
       (12121724)
       363918.68   3783258.09        1.91802m (12121724)             363918.68   3783283.09        1.47532m
       (12121724)
       363918.68   3783308.09        1.46381m (10122624)             363919.21   3783332.28        1.85801m
       (10122624)
       363919.21   3783357.28        2.43904m (10122624)             363919.21   3783382.28        3.24267m
       (10122624)
       363919.21   3783407.28        4.49929  (10102124)             363468.40   3783096.50        2.51157
       (11121224)
       363480.32   3783096.24        2.74491  (11121224)             363505.32   3783096.24        3.06093
       (11111224)
       363530.32   3783096.24        3.07404  (09021724)             363555.32   3783096.24        2.94746m
       (10122624)
       363580.32   3783096.24        2.50442m (10122624)             363605.32   3783096.24        1.71236m
       (10122624)
       363629.81   3783096.24        1.18648  (10102124)             363654.81   3783096.24        0.92723
       (10102124)
       363679.81   3783093.68        1.08264  (11121224)             363704.81   3783093.68        1.39219
```

```
       (11121224)
       363729.81   3783093.56       1.84894  (11121224)              363754.81   3783093.56        2.46834
       (11121224)
       363779.81   3783092.66       3.10105  (11121224)              363804.81   3783092.66        3.79026
       (09021724)
       363829.81   3783092.66       3.93275  (09021724)              363854.81   3783092.66        3.98818m
       (10122624)
       363879.81   3783092.66       3.44674m (10122624)              363587.82   3783466.38        1.05912
       (11121224)
       363601.35   3783480.91       1.29709  (11121224)              363601.35   3783505.91        1.86254
       (11121224)
       363601.35   3783530.91       2.80614  (11111224)              363601.35   3783555.91        4.74440
       (09101424)
       363601.35   3783580.91      10.22476m (08012524)              363601.35   3783605.91        8.48516m
       (08012524)
       363573.32   3783452.30       0.89061  (11121224)              363561.08   3783441.85        0.78922
       (11121224)
       363551.24   3783438.12       0.74082  (11121224)              363550.94   3783426.26        0.69183
       (11121224)
       363551.19   3783411.48       0.64337  (11121224)              363550.94   3783395.93        0.65524
       (08121524)
       363550.68   3783381.66       0.73614  (11022524)              363550.43   3783363.30        0.89269
       (11022524)
       363536.92   3783363.05       0.83394  (10111924)              363528.51   3783363.30        0.86727
       (10111924)
       363528.25   3783357.44       0.93209  (10111924)              363513.72   3783357.44        0.94814
       (10111924)
       363504.55   3783352.60       0.97637  (10111924)              363507.18   3783337.93        1.16881
       (09042424)
       363501.43   3783331.08       1.24758  (09042424)              363491.71   3783322.46        1.32682
       (10090724)
       363485.30   3783316.28       1.44262  (10090724)              363478.89   3783311.41        1.50645
       (10090724)
       363470.66   3783132.66       3.97121  (11121224)              363470.66   3783157.66        5.33905m
       (08012524)
       363470.66   3783182.66       6.80478m (08012524)              363469.56   3783203.46        6.30078m
       (08012524)
       363469.56   3783228.46       4.58290m (08012524)              363469.56   3783253.46        2.99158
       (08010424)
       363469.56   3783278.46       2.06176  (08010424)              363469.56   3783303.46        1.56016
       (10090724)
       363798.94   3783066.77       2.14056  (09021724)              363795.11   3783063.90        1.98438
       (09021724)
       363795.43   3783052.56       1.72071  (11111024)              363798.62   3783048.73        1.71159
       (11111024)
       363811.08   3783048.73       1.86449  (11111024)              363815.39   3783052.56        1.97975
       (11111024)
       363815.23   3783063.74       2.28617  (11111024)              363811.24   3783067.41        2.35777
       (11111024)
       363298.29   3783861.01       0.37331  (12121624)              363323.29   3783861.01        0.38789
       (12121624)
       363348.29   3783861.01       0.40018  (12121624)              363373.29   3783861.01        0.40895
       (12121624)
       363398.29   3783861.01       0.41288  (12121624)              363422.49   3783859.43        0.41342
       (12121624)
       363447.49   3783859.43       0.40401  (12121624)              363472.49   3783859.43        0.38589
       (12121624)
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                         ***
 14:56:09

PAGE  17
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL
```

```
                                *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                    INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        0.39395  (12042324)               363517.73   3783858.63        0.43829
        (10090724)
        363542.73   3783858.63        0.47252  (10090724)               363567.73   3783858.63        0.48967
        (10090724)
        363593.53   3783857.44        0.49001  (10090724)               363618.53   3783857.44        0.49291
        (08030124)
        363643.53   3783857.44        0.49079  (09042424)               363671.70   3783856.65        0.49690
        (09042424)
        363697.10   3783854.67        0.49952  (08121524)               363722.10   3783854.67        0.52552
        (08121524)
        363746.70   3783854.27        0.53661  (08121524)               363771.70   3783854.27        0.53047
        (08121524)
        363796.70   3783854.27        0.51086  (08121524)               363821.70   3783854.27        0.48480
        (08121524)
        363846.70   3783854.27        0.49620  (12121424)               363871.70   3783854.27        0.52192
        (12121424)
        363896.70   3783854.27        0.54757  (12121424)               363921.70   3783854.27        0.56552
        (12121424)
        363946.70   3783854.27        0.56966  (12121424)               363971.70   3783854.27        0.55762
        (12121424)
        363996.70   3783854.27        0.53081  (12121424)               364021.70   3783854.27        0.49331
        (12121424)
        364046.70   3783854.27        0.47096  (12121424)               364073.73   3783852.30        0.42755
        (12121424)
        364061.84   3783840.40        0.45355
        (12121424)
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                               ***
 14:56:09

PAGE  18
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                          *** THE SUMMARY OF MAXIMUM PERIOD ( 43848 HRS) RESULTS ***


                                      ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

                                                                                                                NETWORK
GROUP ID                       AVERAGE CONC               RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


SRCGP1    1ST HIGHEST VALUE IS       2.46262 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
          2ND HIGHEST VALUE IS       2.40663 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
          3RD HIGHEST VALUE IS       1.14228 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
          4TH HIGHEST VALUE IS       0.49300 AT (  363601.35,  3783530.91,   219.52,   219.52,    2.00)  DC
          5TH HIGHEST VALUE IS       0.26496 AT (  363601.35,  3783505.91,   218.94,   218.94,    2.00)  DC
          6TH HIGHEST VALUE IS       0.16308 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC
          7TH HIGHEST VALUE IS       0.11322 AT (  363587.82,  3783466.38,   218.13,   218.13,    2.00)  DC
          8TH HIGHEST VALUE IS       0.08123 AT (  363573.32,  3783452.30,   217.83,   217.83,    2.00)  DC
          9TH HIGHEST VALUE IS       0.06386 AT (  363561.08,  3783441.85,   217.73,   217.73,    2.00)  DC
```

```
        10TH HIGHEST VALUE IS       0.05599 AT (  363551.24,  3783438.12,   217.69,   217.69,    2.00)  DC

ALL      1ST HIGHEST VALUE IS       2.62564 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
         2ND HIGHEST VALUE IS       2.55356 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
         3RD HIGHEST VALUE IS       1.82791 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
         4TH HIGHEST VALUE IS       1.73922 AT (  363469.56,  3783203.46,   216.05,   216.05,    2.00)  DC
         5TH HIGHEST VALUE IS       1.45912 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
         6TH HIGHEST VALUE IS       1.35928 AT (  363469.56,  3783228.46,   216.19,   216.19,    2.00)  DC
         7TH HIGHEST VALUE IS       1.31999 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
         8TH HIGHEST VALUE IS       0.90610 AT (  363469.56,  3783253.46,   216.35,   216.35,    2.00)  DC
         9TH HIGHEST VALUE IS       0.88529 AT (  363470.66,  3783132.66,   215.70,   215.70,    2.00)  DC
        10TH HIGHEST VALUE IS       0.75632 AT (  363829.81,  3783092.66,   215.18,   215.18,    2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                       ***
 14:56:09

PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                   *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                       ** CONC OF PM_10    IN MICROGRAMS/M**3                         **


                                                       DATE
                                                            NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)            RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

SRCGP1   HIGH   1ST HIGH VALUE IS       9.61087m ON 08012524: AT (  363601.35,  3783580.91,   220.27,   220.27,
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS      10.22476m ON 08012524: AT (  363601.35,  3783580.91,   220.27,   220.27,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                       ***
 14:56:09

PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
```

```
A Total of         1173 Informational Message(s)

A Total of        43848 Hours Were Processed

A Total of            2 Calm Hours Identified

A Total of         1171 Missing Hours Identified (  2.67 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

```
***************************************
** AERMOD CONTROL PATHWAY
***************************************
**
**
CO STARTING
   TITLEONE LA GROUND WATER REPLENISHMENT PROJECT
   TITLETWO PM2.5
   MODELOPT DFAULT CONC
   AVERTIME 24 PERIOD
   URBANOPT 9862049
   POLLUTID PM_2.5
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-PM25.ERR
CO FINISHED
**
***************************************
** AERMOD SOURCE PATHWAY
***************************************
**
**
SO STARTING
** SOURCE LOCATION **
** SOURCE ID - TYPE - X COORD. - Y COORD. **
   LOCATION WAREHOUSE_A  AREAPOLY   363620.218  3783575.063      220.050
   LOCATION FLOWEQ_A     AREAPOLY   363806.468  3783509.252      218.180
   LOCATION MAINTBLD_A   AREAPOLY   363535.013  3783246.682      216.260
   LOCATION AWPF_A       AREAPOLY   363795.721  3783130.715      215.240
** SOURCE PARAMETERS **
   SRCPARAM WAREHOUSE_A  5.1549E-06     1.000         4
   AREAVERT WAREHOUSE_A  363620.218 3783575.063 363701.152 3783574.154
   AREAVERT WAREHOUSE_A  363701.698 3783600.889 363619.673 3783600.707
   SRCPARAM FLOWEQ_A     2.6508E-06     1.000         4
   AREAVERT FLOWEQ_A     363806.468 3783509.252 363807.165 3783434.338
   AREAVERT FLOWEQ_A     363889.396 3783433.293 363890.789 3783507.858
   SRCPARAM MAINTBLD_A   2.1992E-06     1.000         6
   AREAVERT MAINTBLD_A   363535.013 3783246.682 363555.349 3783246.117
   AREAVERT MAINTBLD_A   363554.220 3783139.354 363503.945 3783141.048
   AREAVERT MAINTBLD_A   363502.250 3783217.873 363532.754 3783216.743
   SRCPARAM AWPF_A       2.5767E-06     1.000         5
   AREAVERT AWPF_A       363795.721 3783130.715 363864.412 3783129.674
   AREAVERT AWPF_A       363866.494 3783220.222 363795.027 3783220.916
   AREAVERT AWPF_A       363795.027 3783132.103
   URBANSRC ALL

** VARIABLE EMISSIONS TYPE: "BY HOUR-OF-DAY (HROFDY)"
** VARIABLE EMISSION SCENARIO: "WORKHOURS"
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT WAREHOUSE_A  HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT WAREHOUSE_A  HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_A     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT MAINTBLD_A   HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT MAINTBLD_A   HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT AWPF_A       HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT AWPF_A       HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
```

```
   SRCGROUP SRCGP1   WAREHOUSE_A
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD RECEPTOR PATHWAY
****************************************
**
**
RE STARTING
   INCLUDED GWRP-PM25.ROU
RE FINISHED
**
****************************************
** AERMOD METEOROLOGY PATHWAY
****************************************
**
**
ME STARTING
   SURFFILE ..\..\RESE8.SFC
   PROFFILE ..\..\RESE8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
** AERMOD OUTPUT PATHWAY
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** AUTO-GENERATED PLOTFILES
   PLOTFILE   24 ALL 1ST GWRP-PM25.AD\24H1GALL.PLT 31
   PLOTFILE   24 SRCGP1 1ST GWRP-PM25.AD\24H1G001.PLT 32
   PLOTFILE   PERIOD ALL GWRP-PM25.AD\PE00GALL.PLT 33
   PLOTFILE   PERIOD SRCGP1 GWRP-PM25.AD\PE00G000.PLT 34
   SUMMFILE GWRP-PM25.SUM
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 14:52:26

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
```

```
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     4 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_2.5

 **Model Calculates  1 Short Term Average(s) of:  24-HR
     and Calculates PERIOD Averages

 **This Run Includes:      4 Source(s);       2 Source Group(s); and     105 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134

 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-PM25.ERR
 **File for Summary of Results:
 GWRP-PM25.SUM
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                          ***
 14:52:26

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                  *** AREAPOLY SOURCE DATA ***

               NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE  NUMBER      INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X         Y      ELEV.    HEIGHT  OF VERTS.     SZ     SOURCE  SCALAR VARY
```

```
    ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)           (METERS)             BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 WAREHOUSE_A      0   0.51549E-05  363620.2 3783575.1   220.1     1.00       4         0.00     YES   HROFDY
 FLOWEQ_A         0   0.26508E-05  363806.5 3783509.3   218.2     1.00       4         0.00     YES   HROFDY
 MAINTBLD_A       0   0.21992E-05  363535.0 3783246.7   216.3     1.00       6         0.00     YES   HROFDY
 AWPF_A           0   0.25767E-05  363795.7 3783130.7   215.2     1.00       5         0.00     YES   HROFDY
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                              ***
 14:52:26

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                              *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                              SOURCE IDs
 -----------                                              ----------


  SRCGP1     WAREHOUSE_A ,

  ALL        WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                              ***
 14:52:26

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                    SOURCE IDs
  --------   ---------                                    ----------


              9862049.   WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                              ***
 14:52:26

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

    HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -


 SOURCE ID = WAREHOUSE_A  ; SOURCE TYPE = AREAPOLY :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00
```

```
 SOURCE ID = FLOWEQ_A     ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = MAINTBLD_A   ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00


 SOURCE ID = AWPF_A       ; SOURCE TYPE = AREAPOLY :
      1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
      7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
     13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
     19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                        ***
 14:52:26

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                               *** DISCRETE CARTESIAN RECEPTORS ***
                                             (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                              (METERS)

     ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);         ( 363917.1, 3783132.5,     214.8,
     214.8,       2.0);
     ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);         ( 363917.1, 3783182.5,     214.2,
     214.2,       2.0);
     ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);         ( 363918.7, 3783233.1,     214.3,
     214.3,       2.0);
     ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);         ( 363918.7, 3783283.1,     215.5,
     215.5,       2.0);
     ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);         ( 363919.2, 3783332.3,     216.7,
     216.7,       2.0);
     ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);         ( 363919.2, 3783382.3,     217.3,
     217.3,       2.0);
     ( 363919.2, 3783407.3,     217.6,     217.6,       2.0);         ( 363468.4, 3783096.5,     215.5,
     215.5,       2.0);
     ( 363480.3, 3783096.2,     215.5,     215.5,       2.0);         ( 363505.3, 3783096.2,     215.5,
     215.5,       2.0);
     ( 363530.3, 3783096.2,     215.4,     215.4,       2.0);         ( 363555.3, 3783096.2,     215.4,
     215.4,       2.0);
     ( 363580.3, 3783096.2,     215.3,     215.3,       2.0);         ( 363605.3, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363629.8, 3783096.2,     215.4,     215.4,       2.0);         ( 363654.8, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363679.8, 3783093.7,     215.2,     215.2,       2.0);         ( 363704.8, 3783093.7,     215.2,
     215.2,       2.0);
     ( 363729.8, 3783093.6,     215.2,     215.2,       2.0);         ( 363754.8, 3783093.6,     215.3,
     215.3,       2.0);
     ( 363779.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363804.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363829.8, 3783092.7,     215.2,     215.2,       2.0);         ( 363854.8, 3783092.7,     215.2,
     215.2,       2.0);
     ( 363879.8, 3783092.7,     215.1,     215.1,       2.0);         ( 363587.8, 3783466.4,     218.1,
     218.1,       2.0);
```

```
    ( 363601.3, 3783480.9,     218.4,     218.4,       2.0);         ( 363601.3, 3783505.9,     218.9,
    218.9,       2.0);
    ( 363601.3, 3783530.9,     219.5,     219.5,       2.0);         ( 363601.3, 3783555.9,     219.9,
    219.9,       2.0);
    ( 363601.3, 3783580.9,     220.3,     220.3,       2.0);         ( 363601.3, 3783605.9,     220.3,
    220.3,       2.0);
    ( 363573.3, 3783452.3,     217.8,     217.8,       2.0);         ( 363561.1, 3783441.8,     217.7,
    217.7,       2.0);
    ( 363551.2, 3783438.1,     217.7,     217.7,       2.0);         ( 363550.9, 3783426.3,     217.6,
    217.6,       2.0);
    ( 363551.2, 3783411.5,     217.3,     217.3,       2.0);         ( 363550.9, 3783395.9,     217.2,
    217.2,       2.0);
    ( 363550.7, 3783381.7,     217.1,     217.1,       2.0);         ( 363550.4, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363536.9, 3783363.0,     217.0,     217.0,       2.0);         ( 363528.5, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363528.2, 3783357.4,     217.0,     217.0,       2.0);         ( 363513.7, 3783357.4,     217.0,
    217.0,       2.0);
    ( 363504.5, 3783352.6,     216.9,     216.9,       2.0);         ( 363507.2, 3783337.9,     216.8,
    216.8,       2.0);
    ( 363501.4, 3783331.1,     216.8,     216.8,       2.0);         ( 363491.7, 3783322.5,     216.7,
    216.7,       2.0);
    ( 363485.3, 3783316.3,     216.7,     216.7,       2.0);         ( 363478.9, 3783311.4,     216.7,
    216.7,       2.0);
    ( 363470.7, 3783132.7,     215.7,     215.7,       2.0);         ( 363470.7, 3783157.7,     215.8,
    215.8,       2.0);
    ( 363470.7, 3783182.7,     215.9,     215.9,       2.0);         ( 363469.6, 3783203.5,     216.1,
    216.1,       2.0);
    ( 363469.6, 3783228.5,     216.2,     216.2,       2.0);         ( 363469.6, 3783253.5,     216.4,
    216.4,       2.0);
    ( 363469.6, 3783278.5,     216.5,     216.5,       2.0);         ( 363469.6, 3783303.5,     216.7,
    216.7,       2.0);
    ( 363798.9, 3783066.8,     215.2,     215.2,       2.0);         ( 363795.1, 3783063.9,     215.2,
    215.2,       2.0);
    ( 363795.4, 3783052.6,     215.2,     215.2,       2.0);         ( 363798.6, 3783048.7,     215.2,
    215.2,       2.0);
    ( 363811.1, 3783048.7,     215.2,     215.2,       2.0);         ( 363815.4, 3783052.6,     215.2,
    215.2,       2.0);
    ( 363815.2, 3783063.7,     215.2,     215.2,       2.0);         ( 363811.2, 3783067.4,     215.2,
    215.2,       2.0);
    ( 363298.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363323.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363348.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363373.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);         ( 363422.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);         ( 363472.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);         ( 363517.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);         ( 363567.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363618.5, 3783857.4,     220.2,
    220.2,       2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);         ( 363671.7, 3783856.6,     220.2,
    220.2,       2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);         ( 363722.1, 3783854.7,     220.2,
    220.2,       2.0);
```

```
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** DISCRETE CARTESIAN RECEPTORS ***
                                            (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                            (METERS)

     ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363771.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363821.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363871.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363921.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363971.7, 3783854.3,     220.2,
     220.2,       2.0);
     ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);         ( 364021.7, 3783854.3,     221.2,
     221.2,       2.0);
     ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);         ( 364073.7, 3783852.3,     223.7,
     223.7,       2.0);
     ( 364061.8, 3783840.4,     222.8,     222.8,
     2.0);
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 14:52:26

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                              (1=YES; 0=NO)

          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
          1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

              NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.



                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                             (METERS/SEC)

                                                    1.54,   3.09,   5.14,   8.23,  10.80,
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                                ***
 14:52:26

PAGE   9
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                      *** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

   Surface file:   ..\..\RESE8.SFC                                                                Met Version:  14134
   Profile file:   ..\..\RESE8.PFL
   Surface format:
   FREE
```

```
   Profile format:
   FREE
   Surface station no.:        0                 Upper air station no.:     3190
                 Name: UNKNOWN                                  Name: UNKNOWN
                 Year:   2008                                   Year:   2008

 First 24 hours of scalar data
 YR MO DY JDY HR     H0     U*     W*  DT/DZ ZICNV ZIMCH  M-O LEN    Z0  BOWEN ALBEDO  REF WS   WD     HT  REF TA     HT
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
-
 08 01 01   1 01 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 02 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 03 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 04 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 05 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 06 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 07 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 08 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.56  999.00  999.   -9.0  285.4    5.5
 08 01 01   1 09   22.6 -9.000 -9.000 -9.000   54. -999. -99999.0  0.50   1.00   0.32  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 10   71.8 -9.000 -9.000 -9.000  147. -999. -99999.0  0.50   1.00   0.24  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 11  111.2 -9.000 -9.000 -9.000  357. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 12  128.1 -9.000 -9.000 -9.000  571. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 13  127.4 -9.000 -9.000 -9.000  712. -999. -99999.0  0.50   1.00   0.20  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 14  109.8 -9.000 -9.000 -9.000  763. -999. -99999.0  0.50   1.00   0.21  999.00  999.   -9.0  290.9    5.5
 08 01 01   1 15   52.2 -9.000 -9.000 -9.000  786. -999. -99999.0  0.50   1.00   0.25  999.00  999.   -9.0  290.4    5.5
 08 01 01   1 16   27.2 -9.000 -9.000 -9.000  796. -999. -99999.0  0.50   1.00   0.33  999.00  999.   -9.0  289.2    5.5
 08 01 01   1 17 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   0.59  999.00  999.   -9.0  288.1    5.5
 08 01 01   1 18 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 19 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 20 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 21 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5
 08 01 01   1 22 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 23 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  287.0    5.5
 08 01 01   1 24 -999.0 -9.000 -9.000 -9.000 -999. -999. -99999.0  0.50   1.00   1.00  999.00  999.   -9.0  285.9    5.5


 First hour of profile data
 YR MO DY HR HEIGHT F  WDIR    WSPD AMB_TMP sigmaA  sigmaW  sigmaV
 08 01 01 01    5.5 0 -999.  -99.00   287.1   99.0  -99.00  -99.00
 08 01 01 01    9.1 1 -999.  -99.00  -999.0   99.0  -99.00  -99.00

 F indicates top of profile (=1) or below (=0)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                      ***
 14:52:26

PAGE  10
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SRCGP1   ***
                                    INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **

       X-COORD (M)   Y-COORD (M)        CONC                          X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
         363917.08    3783107.55        0.00140                         363917.08    3783132.55
         0.00147
         363917.08    3783157.55        0.00155                         363917.08    3783182.55
         0.00165
```

363917.08	3783207.55	0.00176	363918.68	3783233.09	0.00188
363918.68	3783258.09	0.00203	363918.68	3783283.09	0.00221
363918.68	3783308.09	0.00243	363919.21	3783332.28	0.00267
363919.21	3783357.28	0.00297	363919.21	3783382.28	0.00333
363919.21	3783407.28	0.00374	363468.40	3783096.50	0.00187
363480.32	3783096.24	0.00198	363505.32	3783096.24	0.00223
363530.32	3783096.24	0.00250	363555.32	3783096.24	0.00278
363580.32	3783096.24	0.00304	363605.32	3783096.24	0.00327
363629.81	3783096.24	0.00345	363654.81	3783096.24	0.00355
363679.81	3783093.68	0.00353	363704.81	3783093.68	0.00346
363729.81	3783093.56	0.00330	363754.81	3783093.56	0.00307
363779.81	3783092.66	0.00278	363804.81	3783092.66	0.00249
363829.81	3783092.66	0.00219	363854.81	3783092.66	0.00191
363879.81	3783092.66	0.00166	363587.82	3783466.38	0.03785
363601.35	3783480.91	0.05453	363601.35	3783505.91	0.08859
363601.35	3783530.91	0.16483	363601.35	3783555.91	0.38192
363601.35	3783580.91	0.82337	363601.35	3783605.91	0.80465
363573.32	3783452.30	0.02716	363561.08	3783441.85	0.02135
363551.24	3783438.12	0.01872	363550.94	3783426.26	0.01651
363551.19	3783411.48	0.01438	363550.94	3783395.93	0.01254
363550.68	3783381.66	0.01117	363550.43	3783363.30	0.00974
363536.92	3783363.05	0.00876	363528.51	3783363.30	0.00823
363528.25	3783357.44	0.00790	363513.72	3783357.44	0.00709
363504.55	3783352.60	0.00645	363507.18	3783337.93	0.00601
363501.43	3783331.08	0.00556	363491.71	3783322.46	0.00497
363485.30	3783316.28	0.00462	363478.89	3783311.41	0.00433
363470.66	3783132.66	0.00210	363470.66	3783157.66	0.00226
363470.66	3783182.66	0.00245	363469.56	3783203.46	0.00261
363469.56	3783228.46	0.00286	363469.56	3783253.46	0.00315
363469.56	3783278.46	0.00350	363469.56	3783303.46	0.00393
363798.94	3783066.77	0.00237	363795.11	3783063.90	0.00239
363795.43	3783052.56	0.00231	363798.62	3783048.73	0.00225

```
        363811.08    3783048.73        0.00214                      363815.39    3783052.56
        0.00212
        363815.23    3783063.74        0.00218                      363811.24    3783067.41
        0.00225
        363298.29    3783861.01        0.00621                      363323.29    3783861.01
        0.00674
        363348.29    3783861.01        0.00730                      363373.29    3783861.01
        0.00791
        363398.29    3783861.01        0.00855                      363422.49    3783859.43
        0.00929
        363447.49    3783859.43        0.01000                      363472.49    3783859.43
        0.01073
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                        ***
 14:52:26

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **

      X-COORD (M)   Y-COORD (M)        CONC                       X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.01148                      363517.73    3783858.63
        0.01206
        363542.73    3783858.63        0.01268                      363567.73    3783858.63
        0.01315
        363593.53    3783857.44        0.01355                      363618.53    3783857.44
        0.01355
        363643.53    3783857.44        0.01324                      363671.70    3783856.65
        0.01263
        363697.10    3783854.67        0.01192                      363722.10    3783854.67
        0.01085
        363746.70    3783854.27        0.00975                      363771.70    3783854.27
        0.00860
        363796.70    3783854.27        0.00751                      363821.70    3783854.27
        0.00654
        363846.70    3783854.27        0.00569                      363871.70    3783854.27
        0.00497
        363896.70    3783854.27        0.00436                      363921.70    3783854.27
        0.00385
        363946.70    3783854.27        0.00342                      363971.70    3783854.27
        0.00305
        363996.70    3783854.27        0.00274                      364021.70    3783854.27
        0.00245
        364046.70    3783854.27        0.00221                      364073.73    3783852.30
        0.00198
        364061.84    3783840.40
        0.00214
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                        ***
 14:52:26

PAGE  12
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL
```

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): WAREHOUSE_A , FLOWEQ_A , MAINTBLD_A , AWPF_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_2.5 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.09242	363917.08	3783132.55	0.12081
363917.08	3783157.55	0.14913	363917.08	3783182.55	0.16519
363917.08	3783207.55	0.16244	363918.68	3783233.09	0.13696
363918.68	3783258.09	0.11361	363918.68	3783283.09	0.09581
363918.68	3783308.09	0.08664	363919.21	3783332.28	0.08571
363919.21	3783357.28	0.09378	363919.21	3783382.28	0.11459
363919.21	3783407.28	0.15604	363468.40	3783096.50	0.09431
363480.32	3783096.24	0.11018	363505.32	3783096.24	0.14384
363530.32	3783096.24	0.15580	363555.32	3783096.24	0.13484
363580.32	3783096.24	0.10084	363605.32	3783096.24	0.07637
363629.81	3783096.24	0.06518	363654.81	3783096.24	0.06344
363679.81	3783093.68	0.06692	363704.81	3783093.68	0.07864
363729.81	3783093.56	0.09992	363754.81	3783093.56	0.13742
363779.81	3783092.66	0.19321	363804.81	3783092.66	0.25388
363829.81	3783092.66	0.27251	363854.81	3783092.66	0.22957
363879.81	3783092.66	0.15658	363587.82	3783466.38	0.08796
363601.35	3783480.91	0.10789	363601.35	3783505.91	0.14072
363601.35	3783530.91	0.21473	363601.35	3783555.91	0.42863
363601.35	3783580.91	0.86613	363601.35	3783605.91	0.84317
363573.32	3783452.30	0.07485	363561.08	3783441.85	0.06769
363551.24	3783438.12	0.06397	363550.94	3783426.26	0.06304
363551.19	3783411.48	0.06306	363550.94	3783395.93	0.06414
363550.68	3783381.66	0.06634	363550.43	3783363.30	0.07137
363536.92	3783363.05	0.07029	363528.51	3783363.30	0.06934
363528.25	3783357.44	0.07196	363513.72	3783357.44	0.07036
363504.55	3783352.60	0.07175	363507.18	3783337.93	0.08253
363501.43	3783331.08	0.08777	363491.71	3783322.46	0.09460

```
        363485.30    3783316.28        0.09991                     363478.89    3783311.41
        0.10328
        363470.66    3783132.66        0.22882                     363470.66    3783157.66
        0.37485
        363470.66    3783182.66        0.46878                     363469.56    3783203.46
        0.44648
        363469.56    3783228.46        0.35025                     363469.56    3783253.46
        0.23535
        363469.56    3783278.46        0.15638                     363469.56    3783303.46
        0.10862
        363798.94    3783066.77        0.12802                     363795.11    3783063.90
        0.11817
        363795.43    3783052.56        0.09716                     363798.62    3783048.73
        0.09316
        363811.08    3783048.73        0.09859                     363815.39    3783052.56
        0.10640
        363815.23    3783063.74        0.13032                     363811.24    3783067.41
        0.13832
        363298.29    3783861.01        0.01373                     363323.29    3783861.01
        0.01452
        363348.29    3783861.01        0.01537                     363373.29    3783861.01
        0.01627
        363398.29    3783861.01        0.01722                     363422.49    3783859.43
        0.01829
        363447.49    3783859.43        0.01931                     363472.49    3783859.43
        0.02036
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                      ***
 14:52:26

PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                          **

      X-COORD (M)   Y-COORD (M)        CONC                      X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363491.94    3783857.05        0.02144                     363517.73    3783858.63
        0.02231
        363542.73    3783858.63        0.02325                     363567.73    3783858.63
        0.02405
        363593.53    3783857.44        0.02484                     363618.53    3783857.44
        0.02516
        363643.53    3783857.44        0.02517                     363671.70    3783856.65
        0.02493
        363697.10    3783854.67        0.02458                     363722.10    3783854.67
        0.02370
        363746.70    3783854.27        0.02273                     363771.70    3783854.27
        0.02158
        363796.70    3783854.27        0.02038                     363821.70    3783854.27
        0.01915
        363846.70    3783854.27        0.01793                     363871.70    3783854.27
        0.01673
        363896.70    3783854.27        0.01556                     363921.70    3783854.27
        0.01442
        363946.70    3783854.27        0.01332                     363971.70    3783854.27
        0.01228
```

```
        363996.70    3783854.27        0.01129                      364021.70    3783854.27
        0.01031
        364046.70    3783854.27        0.00941                      364073.73    3783852.30
        0.00858
        364061.84    3783840.40
        0.00929
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                    ***
 14:52:26

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  SRCGP1   ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                          **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363917.08   3783107.55       0.02640m (10122624)             363917.08   3783132.55       0.02761m
       (10122624)
       363917.08   3783157.55       0.02857m (10122624)             363917.08   3783182.55       0.02924m
       (10122624)
       363917.08   3783207.55       0.02955m (10122624)             363918.68   3783233.09       0.02909m
       (10122624)
       363918.68   3783258.09       0.02881m (10122624)             363918.68   3783283.09       0.02856m
       (10122624)
       363918.68   3783308.09       0.02913  (10102124)             363919.21   3783332.28       0.03190
       (10102124)
       363919.21   3783357.28       0.03526  (10102124)             363919.21   3783382.28       0.03945
       (10102124)
       363919.21   3783407.28       0.04564m (10030724)             363468.40   3783096.50       0.02316
       (11121224)
       363480.32   3783096.24       0.02295m (10111124)             363505.32   3783096.24       0.02459m
       (10111124)
       363530.32   3783096.24       0.02525m (10111124)             363555.32   3783096.24       0.02951
       (11111024)
       363580.32   3783096.24       0.03364  (11111024)             363605.32   3783096.24       0.03555
       (11111024)
       363629.81   3783096.24       0.03482  (11111024)             363654.81   3783096.24       0.03314m
       (11011124)
       363679.81   3783093.68       0.03325m (11011124)             363704.81   3783093.68       0.03192m
       (11011124)
       363729.81   3783093.56       0.02904m (11011124)             363754.81   3783093.56       0.02765
       (10010224)
       363779.81   3783092.66       0.02534  (10010224)             363804.81   3783092.66       0.02650m
       (10122624)
       363829.81   3783092.66       0.02805m (10122624)             363854.81   3783092.66       0.02863m
       (10122624)
       363879.81   3783092.66       0.02815m (10122624)             363587.82   3783466.38       0.33091
       (11121224)
       363601.35   3783480.91       0.41355  (11121224)             363601.35   3783505.91       0.61207
       (11121224)
       363601.35   3783530.91       0.93032  (11121224)             363601.35   3783555.91       1.50360
       (11111224)
       363601.35   3783580.91       3.21337m (08012524)             363601.35   3783605.91       2.66642m
       (08012524)
       363573.32   3783452.30       0.27224  (11121224)             363561.08   3783441.85       0.23754
```

```
        (11121224)
        363551.24   3783438.12        0.22300  (11121224)                363550.94   3783426.26        0.20110
        (11121224)
        363551.19   3783411.48        0.17652  (11121224)                363550.94   3783395.93        0.15351
        (11121224)
        363550.68   3783381.66        0.13495  (11121224)                363550.43   3783363.30        0.11433
        (11121224)
        363536.92   3783363.05        0.11695  (11121224)                363528.51   3783363.30        0.11794
        (11121224)
        363528.25   3783357.44        0.11270  (11121224)                363513.72   3783357.44        0.11297
        (11121224)
        363504.55   3783352.60        0.10873  (11121224)                363507.18   3783337.93        0.09869
        (11121224)
        363501.43   3783331.08        0.09433  (11121224)                363491.71   3783322.46        0.08928
        (11121224)
        363485.30   3783316.28        0.08587  (11121224)                363478.89   3783311.41        0.08326
        (11121224)
        363470.66   3783132.66        0.02845  (11121224)                363470.66   3783157.66        0.03313
        (11121224)
        363470.66   3783182.66        0.03861  (11121224)                363469.56   3783203.46        0.04401
        (11121224)
        363469.56   3783228.46        0.05122  (11121224)                363469.56   3783253.46        0.05952
        (11121224)
        363469.56   3783278.46        0.06889  (11121224)                363469.56   3783303.46        0.07929
        (11121224)
        363798.94   3783066.77        0.02276m (10122624)                363795.11   3783063.90        0.02210m
        (10122624)
        363795.43   3783052.56        0.02137  (10010224)                363798.62   3783048.73        0.02085
        (10010224)
        363811.08   3783048.73        0.02165m (10122624)                363815.39   3783052.56        0.02236m
        (10122624)
        363815.23   3783063.74        0.02361m (10122624)                363811.24   3783067.41        0.02377m
        (10122624)
        363298.29   3783861.01        0.04967  (12121624)                363323.29   3783861.01        0.05304
        (12121624)
        363348.29   3783861.01        0.05584  (12121624)                363373.29   3783861.01        0.05777
        (12121624)
        363398.29   3783861.01        0.05843  (12121624)                363422.49   3783859.43        0.05820
        (12121624)
        363447.49   3783859.43        0.06257  (12042324)                363472.49   3783859.43        0.06692
        (10090724)
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                         ***
 14:52:26

PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  SRCGP1   ***
                                    INCLUDING SOURCE(S):     WAREHOUSE_A ,

                                               *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                          ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363491.94   3783857.05        0.07615  (10090724)                363517.73   3783858.63        0.08452
        (10090724)
        363542.73   3783858.63        0.08829  (10090724)                363567.73   3783858.63        0.09269
        (09101324)
```

```
         363593.53   3783857.44        0.09562  (09101324)              363618.53   3783857.44        0.10102
         (10111924)
         363643.53   3783857.44        0.09943  (10111924)              363671.70   3783856.65        0.09802
         (11022524)
         363697.10   3783854.67        0.10858  (11022524)              363722.10   3783854.67        0.10793
         (11022524)
         363746.70   3783854.27        0.10750  (12121424)              363771.70   3783854.27        0.10094
         (12121424)
         363796.70   3783854.27        0.08928  (12121424)              363821.70   3783854.27        0.07544
         (12121424)
         363846.70   3783854.27        0.06172  (12121424)              363871.70   3783854.27        0.04950
         (12121424)
         363896.70   3783854.27        0.05070m (12121724)              363921.70   3783854.27        0.05130m
         (12121724)
         363946.70   3783854.27        0.05042m (12121724)              363971.70   3783854.27        0.04803m
         (12121724)
         363996.70   3783854.27        0.04440m (12121724)              364021.70   3783854.27        0.04018m
         (12121724)
         364046.70   3783854.27        0.03529m (12121724)              364073.73   3783852.30        0.02950m
         (12121724)
         364061.84   3783840.40        0.03075m
         (12121724)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                               ***
 14:52:26

PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_2.5   IN MICROGRAMS/M**3                          **

       X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)             X-COORD (M)  Y-COORD (M)        CONC
       (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
         363917.08   3783107.55        0.87012  (10102124)              363917.08   3783132.55        1.18967
         (10102124)
         363917.08   3783157.55        1.32798  (10102124)              363917.08   3783182.55        1.19194
         (10102124)
         363917.08   3783207.55        0.90904  (10101824)              363918.68   3783233.09        0.82914m
         (12121724)
         363918.68   3783258.09        0.69781m (12121724)              363918.68   3783283.09        0.53155m
         (12121724)
         363918.68   3783308.09        0.38151m (12121724)              363919.21   3783332.28        0.46860m
         (10122624)
         363919.21   3783357.28        0.61331m (10122624)              363919.21   3783382.28        0.81355m
         (10122624)
         363919.21   3783407.28        1.12799  (10102124)              363468.40   3783096.50        0.64680
         (11121224)
         363480.32   3783096.24        0.70635  (11121224)              363505.32   3783096.24        0.79775
         (11111224)
         363530.32   3783096.24        0.79406  (09021724)              363555.32   3783096.24        0.74877m
         (10122624)
         363580.32   3783096.24        0.63667m (10122624)              363605.32   3783096.24        0.43608m
         (10122624)
         363629.81   3783096.24        0.30117  (10102124)              363654.81   3783096.24        0.28480
         (11121224)
         363679.81   3783093.68        0.36229  (11121224)              363704.81   3783093.68        0.48122
```

```
       (11121224)
       363729.81   3783093.56       0.65442  (11121224)              363754.81   3783093.56        0.88750
       (11121224)
       363779.81   3783092.66       1.12536  (11121224)              363804.81   3783092.66        1.36703
       (09021724)
       363829.81   3783092.66       1.41943  (09021724)              363854.81   3783092.66        1.44223m
       (10122624)
       363879.81   3783092.66       1.23994m (10122624)              363587.82   3783466.38        0.34814
       (11121224)
       363601.35   3783480.91       0.42850  (11121224)              363601.35   3783505.91        0.61999
       (11121224)
       363601.35   3783530.91       0.93430  (11121224)              363601.35   3783555.91        1.54527
       (09101424)
       363601.35   3783580.91       3.36860m (08012524)              363601.35   3783605.91        2.79524m
       (08012524)
       363573.32   3783452.30       0.29119  (11121224)              363561.08   3783441.85        0.25709
       (11121224)
       363551.24   3783438.12       0.24133  (11121224)              363550.94   3783426.26        0.22353
       (11121224)
       363551.19   3783411.48       0.20517  (11121224)              363550.94   3783395.93        0.18926
       (11121224)
       363550.68   3783381.66       0.19577  (08121524)              363550.43   3783363.30        0.22663
       (11022524)
       363536.92   3783363.05       0.21739  (09042424)              363528.51   3783363.30        0.22326
       (09042424)
       363528.25   3783357.44       0.23860  (09042424)              363513.72   3783357.44        0.24189
       (09042424)
       363504.55   3783352.60       0.25162  (09042424)              363507.18   3783337.93        0.30164
       (09042424)
       363501.43   3783331.08       0.32140  (09042424)              363491.71   3783322.46        0.34062
       (10090724)
       363485.30   3783316.28       0.36970  (10090724)              363478.89   3783311.41        0.38564
       (10090724)
       363470.66   3783132.66       1.01644  (11121224)              363470.66   3783157.66        1.38288
       (11121924)
       363470.66   3783182.66       1.75124m (08012524)              363469.56   3783203.46        1.62472m
       (08012524)
       363469.56   3783228.46       1.18957m (08012524)              363469.56   3783253.46        0.77159
       (08010424)
       363469.56   3783278.46       0.53717  (08010424)              363469.56   3783303.46        0.39892
       (10090724)
       363798.94   3783066.77       0.76280  (09021724)              363795.11   3783063.90        0.70674m
       (08010224)
       363795.43   3783052.56       0.60093  (11010324)              363798.62   3783048.73        0.59598
       (11111024)
       363811.08   3783048.73       0.65246  (11111024)              363815.39   3783052.56        0.69460
       (11111024)
       363815.23   3783063.74       0.80584  (11111024)              363811.24   3783067.41        0.83150
       (11111024)
       363298.29   3783861.01       0.11153  (12121624)              363323.29   3783861.01        0.11552
       (12121624)
       363348.29   3783861.01       0.11876  (12121624)              363373.29   3783861.01        0.12088
       (12121624)
       363398.29   3783861.01       0.12148  (12121624)              363422.49   3783859.43        0.12104
       (12121624)
       363447.49   3783859.43       0.11751  (12121624)              363472.49   3783859.43        0.11460
       (12042324)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                       ***
 14:52:26

PAGE  17
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL
```

```
                         *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                             INCLUDING SOURCE(S):     WAREHOUSE_A , FLOWEQ_A    , MAINTBLD_A  , AWPF_A      ,

                                          *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                     ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **

     X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
     (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
       363491.94   3783857.05        0.12396  (10090724)             363517.73   3783858.63        0.13755
       (10090724)
       363542.73   3783858.63        0.14693  (10090724)             363567.73   3783858.63        0.15032
       (10090724)
       363593.53   3783857.44        0.14906  (09101324)             363618.53   3783857.44        0.15056
       (08030124)
       363643.53   3783857.44        0.15120  (09042424)             363671.70   3783856.65        0.15085
       (09042424)
       363697.10   3783854.67        0.15293  (08121524)             363722.10   3783854.67        0.16013
       (08121524)
       363746.70   3783854.27        0.16224  (08121524)             363771.70   3783854.27        0.15863
       (08121524)
       363796.70   3783854.27        0.15072  (08121524)             363821.70   3783854.27        0.14164
       (12121424)
       363846.70   3783854.27        0.14377  (12121424)             363871.70   3783854.27        0.14814
       (12121424)
       363896.70   3783854.27        0.15307  (12121424)             363921.70   3783854.27        0.15659
       (12121424)
       363946.70   3783854.27        0.15704  (12121424)             363971.70   3783854.27        0.15366
       (12121424)
       363996.70   3783854.27        0.14668  (12121424)             364021.70   3783854.27        0.13699
       (12121424)
       364046.70   3783854.27        0.13108  (12121424)             364073.73   3783852.30        0.11961
       (12121424)
       364061.84   3783840.40        0.12685
       (12121424)
FF *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                             ***
 14:52:26

PAGE  18
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                          *** THE SUMMARY OF MAXIMUM PERIOD ( 43848 HRS) RESULTS ***


                                      ** CONC OF PM_2.5   IN MICROGRAMS/M**3                         **

                                                                                                             NETWORK
GROUP ID                       AVERAGE CONC                RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -

SRCGP1    1ST HIGHEST VALUE IS       0.82337 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
          2ND HIGHEST VALUE IS       0.80465 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
          3RD HIGHEST VALUE IS       0.38192 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
          4TH HIGHEST VALUE IS       0.16483 AT (  363601.35,  3783530.91,   219.52,   219.52,    2.00)  DC
          5TH HIGHEST VALUE IS       0.08859 AT (  363601.35,  3783505.91,   218.94,   218.94,    2.00)  DC
          6TH HIGHEST VALUE IS       0.05453 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC
          7TH HIGHEST VALUE IS       0.03785 AT (  363587.82,  3783466.38,   218.13,   218.13,    2.00)  DC
          8TH HIGHEST VALUE IS       0.02716 AT (  363573.32,  3783452.30,   217.83,   217.83,    2.00)  DC
          9TH HIGHEST VALUE IS       0.02135 AT (  363561.08,  3783441.85,   217.73,   217.73,    2.00)  DC
```

```
        10TH HIGHEST VALUE IS       0.01872 AT (  363551.24,  3783438.12,   217.69,   217.69,    2.00)  DC

ALL      1ST HIGHEST VALUE IS       0.86613 AT (  363601.35,  3783580.91,   220.27,   220.27,    2.00)  DC
         2ND HIGHEST VALUE IS       0.84317 AT (  363601.35,  3783605.91,   220.26,   220.26,    2.00)  DC
         3RD HIGHEST VALUE IS       0.46878 AT (  363470.66,  3783182.66,   215.94,   215.94,    2.00)  DC
         4TH HIGHEST VALUE IS       0.44648 AT (  363469.56,  3783203.46,   216.05,   216.05,    2.00)  DC
         5TH HIGHEST VALUE IS       0.42863 AT (  363601.35,  3783555.91,   219.93,   219.93,    2.00)  DC
         6TH HIGHEST VALUE IS       0.37485 AT (  363470.66,  3783157.66,   215.81,   215.81,    2.00)  DC
         7TH HIGHEST VALUE IS       0.35025 AT (  363469.56,  3783228.46,   216.19,   216.19,    2.00)  DC
         8TH HIGHEST VALUE IS       0.27251 AT (  363829.81,  3783092.66,   215.18,   215.18,    2.00)  DC
         9TH HIGHEST VALUE IS       0.25388 AT (  363804.81,  3783092.66,   215.18,   215.18,    2.00)  DC
        10TH HIGHEST VALUE IS       0.23535 AT (  363469.56,  3783253.46,   216.35,   216.35,    2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                       ***
 14:52:26

PAGE  19
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                                 *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                     ** CONC OF PM_2.5   IN MICROGRAMS/M**3                          **


                                                         DATE
                                                              NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

SRCGP1   HIGH   1ST HIGH VALUE IS       3.21337m ON 08012524: AT (  363601.35,  3783580.91,   220.27,   220.27,
2.00)  DC

ALL      HIGH   1ST HIGH VALUE IS       3.36860m ON 08012524: AT (  363601.35,  3783580.91,   220.27,   220.27,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
 *** AERMOD - VERSION  14134 ***   *** LA GROUND WATER REPLENISHMENT PROJECT
***        08/10/15
 *** AERMET - VERSION  14134 ***   *** PM2.5                                                       ***
 14:52:26

PAGE  20
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
```

```
A Total of         1173 Informational Message(s)

A Total of        43848 Hours Were Processed

A Total of            2 Calm Hours Identified

A Total of         1171 Missing Hours Identified (  2.67 Percent)


   ******** FATAL ERROR MESSAGES ********
              ***  NONE  ***


   ********   WARNING MESSAGES   ********
              ***  NONE  ***


   ************************************
   *** AERMOD Finishes Successfully ***
   ************************************
```

```
*************************************
** AERMOD Control Pathway
****************************************
**
**
CO STARTING
   TITLEONE LA Ground Water Replenishment Project
   TITLETWO PM10
   MODELOPT DFAULT CONC
   AVERTIME 24 PERIOD
   URBANOPT 9862049
   POLLUTID PM_10
   FLAGPOLE 2.00
   RUNORNOT RUN
   ERRORFIL GWRP-PM10.err
CO FINISHED
**
****************************************
** AERMOD Source Pathway
****************************************
**
**
SO STARTING
** Source Location **
** Source ID - Type - X Coord. - Y Coord. **
   LOCATION FLOWEQ_A     AREAPOLY   363806.468  3783509.252      218.180
** Source Parameters **
   SRCPARAM FLOWEQ_A     0.0000128997     1.000         4
   AREAVERT FLOWEQ_A     363806.468 3783509.252 363807.165 3783434.338
   AREAVERT FLOWEQ_A     363889.396 3783433.293 363890.789 3783507.858
   URBANSRC ALL

** Variable Emissions Type: "By Hour-of-Day (HROFDY)"
** Variable Emission Scenario: "WORKHOURS"
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 1.0 1.0 1.0 1.0
   EMISFACT FLOWEQ_A     HROFDY 1.0 1.0 1.0 1.0 0.0 0.0
   EMISFACT FLOWEQ_A     HROFDY 0.0 0.0 0.0 0.0 0.0 0.0
   SRCGROUP ALL
SO FINISHED
**
****************************************
** AERMOD Receptor Pathway
****************************************
**
**
RE STARTING
   INCLUDED GWRP-PM10.rou
RE FINISHED
**
****************************************
** AERMOD Meteorology Pathway
****************************************
**
**
ME STARTING
   SURFFILE ..\..\rese8.sfc
   PROFFILE ..\..\rese8.PFL
   SURFDATA 0 2008
   UAIRDATA 3190 2008
   PROFBASE 10.0 METERS
ME FINISHED
**
****************************************
```

```
** AERMOD Output Pathway
****************************************
**
**
OU STARTING
   RECTABLE ALLAVE 1ST
   RECTABLE 24 1ST
** Auto-Generated Plotfiles
   PLOTFILE 24 ALL 1ST GWRP-PM10.AD\24H1GALL.PLT 31
   PLOTFILE PERIOD ALL GWRP-PM10.AD\PE00GALL.PLT 32
   SUMMFILE GWRP-PM10.sum
OU FINISHED

 ***********************************
 *** SETUP Finishes Successfully ***
 ***********************************

 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                   ***
 14:11:16

PAGE   1
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                            ***     MODEL SETUP OPTIONS SUMMARY       ***
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 **Model Is Setup For Calculation of Average CONCentration Values.

   --  DEPOSITION LOGIC  --
 **NO GAS DEPOSITION Data Provided.
 **NO PARTICLE DEPOSITION Data Provided.
 **Model Uses NO DRY DEPLETION.  DRYDPLT  =  F
 **Model Uses NO WET DEPLETION.  WETDPLT  =  F

 **Model Uses URBAN Dispersion Algorithm for the SBL for     1 Source(s),
   for Total of    1 Urban Area(s):
   Urban Population =   9862049.0 ;  Urban Roughness Length =  1.000 m

 **Model Uses Regulatory DEFAULT Options:
         1. Stack-tip Downwash.
         2. Model Accounts for ELEVated Terrain Effects.
         3. Use Calms Processing Routine.
         4. Use Missing Data Processing Routine.
         5. No Exponential Decay for URBAN/Non-SO2.
         6. Urban Roughness Length of 1.0 Meter Assumed.

 **Other Options Specified:
         TEMP_Sub - Meteorological data includes TEMP substitutions

 **Model Accepts FLAGPOLE Receptor Heights.

 **The User Specified a Pollutant Type of:  PM_10

 **Model Calculates  1 Short Term Average(s) of:  24-HR
     and Calculates PERIOD Averages

 **This Run Includes:      1 Source(s);       1 Source Group(s); and     108 Receptor(s)

 **Model Set To Continue RUNning After the Setup Testing.

 **The AERMET Input Meteorological Data Version Date:  14134
```

```
 **Output Options Selected:
          Model Outputs Tables of PERIOD Averages by Receptor
          Model Outputs Tables of Highest Short Term Values by Receptor (RECTABLE Keyword)
          Model Outputs External File(s) of High Values for Plotting (PLOTFILE Keyword)
          Model Outputs Separate Summary File of High Ranked Values (SUMMFILE Keyword)

 **NOTE:  The Following Flags May Appear Following CONC Values:  c for Calm Hours
                                                                 m for Missing Hours
                                                                 b for Both Calm and Missing Hours

 **Misc. Inputs:  Base Elev. for Pot. Temp. Profile (m MSL) =    10.00 ;  Decay Coef. =    0.000     ;  Rot. Angle
 =     0.0
                  Emission Units = GRAMS/SEC                                ;  Emission Rate Unit Factor =   0.10000E+07
                  Output Units   = MICROGRAMS/M**3

 **Approximate Storage Requirements of Model =      3.5 MB of RAM.

 **Detailed Error/Message File:
 GWRP-PM10.err
 **File for Summary of Results:
 GWRP-PM10.sum
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                ***
 14:11:16

PAGE   2
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                                  *** AREAPOLY SOURCE DATA ***

               NUMBER EMISSION RATE   LOCATION OF AREA  BASE     RELEASE  NUMBER      INIT.   URBAN  EMISSION RATE
   SOURCE       PART.  (GRAMS/SEC       X         Y      ELEV.    HEIGHT  OF VERTS.     SZ     SOURCE  SCALAR VARY
     ID         CATS.   /METER**2)   (METERS) (METERS) (METERS) (METERS)            (METERS)              BY
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - -

 FLOWEQ_A         0   0.12900E-04  363806.5 3783509.3   218.2     1.00       4         0.00     YES   HROFDY
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                ***
 14:11:16

PAGE   3
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL


                                             *** SOURCE IDs DEFINING SOURCE GROUPS ***

 SRCGROUP ID                                              SOURCE IDs
 -----------                                              ----------


  ALL        FLOWEQ_A    ,
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                ***
 14:11:16

PAGE   4
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL
```

```
                                   *** SOURCE IDs DEFINED AS URBAN SOURCES ***

  URBAN ID   URBAN POP                                    SOURCE IDs
  --------   ---------                                    ----------



             9862049.   FLOWEQ_A    ,
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                   ***
 14:11:16

PAGE   5
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              * SOURCE EMISSION RATE SCALARS WHICH VARY FOR EACH HOUR OF THE DAY *

     HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR      HOUR    SCALAR
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -



 SOURCE ID = FLOWEQ_A     ; SOURCE TYPE = AREAPOLY :
       1   .00000E+00      2   .00000E+00      3   .00000E+00      4   .00000E+00      5   .00000E+00      6   .00000E+00
       7   .00000E+00      8   .00000E+00      9   .10000E+01     10   .10000E+01     11   .10000E+01     12   .10000E+01
      13   .10000E+01     14   .10000E+01     15   .10000E+01     16   .10000E+01     17   .00000E+00     18   .00000E+00
      19   .00000E+00     20   .00000E+00     21   .00000E+00     22   .00000E+00     23   .00000E+00     24   .00000E+00

FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                   ***
 14:11:16

PAGE   6
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                            *** DISCRETE CARTESIAN RECEPTORS ***
                                         (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                         (METERS)

     ( 363917.1, 3783107.5,     214.9,     214.9,       2.0);         ( 363917.1, 3783132.5,     214.8,
     214.8,       2.0);
     ( 363917.1, 3783157.5,     214.5,     214.5,       2.0);         ( 363917.1, 3783182.5,     214.2,
     214.2,       2.0);
     ( 363917.1, 3783207.5,     214.1,     214.1,       2.0);         ( 363918.7, 3783233.1,     214.3,
     214.3,       2.0);
     ( 363918.7, 3783258.1,     214.8,     214.8,       2.0);         ( 363918.7, 3783283.1,     215.5,
     215.5,       2.0);
     ( 363918.7, 3783308.1,     216.2,     216.2,       2.0);         ( 363919.2, 3783332.3,     216.7,
     216.7,       2.0);
     ( 363919.2, 3783357.3,     217.1,     217.1,       2.0);         ( 363919.2, 3783382.3,     217.3,
     217.3,       2.0);
     ( 363919.2, 3783407.3,     217.6,     217.6,       2.0);         ( 363468.4, 3783096.5,     215.5,
     215.5,       2.0);
     ( 363480.3, 3783096.2,     215.5,     215.5,       2.0);         ( 363505.3, 3783096.2,     215.5,
     215.5,       2.0);
     ( 363530.3, 3783096.2,     215.4,     215.4,       2.0);         ( 363555.3, 3783096.2,     215.4,
     215.4,       2.0);
     ( 363580.3, 3783096.2,     215.3,     215.3,       2.0);         ( 363605.3, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363629.8, 3783096.2,     215.4,     215.4,       2.0);         ( 363654.8, 3783096.2,     215.3,
     215.3,       2.0);
     ( 363679.8, 3783093.7,     215.2,     215.2,       2.0);         ( 363704.8, 3783093.7,     215.2,
```

```
    215.2,       2.0);
    ( 363729.8, 3783093.6,     215.2,     215.2,       2.0);        ( 363754.8, 3783093.6,     215.3,
    215.3,       2.0);
    ( 363779.8, 3783092.7,     215.2,     215.2,       2.0);        ( 363804.8, 3783092.7,     215.2,
    215.2,       2.0);
    ( 363829.8, 3783092.7,     215.2,     215.2,       2.0);        ( 363854.8, 3783092.7,     215.2,
    215.2,       2.0);
    ( 363879.8, 3783092.7,     215.1,     215.1,       2.0);        ( 363587.8, 3783466.4,     218.1,
    218.1,       2.0);
    ( 363601.3, 3783480.9,     218.4,     218.4,       2.0);        ( 363599.5, 3783505.7,     218.9,
    218.9,       2.0);
    ( 363573.3, 3783452.3,     217.8,     217.8,       2.0);        ( 363561.1, 3783441.8,     217.7,
    217.7,       2.0);
    ( 363551.2, 3783438.1,     217.7,     217.7,       2.0);        ( 363550.9, 3783426.3,     217.6,
    217.6,       2.0);
    ( 363551.2, 3783411.5,     217.3,     217.3,       2.0);        ( 363550.9, 3783395.9,     217.2,
    217.2,       2.0);
    ( 363550.7, 3783381.7,     217.1,     217.1,       2.0);        ( 363550.4, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363536.9, 3783363.0,     217.0,     217.0,       2.0);        ( 363528.5, 3783363.3,     217.0,
    217.0,       2.0);
    ( 363528.2, 3783357.4,     217.0,     217.0,       2.0);        ( 363513.7, 3783357.4,     217.0,
    217.0,       2.0);
    ( 363504.5, 3783352.6,     216.9,     216.9,       2.0);        ( 363507.2, 3783337.9,     216.8,
    216.8,       2.0);
    ( 363501.4, 3783331.1,     216.8,     216.8,       2.0);        ( 363491.7, 3783322.5,     216.7,
    216.7,       2.0);
    ( 363485.3, 3783316.3,     216.7,     216.7,       2.0);        ( 363478.9, 3783311.4,     216.7,
    216.7,       2.0);
    ( 363470.7, 3783132.7,     215.7,     215.7,       2.0);        ( 363470.7, 3783157.7,     215.8,
    215.8,       2.0);
    ( 363470.7, 3783182.7,     215.9,     215.9,       2.0);        ( 363469.6, 3783203.5,     216.1,
    216.1,       2.0);
    ( 363469.6, 3783228.5,     216.2,     216.2,       2.0);        ( 363469.6, 3783253.5,     216.4,
    216.4,       2.0);
    ( 363469.6, 3783278.5,     216.5,     216.5,       2.0);        ( 363469.6, 3783303.5,     216.7,
    216.7,       2.0);
    ( 363798.9, 3783066.8,     215.2,     215.2,       2.0);        ( 363795.1, 3783063.9,     215.2,
    215.2,       2.0);
    ( 363795.4, 3783052.6,     215.2,     215.2,       2.0);        ( 363798.6, 3783048.7,     215.2,
    215.2,       2.0);
    ( 363811.1, 3783048.7,     215.2,     215.2,       2.0);        ( 363815.4, 3783052.6,     215.2,
    215.2,       2.0);
    ( 363815.2, 3783063.7,     215.2,     215.2,       2.0);        ( 363811.2, 3783067.4,     215.2,
    215.2,       2.0);
    ( 363298.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363323.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363348.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363373.3, 3783861.0,     220.2,
    220.2,       2.0);
    ( 363398.3, 3783861.0,     220.2,     220.2,       2.0);        ( 363422.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363447.5, 3783859.4,     220.2,     220.2,       2.0);        ( 363472.5, 3783859.4,     220.2,
    220.2,       2.0);
    ( 363491.9, 3783857.0,     220.2,     220.2,       2.0);        ( 363517.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363542.7, 3783858.6,     220.2,     220.2,       2.0);        ( 363567.7, 3783858.6,     220.2,
    220.2,       2.0);
    ( 363593.5, 3783857.4,     220.2,     220.2,       2.0);        ( 363618.5, 3783857.4,     220.2,
    220.2,       2.0);
    ( 363643.5, 3783857.4,     220.2,     220.2,       2.0);        ( 363671.7, 3783856.6,     220.2,
    220.2,       2.0);
    ( 363697.1, 3783854.7,     220.2,     220.2,       2.0);        ( 363722.1, 3783854.7,     220.2,
    220.2,       2.0);
    ( 363746.7, 3783854.3,     220.2,     220.2,       2.0);        ( 363771.7, 3783854.3,     220.2,
```

```
    220.2,       2.0);
    ( 363796.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363821.7, 3783854.3,     220.2,
    220.2,       2.0);
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                            ***
 14:11:16

PAGE   7
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                               *** DISCRETE CARTESIAN RECEPTORS ***
                                              (X-COORD, Y-COORD, ZELEV, ZHILL, ZFLAG)
                                                              (METERS)

    ( 363846.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363871.7, 3783854.3,     220.2,
    220.2,       2.0);
    ( 363896.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363921.7, 3783854.3,     220.2,
    220.2,       2.0);
    ( 363946.7, 3783854.3,     220.2,     220.2,       2.0);         ( 363971.7, 3783854.3,     220.2,
    220.2,       2.0);
    ( 363996.7, 3783854.3,     220.2,     220.2,       2.0);         ( 364021.7, 3783854.3,     221.2,
    221.2,       2.0);
    ( 364046.7, 3783854.3,     222.3,     222.3,       2.0);         ( 364073.7, 3783852.3,     223.7,
    223.7,       2.0);
    ( 364061.8, 3783840.4,     222.8,     222.8,       2.0);         ( 363599.5, 3783520.9,     219.3,
    219.3,       2.0);
    ( 363599.5, 3783539.4,     219.6,     219.6,       2.0);         ( 363599.1, 3783552.3,     219.9,
    219.9,       2.0);
    ( 363599.3, 3783565.5,     220.1,     220.1,       2.0);         ( 363599.5, 3783584.2,     220.3,
    220.3,       2.0);
    ( 363599.7, 3783598.2,     220.3,     220.3,       2.0);         ( 363589.8, 3783607.5,     220.2,
    220.2,       2.0);
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                            ***
 14:11:16

PAGE   8
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                              *** METEOROLOGICAL DAYS SELECTED FOR PROCESSING ***
                                                                 (1=YES; 0=NO)

            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1 1 1 1 1
            1 1 1 1 1 1 1 1 1 1  1 1 1 1 1 1

                NOTE:  METEOROLOGICAL DATA ACTUALLY PROCESSED WILL ALSO DEPEND ON WHAT IS INCLUDED IN THE DATA FILE.


                                    *** UPPER BOUND OF FIRST THROUGH FIFTH WIND SPEED CATEGORIES ***
                                                                (METERS/SEC)

                                                 1.54,   3.09,   5.14,   8.23,  10.80,
 *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                            ***
```

14:11:16

PAGE 9

**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** UP TO THE FIRST 24 HOURS OF METEOROLOGICAL DATA ***

Surface file: ..\..\rese8.sfc Met Version: 14134
Profile file: ..\..\rese8.PFL
Surface format:
FREE
Profile format:
FREE
Surface station no.: 0 Upper air station no.: 3190
Name: UNKNOWN Name: UNKNOWN
Year: 2008 Year: 2008

First 24 hours of scalar data

YR	MO	DY	JDY	HR	H0	U*	W*	DT/DZ	ZICNV	ZIMCH	M-O LEN	Z0	BOWEN	ALBEDO	REF WS	WD	HT	REF TA	HT
08	01	01	1	01	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	02	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	03	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	04	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	05	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	06	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	07	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.4	5.5
08	01	01	1	08	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	0.56	999.00	999.	-9.0	285.4	5.5
08	01	01	1	09	22.6	-9.000	-9.000	-9.000	54.	-999.	-99999.0	0.50	1.00	0.32	999.00	999.	-9.0	285.9	5.5
08	01	01	1	10	71.8	-9.000	-9.000	-9.000	147.	-999.	-99999.0	0.50	1.00	0.24	999.00	999.	-9.0	288.1	5.5
08	01	01	1	11	111.2	-9.000	-9.000	-9.000	357.	-999.	-99999.0	0.50	1.00	0.21	999.00	999.	-9.0	289.2	5.5
08	01	01	1	12	128.1	-9.000	-9.000	-9.000	571.	-999.	-99999.0	0.50	1.00	0.20	999.00	999.	-9.0	290.4	5.5
08	01	01	1	13	127.4	-9.000	-9.000	-9.000	712.	-999.	-99999.0	0.50	1.00	0.20	999.00	999.	-9.0	290.4	5.5
08	01	01	1	14	109.8	-9.000	-9.000	-9.000	763.	-999.	-99999.0	0.50	1.00	0.21	999.00	999.	-9.0	290.9	5.5
08	01	01	1	15	52.2	-9.000	-9.000	-9.000	786.	-999.	-99999.0	0.50	1.00	0.25	999.00	999.	-9.0	290.4	5.5
08	01	01	1	16	27.2	-9.000	-9.000	-9.000	796.	-999.	-99999.0	0.50	1.00	0.33	999.00	999.	-9.0	289.2	5.5
08	01	01	1	17	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	0.59	999.00	999.	-9.0	288.1	5.5
08	01	01	1	18	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	19	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	20	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	21	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5
08	01	01	1	22	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	23	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	287.0	5.5
08	01	01	1	24	-999.0	-9.000	-9.000	-9.000	-999.	-999.	-99999.0	0.50	1.00	1.00	999.00	999.	-9.0	285.9	5.5

First hour of profile data

YR	MO	DY	HR	HEIGHT	F	WDIR	WSPD	AMB_TMP	sigmaA	sigmaW	sigmaV
08	01	01	01	5.5	0	-999.	-99.00	287.1	99.0	-99.00	-99.00
08	01	01	01	9.1	1	-999.	-99.00	-999.0	99.0	-99.00	-99.00

F indicates top of profile (=1) or below (=0)

*** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project
*** 08/12/15
*** AERMET - VERSION 14134 *** *** PM10 ***
14:11:16

PAGE 10

**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE PERIOD (43848 HRS) AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FLOWEQ_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	X-COORD (M)	Y-COORD (M)	CONC
363917.08	3783107.55	0.04220	363917.08	3783132.55	0.04795
363917.08	3783157.55	0.05498	363917.08	3783182.55	0.06368
363917.08	3783207.55	0.07463	363918.68	3783233.09	0.08810
363918.68	3783258.09	0.10636	363918.68	3783283.09	0.13114
363918.68	3783308.09	0.16611	363919.21	3783332.28	0.21492
363919.21	3783357.28	0.29169	363919.21	3783382.28	0.41945
363919.21	3783407.28	0.64022	363468.40	3783096.50	0.00964
363480.32	3783096.24	0.00992	363505.32	3783096.24	0.01060
363530.32	3783096.24	0.01142	363555.32	3783096.24	0.01242
363580.32	3783096.24	0.01366	363605.32	3783096.24	0.01520
363629.81	3783096.24	0.01710	363654.81	3783096.24	0.01952
363679.81	3783093.68	0.02227	363704.81	3783093.68	0.02574
363729.81	3783093.56	0.02964	363754.81	3783093.56	0.03378
363779.81	3783092.66	0.03760	363804.81	3783092.66	0.04096
363829.81	3783092.66	0.04323	363854.81	3783092.66	0.04403
363879.81	3783092.66	0.04321	363587.82	3783466.38	0.13932
363601.35	3783480.91	0.16472	363599.46	3783505.72	0.16938
363573.32	3783452.30	0.11686	363561.08	3783441.85	0.10134
363551.24	3783438.12	0.09263	363550.94	3783426.26	0.08711
363551.19	3783411.48	0.08046	363550.94	3783395.93	0.07308
363550.68	3783381.66	0.06642	363550.43	3783363.30	0.05837
363536.92	3783363.05	0.05411	363528.51	3783363.30	0.05183
363528.25	3783357.44	0.04975	363513.72	3783357.44	0.04621
363504.55	3783352.60	0.04285	363507.18	3783337.93	0.03954
363501.43	3783331.08	0.03686	363491.71	3783322.46	0.03347
363485.30	3783316.28	0.03139	363478.89	3783311.41	0.02969
363470.66	3783132.66	0.01114	363470.66	3783157.66	0.01240
363470.66	3783182.66	0.01394	363469.56	3783203.46	0.01542
363469.56	3783228.46	0.01761	363469.56	3783253.46	

```
        0.02028
        363469.56    3783278.46        0.02349                        363469.56    3783303.46
        0.02730
        363798.94    3783066.77        0.03543                        363795.11    3783063.90
        0.03456
        363795.43    3783052.56        0.03282                        363798.62    3783048.73
        0.03254
        363811.08    3783048.73        0.03358                        363815.39    3783052.56
        0.03450
        363815.23    3783063.74        0.03638                        363811.24    3783067.41
        0.03671
        363298.29    3783861.01        0.01929                        363323.29    3783861.01
        0.02029
        363348.29    3783861.01        0.02135                        363373.29    3783861.01
        0.02248
        363398.29    3783861.01        0.02368                        363422.49    3783859.43
        0.02501
        363447.49    3783859.43        0.02634                        363472.49    3783859.43
        0.02772
        363491.94    3783857.05        0.02910                        363517.73    3783858.63
        0.03045
        363542.73    3783858.63        0.03198                        363567.73    3783858.63
        0.03355
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                        ***
 14:11:16

PAGE  11
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE PERIOD ( 43848 HRS) AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP: ALL      ***
                                  INCLUDING SOURCE(S):     FLOWEQ_A    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

       X-COORD (M)   Y-COORD (M)        CONC                        X-COORD (M)   Y-COORD (M)        CONC
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - -
        363593.53    3783857.44        0.03539                        363618.53    3783857.44
        0.03701
        363643.53    3783857.44        0.03861                        363671.70    3783856.65
        0.04051
        363697.10    3783854.67        0.04239                        363722.10    3783854.67
        0.04358
        363746.70    3783854.27        0.04451                        363771.70    3783854.27
        0.04491
        363796.70    3783854.27        0.04477                        363821.70    3783854.27
        0.04405
        363846.70    3783854.27        0.04277                        363871.70    3783854.27
        0.04099
        363896.70    3783854.27        0.03881                        363921.70    3783854.27
        0.03634
        363946.70    3783854.27        0.03370                        363971.70    3783854.27
        0.03099
        363996.70    3783854.27        0.02829                        364021.70    3783854.27
        0.02554
        364046.70    3783854.27        0.02299                        364073.73    3783852.30
        0.02064
        364061.84    3783840.40        0.02274                        363599.49    3783520.86
        0.17047
        363599.49    3783539.39        0.16831                        363599.11    3783552.26
```

0.16418
363599.30 3783565.50 0.15925 363599.49 3783584.22
0.15020
363599.68 3783598.22 0.14250 363589.84 3783607.49
0.12848

FF *** AERMOD - VERSION 14134 *** *** LA Ground Water Replenishment Project
*** 08/12/15
*** AERMET - VERSION 14134 *** *** PM10 ***
14:11:16

PAGE 12
**MODELOPTs: RegDFAULT CONC ELEV FLGPOL

*** THE 1ST HIGHEST 24-HR AVERAGE CONCENTRATION VALUES FOR SOURCE GROUP: ALL ***
INCLUDING SOURCE(S): FLOWEQ_A ,

*** DISCRETE CARTESIAN RECEPTOR POINTS ***

** CONC OF PM_10 IN MICROGRAMS/M**3 **

X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)	X-COORD (M)	Y-COORD (M)	CONC	(YYMMDDHH)
363917.08	3783107.55	0.34512	(10010224)	363917.08	3783132.55	0.38455	(10010224)
363917.08	3783157.55	0.44794m	(10122624)	363917.08	3783182.55	0.54476m	(10122624)
363917.08	3783207.55	0.66783m	(10122624)	363918.68	3783233.09	0.83260m	(10122624)
363918.68	3783258.09	1.03655m	(10122624)	363918.68	3783283.09	1.30426m	(10122624)
363918.68	3783308.09	1.66386m	(10122624)	363919.21	3783332.28	2.13708m	(10122624)
363919.21	3783357.28	2.83106m	(10122624)	363919.21	3783382.28	3.78949m	(10122624)
363919.21	3783407.28	5.26583	(10102124)	363468.40	3783096.50	0.27897	(11121224)
363480.32	3783096.24	0.29100	(11121224)	363505.32	3783096.24	0.31518	(11121224)
363530.32	3783096.24	0.33655	(11121224)	363555.32	3783096.24	0.35347	(11121224)
363580.32	3783096.24	0.36411	(11121224)	363605.32	3783096.24	0.36668	(11121224)
363629.81	3783096.24	0.36026	(11121224)	363654.81	3783096.24	0.34400	(11121224)
363679.81	3783093.68	0.31280	(11121224)	363704.81	3783093.68	0.27896	(11121224)
363729.81	3783093.56	0.28474m	(10111124)	363754.81	3783093.56	0.32200	(11111024)
363779.81	3783092.66	0.38143	(11111024)	363804.81	3783092.66	0.41078	(11111024)
363829.81	3783092.66	0.40041	(11111024)	363854.81	3783092.66	0.39426m	(11011124)
363879.81	3783092.66	0.38382m	(11011124)	363587.82	3783466.38	0.91227	(11121924)
363601.35	3783480.91	1.09868	(11121924)	363599.46	3783505.72	1.17680	(11121924)
363573.32	3783452.30	0.74373	(11121924)	363561.08	3783441.85	0.62987	(11121924)
363551.24	3783438.12	0.57402	(11121924)	363550.94	3783426.26	0.51438	(11121924)
363551.19	3783411.48	0.44556	(11121924)	363550.94	3783395.93	0.40450	(08051024)

```
        363550.68   3783381.66        0.42370  (09120224)                363550.43   3783363.30        0.43700
        (09120224)
        363536.92   3783363.05        0.39899  (09120224)                363528.51   3783363.30        0.37693
        (09120224)
        363528.25   3783357.44        0.37932  (09120224)                363513.72   3783357.44        0.34523
        (09120224)
        363504.55   3783352.60        0.32809  (09120224)                363507.18   3783337.93        0.33736
        (09120224)
        363501.43   3783331.08        0.32645  (09120224)                363491.71   3783322.46        0.30871
        (09120224)
        363485.30   3783316.28        0.29742  (09120224)                363478.89   3783311.41        0.28684
        (09120224)
        363470.66   3783132.66        0.28451  (11121224)                363470.66   3783157.66        0.28161
        (11121224)
        363470.66   3783182.66        0.27407  (11121224)                363469.56   3783203.46        0.26203
        (11121224)
        363469.56   3783228.46        0.24515  (11121224)                363469.56   3783253.46        0.23631
        (09120224)
        363469.56   3783278.46        0.25872  (09120224)                363469.56   3783303.46        0.27200
        (09120224)
        363798.94   3783066.77        0.36476  (11111024)                363795.11   3783063.90        0.35827
        (11111024)
        363795.43   3783052.56        0.34241  (11111024)                363798.62   3783048.73        0.33860
        (11111024)
        363811.08   3783048.73        0.33928  (11111024)                363815.39   3783052.56        0.34347
        (11111024)
        363815.23   3783063.74        0.36076  (11111024)                363811.24   3783067.41        0.36774
        (11111024)
        363298.29   3783861.01        0.20347  (12121624)                363323.29   3783861.01        0.21592
        (12121624)
        363348.29   3783861.01        0.22754  (12121624)                363373.29   3783861.01        0.23789
        (12121624)
        363398.29   3783861.01        0.24653  (12121624)                363422.49   3783859.43        0.25367
        (12121624)
        363447.49   3783859.43        0.25729  (12121624)                363472.49   3783859.43        0.25725
        (12121624)
        363491.94   3783857.05        0.25718  (12121624)                363517.73   3783858.63        0.24751
        (12121624)
        363542.73   3783858.63        0.23509  (12121624)                363567.73   3783858.63        0.23898
        (12042324)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                      ***
 14:11:16

PAGE  13
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                              *** THE   1ST HIGHEST 24-HR AVERAGE CONCENTRATION   VALUES FOR SOURCE GROUP:  ALL      ***
                                  INCLUDING SOURCE(S):     FLOWEQ_A    ,

                                             *** DISCRETE CARTESIAN RECEPTOR POINTS ***

                                        ** CONC OF PM_10    IN MICROGRAMS/M**3                          **

      X-COORD (M)  Y-COORD (M)        CONC     (YYMMDDHH)              X-COORD (M)  Y-COORD (M)        CONC
      (YYMMDDHH)
 - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
 - - - - - - -
        363593.53   3783857.44        0.24633  (10090724)                363618.53   3783857.44        0.27807
        (10090724)
        363643.53   3783857.44        0.30307  (10090724)                363671.70   3783856.65        0.31941
        (10090724)
        363697.10   3783854.67        0.33117  (09101324)                363722.10   3783854.67        0.36359
```

```
       (09101324)
       363746.70   3783854.27        0.37319  (09101324)                363771.70   3783854.27        0.36706
       (10111924)
       363796.70   3783854.27        0.37955  (10111924)                363821.70   3783854.27        0.36557
       (10111924)
       363846.70   3783854.27        0.33168  (11022524)                363871.70   3783854.27        0.38333
       (11022524)
       363896.70   3783854.27        0.41584  (11022524)                363921.70   3783854.27        0.42333
       (11022524)
       363946.70   3783854.27        0.43883  (12121424)                363971.70   3783854.27        0.43918
       (12121424)
       363996.70   3783854.27        0.41978  (12121424)                364021.70   3783854.27        0.38570
       (12121424)
       364046.70   3783854.27        0.36968  (12121424)                364073.73   3783852.30        0.33402
       (12121424)
       364061.84   3783840.40        0.35388  (12121424)                363599.49   3783520.86        1.18958
       (11121924)
       363599.49   3783539.39        1.15507  (11121924)                363599.11   3783552.26        1.09888
       (11121924)
       363599.30   3783565.50        1.05215  (10121724)                363599.49   3783584.22        1.01766
       (10121724)
       363599.68   3783598.22        0.96923  (10121724)                363589.84   3783607.49        0.89013
       (10121724)
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:11:16

PAGE  14
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

                                          *** THE SUMMARY OF MAXIMUM PERIOD ( 43848 HRS) RESULTS ***


                                    ** CONC OF PM_10    IN MICROGRAMS/M**3                         **

                                                                                                             NETWORK
GROUP ID                       AVERAGE CONC                RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)  OF TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -


ALL       1ST HIGHEST VALUE IS       0.64022 AT (  363919.21,  3783407.28,   217.57,   217.57,    2.00)  DC
          2ND HIGHEST VALUE IS       0.41945 AT (  363919.21,  3783382.28,   217.33,   217.33,    2.00)  DC
          3RD HIGHEST VALUE IS       0.29169 AT (  363919.21,  3783357.28,   217.08,   217.08,    2.00)  DC
          4TH HIGHEST VALUE IS       0.21492 AT (  363919.21,  3783332.28,   216.70,   216.70,    2.00)  DC
          5TH HIGHEST VALUE IS       0.17047 AT (  363599.49,  3783520.86,   219.30,   219.30,    2.00)  DC
          6TH HIGHEST VALUE IS       0.16938 AT (  363599.46,  3783505.72,   218.94,   218.94,    2.00)  DC
          7TH HIGHEST VALUE IS       0.16831 AT (  363599.49,  3783539.39,   219.64,   219.64,    2.00)  DC
          8TH HIGHEST VALUE IS       0.16611 AT (  363918.68,  3783308.09,   216.24,   216.24,    2.00)  DC
          9TH HIGHEST VALUE IS       0.16472 AT (  363601.35,  3783480.91,   218.36,   218.36,    2.00)  DC
         10TH HIGHEST VALUE IS       0.16418 AT (  363599.11,  3783552.26,   219.88,   219.88,    2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                          ***
 14:11:16

PAGE  15
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL
```

```
                                                   *** THE SUMMARY OF HIGHEST 24-HR RESULTS ***


                                       ** CONC OF PM_10    IN MICROGRAMS/M**3                          **


                                                         DATE
                                                              NETWORK
GROUP ID                          AVERAGE CONC     (YYMMDDHH)             RECEPTOR  (XR, YR, ZELEV, ZHILL, ZFLAG)    OF
TYPE  GRID-ID
- - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - - -
- - - - - -

ALL      HIGH   1ST HIGH VALUE IS       5.26583  ON 10102124: AT (  363919.21,  3783407.28,   217.57,   217.57,
2.00)  DC


 *** RECEPTOR TYPES:  GC = GRIDCART
                      GP = GRIDPOLR
                      DC = DISCCART
                      DP = DISCPOLR
FF *** AERMOD - VERSION  14134 ***   *** LA Ground Water Replenishment Project
***        08/12/15
 *** AERMET - VERSION  14134 ***   *** PM10                                                                ***
 14:11:16

PAGE  16
 **MODELOPTs:   RegDFAULT CONC      ELEV      FLGPOL

 *** Message Summary : AERMOD Model Execution ***

  --------- Summary of Total Messages --------

 A Total of            0 Fatal Error Message(s)
 A Total of            0 Warning Message(s)
 A Total of         1173 Informational Message(s)

 A Total of        43848 Hours Were Processed

 A Total of            2 Calm Hours Identified

 A Total of         1171 Missing Hours Identified (  2.67 Percent)


    ******** FATAL ERROR MESSAGES ********
               ***  NONE  ***


    ********   WARNING MESSAGES   ********
               ***  NONE  ***


    ************************************
    *** AERMOD Finishes Successfully ***
    ************************************
```

APPENDIX D

Biological Technical Report

DRAFT BIOLOGICAL TECHNICAL REPORT
LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT
LOS ANGELES COUNTY, CALIFORNIA

Prepared for:

Los Angeles Department of Water and Power
111 North Hope Street
Los Angeles, California 90012

Prepared by:

AECOM
515 S. Flower St. 8th Floor
Los Angeles, California 90071

September 18, 2015
Updated April 15, 2016

Biological Technical Report
for
Los Angeles Groundwater Replenishment Project (LAGWRP)
Los Angeles County, California

Prepared for:

Los Angeles Department of Water and Power
111 North Hope Street
Los Angeles, California 90012

Contact: Laura Hunter

Prepared by:

AECOM
515 S. Flower St. 8th Floor
Los Angeles, California 90071

September 18, 2015
Updated April 15, 2016

TABLE OF CONTENTS

LIST OF FIGURES

LIST OF TABLES

This page intentionally left blank.

CHAPTER 1.0
INTRODUCTION

AECOM was contracted by the Los Angeles Department of Water and Power (LADWP) to conduct a biological resource assessment of components of the proposed Los Angeles Groundwater Replenishment Project (Proposed Project). This assessment was completed in anticipation of the proposed construction of a new Advanced Water Purification Facilities (AWPF) at the existing Donald C. Tillman Water Reclamation Plant (DCTWRP), a recycled water pipeline along Arleta Avenue from an existing recycled water pipeline to the Pacoima Spreading Grounds (PSG), and improvements at PSG and the Hansen Spreading Grounds (HSG). The recycled water pipeline would convey tertiary treated water from the proposed AWPF to PSG and HSG (Figure 1-1). This biological technical report was prepared in support of an Environmental Impact Report (EIR), which is being prepared for the Project in accordance with the California Environmental Quality Act (CEQA).

1.1 PROJECT OVERVIEW

To maintain the reliability of the City of Los Angeles' potable water supply and reduce dependence on imported sources of water, the City, as represented by the Los Angeles Department of Water and Power (LADWP) and the Los Angeles Department of Public Works Bureau of Sanitation (LASAN), proposes to implement the Proposed Project to replenish the San Fernando Groundwater Basin (SFB) with up to 30,000 acre-feet per year (AFY) of purified recycled water (purified water) from DCTWRP. Achieving this replenishment goal would entail operating DCTWRP at the plant's full existing capacity to treat up to 80 million gallons per day (mgd) of wastewater.

The SFB underlies most of the San Fernando Valley. Through numerous extraction wells, the basin serves as an important source of potable water supply for the City. Local groundwater has provided about 11 percent of the City's water supply over the past decade during normal precipitation years and about 30 percent of the supply during drought years. Groundwater is also an important source of potable water during potential emergency circumstances (such as an earthquake along the San Andreas Fault), when imported water supplies may be unavailable for a relatively extended period. The SFB represents over 80 percent of the groundwater supply available to the City based on the storage capacity of the basin and the City's water rights.

Recycled water is highly treated wastewater that has undergone multiple levels of treatment, traditionally referred to as tertiary treatment, to ensure that it meets health and safety standards first established by California Department of Public Health and now administered by the State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW) under Title 22, Division 4, Chapter 3 of the California Code of Regulations (Title 22). In accordance with Title 22, recycled water is not suitable for direct potable consumption. Therefore, the City employs Title 22 recycled water produced at DCTWRP for various non-potable uses, which do not currently include replenishing groundwater basins that are a source of potable water supply.

The purified water that would be produced under the Proposed Project is also a form of recycled water. However, to create purified water, recycled water that has been treated to a tertiary level at DCTWRP would be further treated utilizing ozonation, biologically activated carbon (BAC), multiple-barrier filtration (e.g., microfiltration [MF] and reverse osmosis [RO]) and advanced oxidation processes (AOP). Purified water would be used under the Proposed Project to replenish the SFB.

The primary purpose of the Proposed Project is to reduce the City's dependence on imported water sources by increasing the local groundwater supply available for potable use. The Project would consist of three basic elements: 1) *treatment* would entail the construction and operation of a new advanced water purification facilities (AWPF) and related facilities that would provide additional levels of treatment of recycled water generated by the existing DCTWRP facilities to produce purified water; 2) *conveyance* would entail the use of existing and newly constructed pipelines to transport the purified water from the AWPF to existing spreading grounds; and 3) *replenishment* would entail the spreading of the purified water at the existing spreading grounds so that it would percolate into the SFB.

1.2 EXISTING SETTING

1.2.1 San Fernando Groundwater Basin

The Proposed Project is located in the central and eastern portions of the San Fernando Valley of the City of Los Angeles, which is underlain by the SFB (Figure 1-2). The 112,000-acre SFB includes water-bearing sediments beneath the San Fernando Valley, Tujunga Valley, Browns Canyon, and the alluvial areas surrounding the Verdugo Mountains near La Crescenta and Eagle Rock. The SFB is bounded on the north and northwest by the Santa Susana Mountains, on the north and northeast by the San Gabriel Mountains, on the east by the San Rafael Hills, on the south by the Santa Monica Mountains and Chalk Hills, and on the west by the Simi Hills. Groundwater levels in the SFB vary seasonally and by locality, with levels in the western section of the SFB at approximately 50 feet below ground surface and levels in the eastern section at between 200 and 500 feet below ground surface. LADWP currently holds adjudicated water rights to extract 87,000 AFY from the SFB. However, as mentioned above, allowable pumping would increase an amount equal to the GWR of the basin provided by the Proposed Project.

1.2.2 Donald C. Tillman Water Reclamation Plant

DCTWRP is located at 6100 Woodley Avenue, in the Encino community of the City of Los Angeles. It is surrounded by, although not abutting, Victory Boulevard to the north, Woodley Avenue to the west and south, and Interstate 405 (I-405) to the east. It is immediately surrounded by Woodley Avenue Park on the west, south, and east, and by an Air National Guard facility on the north (Figure 1-3).

The DCTWRP property is located within the Sepulveda Basin, which is owned and managed by the United States Army Corps of Engineers (Corps) for the purposes of flood control, recreation opportunities, natural resources preservation and enhancement, and other uses. DCTWRP is operated by LASAN under a lease agreement with the Corps. The currently developed portions of the DCTWRP complex are generally separated from the surrounding Sepulveda Basin property by berms or walls, which have a top elevation of 715.0 feet above mean sea level. These berms and walls protect the property from flooding from a 100-year storm flood event, which may reach an elevation of 712.0 feet. Based on updated flood control requirements issued by the Corps and on revised estimates for the flood potential in the basin, the existing berm and wall at DCTWRP will be raised provide protection to the existing facilities from a Probable Maximum Flood event, which may reach an elevation of 716.7 feet. These improvements to the berm and wall are anticipated to commence in 2016 and be completed in 2017, prior to the initiation of construction for the proposed LAGWR Project.

DCTWRP began operating in 1985 as a water reclamation facility. While the DCTWRP lease encompasses approximately 96 acres within the Sepulveda Basin, the current wastewater treatment facilities, including support functions such as administration, storage, and maintenance, occupy only about 50 acres, which, as mentioned above, are protected by a flood control berm and wall. DCTWRP is a biological nutrient removal, activated sludge treatment facility with an 80-mgd treatment capacity consisting of two separate 40-mgd phases. Wastewater is received at the headworks facility located in the northern part of DCTWRP from the 96-inch Additional Valley Outfall Relief Sewer (AVORS) and the 80-inch East Valley Interceptor Sewer (EVIS) and undergoes primary treatment, biological nutrient removal, filtration, and disinfection to provide a tertiary level of wastewater treatment.

The Japanese Garden, dedicated in 1984, occupies about 6.5 acres in the northwest corner of the DCTWRP property, and is also located within the area protected by the flood control berm and wall. Recycled water from DCTWRP is currently delivered to the Japanese Garden lake. Access to the garden is from Woodley Avenue at the southwest corner of the DCTWRP property. A parking lot for about 100 vehicles is located south of and adjacent to the garden.

The Balboa Pump Station, located in the southeast corner of the DCTWRP property, consists of three 18-cubic feet per second, 1,000 horsepower pumps, with provisions to add three more pumps. An existing 10-mile-long, 54-inch-diameter pipeline, the East Valley Recycled Water Line (EVRWL), currently connects the Balboa Pump Station to HSG and the Hansen Storage Tank, which is located at VGS, adjacent to HSG. The pump station and pipeline are currently used to convey DCTWRP recycled water to irrigation and industrial customers in the San Fernando Valley. Although the EVRWL connects to HSG, no recycled water is currently delivered to the spreading grounds itself.

1.2.3 Hansen Spreading Grounds

HSG is located in the Sun Valley community of the City of Los Angeles, along the northwest side of the Tujunga Wash Channel (Figure 1-4). It is bordered by Branford Street to the northwest, Glenoaks Boulevard to the northeast, the Tujunga Wash Channel to the southeast, and San Fernando Road to the southwest. HSG is operated by the Los Angeles County Department of Public Works (LACDPW). The Hansen Dam Recreation Area is located to the northeast. HSG is surrounded by open space, light manufacturing uses, and VGS. HSG receives controlled flows from Hansen Dam and Big Tujunga Dam. It occupies 156 gross acres and includes eight medium spreading basins occupying 117 wetted acres.

1.2.4 Pacoima Spreading Grounds

PSG is located in the Pacoima community of the City of Los Angeles, adjacent to Pacoima Wash and the Pacoima Diversion Channel (Figure 1-5). It is bordered by residential neighborhoods to the northwest and west, Woodman Avenue to the southwest, Filmore Street to the southeast, and Arleta Avenue to the northeast. PSG is also traversed by Devonshire Street, east to west. PSG is operated by LACDPW. PSG receives controlled flows from Pacoima Dam, partially controlled flows from Lopez Flood Control Basin, and uncontrolled storm flows from East Canyon Channel and Pacoima Wash. It also receives imported water for groundwater replenishment. PSG occupies 169 gross acres and includes twelve shallow spreading basins occupying 107 wetted acres. It presently has an estimated maximum storage volume of 173 mg, an intake capacity of 388 mgd, and an average percolation rate of approximately 42 mgd. However, LACDPW is undertaking a project that will modify the configuration of the PSG to increase detention capacity and recharge rate and to provide the maximum storage flexibility between the different basins. The total storage volume will be increased to 390 mg, and the percolation rate will be increased to 92 mgd. Construction is anticipated to commence in 2016 and be completed in 2018, prior to the initiation of construction at PSG for the proposed LAGWR Project.

Proposed Project activities at the DCTWRP, including the brine line, comprise *onsite components* of the Project. Proposed Project activities related to the recycled water pipeline along Arleta Avenue and at PSG and HSG comprise *offsite components* of the Project.

1.2.5 DCTWRP Operations and Outflows

As discussed above, DCTWRP has a capacity to treat up to 80 mgd of wastewater if both the existing 40-mgd phases are operational. However, only a single phase is currently operated at a given time because the demand and infrastructure for recycled water is insufficient to warrant operating both phases simultaneously. This limited demand is partially attributable to discontinuing earlier proposed projects utilizing the recycled water effluent from DCTWRP for groundwater replenishment due to public concerns about the use of recycled water as an indirect source of potable water. The wastewater that would otherwise reach DCTWRP via the AVORS and EVIS and be treated in the second 40-mgd phase instead currently bypasses the plant and is conveyed to Hyperion Treatment Plant in Playa Del Rey, where it undergoes a secondary level of treatment and is pumped into Santa Monica Bay.

The recycled water currently produced at DCTWRP is used in several ways. A small portion (about 2 mgd) is needed for various in-plant processes. An average of approximately 4 mgd is used for NPR, such as large irrigation customers and industrial process customers. The large majority of the recycled water is directed through a network of pipes to various water bodies located in the Sepulveda Basin. These include the Japanese Garden lake (adjacent to the DCTWRP complex), Lake Balboa (approximately 0.75 miles west of DCTWRP), and the Wildlife Lake (approximately 0.25 miles southeast of DCTWRP). This water reaches the Los Angeles River from the lakes. This flow-through process serves to maintain water quality within the lakes to prevent fish kills, odor problems, and algae blooms. The Los Angeles River also intermittently receives water directly from DCTWRP via an operational safety weir located at the river south of Sepulveda Dam, approximately 1.1 miles south of DCTWRP (see Figure 1-6).

The flow-through process at the lakes serves to maintain water quality within the lakes to prevent fish kills, odor problems, and algae blooms. In February of 2015, the Hansen Dam Golf Course came online as a large NPR customer served by recycled water generated at DCTWRP. With the exception of a few smaller NPR customers that are scheduled to come online in 2016, with the inclusion of the golf course, the NPR program from DCTWRP is complete. Therefore, the period since February 2015 is representative of the existing condition relative to the distribution of recycled water from DCTWRP based on current operations and is reflective of the expected pre-Project flows to the lakes and the Los Angeles River. The flows over the weir were calculated by deducting the metered flows to the lakes and metered NPR use from the total recycled water production at DCTWRP. The flows at the weir fluctuate throughout the year based on several factors, including variable rates of production and actual NPR consumption related to weather and other circumstances. The average daily flow from DCTWRP to the Los Angeles River via the lakes and the weir throughout this period was about 27.3 mg. The average daily flow during the summer months (April through September) was about 26.5 mg.

1.3 PURPOSE AND NEED

The primary objective and fundamental purpose of the Proposed Project is to supplement the City of Los Angeles' potable water supply through GWR with up to 30,000 AFY of purified water in order to reduce dependence on imported water and diversify the City's water portfolio, thereby increasing system reliability and sustainability. In normal precipitation years, the City relies on four sources to meet its water needs: 1) approximately 36 percent from snowmelt from the Eastern Sierra conveyed to the City by the Los Angeles Aqueduct system; 2) approximately 52 percent from purchases from the Metropolitan Water District of Southern California (MWD) conveyed from the Colorado River through the Colorado River Aqueduct and from the State Water Project via the California Aqueduct; 3) approximately 11 percent from local groundwater; and 4) approximately 1 percent from recycled water, which is currently used for NPR. Although imported water resources have served the City for over a century, several factors have converged that threaten the long-term reliability of these supplies. Climatic conditions, including consecutive years of below historically average snowfall, and environmental commitments have severely impacted imported water supply sources.

To achieve the GWR goal, the Proposed Project would capitalize on existing facilities, including the existing DCTWRP, which has currently underutilized capacity to provide the recycled water influent necessary for the proposed AWPF; the existing 10-mile EVRWL interconnecting DCTWRP and HSG, which has capacity to transport the required volume of purified water to support the GWR objective; and the existing HSG and PSG, which have available capacity to accommodate the spreading of purified water for GWR. While the use of these existing facilities would provide for a number of the major components of the Proposed Project, several new facilities would also be required. These would include an AWPF and support facilities located at DCT SE; a new 3,000-foot brine pipeline to transport the brine flow from the new AWPF to an existing sewer main for processing at the Hyperion Treatment Plant; three new pumps at the existing Balboa Pump Station, also located in the southeast corner of DCTWRP; approximately 2.5 miles of new pipeline to transport purified water from the EVRWL to PSG; and new outlet and gate structures at HSG and PSG.

1.4 PROPOSED PROJECT SITE AND FACILITIES

1.4.1 Proposed Project Site

The preparation of Urban Water Management Plans (UWMPs) is required of urban water suppliers (such as LADWP) by the State of California Department of Water Resources to address issues and develop strategies related to providing adequate water supplies to meet customer demand. Ensuring an adequate supply of water, including through reductions in demand, has become increasingly crucial in the face of more frequent and prolonged droughts and diminishing sources. As one element of the most recent City of Los Angeles UWMP, completed in 2010, a goal was established to increase the use of recycled water within the City to 59,000 AFY by 2035. Based on this goal, LADWP and LASAN jointly developed the Recycled Water Master Plan (RWMP), finalized in 2012. The RWMP established guidance to accomplish nearer-term recycled water planning goals through 2035 as well as longer-term goals for an additional 50 years beyond 2035.

Based on its selection as the preferred site in the RWMP's Groundwater Replenishment Master Plan (GWRMP), a preferred site was identified for the AWPF located in the southwest corner of the DCTWRP complex (DCT SW). DCT SW was the location for the AWPF indicated in the Notice of Preparation (NOP) for the Proposed Project Draft EIR, dated September 6, 2013. However, since the publication of the NOP, more detailed analysis for the Proposed Project has occurred, including further considerations related to preserving future potential expansion capability for both recycled water treatment and advanced water purification processes at DCTWRP. Based on this analysis, it was determined that DCT SW provided very limited capability to further expand the AWPF, if necessary in the future, because the site was physically constrained by adjacent uses. Therefore, a site in the southeast corner of the DCTWRP complex (DCT SE), which was also one of the five sites evaluated in the GWRMP, was further analyzed to determine its potential to preserve future expansion capability at DCTWRP.

DCT SE was not identified as the preferred site for the AWPF in the GWRMP because its location had previously been established as part of the area required for future phase expansions of the recycled water treatment facilities based on the Ultimate Development Plan for DCTWRP prepared in 1991. At the time of completion of the Ultimate Development Plan, the two existing 40-mgd recycled water treatment phases had been implemented, one in 1984 and one in 1991. However, since the preparation of the Ultimate Development Plan, technological advancements have significantly reduced the physical area requirements for recycled water treatment. Therefore it has now been determined that the AWPF could be accommodated at DCT SE without compromising a potential expansion of the recycled water treatment facilities within the area protected by the existing berm at DCTWRP. In addition, the DCT SE site would also provide greater flexibility than DCT SW to expand the AWPF in the future, if required, within the area protected by the existing berm. DCT SE has therefore been identified as the Proposed Project site to be analyzed in the Project's Draft EIR.

1.4.2 Proposed Project Facilities

A number of facilities, both within (onsite components) and outside the DCTWRP complex (offsite components), would be required to provide the treatment, conveyance, and replenishment functions for the Proposed Project. These facilities are presented below.

1.4.2.1 Onsite Components

Descriptions of onsite components of the Proposed Project are provided below and depicted on Figure 1-4.

DCTWRP

Advanced Water Purification Facilities

The AWPF is the primary facility required to purify the recycled water produced by the existing DCTWRP recycled water treatment facilities. The AWPF would be located in the southeast corner of the DCTWRP complex, within the existing flood protection berm. The site for the AWPF is approximately 1.75 acres and is currently vacant. As presently planned, the AWPF may include ozonation, BAC, MF, RO, and AOP systems to produce purified water. In addition, a portion of the existing disinfection contact tanks, which would not be required for either the recycled water treatment or the water purification process, would be converted for the ozonation and BAC processes. To support the AWPF processes, additional functions, such as pumps, filters, tanks, piping, chemical storage, alarm systems, security surveillance, and distributed control systems for remote monitoring and controls, would be required within or adjacent to the AWPF.

Warehouse and Maintenance Facilities

Although maintenance and warehouse facilities currently exist at DCTWRP, they will require expansion to support the advanced water purification processes in terms of material, equipment, and shops. The existing warehouse and maintenance functions are located in the southwestern corner of DCTWRP, but there is inadequate space available adjacent to the facilities to expand to accommodate the AWPF support functions. Therefore, in order to provide for the expansion of these facilities and to consolidate like functions (i.e., all warehouse functions and all maintenance functions) at DCTWRP, a new warehouse would be constructed in the northwest corner of the complex. This site is approximately 0.75 acres and is currently vacant and partially used for materials storage. This facility would accommodate all warehousing functions at DCTWRP to support both the recycled water treatment and advanced water purification processes.

Flow Equalization Tank

The expansion of the flow equalization tanks would provide storage capacity to temporarily retain influent, which could then be released into the treatment system at a controlled rate to help maintain a constant volume of influent into the system even while external flows into the plant may vary considerably on a diurnal basis. Maintaining uniform conditions maximizes the capacity of the treatment system while improving efficiency and reliability by minimizing potentially wide fluctuations in volume. The proposed equalization tank would provide about 7 mg of influent storage capacity. It would be located in the northeastern part of the DCTWRP complex. The site for the equalization tanks is approximately 1.75 acres and is currently vacant.

Ancillary Facilities

Some ancillary facilities would also be required to support the AWPF and GWR operations at DCTWRP. Due to the electric power demand to operate the AWPF, a new substation would be constructed. It would be located in the south-central part of DCTWRP, between the existing disinfection contact tanks. This site is approximately 0.2 acres and is currently occupied by a dechlorination facility, which is no longer utilized and would be demolished.

The existing Balboa Pump Station, located adjacent to the berm in the far southeast corner of the DCTWRP complex, would also be expanded to support the pumping of the purified water produced at the AWPF to HSG via the existing EVRWL and to PSG via the EVRWL and a proposed 42-inch line. The improvements at the pump station would involve adding three additional pumps at a previously constructed but unused connection to the EVRWL.

Brine Line

The RO system in the AWPF would remove dissolved solids from the recycled water by forcing it under pressure through a semi-permeable membrane that allows the passage of water molecules but leaves behind a concentrated brine solution. This brine solution must be routed to the sewer system to be transmitted with other wastewater streams to the Hyperion Treatment Plant in Playa Del Rey for further processing. Although the AVORS line traverses the DCTWRP property, it cannot be used to transport brine because flows from the AVORS are collected downstream at the Los Angeles-Glendale Water Reclamation Plant for recycling. The nearby Valley Outfall Relief Sewer (VORS), which runs eastward along Victory Boulevard and turns southward east of I-405, is connected to a diversion structure which can direct the brine to Hyperion Treatment Plant. To reach the VORS from the AWPF, a 24-inch diameter brine line would be routed easterly from the AWPF beneath the existing flood control berm, northerly along the road located west of the Cricket Fields, easterly and then northeasterly along the DCTWRP access road, passing beneath the Orange Line Busway, and following Haskell Avenue to connect with the VORS in Victory Boulevard west of the I-405. The length of the brine line would be approximately 3,000 feet, with approximately 300 feet located within public roads (Figure 1-5).

1.4.2.2 Offsite Components

Descriptions of offsite components of the Proposed Project are provided below and depicted on Figure 1-5.

Conveyance Pipeline

Purified water produced at the AWPF would be conveyed to HSG using an existing EVRWL that currently conveys recycled water from the Balboa Pump Station to the Hansen Storage Tank at VGS, adjacent to HSG. However, a new pipeline branch would need to be constructed from the EVRWL to PSG, as shown in Figure 1-7. The new 42-inch-diameter recycled water pipeline would start at the intersection of Branford Street and Arleta Avenue and proceed northwesterly along Arleta Avenue, suspend across the Pacoima Diversion Channel, and continue into PSG. This pipeline segment would be approximately 10,820 feet long. A continuation of this pipeline, approximately 1,920 feet, would be located within PSG property to connect to proposed outlet structures adjacent to Devonshire Street, as further discussed below.

Pacoima Spreading Grounds

As mentioned above, purified water would be conveyed to the PSG through a new 42-inch-diameter pipeline connecting to the EVRWP and extending from Branford Street northwest along Arleta Avenue. However, additional improvements would be required to deliver the purified water to the individual spreading basins within PSG. A gate structure would be installed within the PSG property near the intersection of Arleta Avenue and Devonshire Street, at the end of the proposed 42-inch conveyance pipeline. The 42-inch pipeline would then continue from the gate structure westerly within PSG adjacent to Devonshire Street. This pipeline would be approximately 4,000 feet in length. Outlet structures to discharge purified water to one or more of the basins would also be installed, as shown in Figure 1-8.

Hansen Spreading Grounds

As mentioned above, purified water would be conveyed to HSG through the existing EVRWL from the DCTWRP. However, additional ancillary facilities would be constructed at HSG to allow for system flexibility, including directing purified water to various spreading basins individually or in combination. A new pipeline of approximately 200 linear feet and an outlet structure would be installed from the existing EVRWL to a location in the southwest part of the basin (Figure 1-9). A gate valve would also be installed at the end of the existing line in the northeast part of the basin. These facilities would provide the ability to control the flow of the purified water to different basins within HSG as necessary.

1.5 PROJECT CONSTRUCTION

Construction of the Proposed Project would commence in fourth quarter of 2018 and is expected to last over 4 years, ending in late 2022. As indicated in Figure 2-12, construction would be conducted in several phases, which may partially overlap in schedule, especially since construction would occur at several physically separated sites (i.e., DCTWRP, HSG, PSG, and within City streets). Construction activities would typically occur from 7:00 a.m. to 3:30 p.m., but construction in major City streets would generally not begin before 9:00 a.m. in accordance with the City of Los Angeles Mayor's Executive Directive No. 2, which prohibits construction on selected roads between 6:00 a.m. and 9:00 a.m. and between 3:30 p.m. and 7:00 p.m.

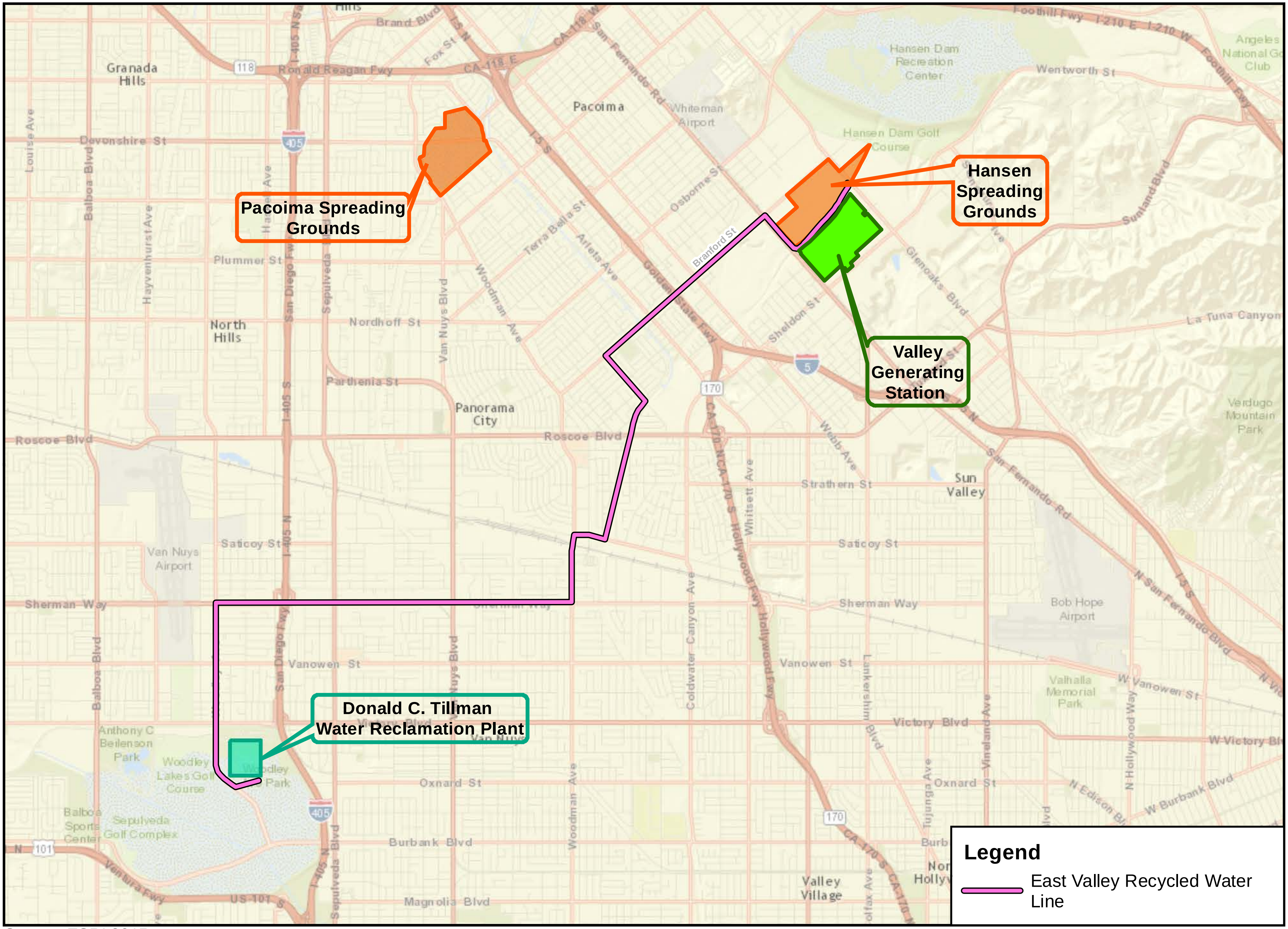
1.6 VALLEY GENERATING STATION ALTERNATIVE

Under the VGS Alternative, the AWPF and the associated support facilities would be located on a site within VGS, which is an active LADWP electrical generating station located adjacent to HSG and about 6 miles northeast of DCTWRP. VGS was also one of the alternative AWPF sites identified in the GWRMP. The VGS water purification facilities would function as an entirely independent operation, physically segregated from other VGS functions by fencing. Under the VGS Alternative, the expansion to the flow equalization tanks and the Balboa Pump Station would still occur at DCTWRP, on property leased from the Corps in the Sepulveda Basin within the existing DCTWRP flood protection berm. The improvements at HSG and PSG would be essentially the same under the VGS Alternative as under the Proposed Project.

Since the AWFP would be located at VGS rather than DCTWRP, the primary operational difference between the VGS Alternative and the Proposed Project would be that the existing EVRWL, which would convey purified water from DCTWRP to HSG under the Proposed Project, would instead convey recycled water from DCTWRP to VGS, where it would undergo the advanced treatment required to produce purified water. Because the EVRWL would function as a recycled water line under the VGS Alternative, new conveyance pipelines to transfer purified water from VGS to HSG and PSG would be required; these new conveyance lines would be about twice the length as required under the Proposed Project (about 4 miles versus 2 miles), all located with public roadways. Similar to the Proposed Project, the backwash and brine solution generated as a byproduct of the MF and RO processes at the AWPF must be routed to the sewer system to be transmitted with other wastewater streams to the Hyperion Treatment Plant in Playa Del Rey for further processing. As with the Project, this would require a new brine line connection to the VORS. However, the brine line for the VGS Alternative would be approximately 7 miles in length, all within public roadways (this compares with a 3,000-foot brine line required for the Proposed Project, only approximately 300 feet of which would be located within public roadways.

The VGS Alternative would be feasible and would meet most of the basic objectives of the Proposed Project. It would be capable of providing up to 30,000 AFY of purified water for GWR, which would be spread at HSG and PSG. It would utilize the available unused treatment capacity of DCTWRP to provide the recycled water for the advanced water purification process, and it would use the existing EVRWL to convey the recycled water from DCTWRP to VGS. Under the VGS Alternative, the existing levels of recycled water service for NPR customers and other beneficial uses would be maintained. Because many of the facilities that would be located at DCTWRP under the Proposed Project would instead be located at VGS, future potential expansion capability for recycled water treatment at DCTWRP would be preserved. In addition, because of the available developable area, future potential expansion capability for advanced water purification processes at VGS would also be preserved. However, while LASAN personnel would operate the AWPF at VGS, the operation would be physically removed from DCTWRP; therefore, the VGS Alternative does not maintain the functional and logistical integrity of LASAN operations to the same extent that the Proposed Project would.

VGS is located at 11801 Sheldon Street in the Sun Valley community of the City of Los Angeles. VGS is a 150-acre electric power generating facility owned by LADWP. Approximately 30 acres in the northeastern part of VGS is devoted to the Truesdale Center, which is the LADWP training facility for electrical distribution field personnel. An existing 7-million gallon (mg) recycled water storage tank (Hansen Tank) is located at VGS. It is currently used to store recycled water produced at DCTWRP for distribution to NPR customers. Figure 1-1 shows the location of VGS in relationship to the DCTWRP, HSG, and PSG. Figure 1-10 shows an aerial view of existing VGS facilities.



Source: ESRI 2015

0 1 2 Miles

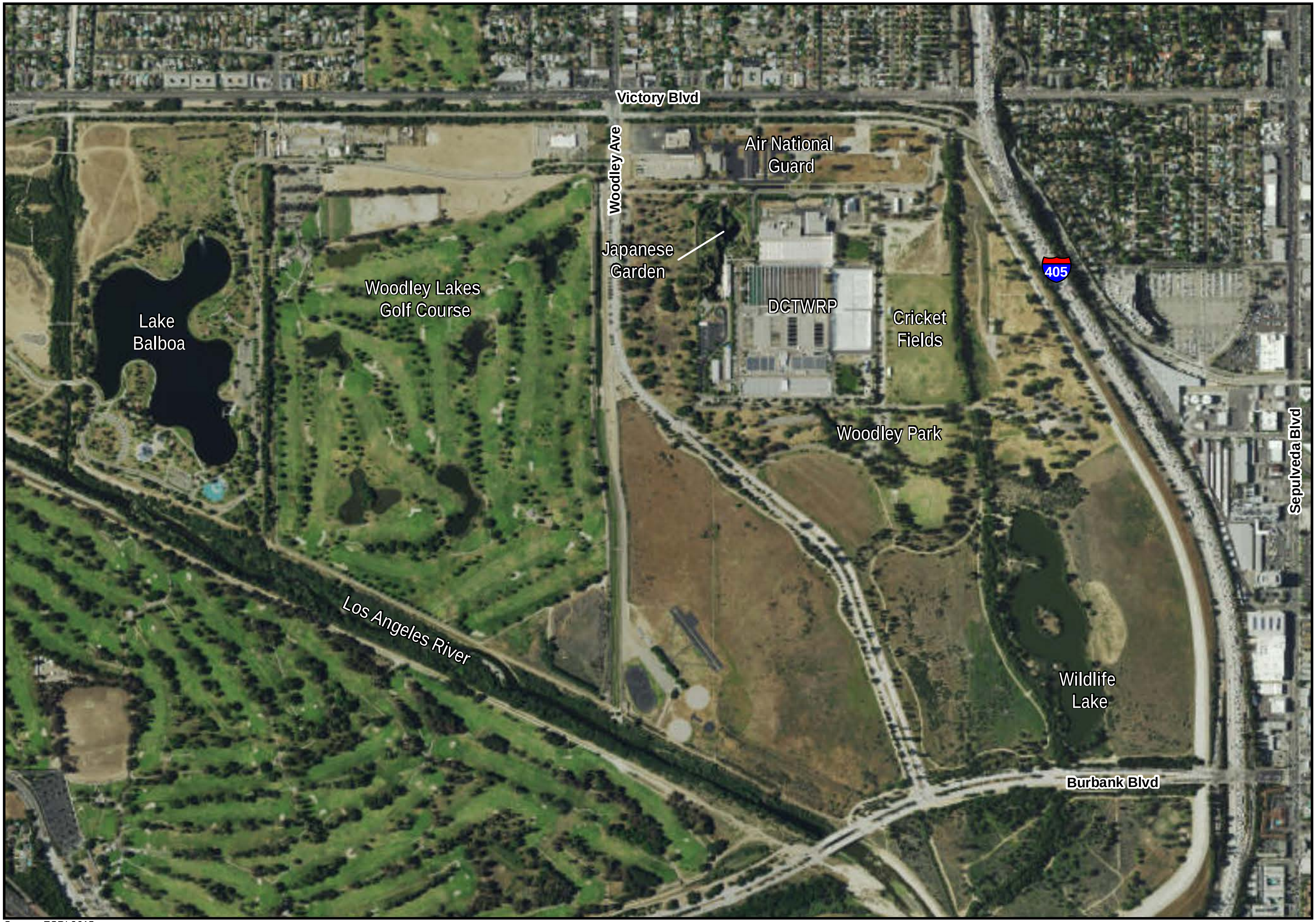
Figure 1-1
Existing Facilities Overview

This page intentionally left blank.

Source: ESRI 2015

Figure 1-2
Regional Location Map

This page intentionally left blank.



Source: ESRI 2015

0 1,500 3,000 Feet

Figure 1-3

DCTWRP Vicinity Map

This page intentionally left blank.

Source: ESRI 2015

0 250 500 Feet

Figure 1-4

Proposed Project, DCTWRP Facilities

This page intentionally left blank.

Source: ESRI, 2015

0 500 1,000 Feet

Figure 1-5
Proposed Project DCTWRP Brine Line

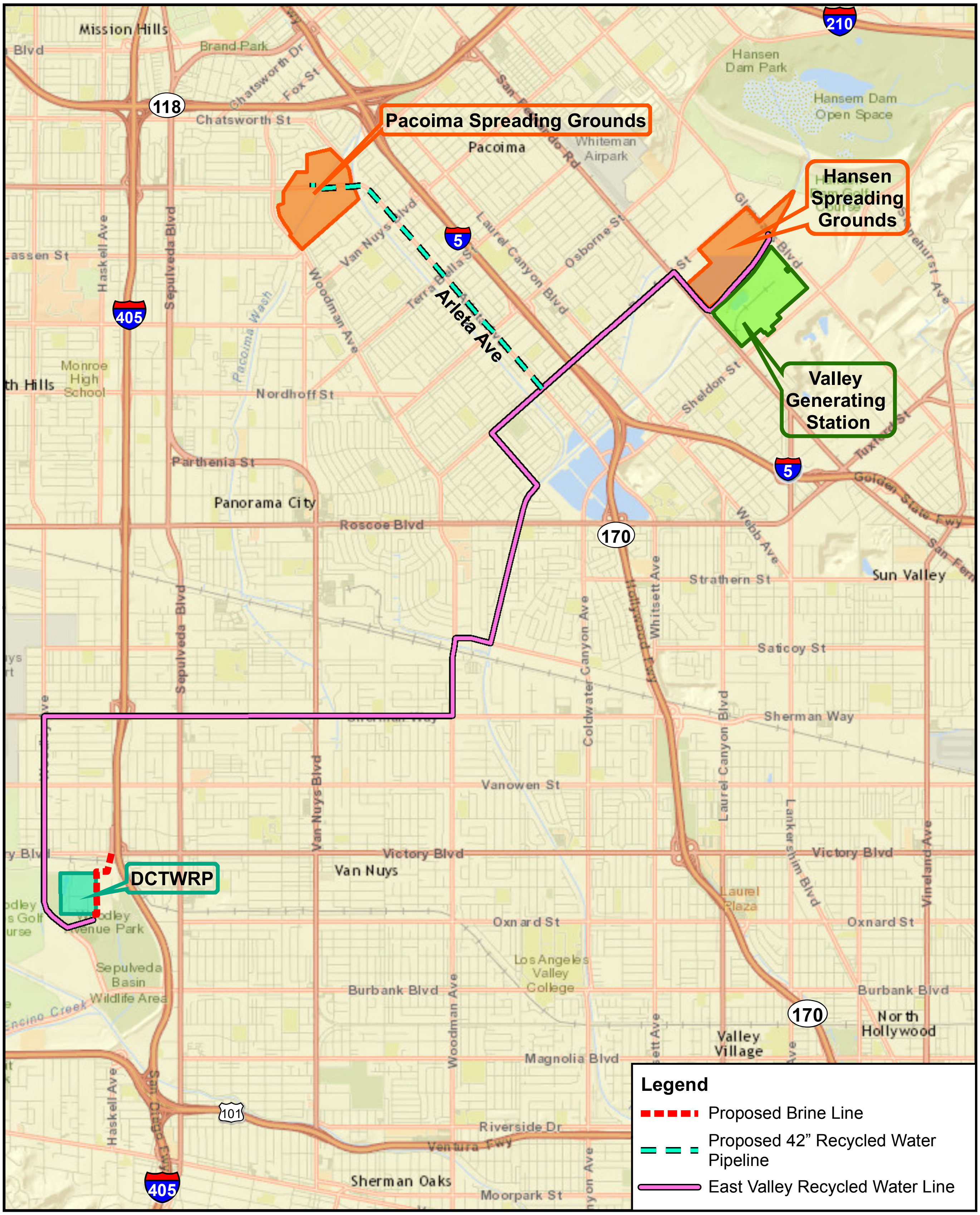
This page intentionally left blank.

Source: ESRI 2015

0 0.25 0.5 Miles

Figure 1-6
DCTWRP Discharge Flows

This page intentionally left blank.



Source: ESRI, 2016

Figure 1-7
Existing and Proposed Pipelines

This page intentionally left blank.

Source: ESRI, 2016

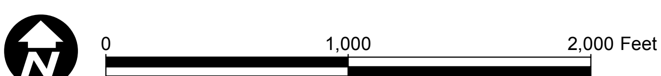
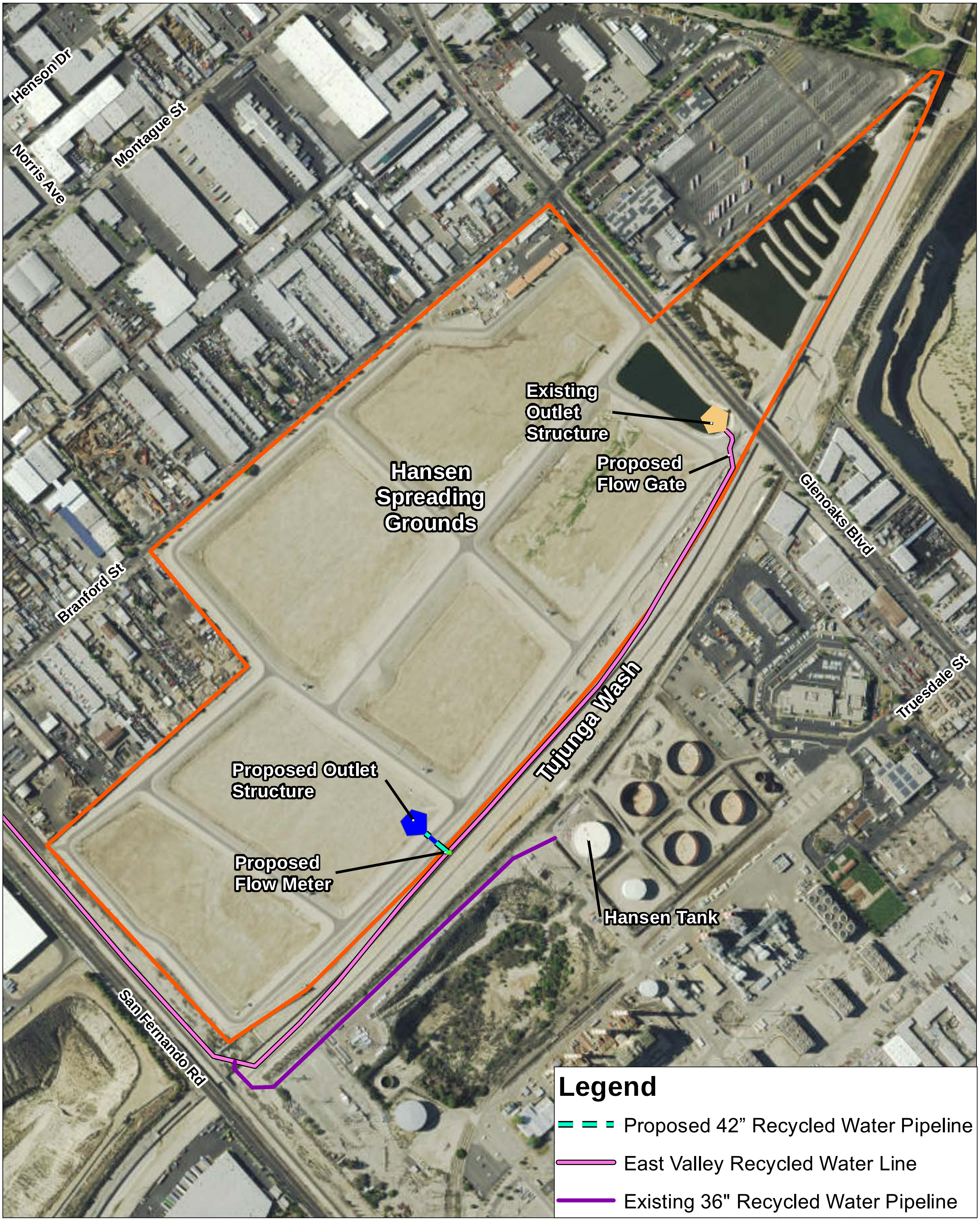


Figure 1-8
Proposed PSG Improvements

This page intentionally left blank.

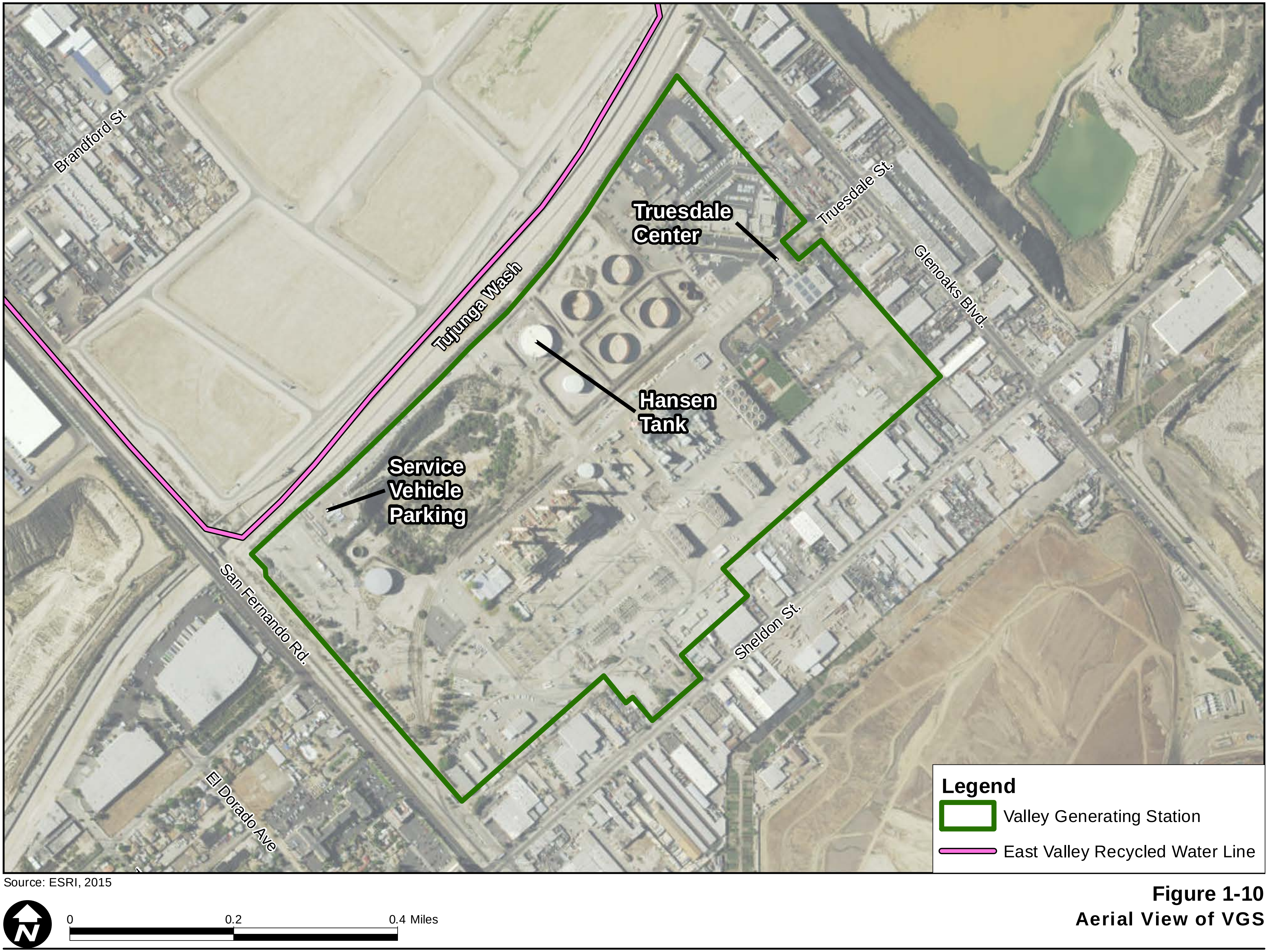


Source: ESRI, 2015

0 500 1,000 Feet

Figure 1-9
Proposed HSG Improvements

This page intentionally left blank.



Source: ESRI, 2015

Figure 1-10
Aerial View of VGS

This page intentionally left blank.

CHAPTER 2.0
EXISTING BIOLOGICAL CONDITIONS

2.1 FIELD SURVEYS

Prior to conducting fieldwork, California Department of Fish and Wildlife (CDFW) U.S. Fish and Wildlife Service (USFWS), and California Native Plant Society (CNPS) sensitive species occurrence databases were reviewed for the project vicinity. These sources are cited in relevant sections of the following report and lists generated from a search of these three databases is included in Appendix A. Aerial photography was also reviewed prior to conducting site visits to determine if natural or sensitive vegetation communities occur within or adjacent to onsite and offsite components. AECOM biologists Art Popp and Donna Germann conducted site surveys to document existing biological resources at the proposed AWPF site within the DCTWRP and the alternative location at the VGS on November 25, 2013. Surveys of the locations where improvements at PSG and HSG are proposed, were surveyed on August 23, 2015 by AECOM biologists Art Popp and John Parent. This report presents the results of the surveys and background review and is intended to assist LADWP during the regulatory permitting process for the Proposed Project. The surveys were intended as an evaluation of habitat types occurring within onsite and offsite components and an assessment of the potential for occurrence of special-status plant and wildlife species. Vegetation communities, land cover types, plant species, and wildlife species found within the proposed components were documented during the field surveys. A 300-foot survey buffer around onsite and offsite components was also evaluated. For this report, the biological survey area (BSA) includes the onsite and offsite components and their respective survey buffers. Information was also gathered to assess jurisdictional areas and features coinciding with proposed onsite and offsite components. The acreage of the BSA surveyed is presented in the table below and depicted on Figures 2-1 through 2-3.

Table 2-1. Acreage of BSA for Onsite and Offsite Components and VGS Alternative

Onsite Components (DCTWRP and Brine Line)	Offsite Components (Recycled Water Pipeline, HSG and PSG)	VGS Alternative and Brine Line
92.93	640.7	46.79

Seasonal, species-specific botanical and wildlife surveys were not conducted as part of this evaluation. The field methods employed would not necessarily rule out some special-status species; however, based on the survey conducted and an assessment of habitats within the BSA, most special-status plant and wildlife species are not expected to occur or can be entirely ruled out.

2.2 VEGETATIVE COMMUNITIES

Vegetation communities and land cover types in the BSA were identified through aerial photography interpretation and ground-truthed during field visits. Other than a very small area of disturbed riparian habitat within the BSA of the onsite brine line, the BSA consists entirely of urban/developed cover types; natural vegetation communities are absent from the BSA.

2.2.1 Onsite Components

The DCTWRP site is entirely developed with buildings, water treatment facility infrastructure (i.e. aeration tanks, clarification chambers, filtration units), paved roads and parking areas, and landscapes of lawn and ornamental plantings (Figure 2-1). No natural vegetation communities were identified within the site. Typical ornamental plants observed within the DCTWRP site included non-natives such as bottlebrush (*Callistemon citrinus*), jacaranda (*Jacaranda mimosifolia*), olive (*Olea europaea*), eucalyptus (*Eucalyptus* spp.), philodendron (*Philodendron* spp.), and common periwinkle *(Vinca minor*). Native ornamental pine (*Pinus* spp.), sycamore (*Platanus racemose*), oak (*Quercus* spp.) bay laurel (*Umbellularia californica*), and alder (*Alnus* sp.) were also observed.

Athletic fields, large areas of lawn, the National Guard building, and the Japanese Garden surround the DCTWRP. The 6.5-acre Japanese Garden, at the northwest corner of the DCTWRP site, includes terrestrial and aquatic habitats, with a basic style of gardening known as a “wet garden with promenade” (SuihoEn 2015). It is a strolling garden with pathways that transect vast areas of lawn and ornamental landscapes of trees and shrubs typical of Japanese gardens (i.e. willow, cherry, peach, ginkgo). No natural vegetation communities were identified in the BSA of the DCTWRP site.

The alignment of the brine line from the proposed AWPF to its connection with the VORS follows the southern perimeter of the DCTWRP facility east, then runs north along the outside of the eastern perimeter fence along a dirt road. The alignment then follows a paved road associated with the National Guard facility, transects the Orange Line Busway, Orange Line Bike Path, an I-405 on-ramp, and associated ornamental roadside habitat, to tie-in to the VORS. Haskell Creek occurs in the BSA, near the proposed tie-in to the VORS; however, the brine line would not intersect the creek. An approximate 600-foot reach of the creek occurring in the BSA consists of disturbed riparian habitat totaling approximately 1.57 acres. This habitat is dominated by shamel ash (*Fraxinus uhdei*) trees, a species not native to California. Some arroyo willow (*Salix lasiolepis*) and occasional Washington fan palm (*Washingtonia robusta*) were also observed. This community exhibits indications of human presence, with informal biking/hiking pathways and trash present.

No federally or state-listed plant species were observed during the field survey of onsite components.

2.2.2 Offsite Components

Vegetation within the BSA of the recycled water pipeline (Figure 2-2) includes ornamental plantings and lawns associated with residential development along Arleta Avenue. Large mature street trees are present including eucalyptus, pine, palm, and other ornamental species. No natural vegetation communities were observed within the BSA of the recycled water pipeline.

Bare ground and concrete are present at the locations for proposed improvements in the spreading grounds. In general, PSG and HSG consist primarily of barren or sparsely-vegetated infiltration basins separated by raised dirt roads that divide the spreading grounds into basins (Figure 2-2). Some vegetation was present in the infiltration basins at both spreading grounds during the survey; however, dry conditions made the identification of vegetation difficult. Common sunflower (*Helianthus annuus*), short-pod mustard (*Hirschfeldia incana*), and brome grasses were identified. Additionally, some eucalyptus, pine, and palm trees were observed along the perimeter of the spreading grounds, especially at PSG. More barren conditions were prevalent at HSG. Residential development generally occurs within the BSA surrounding PSG and industrial-commercial development within the BSA surrounding HSG.

Tujunga Wash runs along the southern perimeter of the BSA of the HSG; this reach of the wash is completely encased in concrete. A 40 to 50-foot wide strip of vegetation composed primarily of native California buckwheat (*Eriogonum fasciculatum*) with ruderal herbaceous species occurs high along the opposite bank of Tujunga Wash from the HSG; however, the community is generally sparse and of poor habitat quality, and likely is remnant after previous encasement of Tujunga Wash in concrete and development of the adjacent VGS.

2.2.3 VGS Alternative

The BSA of the VGS Alternative (Figure 2-3) consists primarily of paved and gravel surfaces. The site contains electrical transmission towers for lineman training programs, a few small buildings, and areas where LADWP vehicles, equipment, and electrical-related materials are parked/stored. Vegetation is primarily present along perimeter fencing and includes eucalyptus trees, magnolia (*Magnolia* sp.) trees, thick-leaved yerba santa (*Eriodictyon crassifolium*), and laurel sumac (*Malosma laurina*). Other plant species identified onsite include Washington fan palm, tree tobacco (*Nicotiana glauca*), tree-of-heaven (*Ailanthus altissima*), and black mustard (*Brassica nigra*). As described in the previous chapter, a thin strip, approximately 40 to 50 feet wide, of disturbed vegetated habitat occurs outside the northern perimeter fence, between the fence line of the VGS and the concrete-encased channel of Tujunga Wash. This sparsely vegetated community consists primarily of California buckwheat and ruderal herbaceous species.

The BSA of the brine line (Figure 2-3) from the VGS approximately 7 miles south to its tie-in, is composed entirely of heavily urban developed land cover. Vegetation is composed of ornamental plantings of native and non-native species, as those observed in other areas of the Proposed Project.

2.3 WILDLIFE SPECIES

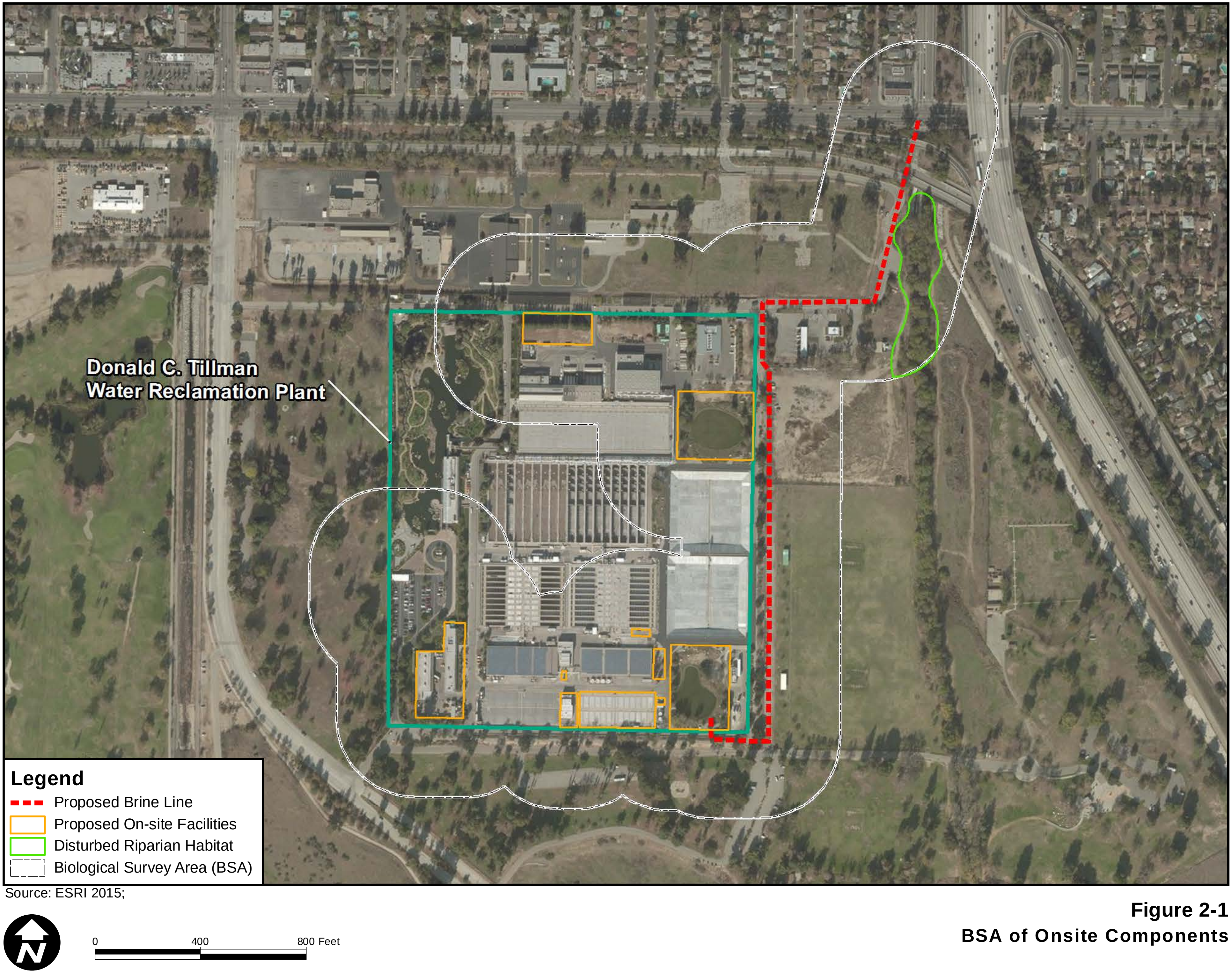
2.3.1 Onsite Components

Wildlife identified during the field survey of onsite components included bird species typical of urban areas, including bushtit (*Psaltriparus minimus*), American crow (*Corvus brachyrhynchos*), song sparrow (*Melospiza melodia*), house finch (*Carpodacus mexicanus*), lesser goldfinch (*Carduelis psaltria*), Northern mockingbird (*Mimus polyglottos*), yellow-rumped warbler (*Dendroica coronate*), house sparrow (*Passer domesticus*), Anna's hummingbird (*Calypte anna*), black phoebe (*Sayornis nigricans*), and rock pigeon (*Columba livia*). The majority of observations were of birds foraging and resting in and around ornamental vegetation. One raptor, red-shouldered hawk (*Buteo lineatus*) was also observed. Western fence lizard (*Sceloporus occidentalis*) and cottontail rabbit (*Sylvilagus audubonii*) were also observed within the BSA of onsite components.

No federally or state-listed wildlife species were detected during field surveys of onsite components.

2.3.2 Offsite Components

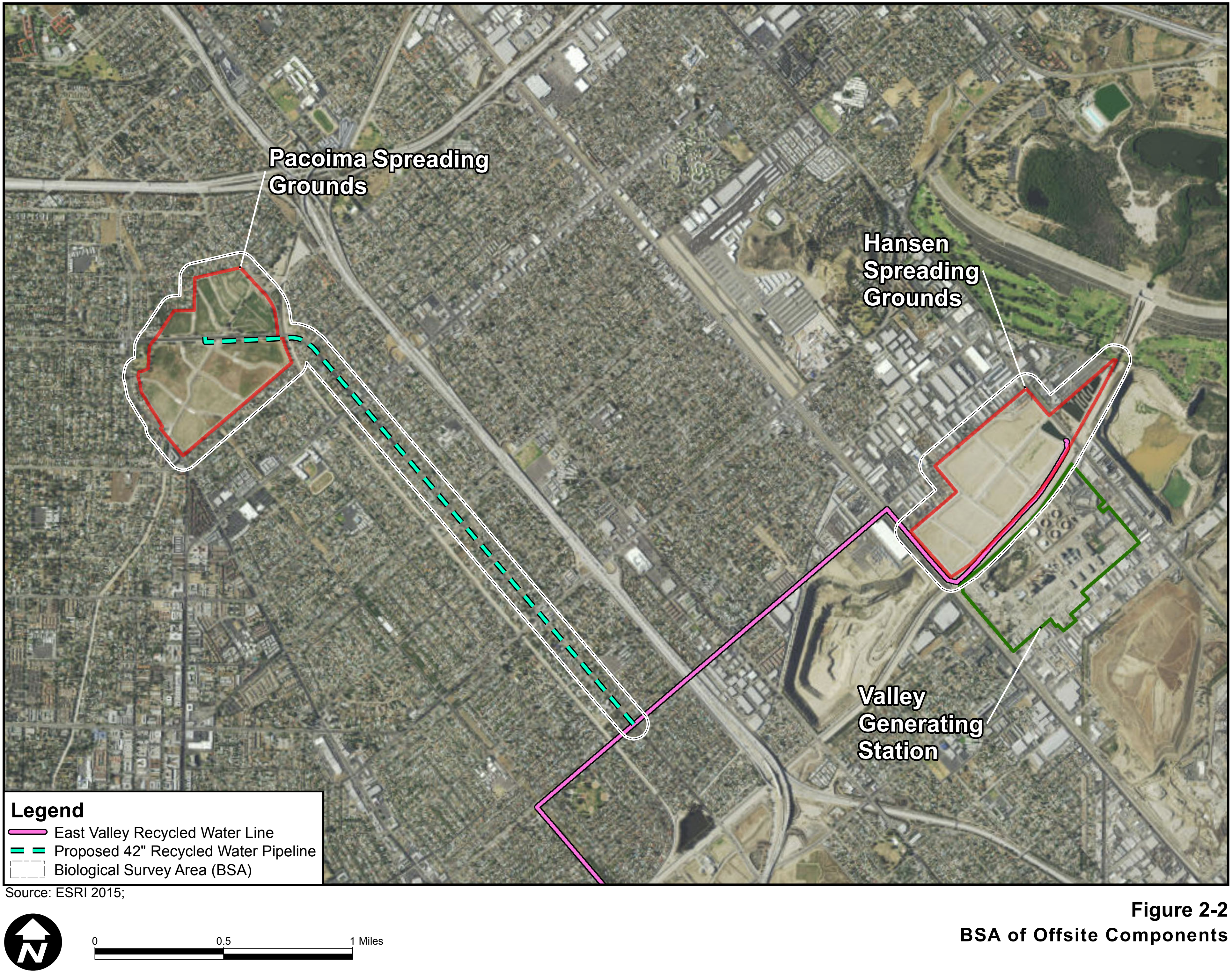
Wildlife identified during the field survey of offsite components included American crow, house finch, lesser goldfinch, house sparrow (*Passer domesticus*), and European starling (*Sturnus vulgaris*). Two raptor species, red-tailed hawk (*Buteo jamaicensis*) and turkey vulture (*Cathartes aura*) were also observed, both at PSG.
No federally or state-listed wildlife species were observed during the field survey of offsite components.



Source: ESRI 2015;

Figure 2-1
BSA of Onsite Components

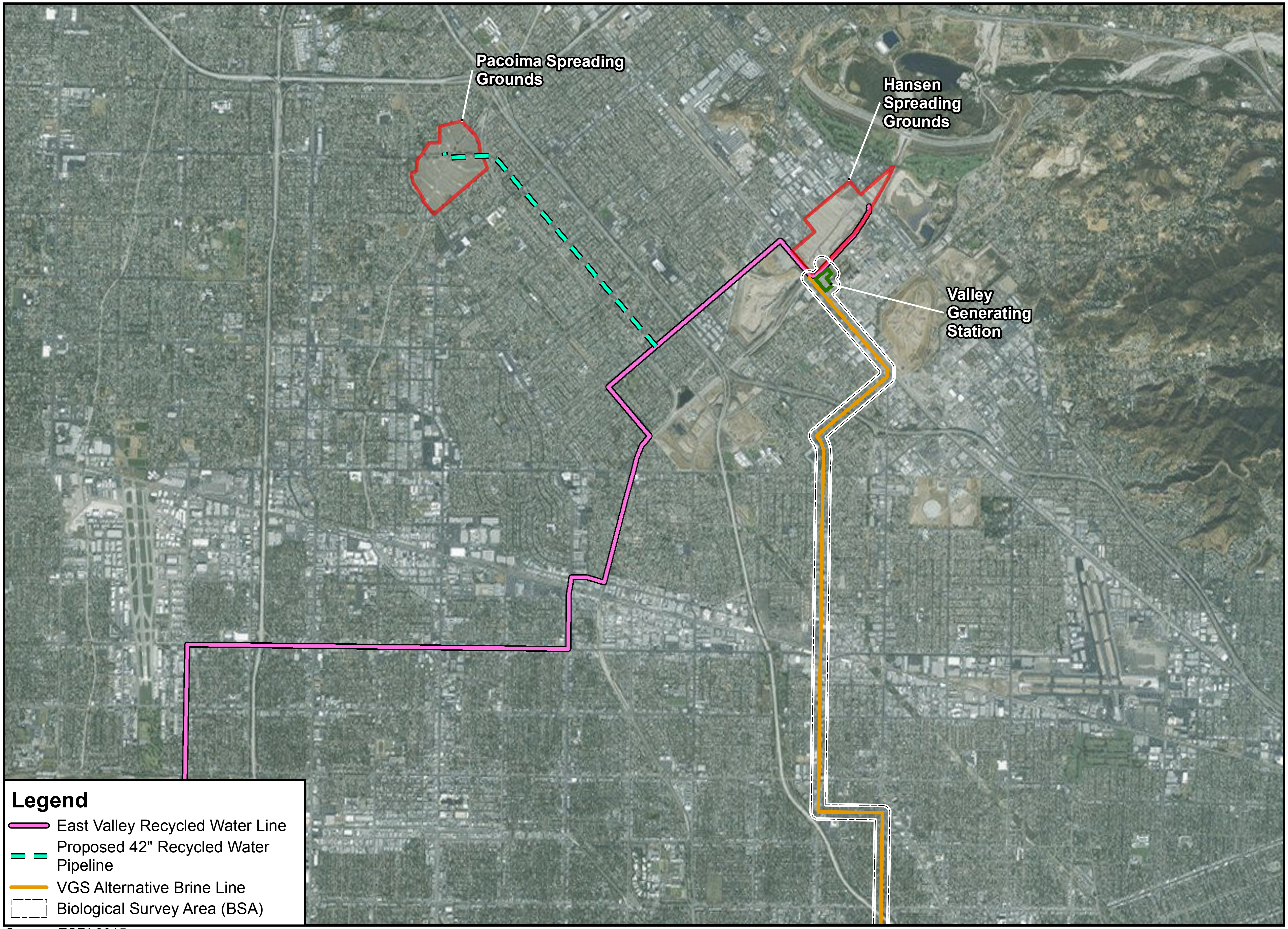
This page intentionally left blank.



Source: ESRI 2015;

Figure 2-2
BSA of Offsite Components

This page intentionally left blank.



Source: ESRI 2015;

Figure 2-3
BSA of the VGS Alternative

This page intentionally left blank.

2.3.3 VGS Alternative

Only a few observations of wildlife were made during the field survey of the VGS Alternative. House sparrow, American crow, European starling, and mourning dove (*Zenaida macroura*) were detected. No nests were observed in the training transmission towers and no federally or state-listed wildlife species were detected during the field survey of the VGS Alternative. A desktop survey of the brine line alignment from the VGS Alternative site south to its tie-in indicates that no natural vegetation communities are present. As a result, wildlife species along the alignment are likely typical of urban environments and no federally or state-listed wildlife species would likely occur.

2.4 WILDLIFE MOVEMENT CORRIDORS

In an urban context, a wildlife migration corridor can be defined as a linear landscape feature of sufficient width and buffer to allow animal movement between two comparatively undisturbed habitat fragments, or between a habitat fragment and some vital resource that encourages population growth and diversity. Habitat fragments are isolated patches of habitat separated by otherwise foreign or inhospitable areas, such as urban/suburban tracts, agricultural lands, or highways. Habitat fragments can isolate species populations by limiting migration, foraging, and breeding opportunities. Isolation of populations can have many harmful impacts and may contribute significantly to local species extinction.

Two types of wildlife migration corridors seen in urban settings are regional corridors, defined as those linking two or more large areas of natural open space, and local corridors, defined as those allowing resident animals to access critical resources (food, cover, and water) in a smaller area that might otherwise be isolated by urban development. Wildlife migration corridors are essential in geographically diverse settings, and especially in urban settings, for the sustainability of healthy and diverse animal communities. At a minimum, corridors promote colonization of habitat and genetic variability by connecting fragments of like habitat and help sustain individual species distributed in and among habitat fragments. They are also important features for dispersal, seasonal migration, foraging, and breeding.

2.4.1 Onsite Components

As previously described in Chapter 2.1.1, riparian habitat occurs within the BSA of the brine line, along Haskell Creek (Figure 2-1). This approximate 1.57-acre habitat is dominated by non-native shamel ash. It likely serves as a local wildlife movement corridor, providing foraging, cover, and resting habitat for wildlife. This riparian corridor enters the Sepulveda Basin from the north, flows into the Wildlife Lake and terminates approximately a quarter-mile below the lake, in the Los Angeles River. The corridor provides a connection to and from more extensive riparian habitat along the river, and services as a corridor between the northern boundary of the Basin and the Los Angeles River, through what is relatively open habitat. It is not anticipated that Project activities to install the brine line will intersect this riparian corridor, but activities could come within 40 feet of this habitat.

The Los Angeles River is located approximately 0.5 mile south-southwest of onsite components (see Figure 1-6) and serves as an important regional wildlife movement corridor for species associated with freshwater and riparian habitats. Although reduced in size by development and channelization of the river, the riparian corridor along the Los Angeles River includes a variety of plant and habitat layers (i.e., mature trees, shrubs, and herbaceous vegetation) that facilitate bird movement along the river. The Los Angeles River also provides a movement corridor for fish and other semi-aquatic species, although the Sepulveda Dam spans the river at the downstream end of the Sepulveda Basin, limiting wildlife movement. Lake Balboa, Woodley Creek, Japanese Garden Lake, the Wildlife Lake, and the Sepulveda Basin Wildlife Preserve around it, all occur within one mile of onsite components, but would not be impacted during construction as these features occur a sufficient distance from onsite components.

In addition, the Santa Monica Mountains Significant Ecological Area (SEA) is located approximately three miles southwest of onsite components (Figure 2-4) (LACDRP 2015), providing a large area of natural open space habitat for wildlife in eastern Los Angeles County. Although impacted by development in the far eastern portion of its range, the Santa Monica Mountains allow wildlife movement through relatively vast and undisturbed habitats. With its large size and variations in topography, wildlife utilizes natural corridors that allow movement between large open space areas within the range, as well as between the Simi Hills to the north.

2.4.2 Offsite Components

Tujunga Wash, which runs along the southern perimeter of the HSG, is of local importance for wildlife movement, providing connections between the San Fernando Valley and undisturbed habitats upstream of Hansen Dam. Movement along the wash corridor, however, has been affected by development along its banks and encasement of the entire wash channel in concrete downstream of Hansen Dam. It however remains a viable corridor for some wildlife dispersement between the urban setting of the San Fernando Valley and points east towards undisturbed habitats behind Hansen Dam and further east into the Angeles National Forest.

The HSG falls within the Tujunga Valley/Hansen Dam SEA, which also includes within its boundaries the Hansen Flood Control Basin, an approximate five-mile reach of Big Tujunga Creek/Tujunga Wash upstream of Hansen Dam, recreation facilities at the base of the dam (i.e.

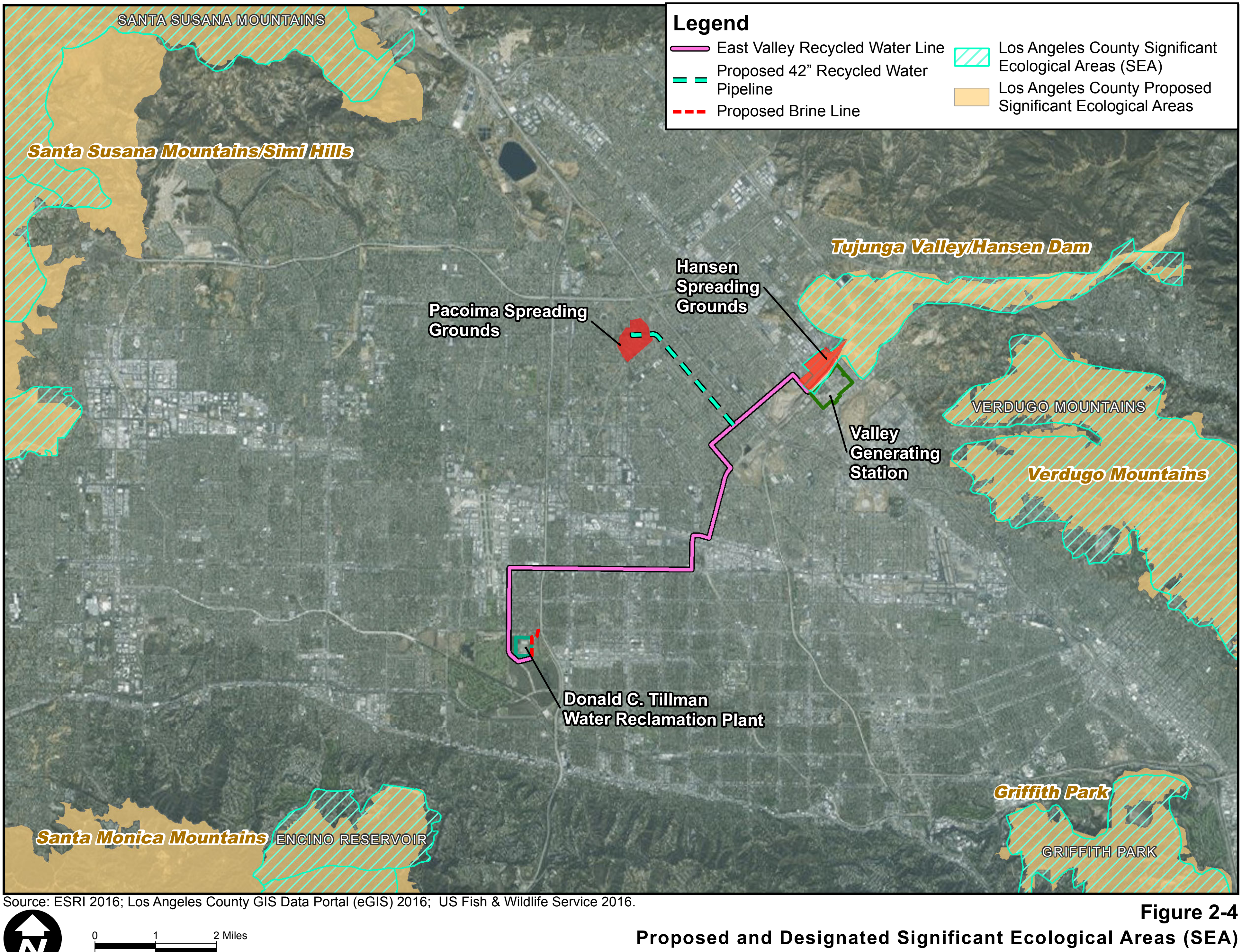
Hansen Dam Park and Hansen Dam Golf Course), and extending southwest to San Fernando Boulevard to include the HSG (Figure 2-4) (LACDRP 2012a). This SEA provides a large and unique area of natural open space habitat for wildlife in the northeastern portion of the San Fernando Valley, and provides connections to undisturbed habitats further east into the Angeles National Forest. The Big Tujunga Creek area is recognized for its great importance to migrating birds on the Pacific Flyway as well as the rare habitat of alluvial fan scrub, which provides habitat for uncommon resident birds. Tujunga Wash, above the dam and into the Angeles National Forest beyond the SEA, is designated critical habitat for the federally-threatened Santa Ana sucker (*Catastomus santaanae*) (Figure 2-5). Two other special-status fish species, arroyo chub (*Gila orcuttii*) and speckled dace (*Rhinichthys osculus* ssp. 3) also occur in the SEA, in Tujunga Wash and upstream in Big Tujunga Creek. The conveyance pipeline and PSG occur approximately 2 to 3 miles west of this SEA.

Additionally the Verdugo Mountains SEA occurs approximately 3 to 6 miles southeast of offsite components (Figure 2-4). This SEA provides a large "island" refuge surrounded by metropolitan Los Angeles, Burbank, and Glendale. It provides what remains of a link between populations found in the Santa Monica Mountains to the west and San Gabriel Mountains to the east (LACDRP 2012b).

2.4.3 VGS Alternative

As a fenced-in, urban developed site, the VGS does not serve as a wildlife movement corridor. Tujunga Wash occurs within the BSA of the VGS, and as discussed in the previous chapters, is of local importance for wildlife movement. The Tujunga Valley/Hansen Dam SEA, which lies a few hundred feet north-northeast of the VGS in the form of the HSG, provides natural open space habitat for wildlife in the northeastern portion of the San Fernando Valley and provides connections to undisturbed habitats further east into the Angeles National Forest. However, undisturbed habitats associated with this SEA lie behind Hansen Dam, approximately 1.5 miles north of the VGS site. Additionally, as previously described, the Verdugo Mountains SEA occurs approximately two miles east of the VGS and serves as a wildlife corridor between what remains of a link between populations found in the Santa Monica Mountains to the west and San Gabriel Mountains to the east.

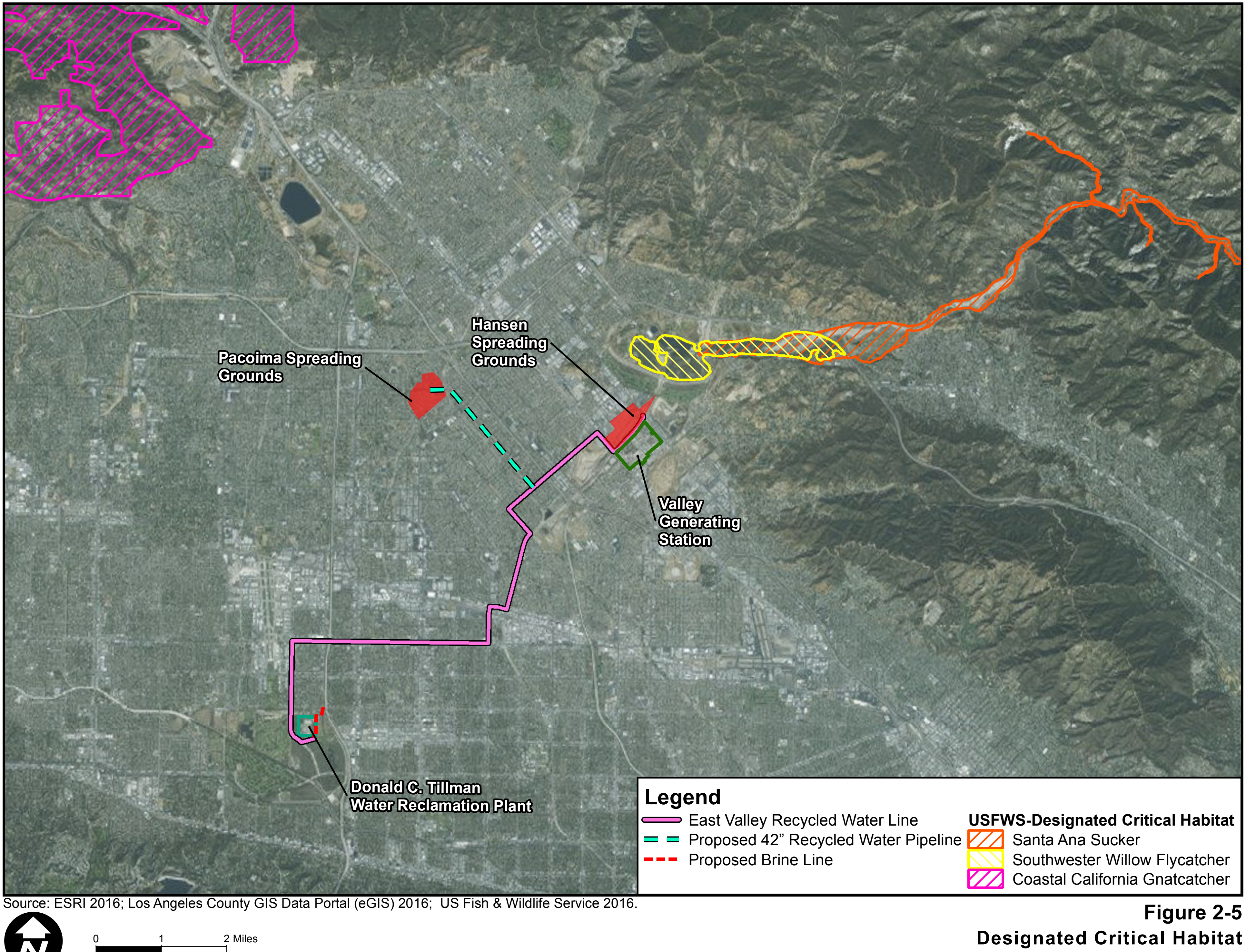
This page intentionally left blank.



Source: ESRI 2016; Los Angeles County GIS Data Portal (eGIS) 2016; US Fish & Wildlife Service 2016.

Figure 2-4
Proposed and Designated Significant Ecological Areas (SEA)

This page intentionally left blank.



Source: ESRI 2016; Los Angeles County GIS Data Portal (eGIS) 2016; US Fish & Wildlife Service 2016.

Figure 2-5
Designated Critical Habitat

This page intentionally left blank.

CHAPTER 3.0
SPECIAL-STATUS BIOLOGICAL RESOURCES

Prior to conducting the field surveys, the California Natural Diversity Data Base (CNDDB) (CDFW 2015a) was reviewed for the most recent distribution information for special-status plant and animal species and sensitive natural communities within the Van Nuys quadrangle and the surrounding eight quadrangles: Oat Mountain, San Fernando, Sunland, Burbank, Hollywood, Beverly Hills, Topanga, and Canoga Park.

Additionally, information on special-status plant species was compiled through a review of:

- *Inventory of Rare and Endangered Plants of California* (CNPS 2015)
- *State and Federally Listed Endangered, Threatened, and Rare Plants of California* (CDFW 2015b)
- *Special Vascular Plants, Bryophytes, and Lichens List* (CDFW 2015c)
- *Information for Planning and Conservation (IPaC)* (USFWS 2015)

Information on special-status animal species was compiled through a review of:

- CNDDB (CDFW 2015a)
- *State and Federally Listed Endangered and Threatened Animals of California* (CDFW 2015d)
- Special Animals List (CDFW 2015e)
- *IPaC* (USFWS 2015)

3.1 SPECIAL-STATUS PLANTS

Special-status plant species include those listed as Endangered, Threatened, Rare or those species proposed for listing by the USFWS under the federal Endangered Species Act (FESA) and CDFW under the California Endangered Species Act (CESA) (CDFW 2015b). The CNPS inventory is sanctioned by the CDFW and serves essentially as the list of candidate plant species for state listing. CNPS's California Rare Plant Ranks (CRPR; formerly CNPS List) 1B and 2 species are considered eligible for state listing as endangered or threatened.

Thirteen plant species known from the Van Nuys and surrounding eight quadrangles are federally and/or state-listed as threatened, endangered, or rare, including: marsh sandwort (*Arenaria paludicola*), Braunton's milk-vetch (*Astragalus brauntonii*), Ventura Marsh milk-vetch (*Astragalus pycnostachyus* var. *lanosissimus*), coastal dunes milk-vetch (*Astragalus tener* var. *titi*), Nevin's barberry (*Berberis nevinii*), salt marsh bird's-beak (*Chloropyron maritimum* spp. *maritimum*), San Fernando Valley spineflower (*Chorizanthe parryi* var. *fernandina*), Santa Susana tarplant (*Deinandra minthornii*), beach spectaclepod (*Dithyrea maritima*), slender-horned spineflower (*Dodecahema leptoceras*), Santa Monica dudleya (*Dudleya cymosa* ssp. *ovatifolia*), Gambel's water cress (*Nasturtium gambelii*), and California Orcutt grass (*Orcuttia californica*).

A total of 51 special-status plant species were identified from searches of the CNDDB and CNPS on-line inventory to have historically been recorded from the Van Nuys and surrounding eight quadrangles, and from a search of IPaC for the Project area. The results of these searches are included in Appendix A. One species, Davidson's bush-mallow, is previously known from the reach of Tujunga Wash that lies within the BSA of the HSG, between the HSG and the VGS Alternative. The record of this occurrence is from 1928 (CDFW 2015a) and this species was not observed during the field survey. This reach of the wash is entirely encased in concrete and this species is likely extirpated from the area. No other species occurrences coincide with the BSA. Most occurrences in the region are known from intact natural habitats within the Angeles National Forest and Verdugo Mountains, a few miles to the north and east of the HSG, and from undisturbed habitats in the Santa Monica Mountains, approximately five miles southwest of the DCTWRP, and from the Santa Susanna Mountains, ten plus miles to the west and northwest of the DCTWRP.

Due to the presence of primarily urban developed habitats in the BSA, the absence of any observations of special-status plant species during field surveys, and familiarity with the flora in the vicinity of the Project's components, no special-status plant species are considered to have potential to occur with the BSA of onsite and offsite components and the VGS Alternative. These species, their status, habitat requirements, and potential to occur within the BSA are provided in Table A, Appendix B.

3.2 SPECIAL-STATUS WILDLIFE

Special-status wildlife species include those listed as Endangered, Threatened, Rare or those species proposed for listing by the USFWS under FESA and CDFW under CESA (CDFW 2015d). Additional species receive federal protection under the Bald Eagle Protection Act (e.g., bald eagle, golden eagle), the Migratory Bird Treaty Act (MBTA), and state protection under CEQA Section 15380(d).

All birds, except European starlings, English house sparrows, rock doves (pigeons), and non-migratory game birds such as quail, pheasant, and grouse are protected under the MBTA. However, non-migratory game birds are protected under California Fish and Game Code (CFGC) Section 3503. Many other species are considered by CDFW to be California species of special concern (SSC), listed in Remsen (1978), Williams (1986) and CDFW (2015e), and others are on a CDFW Watch List (WL) (CDFW 2015e). The CNDDB tracks species within California for which there is conservation concern, including many that are not formally listed, and assigns them a CNDDB Rank (CDFW 2015e). Although SSC and WL species, and species that are tracked by the CNDDB but not formally listed are afforded no official legal status, they may receive special consideration during the CEQA review process.

CDFW further classifies some species under the following categories: "Fully Protected", "Protected birds" (CDFW Code §3511), "Protected mammals" (CDFW Code §4700), "Protected amphibian" (CDFW Code §5050 and Chapter 5, §41), "Protected reptile" (CDFW Code §5050 and Chapter 5, §42), and "Protected fish" (CDFW Code §5515). The designation "Protected" indicates that a species may not be taken or possessed except under special permit from CDFW; "Fully Protected" indicates that a species can be taken for scientific purposes by permit only (CDFW 2015e). CDFW Code §§3503, 3505, and 3800 prohibit the take, destruction or possession of any bird, nest or egg of any bird except English house sparrows and European starlings unless express authorization is obtained from CDFW. Additionally, USFWS has designated a number of migratory nongame birds as Birds of Conservation Concern (BCC) (USFWS 2008). This is the most recent effort by USFWS to identify migratory birds that, without conservation actions, are likely to become candidates for listing under FESA. Twenty five BCC are included in the IPaC list generated for the Project area.

Ten wildlife species known from the Van Nuys and surrounding eight quadrangles are federally and/or state-listed as threatened, endangered, or rare, including: southern steelhead (*Oncorhynchus mykiss irideus*), arroyo toad (*Anaxyrus californicus*), southern mountain yellow-legged frog (*Rana muscosa*), desert tortoise (*Gopherus agassizii*), Swainson’s hawk (*Buteo swainsoni*), western yellow-billed cuckoo (*Coccyzus americanus occidentalis*), southwestern willow flycatcher (*Empidonax traillii extimus*), bank swallow (*Riparia riparia*), coastal California gnatcatcher (*Polioptila californica californica*), and least Bell’s vireo (*Vireo bellii pusillus*).

A total of 41 special-status wildlife species were identified from the CNDDB search to have historically been recorded from the Van Nuys and surrounding eight quadrangles, and from a search of IPaC for the Project area. The results of these searches are included in Appendix A. An additional species, Cooper’s hawk (*Accipiter cooperii*) was included in the list of special-status wildlife species because of its known occurrences in urban southern California environments, making a total of 42 special-status wildlife species that were evaluated for this report. The 25 BCC included in the IPaC list are not discussed individually, but are addressed in sections dealing with nesting birds protected under the MBTA.

A historical record from 2004 of least Bell's vireo is documented in the CNDDB as overlapping the DCTWRP site. The record indicates that a lone male vireo, likely a foraging transient, was detected in a restoration area in the Sepulveda Basin's wildlife preserve. The nearest potentially suitable nesting habitat for this species occurs 0.5 miles to the south-southwest along the Los Angeles River. No other occurrences of special-status wildlife species coincide with the Project's onsite and offsite components, and the VGS Alternative. Similar to regional occurrences of special-status plant species, most wildlife species occurrences in the region are known from intact natural habitats behind Hansen Dam and within the Angeles National Forest, Verdugo Mountains, Santa Monica Mountains, and Santa Susanna Mountains.

Due to the presence of primarily urban developed habitats in the BSA, the absence of any observations of special-status wildlife species during field surveys, and familiarity with the fauna in the vicinity of the Project's components, a total of three special-status wildlife species, Cooper's hawk, Swainson's hawk (*Buteo swainsoni*), hoary bat (*Lasiurus cinereus*), and western yellow bat were considered to have at least some potential (low, moderate, or high) to occur within the vicinity of onsite and offsite components and the VGS Alternative. These three species and all other special-status wildlife species considered for this report, their status, habitat requirements, and potential to occur within the BSA are provided in Table B, Appendix B. In addition, several birds protected by the MBTA and CFGC have potential to nest in the vicinity of onsite and offsite components and the VGS Alternative.

Birds

<u>Raptors</u>

Most common raptors such as red-tailed hawk (*Buteo jamaicensis*) and red-shouldered hawk (*Buteo lineatus*) observed during the field surveys, nest in mature, large coniferous or deciduous trees and use twigs or branches as nesting material. These raptors could nest in the vicinity of the Project's components, in particular on large mature ornamental trees occurring within the BSA of onsite and offsite components, and the VGS Alternative. Additionally, transmission towers within the VGS Alternative provide potentially suitable nesting habitat. Common raptors, such as those observed, are afforded protection under the MBTA and CFGC. The nesting period for raptors generally occurs between December 15 and August 31.

Cooper's hawk

Cooper's hawk is CDFW Watch List species. This species is a breeding resident throughout most of the wooded portion of California, ranging in elevation from sea level to above 2,700 meters. Outside of the breeding season, it disperses widely from southern Canada to northern Mexico and locally occurs less frequently in mountain areas than at lower elevations. In natural environments, Cooper's hawk nests primarily in oaks, eucalyptus, and riparian willows (Asay 1987), where it builds high in trees, but beneath the canopy. It forages in broken woodland and habitat edges, hunting mammals, birds, amphibians, and reptiles. A recent study in Orange County, California, has demonstrated that this species has successfully adapted to nesting and foraging in urban environments, where smaller birds are plentiful, and tall trees and buildings provide nesting sites (Chiang et al. 2012).

No record of this species from the Van Nuys or surrounding eight quadrangles exists in the CNDDB and this species was not observed during field surveys. However; as previously indicated, this raptor has become accustomed to urban environments and has potential to occur in the BSA of onsite and offsite components, and the VGS Alternative. Due to the presence of tall mature trees and buildings suitable for nesting and a supply of small urban birds and mammals as prey, this species has a low potential to occur in the BSA of onsite and offsite components, and the VGS Alternative.

Swainson's hawk

Swainson's hawk is state-listed as threatened and is a USFWS BCC. This species' numbers are greatest in the Central valley and in the Great basin area of northeastern California, with a few territories located in Shasta Valley, the Owens valley, and the Mohave Desert. The Swainson's hawk breeds in the western United States and Canada and winters in South America as far south as Argentina. This raptor is adapted to the open grasslands and has become increasingly dependent on agriculture, especially alfalfa crops, as native communities are converted to agricultural lands. The diet of the Swainson's hawk in California is varied, but mainly consists of small rodents called voles; however other small mammals, birds, and insects are also taken. This species often nest peripheral to riparian systems and will also use lone trees in agricultural fields or pastures and roadside trees when available, and adjacent to suitable foraging habitat (CDFW 2015f).

Swainson's hawk was not observed during field surveys and the nearest record of this species is from the vicinity of Encino, three plus miles southwest of the DCTWRP. Breeding populations of this species are now likely extirpated from the Traverse Ranges (CDFW 2015a); however; this species may occur as a rare migrating transient in the BSA, where suitable prey occurs. As a result, this species has a low potential to occur in the BSA of onsite and offsite components, and the VGS Alternative.

Special-Status Passerine and Non-Passerine Landbirds

Passerines (perching birds) are a taxonomic grouping that consists of several families including swallows (*Hirundinidae*); larks (*Alaudidae*); crows, ravens, and jays (*Corvidae*); shrikes (*Laniidae*); vireos (*Vireonidae*); finches (*Fringillidae*); and Emberizids (*Emberizidae*; warblers, sparrows, blackbirds, etc.), among others. Non-passerine land birds are a non-taxonomic-based grouping typically used by ornithologists to categorize a loose assemblage of birds. Families grouped into this category include kingfishers (*Alcedinidae*), woodpeckers (*Picidae*), swifts (*Apodidae*), hummingbirds (*Trochilidae*), and pigeons and doves (*Columbidae*), among others. Habitat, nesting, and foraging requirements for these species are wide ranging; therefore, outlining generic habitat requirements for this grouping is difficult. These species typically use most habitat types and are known to nest on the ground; in shrubs and trees; on buildings; under bridges; and within cavities, crevices, and manmade structures. Many of these species migrate over long distances and all species, except starlings, English house sparrows, and rock doves (pigeons), are protected under the federal MBTA and CFGC. The nesting period for passerines and non-passerine land birds generally occurs between February 15 and September 15, depending on species and climatic conditions.

Although consisting of ornamental plant species, suitable nesting and foraging habitat is present within the BSA of onsite and offsite components and the VGS Alternative for passerines and non-passerine land birds found in urban environments such as bushtit, American crow, song sparrow, house finch, lesser goldfinch, yellow-rumped warbler, and other species that were observed during the surveys.

Several special-status passerine and non-passerine land bird species were considered during the preparation of this report because the Project’s components fall within the vicinity of historical occurrences of these species, including tricolored blackbird (*Agelauis tricolor*), southwestern willow flycatcher, coastal California gnatcatcher, western yellow-billed cuckoo, bank swallow, and least Bell’s vireo. These species are not expected to occur within the BSA due to a lack of suitable habitat (see Appendix B).

Mammals

Two special-status bat species, hoary bat and western yellow bat are considered to have some potential to occur within the survey area.

Hoary bat

Hoary bat is tracked by the CNDDB and is listed as medium priority by WBWG. Medium priority indicates a level of concern that should warrant closer evaluation, more research, and conservation actions of both the species and possible threats (WBWG 2015). This species is the most widespread of all North American bats, ranging from near the limit of trees in Canada, southward at least to Guatemala, and from Brazil to Argentina and Chile in South America. In the United States, hoary bats are more common in the prairie states and Pacific Northwest, where they are highly associated with forested habitats. They may be found at any location in California, although distribution is patchy in southeastern deserts. Habitats suitable for bearing young include all woodlands and forests with medium to large trees and dense foliage. During migration in southern California, males are found in foothills, deserts, and mountains; females in lowlands and coastal valleys (Vaughan and Krutzsch 1954). They are solitary bats and roost primarily in trees along the edges of both coniferous and deciduous forests, near the ends of branches (WBWG 2005a).

This species was not observed during field surveys and the nearest historic record is from approximately two miles west of the DCTWRP in Van Nuys, and a record from approximately two miles north-northeast of PSG in San Fernando. Due to the presence of urban habitat mosaics in the BSA that provide suitable foraging and roosting habitat, this species has low potential to occur in the BSA of onsite and offsite components, and the VGS Alternative.

Western yellow bat

Western yellow bat is also tracked by the CNDDB and listed as medium priority by WBWG (WBWG 2015). This species occurs in northern Mexico, western Arizona, southern California, southern Nevada, and southwestern New Mexico. Western yellow bats are primarily associated with dry, thorny vegetation on the Mexican Plateau, and are found in desert regions of the southwestern United States, where they show a particular association with palms and other desert riparian habitats. This species has been associated with natural and non-natural water features in open grassy areas and scrub, as well as canyon and riparian situations. They are known to occur in a number of palm oases, but are also believed to be expanding their range with the increased usage of ornamental palms in landscaping, including in to urban areas. Occurrences have been reported over swimming pools, lawns in residential areas, and orchards. This species is suspected to be non-colonial. Individuals usually roost in trees, hanging from the underside of a leaf. They are commonly found in California roosting in the skirt of dead fronds in both native and non-native palm trees, and have also been documented roosting in cottonwood trees. At least some individuals or populations may be migratory, although some individuals appear to be present year-round, even in the northernmost portion of their range. These bats probably do not hibernate; activity has been observed year-round in both the southern and northern portions of their range (WBWG 2005b).

This species was not observed during field surveys and the nearest historic record documented in the CNDDB is from more than 10 miles from Project components in Glendale. However, palm trees potentially suitable as roosting and foraging habitat are present in the BSA, in particular in the BSA of the recycled water line along Arleta Avenue. Although known more from desert regions, the occurrence of this species in urban areas and presence of potentially suitable trees within the BSA of Project components results in this species having a low potential to occur in the BSA of onsite and offsite components, and the VGS Alternative.

3.3 SENSITIVE NATURAL COMMUNITIES

Sensitive natural communities are those that are designated as rare in the region by the CNDDB, support special-status plant or wildlife species, or receive regulatory protection (i.e., Section 404 of the Clean Water Act (CWA) and/or Sections 1600 et seq. of the CFGC). Rare communities are given the highest inventory priority (Holland 1986; CDFG 2010). Based on a review of the CNDDB (CDFW 2015a), seven sensitive vegetative communities have been recorded within the Van Nuys and surrounding eight quadrangles, including California Walnut Woodland, Riversidian Alluvial Fan Sage Scrub, Southern California Arroyo Chur/Santa Ana Sucker Stream, Southern Coast Live Oak Riparian Forest, Southern Cottonwood Willow Riparian Forest, Southern Mixed Riparian Forest, and Southern Sycamore Alder Riparian Woodland. As previously described, vegetation communities with the BSA are composed of ornamental plant species and none of these sensitive natural communities coincide with the Project's components. They are primarily known from the Santa Monica Mountains, Verdugo Mountains, and the Angeles National Forest were natural vegetation communities generally remain undisturbed.

3.4 WETLANDS AND OTHER WATERS OF THE U.S. AND STATE

Aquatic resources, including riparian areas, wetlands, and certain aquatic vegetation communities, are considered sensitive biological resources that can fall under the jurisdiction of several regulatory agencies.

Under Section 404 of the CWA, the Corps exerts jurisdiction over waters of the U.S., including, but not limited to, all waters that are subject to the ebb and flow of tide; wetlands, and other waters such as lakes, rivers, streams (including intermittent or ephemeral streams), mudflats, sandflats, sloughs, prairie potholes, vernal pools, wet meadows, playa lakes, or natural ponds, and tributaries of the above features. The extent of a stream that falls under Corps jurisdiction is generally defined as that portion that falls within the limits of the ordinary high water mark (OHWM). Field indicators of OHWM include clear and natural lines on opposite sides of the banks, scouring, sedimentary deposits, drift lines, exposed roots, shelving, destruction of terrestrial vegetation, and the presence of litter or debris. Typically, the width of waters corresponds to the 2-year flood event. Wetlands, including swamps, bogs, seasonal wetlands, seeps, marshes, and similar areas, are defined by the Corps as "those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions" (33 Code of Federal Regulations [CFR] 328.3 [b]; 40 CFR 230.3 [t]). Indicators of three wetland parameters (hydric soils, hydrophytic vegetation, and wetland hydrology as determined by field investigation) must be present for a site to be classified as a wetland by the Corps (Environmental Laboratory 1987).

Pursuant to Section 401 of the CWA and Environmental Protection Agency 404(b)(1) guidelines, in order for a Corps permit applicant to conduct any activity, which may result in discharge into navigable waters, they must provide a certification from the Regional Water Quality Control Board (RWQCB) that such discharge will comply with state water quality standards. Under the Porter-Cologne Water Quality Control Act (California Water Code [CWC] Sections 13000–14920), RWQCB is authorized to regulate the discharge of waste that could affect the quality of the state's waters. RWQCB jurisdiction corresponds with that of the Corps and, typically, with that of CDFW along a river, stream, or creek. RWQCB also asserts jurisdiction over aquatic features that are considered "isolated" from federal jurisdiction features.

CDFW exercises jurisdiction over waters of the state, including wetland and riparian resources associated with rivers, streams, and lakes under CFGC Sections 1600– 1607. CDFW has the authority to regulate work that will substantially divert, obstruct, or change the natural flow of a river, stream, or lake; substantially change the bed, channel, or bank of a river, stream, or lake; or use material from a streambed. CDFW jurisdiction along a river, stream, creek, or other water body is usually bounded by the top-of-bank or the outermost edges of riparian vegetation.

A number of aquatic and riparian resources occur within the BSA. As described in Chapter 2.2.1, a portion of Haskell Creek occurs within the BSA of the onsite brine line. The extent of riparian habitat along it is depicted on Figure 2-1 and represents the approximate extent of potentially jurisdictional waters. Installation of the brine line; however, is not anticipated to impact the creek or riparian habitat along it. Similarly, Tujunga Wash occurs within the BSA of the HSG; however, improvements inside the HSG would not impact Tujunga Wash.

PSG and HSG themselves are not considered jurisdictional features. The Corps and US Environmental Protection Agency (USEPA) recently published the CWA final rule that provides updated definitions of what constitutes federally-protected waters. The agencies specifically excluded from the definition of protected waters constructed detention and retention basins created in dry land and used for wastewater recycling. The exclusion also covers water distributary structures that are built in dry land for water recycling, such as the improvements proposed for PSG and HSG (Corps and USEPA 2015). As a result, construction of improvements in the spreading grounds would not occur within federally-protected waters. CDFW and the RWQCB also do not consider spreading grounds as protected state waters. As a result, construction of improvements in the spreading grounds would not trigger the requirement for a Streambed Alternation Agreement from CDFW, or require RWQCB permitting under the Porter-Cologne Water Quality Control Act.

CHAPTER 4.0
APPLICABLE REGULATIONS

As discussed in some of the previous chapters, several regulations have been established by federal, state, and local agencies to protect and conserve biological resources. The descriptions below provide an overview of agency regulations that may be applicable to the resources that occur within the Project's components, and their respective requirements. The final determination of whether permits are required is made by the regulating agencies.

4.1 FEDERAL REGULATIONS AND STANDARDS

Federal Endangered Species Act (ESA)

Enacted in 1973, the federal ESA provides for the conservation of threatened and endangered species and their ecosystems (United States Code [U.S.C.] Title 16, Chapter 35, Sections 1531–1544). The ESA prohibits the "take" of threatened and endangered species except under certain circumstances and only with authorization from USFWS through a permit under Section 4(d), 7 or 10(a) of the ESA. "Take" under the ESA is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct."

Formal consultation under Section 7 of the ESA would be required if the Proposed Project had the potential to affect a federally listed species that has been detected within or adjacent to the Project's components.

Migratory Bird Treaty Act

Congress passed the MBTA in 1918 to prohibit the kill or transport of native migratory birds, or any part, nest, or egg of any such bird unless allowed by another regulation adopted in accordance with the MBTA (U.S.C. Title 16, Chapter 7, Subchapter II, Sections 703–712). The prohibition applies to birds included in the respective international conventions between the United States and Great Britain, the United States and Mexico, the United States and Japan, and the United States and Russia.

No permit is issued under the MBTA; however, the Proposed Project would need to employ measures that would avoid or minimize impacts on protected migratory birds.

Clean Water Act

Under Section 404 of the CWA, the Corps regulates the discharge of dredged or fill material into jurisdictional waters of the U.S., which include those waters listed in 33 CFR 328.3 (Definitions) (U.S.C. Title 33, Chapter 26, Sections 101–607). Section 401 of the CWA requires a water quality certification from the state for all permits issued by the Corps under Section 404 of the CWA. RWQCB is the state agency in charge of issuing a CWA Section 401 water quality certification or waiver.

As described in Chapter 3.5, the Project would not coincide with waters of the U.S. Spreading grounds are not considered waters of the U.S. and as a result, improvements in the spreading grounds would not require permitting pursuant to the CWA. Additionally, the recycled pipeline would be suspended across the Pacoima Diversion Channel and is not anticipated to trigger permitting pursuant to the CWA.

Magnuson-Stevens Fishery Conservation and Management Act

Under the purview of the National Oceanic and Atmospheric Association's National Marine Fisheries Service (NMFS), amendments in 1996 to the Magnuson-Stevens Fishery Conservation and Management Act set forth a number of mandates for NMFS, Regional Fishery Management Councils, and federal action agencies to identify and protect important marine and anadromous fish habitat. The Councils, with assistance from NMFS, are required to delineate Essential Fish Habitat (EFH) in fishery management plans for all managed species. EFH is defined to include "those waters and substrate necessary to fish for spawning, breeding, feeding, or growth to maturity" (in the 1997 Interim Final Rule [62 Fed. Reg. 66551, Section 600.10 Definitions]). Waters include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include historic areas if appropriate; substrate includes sediment, hard bottom, structures underlying the waters, and associated biological communities; necessary means the habitat required to support a sustainable fishery and the managed species' contribution to a healthy ecosystem; and "spawning, breeding, feeding, or growth to maturity" covers a species' full life cycle (PFMC 2013).

The Proposed Project is located within a highly urbanized area of the San Fernando Valley and does not include or is connected to any EFH.

Protection of Wetlands – Executive Order Numbers 11990 and 12608

Under this Executive Order (EO) issued May 24, 1977 and amended by EO 12608, Federal agencies must provide leadership and take action to minimize the destruction, loss or degradation of wetlands, and to preserve and enhance the natural and beneficial values of wetlands (42 CFR 26961; 3 CFR 1977 Comp., p. 121). Each agency, to the extent permitted by law, must avoid undertaking or providing assistance for new construction located in wetlands unless the head of the agency finds: there is no practical alternative to such construction; the proposed action includes all practical measures to minimize harm to wetlands that may result from such use. In making this finding the head of the agency may take into account economic, environmental and other pertinent factors. Each agency must also provide opportunity for early public review of any plans or proposals for new construction in wetlands (FedCenter 2015).

No project components, including the suspension of the recycled water pipeline across the Pacoima Diversion Channel, are anticipated to coincide with wetlands or other waters of the U.S. as defined by the 1987 Wetland Delineation Manual (Corps 1987) (see Chapter 3.4).

Wild and Scenic Rivers Act

The National Wild and Scenic Rivers System was created by Congress in 1968 (Public Law 90-542; 16 U.S.C. 1271 et seq.) to preserve certain rivers with outstanding natural, cultural, and recreational values in a free-flowing condition for the enjoyment of present and future generations. The Act is notable for safeguarding the special character of these rivers, while also recognizing the potential for their appropriate use and development. It encourages river management that crosses political boundaries and promotes public participation in developing goals for river protection (NWSRW 2015).

The Proposed Project is not located within the watershed of a wild and scenic river.

Coastal Zone Management Act

The U.S. Congress recognized the importance of meeting the challenge of continued growth in the coastal zone by passing the Coastal Zone Management Act in 1972 (Public Law 109-58; 16 U.S.C. 1451 et seq.). This act, administered by NOAA, provides for the management of the nation's coastal resources, including the Great Lakes. The goal is to "preserve, protect, develop, and where possible, to restore or enhance the resources of the nation's coastal zone."

The Proposed Project is not located in the City of Los Angeles Coastal Zone or the State Coastal Zone. The Project is located within a highly urbanized area of the San Fernando Valley.

4.2 STATE REGULATIONS AND STANDARDS

California Fish and Game Code

The CFGC regulates the taking or possession of birds, mammals, fish, amphibians, and reptiles, as well as impacts to natural resources such as wetlands and waters of the state. It includes the California Endangered Species Act (CESA) (Sections 2050–2115) and Streambed Alteration Agreement (SAA) regulations (Section 1600 et seq.).

Wildlife "take" is defined by CDFW as "to hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." Protection extends to the animals, dead or alive, and all their body parts. Section 2081 of CESA allows CDFW to issue an incidental take permit for state-listed threatened or endangered species, should the proposed Project have the potential to "take" a state-listed species that has been detected within or adjacent to the Project. Certain criteria are required under CESA prior to the issuance of such a permit, including the requirement that impacts of the take are minimized and fully mitigated.

Since Project activities, including the suspension of the recycled water pipeline across the Pacoima Diversion Channel, are not proposed to coincide with waters and riparian habitat under state jurisdiction, issuance of an SAA is not required for this Project.

Porter-Cologne Water Quality Control Act

Under Section 13000 et seq., of the Porter-Cologne Act, RWQCB is the agency that regulates discharges of waste and fill material within any region that could affect a water of the state (CWC 13260[a]), (including wetlands and isolated waters) as defined by CWC Section 13050(e).

A permit under the Porter Cologne Act is not required since Project activities, including the suspension of the recycled water pipeline across the Pacoima Diversion Channel, are not proposed to coincide with waters of the state.

California Environmental Quality Act[1]

CEQA requires that biological resources be considered when assessing the environmental impacts resulting from proposed actions. CEQA does not specifically define what constitutes an "adverse effect" on a biological resource. Instead, lead agencies are charged with determining what specifically should be considered an impact.

[1] PRC Section 21000 et seq. and the State CEQA Guidelines, California Code of Regulations, Section 15000 et seq.

4.3 LOCAL REGULATIONS AND STANDARDS

Significant Ecological Area Program

Los Angeles County first began to inventory biotic resources and identify important areas of biological diversity in the 1970s. Today, the primary mechanism used by the County to conserve biological diversity is a planning overlay called Significant Ecological Areas designated in the County's General Plan Conservation/Open Space Element. Together, the General Plan overlays and a SEA conditional use permit (CUP) process are referred to as the SEA Program. SEAs are ecologically important land and water systems that support valuable habitat for plants and animals, often integral to the preservation of rare, threatened, or endangered species and the conservation of biological diversity in Los Angeles County. While SEAs are not preserves, they are areas where Los Angeles County deems it important to facilitate a balance between development and resource conservation. Development activities in the SEAs are reviewed closely in order to conserve water and biological resources such as streams, oak woodlands, and threatened or endangered species and their habitat. The intent of the proposed SEA regulations is not to preclude development, but to allow controlled development without jeopardizing the biotic diversity of Los Angeles County. Development within the boundaries of an SEA requires a CUP, which is reviewed by the Significant Ecological Area Technical Advisory Committee (SEATAC). SEATAC is an advisory committee to the County's Regional Planning Commission that specializes in various areas of biology in Los Angeles County.

The HSG occurs within the Tujunga Valley/Hansen Dam SEA (Figure 2-4). As a result, improvements proposed for the spreading grounds may require SEATAC review of the Project and issuance of a CUP may be required. However, improvements would occur on bare or concrete ground surfaces and impacts are not considered significant.

Los Angeles County Oak Tree Ordinance

The Los Angeles County Oak Tree Ordinance recognizes oak trees as significant historical, aesthetic, and ecological resources. The goal of the ordinance is to create favorable conditions for the preservation and propagation of this unique and threatened plant heritage. By making this part of the development process, healthy oak trees will be preserved and maintained. The Los Angeles County Oak Tree Ordinance applies to all unincorporated areas of the County. Under the ordinance, a person shall not cut, destroy, remove, relocate, inflict damage, or encroach into the protected zone of any tree of the oak tree genus, which is 8 inches or more diameter at breast height (dbh), 4.5 feet above natural grade, or, in the case of oaks with multiple trunks, a combined dbh of 12 inches or more of the two largest trunks, without first obtaining a permit from the Los Angeles County Fire Department. No oak trees were identified that coincide with

Project components. If it is determined that oak trees need to be removed, LADWP would comply with this ordinance.

CHAPTER 5.0
IMPACTS ON BIOLOGICAL RESOURCES

Biological resources may be either directly or indirectly impacted by a project. Direct and indirect impacts may be either permanent or temporary in nature. These impact categories are defined below.

- **Direct**: Any alteration, physical disturbance, or destruction of biological resources that would result from project-related activities is considered a direct impact. Examples include clearing vegetation, loss of individual species and/or their habitats, and encroaching into wetlands or a river.
- **Indirect**: As a result of project-related activities, biological resources may also be affected in a manner that is ancillary to physical impacts. Examples include elevated noise and dust levels, soil compaction, increased human activity, decreased water quality, and the introduction of invasive wildlife (domestic cats and dogs) and plants.
- **Permanent**: All impacts that result in the long-term or irreversible removal of biological resources are considered permanent. Examples include constructing a building or permanent road on an area containing biological resources. Permanent impacts would occur upon construction of the proposed AWPF, warehouse, etc.
- **Temporary**: Any impacts considered to have reversible impacts on biological resources can be viewed as temporary. Examples include the generation of fugitive dust during construction, or removing vegetation for the preparation of stream bank stabilization activities, and either allowing the natural vegetation to recolonize or actively revegetating the impact area. Surface disturbance that removes vegetation and disturbs the soil is considered a long-term temporary impact because of slow natural recovery in arid ecosystems. Impacts associated with underground installation of the brine line and recycled water pipeline are all anticipated to be temporary, as aboveground conditions would be returned to preexisting conditions.

Impacts on biological resources due to construction activities are described in this chapter. Impacts on biological resources during construction could include such impacts as elevated noise and dust levels during construction.

It is anticipated that permanent impacts will primarily occur as the result of construction of onsite components; the new AWPF, warehouse, maintenance building and parking area, pump station, and primary flow EQ tank.

Installation of the new brine line and recycled water pipeline will result in temporary impacts. Ground surfaces (i.e., pavement or vegetative cover) and underlying soils will be removed to install the pipeline in the excavated trench, the trench will be backfilled, and ground surfaces will be restored to existing conditions.

Potential direct and indirect impacts from construction and operations activities to vegetation, wildlife, special-status plant and wildlife species, sensitive natural communities, and wildlife movement corridors are presented in the following chapters.

5.1 VEGETATION

5.1.1 Construction

5.1.1.1 Vegetation Communities

The construction of onsite and offsite components of the Proposed Project, or the VGS Alternative, would impact urban developed land covers consisting of previously altered habitats including, paved surfaces, buildings, and ornamental landscapes. Only communities of landscape/ornamental vegetation would be directly impacted, and as a result, impacts would not be considered significant. The estimated acreage of permanent impacts associated with the project is presented in the table below.

Table 5-1 Proposed Permanent Impacts in Acres

Onsite Components		Offsite Components			VGS Alternative		
DCTWRP Facilities	Brine Line	Recycled Water Pipeline	PSG	HSG	VGS Facilities	Recycled Water Pipeline	Brine Line
6.79	0.35	0.87	0.95	0.42	7.21	1.82	5.09

Indirect impacts to vegetation communities outside the Project's components could include the accumulation of fugitive dust, and the colonization of nonnative, invasive plant species. Other indirect impacts could include an increase in the amount of compacted or modified surfaces that, if not controlled, could increase the potential for surface runoff, increased erosion, and sediment deposition within vegetation beyond the Project's footprint. With implementation of avoidance and minimization measures presented in Chapter 6, indirect impacts to natural vegetation communities would be avoided and minimized, and not be considered significant.

5.1.1.2 Special-Status Plant Species

Individual special-status plant species could be damaged or destroyed from crushing or trampling during construction activities; however, construction of onsite and offsite components of the Proposed Project, or the VGS Alternative, would occur in urban developed areas unsuitable for special-status species. No federal or state-listed plant species were observed during the field surveys, nor was potentially suitable habitat for listed plant species observed within the BSA of onsite or offsite components and the VGS Alternative. In addition, erosion control measures to control surface runoff, erosion, and sedimentation outside of the Project footprint would be implemented during construction. As a result, no direct or indirect impacts to special-status plant species would occur. Additionally, no USFWS-designated critical habitat for special-status plant species coincides with onsite or offsite components and the VGS Alternative (Figure 2-5).

5.1.2 Operation

Operations and routine maintenance of onsite and offsite components of the Proposed Project, or the VGS Alternative, would be conducted within previously-disturbed urban developed areas, most of which is consists of paved surfaces or bare ground. As a result impacts to vegetation communities and special-status plant species during operation of the Proposed Project would not occur and would not be significant.

5.2 WILDLIFE

5.2.1 Construction

Construction of the onsite and offsite components, or the VGS Alternative, could potentially affect wildlife and wildlife habitat, including construction-related noise disturbance and disruption of movement and potential wildlife mortality. Short-term impacts of construction on wildlife resources would result from wildlife avoidance of the immediate construction zone. Noise and other disturbances caused by heavy equipment and construction crews may cause wildlife to move away from the construction zone. Vegetation removal and during construction of onsite components could result in the mortality of individual wildlife species. Species with limited mobility or that occupy burrows within the construction zones could be crushed during project activities.

No federal or state-listed wildlife species were identified during field surveys; however, four special-status species have low potential to occur on-site including Cooper’s hawk, Swainson’s hawk, hoary bat, and western yellow bat. In addition, birds protected by the MBTA and CFGC have the potential to nest within the BSA.

5.2.1.1 Birds

Raptors

Two special-status raptor species, Cooper's hawk and Swainson's hawk, have potential to occur within the BSA. These species may forage in and near project components and Cooper's hawk has potential to nest in large mature trees in the vicinity. It is anticipated that trees will need to be removed to construct onsite components, in particular at the proposed locations for the AWPF, warehouse, and primary flow EQ. However, by adhering to avoidance and minimization measures outlined in Chapter 6, impacts to special-status raptor species would be less than significant.

Construction noise may indirectly affect raptor species if they are present in the vicinity, causing them to change their behavior and move out of the area. If raptors are detected nesting in the vicinity of project components prior or during construction, noise-reduction measures may need to be implemented to reduce construction noise levels to acceptable levels, or work discontinued until the young have fledged. By adhering to avoidance and minimization measures outlined in Chapter 6, indirect impacts to special-status raptor species are not anticipated and would be less than significant.

Nesting Birds

Birds protected by the MBTA and CFGC have the potential to nest in and near Project components, utilizing landscape/ornamental trees occurring in the BSA. As a result, direct impacts to nesting birds could occur; however, by adhering to avoidance and minimization measures outlined in Chapter 6, the impacts of vegetation removal on nesting birds or their associated habitat are not considered significant.

Indirect impacts to nesting birds within the vicinity of Project components could occur as a result of noise, increased human presence, and vibrations resulting from construction activities. Disturbances related to construction could result in increased nestling mortality due to nest abandonment or decreased feeding frequency. By adhering to avoidance and minimization measures outlined in Chapter 6, such impacts to nesting birds are not anticipated.

5.2.1.2 Mammals

Two special-status bat species, hoary bat and western yellow bat, have potential to occur within the BSA. Although low, the presence of large trees in the BSA provides potentially suitable roosting habitat within the vicinity of Project components. Caves are absent and large suitable structures limited in the BSA, therefore it is unlikely that colonial roost sites are present. Direct impacts to bats could occur; however, by adhering to avoidance and minimization measures outlined in Chapter 6, the impacts of tree removal on bats would be less than significant.

Indirect impacts to special-status bats roosting within the vicinity of Project components could occur as a result of noise, increased human presence, and vibrations resulting from construction activities. Disturbances related to construction could result in displacement from daytime roosts. Disruption of night-time roosts is not anticipated as construction will not occur during dusk or evening hours.

5.2.2 Operation

Impacts during operations and routine maintenance of onsite and offsite components, or the VGS Alternative, would be limited; however, wildlife could be affected by human presence, noise, and fugitive dust. Impacts are expected to be minimal, short term, and in most cases would not directly affect wildlife. Maintenance activities would generally be conducted from within paved surfaces or bare ground and would not encroach into adjacent habitats potentially suitable for special-status wildlife. As a result, impacts to specials status wildlife species are not anticipated during operation and maintenance activities.

5.3 SENSITIVE NATURAL COMMUNITIES

5.3.1 Construction

Riparian habitat composed of non-native shamel ash trees occurs along Haskell Creek within the BSA of the onsite brine line (see Figure 2-1). However, the proposed alignment of the brine line will not intersect this riparian community and as a result, direct impacts are not anticipated. Riparian habitat also occurs approximately 0.5 miles south of the DCTWRP site, along the Los Angeles River; however, construction of onsite components would not directly impact this natural community.

No riparian habitat or sensitive natural communities occur within the BSA of offsite components, and as a result would not be directly impacted during construction. Sensitive Riversidian alluvial fan sage scrub habitat occurs approximately 0.7 miles northeast of the HSG, immediately behind Hansen Dam; however, construction of offsite components would not impact this natural community. A mixed community of native and non-native trees has naturalized a former gravel quarry pit in the VGS across Tujunga Wash from the HSG; however, direct impacts from construction of offsite components or the VGS Alternative to this community would also not occur.

Indirect impacts to riparian habitat/sensitive natural communities during construction could include the accumulation of fugitive dust and noise, increase of surface runoff, increase of erosion, and increase of sediment deposition within vegetation beyond the proposed footprint of onsite components. By adhering to avoidance and minimization measures outlined in Chapter 6, indirect impacts to riparian habitat within the BSA of the onsite brine line would be less than significant. No other sensitive natural communities occur with the BSA and riparian habitat along the Los Angeles River is a sufficient distance from proposed construction activities that indirect impacts are not anticipated.

5.3.2 Operation

Operation of the underground brine line and routine maintenance activities are not anticipated to coincide with the riparian habitat along Haskell Creek. As a result, direct and indirect impacts during operation and routine maintenance of onsite components would not occur and would not be significant.

5.4 WILDLIFE MOVEMENT CORRIDOR

5.4.1 Construction

5.4.1.1 Onsite Components

An approximate 600-foot reach of riparian habitat occurs within the BSA of the brine line along Haskell Creek. As previously presented, this habitat occurs as a narrow strip of vegetation dominated by non-native shamel ash, and likely serves as a local wildlife movement corridor, providing foraging, cover, and resting habitat for wildlife. This riparian corridor enters the Sepulveda Basin from the north, flows into the Wildlife Lake and terminates approximately a quarter-mile below the lake in the Los Angeles River. The corridor provides a connection to and from more extensive riparian habitat along the river, and service as a corridor between the northern boundary of the Basin and the Los Angeles River, through what is relatively open habitat. It is not anticipated that Project activities to install the brine line will intersect this riparian corridor and as a result, direct impacts to a wildlife movement corridor would not occur.

Construction of the brine line could result in wildlife avoiding the riparian habitat along Haskell Creek as a result of noise and dust from construction activities. In the event that indirect impacts to the riparian corridor along Haskell Creek occur, they would be temporary in nature and restricted to the Project construction time period. Project construction activities would not occur at dusk or overnight, and, therefore, would not indirectly impact special-status bat species. By adhering to avoidance and minimization measures provided in Chapter 6, indirect impacts to the functions of Haskell Creek's riparian corridor as a local wildlife movement corridor would be less than significant. The functions and values of the riparian corridor would be unchanged from current conditions upon the completion of construction.

The Los Angeles River is located approximately 0.5 mile south-southwest of onsite components and serves as an important regional wildlife movement corridor for species associated with freshwater and riparian habitats. Although reduced in size by development and channelization of the river, the riparian corridor along the Los Angeles River includes a variety of plant and habitat layers (i.e., mature trees, shrubs, and herbaceous vegetation) that facilitate bird movement along the river. The Los Angeles River also provides a movement corridor for fish and other semi-aquatic species, although the Sepulveda Dam spans the river at the downstream end of the Sepulveda Basin, limiting wildlife movement. Lake Balboa, Woodley Creek, Haskell Creek, Japanese Garden Lake, the Wildlife Lake, and the Sepulveda Basin Wildlife Preserve around it, all occur within one- mile of onsite components (see Figure 1-6), but would not be impacted during construction as these features occur a sufficient distance from onsite components. As a result, long-term impacts to these features as wildlife movement corridors would be less than significant. Indirect impacts to wildlife movement in the Santa Monica Mountain SEA are also not anticipated, due to the distance of the SEA from onsite components.

5.4.1.2 Offsite Components

There are no wildlife movement corridors associated with the recycled water pipeline or PSG; however, the Tujunga Valley/Hansen Dam SEA and Tujunga Wash occur within the BSA of the HSG (see Figure 2-4), and may serve as corridors for wildlife movement. As previously discussed, the HSG is included in the SEA; however, natural vegetation communities are not present in the HSG and the site is completely fenced in. As a result, the HSG is not considered a significant wildlife movement corridor and construction in the HSG would not result in significant direct impacts to a wildlife movement corridor. Construction of improvements in the HSG could result in wildlife species avoiding the immediate project vicinity as a result of human presence, noise, and dust from construction activities; however, they would be temporary in nature and restricted to the project construction time period. Project construction activities would not occur at dusk or overnight, and, therefore, would also not indirectly impact special-status bat species. Therefore, short-term indirect impacts during construction would be less than significant. The functions and values of the HSG as a wildlife movement corridor would be unchanged from current conditions upon the completion of construction. As a result, long-term impacts to the HSG as wildlife movement corridor would also be less than significant.

Tujunga Wash occurs within the BSA of the HSG, and although encased in concrete and void of riparian habitat, it may serve as a wildlife movement corridor between the urban environment of the San Fernando Valley and undisturbed natural communities behind Hansen Dam and further east into the Angeles National Forest. The construction of improvements in the HSG would not directly impact Tujunga Wash; however, as presented above, indirect effects during construction due to human presence, noise, and dust could occur. In the event that indirect impacts to Tujunga Wash occur, they would be temporary in nature and restricted to the project construction time period. Project construction activities would not occur at dusk or overnight, and, therefore, would also not indirectly impact special-status bat species. Therefore, short-term indirect impacts during construction would be less than significant. The functions and values of Tujunga Wash as a wildlife movement corridor would be unchanged from current conditions upon the completion of construction. As a result, long-term impacts to Tujunga Wash as wildlife movement corridor would also be less than significant.

5.4.2 Operation

5.4.2.1 Onsite Components

A portion of the recycled water currently produced at DCTWRP flows through the Japanese Garden lake, Lake Balboa, and the Wildlife Lake to the Los Angeles River, which also intermittently receives water from DCTWRP via an operational safety weir located within the plant. An annual average of approximately 27 mgd of recycled water is currently provided from DCTWRP to the lakes and the river. After Project implementation, a minimum annual average of 27 mgd would continue to be provided to the lakes and the river from DCTWRP. Therefore, the Project, which would utilize the available unused treatment capacity of DCTWRP to provide recycled water for the advanced water purification processes, would not result in a change in discharge to the river, and no impacts to the river’s biological resources and function as a wildlife movement corridor would occur from operation of the onsite components.

Operations and maintenance activities also would not directly or indirectly impact the Santa Monica Mountain SEA’s function as a wildlife movement corridor, due to the 2 to 3 mile distance between onsite components and this SEA. Therefore, no impact would occur.

5.4.2.2 Offsite Components

Operation and routine maintenance activities of offsite components would not directly or indirectly impact the Tujunga Valley/Hansen Dam SEA’s function as a wildlife movement corridor. The HSG does not serve as a significant movement corridor; activities would occur in previously-disturbed habitats generally void of vegetation; and operation and routine maintenance would not change existing conditions from those present prior to project implementation. Operational activities would be conducted so that conflicts with the SEA would not occur. Tujunga Wash, which occurs in the BSA but outside of the footprint of offsite components, would not be impacted by operation and routine maintenance, as all activities would occur within the boundaries of HSG. As a result, impacts during operation and routine maintenance activities would not occur.

5.5 POTENTIAL JURISDICTIONAL AQUATIC FEATURES

5.5.1 Construction

Federally and state-protected aquatic features occur within the BSA of onsite and offsite components, including Haskell Creek in the BSA of the onsite brine line, the Pacoima Diversion Channel in the BSA of the recycled water line, and Tujunga Wash within the BSA of HSG. Construction activities; however, are not anticipated to coincide with Haskell Creek, the Pacoima Diversion Channel, or Tujunga Wash and as a result, direct impacts to protected waters would not occur. Indirect impacts to protected water resources could occur during construction due to stormwater runoff into these protected features, potentially resulting in decreases in water quality of the stream, and increases in erosion and sedimentation. By adhering to avoidance and minimization measures provided in Chapter 6, indirect impacts to Haskell Creek and Tujunga Wash would be less than significant.

As presented in Chapter 3.4, the Corps and EPA have specifically excluded constructed detention and retention basins created in dry land and used for wastewater recycling from the definition of protected waters. The exclusion also covers water distributary structures that are built in dry land for water recycling, such as the improvements proposed for PSG and HSG. As a result, construction of improvements in the spreading grounds would not directly or indirectly effect federally-protected waters. CDFW and the RWQCB also do not consider spreading grounds as protected state waters. As a result, construction of improvements in the spreading grounds would not impact federally or state-protected aquatic features. Additionally, suspension of the recycled water pipeline across the Pacoima Diversion Channel is not anticipated to trigger permitting pursuant to the CWA or Section 1600 et seq of CFGC.

5.5.2 Operation

Operation of the onsite underground brine line and routine maintenance activities are not anticipated to coincide with Haskell Creek. As a result, direct and indirect impacts during operation and routine maintenance of onsite components would not occur.

As previously discussed, PSG and HSG are not defined as federally or state-protected waters and a permit to construct improvements in the spreading grounds is not required. Similarly, operation and routine maintenance of these improvements would not require Corps or CDFW permitting; however, RWQCB permitting would be required to address changes in the discharge of recycled water to the spreading grounds.

CHAPTER 6.0
RECOMMENDED AVOIDANCE AND MINIMIZATION MEASURES

These recommendations are based on background research and the field studies. If conditions within the Project components change or further information about biological resources are generated, additional surveys may become necessary.

BIO-A The following measures shall be implemented to avoid and minimize impacts to special-status species and sensitive habitats:

1. Work areas shall be clearly delineated with fencing or other boundary markers prior to the start of construction.

2. The project limits shall be clearly marked on project maps provided to the construction contractor(s) by LADWP and areas outside of the project limits shall be designated as “no construction” zones. A construction manager shall be present during all construction activities to ensure that work is limited to designated project limits.

3. During construction, construction workers shall strictly limit their activities, vehicles, equipment, and construction materials to the designated construction limits.

4. During construction, all equipment maintenance, staging, and dispensing of fuel, oil, coolant, or any other such activities shall occur in designated areas outside of jurisdictional wetlands or waters and within the project limits. Fueling of equipment shall take place within existing paved areas greater than 100 feet from water features. Contractor equipment shall be checked daily for leaks prior to operation and repaired as necessary.

5. During construction, the construction work zone shall be kept as clean of debris as possible to avoid attracting predators of sensitive wildlife. All food-related trash items shall be enclosed in sealed containers and removed daily from the construction work zone.

6. Pets of project personnel shall not be allowed on the project site during construction.

7. Disposal or temporary placement of excess fill, brush, or other debris shall be strictly prohibited in or along the banks of water features during construction. Stockpile areas

shall be designated prior to the start of construction and shall be located in disturbed areas presently lacking vegetation and delineated on grading plans.

8. Prior to the start of construction, a Stormwater Pollution Prevention Plan (SWPPP) shall be prepared to reduce the potential for accidental releases of fuel, pesticides, and other materials. This plan shall outline refueling locations, emergency response procedures, and reporting requirements. During construction, equipment for immediate cleanup shall be kept on-site. This plan shall also include erosion control measures to control surface runoff, erosion, and sedimentation outside of the project footprints.

BIO-B The clearance of vegetation during construction activities shall occur outside of the nesting bird season (generally February 15 through September 15). If avoidance of construction within this time period is not feasible, the following additional measures shall be employed to avoid and minimize impacts to special-status bird species and nesting birds protected under the MBTA:

1. A pre-construction nesting survey shall be conducted by a qualified biologist within 3 days prior to the start of construction activities to determine whether active nests are present within or directly adjacent to the construction zone. All nests found shall be recorded.

2. If construction activities must occur within 300 feet of an active nest of any passerine bird or within 500 feet of an active nest of any raptor, a qualified biologist shall monitor the nest on a weekly basis and the construction activity shall be postponed until the biologist determines that the nest is no longer active.

3. If the recommended nest avoidance zone is not feasible, the qualified biologist shall determine whether an exception is possible and obtain concurrence from the appropriate resource agency before construction work can resume within the avoidance buffer zone. All work shall cease within the avoidance buffer zone until either agency concurrence is obtained or the biologist determines that the adults and young are no longer reliant on the nest site.

CHAPTER 7.0
CONCLUSIONS

Implementation of avoidance and minimization measures during the project would result in no significant impact upon any federally listed or state-listed threatened, endangered, or candidate plant species, or other species tracked by the CNDDB and occurring or potentially occurring within the Project components. No direct impacts to special-status plant species are anticipated, as none were observed during the field surveys and the BSA lacks suitable habitat for these species. Upon implementation of avoidance and minimization measures, indirect impacts on special-status plants would also be less than significant.

Four special-status wildlife species have low potential to occur within the Project components or immediate vicinity. Species include Cooper’s hawk, Swainson’s hawk, hoary bat, and western yellow bat. No indications of the presence of these species were observed during field surveys. In addition, birds protected by the MBTA and CFGC have the potential to nest on-site or in proximity. Potential direct impacts to these species are associated with vegetation removal. Potential indirect impacts are associated with noise, dust, vibration, and increased human activity, which could cause individuals to change their behavior and move out of the area. Implementation of the avoidance and minimization measures in Chapter 6 would avoid disturbance of these species, resulting in less than significant impacts to special-status wildlife species and nesting birds.

The construction and operation of Project components would not directly affect a wildlife movement corridor, as none occur within the footprint of Project components. Additionally, by adhering to Chapter 6 measures, indirect impacts to wildlife movement corridors occurring in the BSA or vicinity, would also be avoided and would be less than significant.

No sensitive natural communities, or federally or state-protected waters would be directly impacted by the project, as none occur with the footprint of Project components. Additionally, by adhering to Chapter 6 measures, indirect impacts to jurisdictional features occurring in the BSA, such as Haskell Creek and Tujunga Wash, would also be avoided and would be less than significant.

This page intentionally left blank.

CHAPTER 8.0
REFERENCES

Asay, C. E.

1987 *Habitat and Productivity of Cooper's Hawks Nesting in California*. California Department of Fish and Game 73:80–87.

California Department of Fish and Game (CDFG)

2010 List of California Terrestrial Natural Communities Recognized by the Natural Diversity Data Base. Natural Heritage Division. The Resources Agency. September. Available at http://www.dfg.ca.gov/biogeodata/vegcamp/pdfs/natcomlist.pdf. Accessed June 2013.

California Department of Fish and Wildlife (CDFW)

2015a *California Natural Diversity Data Base (CNDDB).* Full report for Van Nuys, Oat Mountain, San Fernando, Sunland, Burbank, Hollywood, Beverly Hills, Topanga, and Canoga Park Quadrangles. Generated July 20, 2015.

2015b State and Federally Listed Endangered, Threatened, and Rare Plants of California. California Natural Diversity Data Base, July 2015. Available at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEPlants.pdf. Accessed July 20, 2015.

2015c Special Vascular Plants, Bryophytes, and Lichens List. California Natural Diversity Data Base, July 2015. Available at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPPlants.pdf. Accessed July 20, 2015.

2015d State and Federally Listed Endangered and Threatened Animals of California, July 2015. Natural Heritage Division, California Natural Diversity Data Base. Available at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/TEAnimals.pdf. Accessed July 20, 2015.

2015e Special Animals. California Natural Diversity Data Base. Available at http://www.dfg.ca.gov/biogeodata/cnddb/pdfs/SPAnimals.pdf. Accessed July 20, 2015.

2015f Swainson's Hawks in California. Available at http://www.dfg.ca.gov/wildlife/nongame/raptors/swha/. Accessed September 11, 2015.

California Native Plant Society (CNPS)

2015 Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society. Sacramento, CA. Available at http://www.cnps.org/inventory. Accessed July 20, 2015.

Chiang, S. N., P. H. Bloom, A. M. Bartuszevige, and S. E. Thomas

2012 Home Range and Habitat Use of Cooper's Hawks in Urban and Natural Areas. In *Urban Bird Ecology and Conservation*, edited by C. A. Lepczyx and P. S. Warren. Studies in Avian Biology No. 45. University of California Press.

Environmental Laboratory

1987 *Corps of Engineers Wetlands Delineation Manual*. Technical Report Y-87-1. U.S. Army Engineer Waterways Experiment Station. Vicksburg, Mississippi.

FedCenter.gov (FedCenter)

2015 Executive Order 11990 Protection of Wetlands. Available at: https://www.fedcenter.gov/Bookmarks/index.cfm?id=585. Accessed September 11, 2015.

Holland, R.

1986 *Preliminary Descriptions of the Terrestrial Natural Communities of California*. California Department of Fish and Game, The Resources Agency. 156 pp.

Jennings, M. R., and M. P. Hayes

1994 Amphibian and Reptile Species of Special Concern in California. California Department of Fish and Game, Inland Fisheries Division, Rancho Cordova, California.

Los Angeles County Department of Regional Planning (LACDRP)

2012a Tujunga Valley and Hansen Dam SEA. Available at: http://planning.lacounty.gov/assets/upl/sea/25_Tujunga_Valley_and_Hansen_Dam_SEA_Spring_2012_GP.pdf. Accessed September 1, 2015.

2012b Verdugo Mountains SEA. Available at: http://planning.lacounty.gov/assets/upl/sea/27_Verdugo_Mountains_SEA_Spring_2012_GP.pdf. Accessed September 1, 2015.

2015 SEA Program. Available at: http://planning.lacounty.gov/sea/proposed. Accessed August 18, 2015.

National Wild and Scenic Rivers System (NWSRS)

2015 About the WSR Act. Available at http://www.rivers.gov/wsr-act.php. Accessed September 11, 2015.

Pacific Fishery Management Council (PFMC)

2013 Habitat and Communities; Habitat. Available at http://www.pcouncil.org/habitat-and-communities/habitat/. Accessed September 11, 2015.

Remsen, H. V.

1978 *Bird Species of Special Concern in California: an Annotated List of Declining or Vulnerable Bird Species*. California Department of Fish and Game, The Resources Agency.

SuihoEn

2015 SuihoEn "Garden of Water & Fragrance." Available at: http://www.thejapanesegarden.com/. Accessed August 8, 2015.

U.S. Corps of Engineers and U.S. Environmental Protection Agency (Corps and USEPA)

2015 Clean Water Rule: Definition of "Waters of the United States"; Final Rule. Federal Register. Vol. 80:124, 37054-37127. June 29.

U.S. Fish and Wildlife Service (USFWS)

2015 Information for Planning and Conservation. Available at https://ecos.fws.gov/ipac/. Accessed August 21, 2015.

2008 *Birds of Conservation Concern 2008*. Division of Migratory Bird Management, Arlington Virginia. December.

Vaughan, T. A., and P. H. Krutzsch (Vaughan and Krutzsch)

1954 Seasonal Distribution of the Hoary Bat in Southern California. *Journal of Mammalogy* 35:431–432.

Western Bat Working Group (WBWG)

2015 Species Matrix. Available at http://wbwg.org/matrices/species-matrix/. Accessed September 3, 2015.

2005a Western Bat Species. Lasiurus cinereus, hoary bat. Available at: http://wbwg.org/western-bat-species. Accessed September 3, 2015.

2005b Western Bat Species. Lasiurus xanthinus, western yellow bat. Available at: http://wbwg.org/western-bat-species. Accessed September 11, 2015.

2015 Species Matrix. Available at http://wbwg.org/matrices/species-matrix/. Accessed September 3, 2015.

Williams, D. F.

1986 *Mammalian Species of Special Concern in California*. California Department of Fish and Game. Wildlife Management Division Administrative Report 86-1. 112 pp.

APPENDIX A

Results of Database Searches of the
California Natural Diversity Data Base (CNDDB)
California Native Plant Society (CNPS)
Information for Planning and Conservation (IPaC)

Selected Elements by Scientific Name

California Department of Fish and Wildlife

California Natural Diversity Database

Query Criteria: Quad is (Beverly Hills (3411814) or Burbank (3411823) or Canoga Park (3411825) or Goat Mountain (3411633) or Hollywood (3411813) or San Fernando (3411834) or Sunland (3411833) or Topanga (3411815) or Van Nuys (3411824))

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Agelaius tricolor tricolored blackbird	ABPBXB0020	None	None	G2G3	S1S2	SSC
Aglaothorax longipennis Santa Monica shieldback katydid	IIORT32020	None	None	G1G2	S1S2	
Anaxyrus californicus arroyo toad	AAABB01230	Endangered	None	G2G3	S2S3	SSC
Anniella pulchra pulchra silvery legless lizard	ARACC01012	None	None	G3G4T3T4Q	S3	SSC
Antrozous pallidus pallid bat	AMACC10010	None	None	G5	S3	SSC
Arenaria paludicola marsh sandwort	PDCAR040L0	Endangered	Endangered	G1	S1	1B.1
Aspidoscelis tigris stejnegeri coastal whiptail	ARACJ02143	None	None	G5T3T4	S2S3	
Astragalus brauntonii Braunton's milk-vetch	PDFAB0F1G0	Endangered	None	G2	S2	1B.1
Astragalus pycnostachyus var. lanosissimus Ventura Marsh milk-vetch	PDFAB0F7B1	Endangered	Endangered	G2T1	S1	1B.1
Astragalus tener var. titi coastal dunes milk-vetch	PDFAB0F8R2	Endangered	Endangered	G2T1	S1	1B.1
Athene cunicularia burrowing owl	ABNSB10010	None	None	G4	S3	SSC
Atriplex parishii Parish's brittlescale	PDCHE041D0	None	None	G1G2	S1	1B.1
Atriplex serenana var. davidsonii Davidson's saltscale	PDCHE041T1	None	None	G5T1	S1	1B.2
Berberis nevinii Nevin's barberry	PDBER060A0	Endangered	Endangered	G1	S1	1B.1
Buteo swainsoni Swainson's hawk	ABNKC19070	None	Threatened	G5	S3	
California macrophylla round-leaved filaree	PDGER01070	None	None	G3?	S3?	1B.1
California Walnut Woodland California Walnut Woodland	CTT71210CA	None	None	G2	S2.1	
Calochortus clavatus var. gracilis slender mariposa-lily	PMLIL0D096	None	None	G4T2T3	S2S3	1B.2
Calochortus plummerae Plummer's mariposa-lily	PMLIL0D150	None	None	G4	S4	4.2

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Calystegia felix lucky morning-glory	PDCON040P0	None	None	GHQ	SH	3.1
Carolella busckana Busck's gallmoth	IILEM2X090	None	None	G1G3	SH	
Catostomus santaanae Santa Ana sucker	AFCJC02190	Threatened	None	G1	S1	SSC
Centromadia parryi ssp. australis southern tarplant	PDAST4R0P4	None	None	G3T2	S2	1B.1
Chloropyron maritimum ssp. maritimum salt marsh bird's-beak	PDSCR0J0C2	Endangered	Endangered	G4?T1	S1	1B.2
Chorizanthe parryi var. fernandina San Fernando Valley spineflower	PDPGN040J1	Candidate	Endangered	G2T1	S1	1B.1
Cicindela hirticollis gravida sandy beach tiger beetle	IICOL02101	None	None	G5T2	S1	
Coccyzus americanus occidentalis western yellow-billed cuckoo	ABNRB02022	Threatened	Endangered	G5T3Q	S1	
Coelus globosus globose dune beetle	IICOL4A010	None	None	G1G2	S1S2	
Corynorhinus townsendii Townsend's big-eared bat	AMACC08010	None	Candidate Threatened	G3G4	S2	SSC
Danaus plexippus pop. 1 monarch - California overwintering population	IILEPP2012	None	None	G4T2T3	S2S3	
Deinandra minthornii Santa Susana tarplant	PDAST4R0J0	None	Rare	G2	S2	1B.2
Diadophis punctatus modestus San Bernardino ringneck snake	ARADB10015	None	None	G5T2T3Q	S2?	
Dithyrea maritima beach spectaclepod	PDBRA10020	None	Threatened	G2	S1	1B.1
Dodecahema leptoceras slender-horned spineflower	PDPGN0V010	Endangered	Endangered	G1	S1	1B.1
Dudleya blochmaniae ssp. blochmaniae Blochman's dudleya	PDCRA04051	None	None	G3T2T3	S2	1B.1
Dudleya cymosa ssp. ovatifolia Santa Monica dudleya	PDCRA040A5	Threatened	None	G5T1	S1	1B.1
Dudleya multicaulis many-stemmed dudleya	PDCRA040H0	None	None	G2	S2	1B.2
Empidonax traillii extimus southwestern willow flycatcher	ABPAE33043	Endangered	Endangered	G5T2	S1	
Emys marmorata western pond turtle	ARAAD02030	None	None	G3G4	S3	SSC
Eumops perotis californicus western mastiff bat	AMACD02011	None	None	G5T4	S3S4	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Gila orcuttii arroyo chub	AFCJB13120	None	None	G2	S2	SSC
Gopherus agassizii desert tortoise	ARAAF01012	Threatened	Threatened	G3	S2	
Harpagonella palmeri Palmer's grapplinghook	PDBOR0H010	None	None	G4	S3	4.2
Helianthus nuttallii ssp. parishii Los Angeles sunflower	PDAST4N102	None	None	G5TH	SH	1A
Horkelia cuneata var. puberula mesa horkelia	PDROS0W045	None	None	G4T1	S1	1B.1
Lasionycteris noctivagans silver-haired bat	AMACC02010	None	None	G5	S3S4	
Lasiurus cinereus hoary bat	AMACC05030	None	None	G5	S4	
Lasiurus xanthinus western yellow bat	AMACC05070	None	None	G5	S3	SSC
Lasthenia glabrata ssp. coulteri Coulter's goldfields	PDAST5L0A1	None	None	G4T2	S2	1B.1
Lepidium virginicum var. robinsonii Robinson's pepper-grass	PDBRA1M114	None	None	G5T3	S3	4.3
Lepus californicus bennettii San Diego black-tailed jackrabbit	AMAEB03051	None	None	G5T3T4	S3S4	SSC
Malacothamnus davidsonii Davidson's bush-mallow	PDMAL0Q040	None	None	G2	S2	1B.2
Microtus californicus stephensi south coast marsh vole	AMAFF11035	None	None	G5T1T2	S1S2	SSC
Monardella hypoleuca ssp. hypoleuca white-veined monardella	PDLAM180A3	None	None	G4T2T3	S2S3	1B.3
Nama stenocarpa mud nama	PDHYD0A0H0	None	None	G4G5	S1S2	2B.2
Nasturtium gambelii Gambel's water cress	PDBRA270V0	Endangered	Threatened	G1	S1	1B.1
Navarretia prostrata prostrate vernal pool navarretia	PDPLM0C0Q0	None	None	G2	S2	1B.1
Neotoma lepida intermedia San Diego desert woodrat	AMAFF08041	None	None	G5T3T4	S3S4	SSC
Nyctinomops macrotis big free-tailed bat	AMACD04020	None	None	G5	S3	SSC
Oncorhynchus mykiss irideus southern steelhead - southern California DPS	AFCHA0209J	Endangered	None	G5T1Q	S1	SSC
Onychomys torridus ramona southern grasshopper mouse	AMAFF06022	None	None	G5T3	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Orcuttia californica California Orcutt grass	PMPOA4G010	Endangered	Endangered	G1	S1	1B.1
Perognathus longimembris brevinasus Los Angeles pocket mouse	AMAFD01041	None	None	G5T1T2	S1S2	SSC
Phrynosoma blainvillii coast horned lizard	ARACF12100	None	None	G3G4	S3S4	SSC
Polioptila californica californica coastal California gnatcatcher	ABPBJ08081	Threatened	None	G3T2	S2	SSC
Pseudognaphalium leucocephalum white rabbit-tobacco	PDAST440C0	None	None	G4	S2	2B.2
Quercus dumosa Nuttall's scrub oak	PDFAG050D0	None	None	G3	S3	1B.1
Rana muscosa southern mountain yellow-legged frog	AAABH01330	Endangered	Endangered	G1	S1	SSC
Rhinichthys osculus ssp. 3 Santa Ana speckled dace	AFCJB3705K	None	None	G5T1	S1	SSC
Riparia riparia bank swallow	ABPAU08010	None	Threatened	G5	S2	
Riversidian Alluvial Fan Sage Scrub Riversidian Alluvial Fan Sage Scrub	CTT32720CA	None	None	G1	S1.1	
Sidalcea neomexicana Salt Spring checkerbloom	PDMAL110J0	None	None	G4	S2	2B.2
Socalchemmis gertschi Gertsch's socalchemmis spider	ILARAU7010	None	None	G1	S1	
Southern California Arroyo Chub/Santa Ana Sucker Stream Southern California Arroyo Chub/Santa Ana Sucker Stream	CARE2330CA	None	None	GNR	SNR	
Southern Coast Live Oak Riparian Forest Southern Coast Live Oak Riparian Forest	CTT61310CA	None	None	G4	S4	
Southern Cottonwood Willow Riparian Forest Southern Cottonwood Willow Riparian Forest	CTT61330CA	None	None	G3	S3.2	
Southern Mixed Riparian Forest Southern Mixed Riparian Forest	CTT61340CA	None	None	G2	S2.1	
Southern Sycamore Alder Riparian Woodland Southern Sycamore Alder Riparian Woodland	CTT62400CA	None	None	G4	S4	
Spea hammondii western spadefoot	AAABF02020	None	None	G3	S3	SSC
Symphyotrichum defoliatum San Bernardino aster	PDASTE80C0	None	None	G2	S2	1B.2
Symphyotrichum greatae Greata's aster	PDASTE80U0	None	None	G3	S3	1B.3
Taxidea taxus American badger	AMAJF04010	None	None	G5	S3	SSC

Species	Element Code	Federal Status	State Status	Global Rank	State Rank	Rare Plant Rank/CDFW SSC or FP
Thamnophis hammondii two-striped garter snake	ARADB36160	None	None	G4	S3S4	SSC
Uma scoparia Mojave fringe-toed lizard	ARACF15030	None	None	G3G4	S3S4	SSC
Vireo bellii pusillus least Bell's vireo	ABPBW01114	Endangered	Endangered	G5T2	S2	

Record Count: 85

Scientific Name	Common Name	Rare Plant Rank	State Listing (CESA)	Federal Listing (FESA)
Arenaria paludicola	marsh sandwort	1B.1	CE	FE
Astragalus brauntonii	Braunton's milk-vetch	1B.1	None	FE
Astragalus pycnostachyus var. lanosissimus	Ventura marsh milk-vetch	1B.1	CE	FE
Astragalus tener var. titi	coastal dunes milk-vetch	1B.1	CE	FE
Atriplex parishii	Parish's brittlescale	1B.1	None	None
Atriplex serenana var. davidsonii	Davidson's saltscale	1B.2	None	None
Berberis nevinii	Nevin's barberry	1B.1	CE	FE
Calandrinia breweri	Brewer's calandrinia	4.2	None	None
California macrophylla	round-leaved filaree	1B.1	None	None
Calochortus catalinae	Catalina mariposa lily	4.2	None	None
Calochortus clavatus var. gracilis	slender mariposa lily	1B.2	None	None
Calochortus plummerae	Plummer's mariposa lily	4.2	None	None
Calystegia felix	lucky morning-glory	3.1	None	None
Calystegia peirsonii	Peirson's morning-glory	4.2	None	None
Camissoniopsis lewisii	Lewis' evening-primrose	3	None	None
Canbya candida	white pygmy-poppy	4.2	None	None
Centromadia parryi ssp. australis	southern tarplant	1B.1	None	None
Cercocarpus betuloides var. blancheae	island mountain-mahogany	4.3	None	None
Chloropyron maritimum ssp. maritimum	salt marsh bird's-beak	1B.2	CE	FE
Chorizanthe parryi var. fernandina	San Fernando Valley spineflower	1B.1	CE	FC
Convolvulus simulans	small-flowered morning-glory	4.2	None	None
Deinandra minthornii	Santa Susana tarplant	1B.2	CR	None
Dithyrea maritima	beach spectaclepod	1B.1	CT	None
Dodecahema leptoceras	slender-horned spineflower	1B.1	CE	FE
Dudleya cymosa ssp. ovatifolia	Santa Monica dudleya	1B.1	None	FT
Dudleya multicaulis	many-stemmed dudleya	1B.2	None	None
Helianthus nuttallii ssp. parishii	Los Angeles sunflower	1A	None	None
Heuchera caespitosa	urn-flowered alumroot	4.3	None	None
Hordeum intercedens	vernal barley	3.2	None	None
Horkelia cuneata var. puberula	mesa horkelia	1B.1	None	None
Hulsea vestita ssp. gabrielensis	San Gabriel Mountains sunflower	4.3	None	None
Juglans californica	Southern California black walnut	4.2	None	None
Lasthenia glabrata ssp. coulteri	Coulter's goldfields	1B.1	None	None
Lepidium virginicum var. robinsonii	Robinson's pepper-grass	4.3	None	None

Scientific Name	Common Name	Rare Plant Rank	State Listing (CESA)	Federal Listing (FESA)
Lilium humboldtii ssp. ocellatum	ocellated Humboldt lily	4.2	None	None
Linanthus concinnus	San Gabriel linanthus	1B.2	None	None
Malacothamnus davidsonii	Davidson's bush-mallow	1B.2	None	None
Monardella hypoleuca ssp. hypoleuca	white-veined monardella	1B.3	None	None
Nama stenocarpa	mud nama	2B.2	None	None
Nasturtium gambelii	Gambel's water cress	1B.1	CT	FE
Phacelia hubbyi	Hubby's phacelia	4.2	None	None
Pseudognaphalium leucocephalum	white rabbit-tobacco	2B.2	None	None
Quercus dumosa	Nuttall's scrub oak	1B.1	None	None
Sidalcea neomexicana	salt spring checkerbloom	2B.2	None	None
Symphyotrichum defoliatum	San Bernardino aster	1B.2	None	None
Symphyotrichum greatae	Greata's aster	1B.3	None	None
Thelypteris puberula var. sonorensis	Sonoran maiden fern	2B.2	None	None

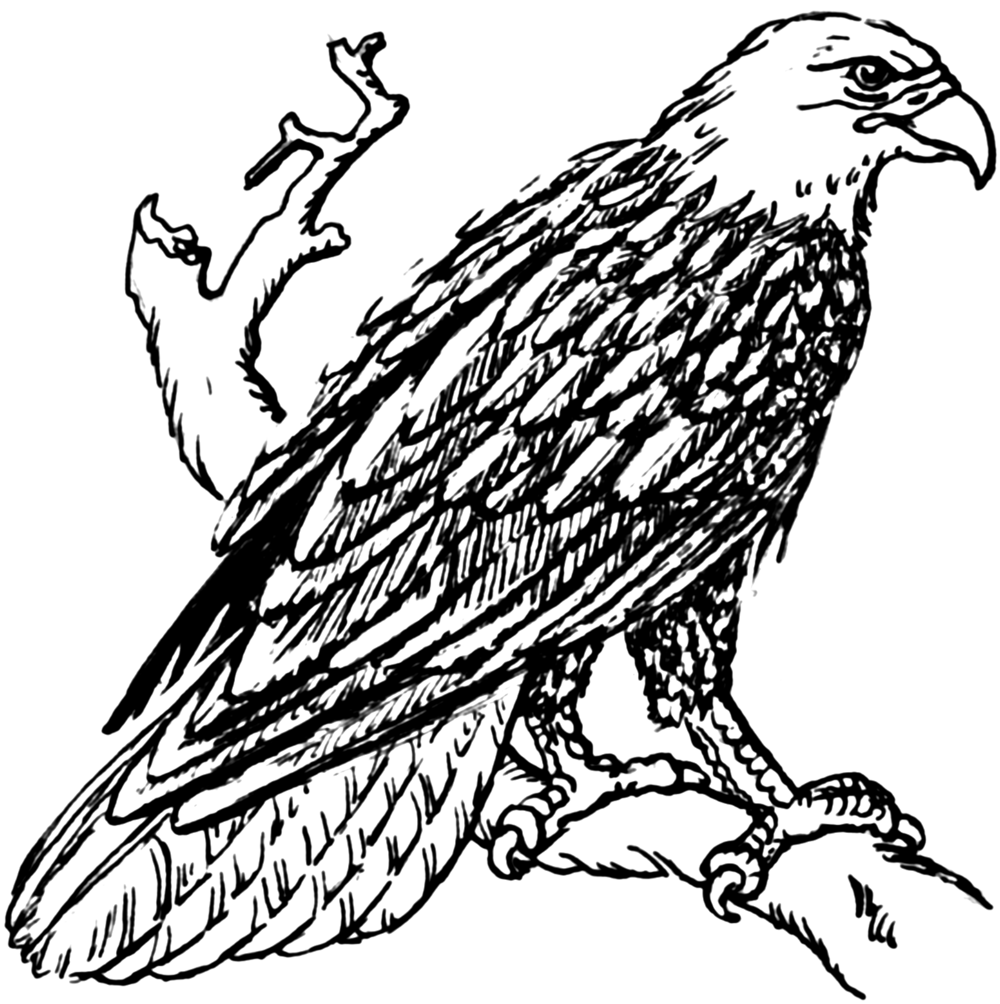
CNPS, Rare Plant Program. 2015. Inventory of Rare and Endangered Plants (online edition, v8-02). California Native Plant Society, Sacramento, CA. Website http://www.rareplants.cnps.org [accessed 20 July 2015].

U.S. Fish & Wildlife Service

LA Groundwater Replinshment Project

IPaC Trust Resource Report

Generated August 21, 2015 12:58 PM MDT



US Fish & Wildlife Service

IPaC Trust Resource Report

Project Description

NAME

LA Groundwater Replinshment Project

PROJECT CODE

KXDB4-CHDU5-BN3GG-OVRDF-ETZDYA

LOCATION

Los Angeles County, California

DESCRIPTION

No description provided

U.S. Fish & Wildlife Contact Information

Species in this report are managed by:

Carlsbad Fish And Wildlife Office
2177 Salk Avenue - Suite 250
Carlsbad, CA 92008-7385
(760) 431-9440

Endangered Species

Proposed, candidate, threatened, and endangered species that are managed by the Endangered Species Program and should be considered as part of an effect analysis for this project.

This unofficial species list is for informational purposes only and does not fulfill the requirements under Section 7 of the Endangered Species Act, which states that Federal agencies are required to "request of the Secretary of Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action." This requirement applies to projects which are conducted, permitted or licensed by any Federal agency.

A letter from the local office and a species list which fulfills this requirement can be obtained by returning to this project on the IPaC website and requesting an Official Species List from the regulatory documents section.

Birds

California Condor Gymnogyps californianus **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B002

Coastal California Gnatcatcher Polioptila californica californica **Threatened**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B08X

Least Bell's Vireo Vireo bellii pusillus **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B067

Southwestern Willow Flycatcher Empidonax traillii extimus **Endangered**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B094

Fishes

Santa Ana Sucker Catostomus santaanae **Threatened**

CRITICAL HABITAT
There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=E07W

Flowering Plants

Braunton's Milk-vetch Astragalus brauntonii **Endangered**

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q05E

Gambel's Watercress Rorippa gambellii **Endangered**

CRITICAL HABITAT

No critical habitat has been designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q38L

Nevin's Barberry Berberis nevinii **Endangered**

CRITICAL HABITAT

There is **final** critical habitat designated for this species.

https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=Q08G

Critical Habitats

Potential effects to critical habitat(s) within the project area must be analyzed along with the endangered species themselves.

There is no critical habitat within this project area

Migratory Birds

Birds are protected by the Migratory Bird Treaty Act and the Bald and Golden Eagle Protection Act.

Any activity which results in the take of migratory birds or eagles is prohibited unless authorized by the U.S. Fish and Wildlife Service (1). There are no provisions for allowing the take of migratory birds that are unintentionally killed or injured.

You are responsible for complying with the appropriate regulations for the protection of birds as part of this project. This involves analyzing potential impacts and implementing appropriate conservation measures for all project activities.

Bald Eagle Haliaeetus leucocephalus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B008

Brewer's Sparrow Spizella breweri — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HA

Burrowing Owl Athene cunicularia — Bird of conservation concern
Year-round

Cactus Wren Campylorhynchus brunneicapillus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FZ

Cassin's Finch Carpodacus cassinii — Bird of conservation concern
Year-round

Costa's Hummingbird Calypte costae — Bird of conservation concern
Season: Breeding

Flammulated Owl Otus flammeolus — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0DK

Fox Sparrow Passerella iliaca — Bird of conservation concern
Season: Wintering

Green-tailed Towhee Pipilo chlorurus — Bird of conservation concern
Season: Breeding

Lawrence's Goldfinch Carduelis lawrencei — Bird of conservation concern
Year-round

Least Bittern Ixobrychus exilis — Bird of conservation concern
Year-round

Lesser Yellowlegs Tringa flavipes — Bird of conservation concern
Season: Wintering

Lewis's Woodpecker Melanerpes lewis — Bird of conservation concern
Season: Wintering

Loggerhead Shrike Lanius ludovicianus — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FY

Long-billed Curlew Numenius americanus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06S

Nuttall's Woodpecker Picoides nuttallii — Bird of conservation concern
Year-round

Oak Titmouse Baeolophus inornatus — Bird of conservation concern
Year-round

Olive-sided Flycatcher Contopus cooperi — Bird of conservation concern
Season: Breeding
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0AN

Peregrine Falcon Falco peregrinus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FU

Red-crowned Parrot Amazona viridigenalis — Bird of conservation concern
Year-round
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0GO

Short-eared Owl Asio flammeus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0HD

Tricolored Blackbird Agelaius tricolor — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B06P

White Headed Woodpecker Picoides albolarvatus — Bird of conservation concern
Year-round

Williamson's Sapsucker Sphyrapicus thyroideus — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0FX

Red Knot Calidris canutus ssp. roselaari — Bird of conservation concern
Season: Wintering
https://ecos.fws.gov/speciesProfile/profile/speciesProfile.action?spcode=B0G6

Refuges

Any activity proposed on National Wildlife Refuge lands must undergo a 'Compatibility Determination' conducted by the Refuge. If your project overlaps or otherwise impacts a Refuge, please contact that Refuge to discuss the authorization process.

There are no refuges within this project area

Wetlands

Impacts to NWI wetlands and other aquatic habitats from your project may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal Statutes.

Project proponents should discuss the relationship of these requirements to their project with the Regulatory Program of the appropriate U.S. Army Corps of Engineers District.

DATA LIMITATIONS

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

DATA EXCLUSIONS

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tuberficid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

DATA PRECAUTIONS

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

Wetland data is unavailable at this time.

APPENDIX B

REGIONAL SPECIAL-STATUS PLANT AND WILDLIFE SPECIES AND SENSITIVE NATURAL COMMUNITIES

Table A. Regional Special-Status Plant Species and Natural Vegetation Communities[1]

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
PLANTS				
marsh sandwort *Arenaria paludicola*	Federal: FE State: SE Other: CRPR 1B.1	Sandy openings in freshwater or brackish marshes and swamps. Occurs between 3-170 meters (10-560 feet). Blooms May-August.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
Braunton's milk-vetch *Astragalus brauntonii*	Federal: FE State: None Other: CRPR 1B.1	Closed-cone coniferous forest, chaparral, coastal scrub, and valley and foothill grassland. Prefers recent burns or disturbed areas, in stiff gravelly clay soils overlying granite or limestone. Occurs between 4-640 meters (13-2,100 feet). Blooms January-August.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Ventura Marsh milk-vetch *Astragalus pycnostachyus* var. *lanosissimus*	Federal: FE State: SE Other: CRPR 1B.1	Coastal dunes, coastal scrub, and edges of coastal salt or brackish marshes and swamps. Occurs between 1-35 meters (3-115 feet). Blooms June-October.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
coastal dunes milk-vetch *Astragalus tener* var. *titi*	Federal: FE State: SE Other: CRPR 1B.1	Often vernally mesic areas in sandy coastal bluff scrub, coastal dunes, and mesic coastal prairie. Occurs between 1-50 meters (3-165 feet). Blooms March-May.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
Parish's brittlescale *Atriplex parishii*	Federal: None Statae: None Other: CRPR 1B.1	Alkaline chenopod scrub, playas, and vernal pools. Occurs between 25-1,900 meters (80-6,230 feet). Blooms June-October.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Davidon's saltscale *Atriplex serenana* var. *davidsonii*	Federal: None Statae: None Other: CRPR 1B.2	Coastal bluff scrub and coastal scrub. Prefer alkaline soil. Between 10-200 meters (30-660 feet). Blooms April-October.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
Nevin's barberry *Berberis nevinii*	Federal: FE State: SE Other: CRPR 1B.1	Chaparral, cismontane woodland, coastal scrub, and riparian scrub, on steep, north-facing slopes or in low grade sandy washes. Occurs between 274–825 meters (900-2,710 feet). Blooms March–June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Brewer's calandrinia *Calandrinia breweri*	Federal: None State: None Other: CRPR 4.2	Sandy or loamy, disturbed sites and burns in chaparral and coastal scrub. Occurs between 10-1,220 meters (30-4,000 feet). Blooms March-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
round-leaved filaree *California macrophylla*	Federal: None State: None Other: CRPR 1B.1	Cismontane woodland, valley and foothill grassland. Occurs between 15-1,200 meters (50-3,940 feet). Blooms March-May.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.

Common Name *Scientific Name*[2]	**Status**[3]	**General Habitat Description**[4]	**Potentially Suitable Habitat Present/ Absent**	**Potential for Occurrence**
Catalina mariposa lily *Calochortus catalinae*	Federal: None State: None Other: CRPR 4.2	Chaparral, cismontane woodland, coastal scrub, and valley and foothill grassland. Occurs between 15-700 meters (50-2,300 feet). Blooms February-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
slender mariposa-lily *Calochortus clavatus* var. *gracilis*	Federal: None State: None Other: CRPR 1B.2	Chaparral and coastal scrub, in shaded foothill canyons, often on grassy slopes within other habitats. Occurs between 320-1,000 meters (1,050-3,280 feet). Blooms March–June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
Plummer's mariposa-lily *Calochortus plummerae*	Federal: None State: None Other: CRPR 4.2	Coastal scrub, chaparral, valley and foothill grassland, cismontane woodland, lower montane coniferous forest, on rocky and sandy sites (granitic or alluvial material), between 100–1,700 meters (330-5,580 feet). Blooms May–July.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
lucky morning-glory *Calystegia felix*	Federal: None State: None Other: CRPR 3.1	Sometimes alkaline meadows and seeps and alluvial riparian scrub. Historically associated with wetland and marshy places, but possibly in drier situations as well. Possibly silty loam and alkaline. Occurs between 30-215 meters (100-705 feet). Blooms March-September.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Peirson's morning glory *Calystegia peirsonii*	Federal: None State: None Other: CRPR 4.2	Chaparral, chenopod scrub, cismontane woodland, coastal scrub, lower montane coniferous forest, and valley and foothill grassland. Occurs between 30-1,500 meters (100-4,920 feet). Blooms April-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Lewis' evening primrose *Camissoniopsis lewisii*	Federal: None State: None Other: CRPR 3	Sandy or clay sites in coastal bluff scrub, cismontane woodland, coastal dunes, coastal scrub, and valley and foothill grasslands. Occurs between 0-300 meters (0-980 feet). Blooms March-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
white pygmy-poppy *Canbya candida*	Federal: None State: None Other: CRPR 4.2	Sandy or granitic sites in Joshua tree woodland, Mojavean desert scrub, and pinyon and juniper woodland. Occurs between 600-1,460 meters (1,970-4,790 feet). Blooms March-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
southern tarplant *Centromadia parryi* ssp. *australis*	Federal: None State: None Other: CRPR 1B.1	Marshes and swamps (margins), valley and foothill grassland. Often in disturbed sites near the coast at marsh edges; also in alkaline soils sometimes with saltgrass, between 0–480 meters (0-1,570 feet). Blooms May–November	Absent	**Not expected.** Potentially suitable habitat for this species is absent.

Common Name *Scientific Name*[2]	**Status**[3]	**General Habitat Description**[4]	**Potentially Suitable Habitat Present/ Absent**	**Potential for Occurrence**
island mountain-mahogany *Cercocarpus betuloides* var. *blancheae*	Federal: None State: None Other: CRPR 4.2	Closed-cone coniferous forest and chaparral. Occurs between 30-600 meters (100-1,970 feet). Blooms February-May.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
salt marsh bird's-beak *Chloropyron maritimum* ssp. *maritimus*	Federal: FE State: SE Other: CRPR 1B.2	Coastal dunes and coastal salt marshes and swamps. Occurs between 0-30 meters (0-100 feet). Blooms May-October.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
San Fernando Valley spineflower *Chorizanthe parryi* var. *fernandina*	Federal: FC State: SE Other: CRPR 1B.1	Sandy coastal scrub and valley and foothill grasslands. Occurs 150-1,220 meters (490-4,000 feet). Blooms April - July	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
small-flowered morning-glory *Convolvuluv simulans*	Federal: None State: None Other: CRPR 4.2	Prefers clay or serpentinite seeps in open areas within chaparral, coastal scrub and valley and foothill grassland. Occurs between 30-700 meters (100-2,300 feet). Blooms March - July	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Santa Susana tarplant *Deinandra minthornii*	Federal: None State: SR Other: CRPR 1B.2	Rocky sites in chaparral and coastal scrub. Occurs between 280-760 meters(920-2,490 feet). Blooms July-November.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
beach spectaclepod *Dithyrea maritima*	Federal: None State: ST Other: CRPR 1B.1	Coastal dunes and sandy coastal scrub. Occurs between 3-50 meters (10-160 feet). Blooms March-May.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
slender-horned spineflower *Dodecahema leptoceras*	Federal: FE State: SE Other: CRPR 1B.1	Prefers sandy sites in chaparral, cismontane woodland, and alluvial fans of coastal scrub. Occurs between 200-760 meters (660-2,490 feet). Blooms April-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Blochman's dudleya *Dudleya blochmaniae* ssp. *blochmaniae*	Federal: None State: None Other: CRPR 1B.1	Prefers rocky, often clay or serpentinite sites in coastal bluff scrub, chaparral, coastal scrub, and valley and foothill grassland. Occurs between 4-450 meters (15-1,480 feet). Blooms April-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Santa Monica dudleya *Dudleya cymosa* ssp. *ovatifolia*	Federal: FT State: None Other: CRPR 1B.1	Prefers volcanic or sedimentary, or rocky sites in chaparral and coastal scrub. Occurs between 150-1,675 meters (490-5,490 feet). Blooms March-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
many-stemmed dudleya *Dudleya multicaulis*	Federal: None State: None Other: CRPR 1B.2	Chaparral, coastal scrub, valley and foothill grassland. Often in clay soils. Occurs between 15-790 meters (50-2,520 feet). Blooms April-July.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
Palmer's grapplinghook *Harpagonella palmeri*	Federal: None State: None Other: CRPR 4.2	Prefers clay; open grassy areas within shrubland. Chaparral, coastal scrub, and valley and foothill grassland. Occurs between 20-955 meters (300-3,130 feet). Blooms March-May.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Los Angeles sunflower *Helianthus nuttallii* ssp. *parishii*	Federal: None State: None Other: CRPR 1A	Coastal salt and freshwater marshes and swamps. Occurs between 10-1,675 meters (30-5,490 feet). Blooms August-October.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
urn-flowered alumroot *Heuchera caespitosa*	Federal: None State: None Other: CRPR 4.3	Prefers rocky sites in cismontane woodland, lower montane coniferous forest, montane riparian forest, and upper montane coniferous forests. Occurs between 1,155-2,650 meters (3,790-8,690 feet). Blooms May-August.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
vernal barley *Hordeum intercedens*	Federal: None State: None Other: CRPR 3.2	Coastal dunes, coastal scrub, valley and foothill grasslands in saline flats and depressions, and vernal pools. Occurs between 5-1,000 meters (15-3,280 feet). Blooms March - June	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
mesa horkelia *Horkelia cuneata* ssp. *puperula*	Federal: None State: None Other: CRPR 1B.1	Prefers sandy or gravelly sites in chaparral, cismontane woodland, and coastal scrub. Occurs between 70-810 meters (230-2,660 feet). Blooms February-September.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
San Gabriel Mountains sunflower *Hulsea vestita* ssp. *gabrielensis*	Federal: None State: None Other: CRPR 4.3	Prefers rocky sites in lower and upper montane coniferous forest. Occurs between 1,500-2,500 meters (4,920-8,200 feet) Blooms May-July.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
Southern California black walnut *Juglans californica*	Federal: None State: None Other: CRPR 4.2	Prefers alluvial sites in chaparral, cismontane woodlands, coastal scrub, and riparian woodland. Occurs between 50-900 meters (160-2,950 feet). Blooms March-August	Absent	**Not expected.** Potentially suitable habitat for natural individuals of this species is absent; however, it may occur as an ornamental landscape tree.
Coulter's goldfields *Lasthenia glabrata* ssp. *coulteri*	Federal: None State: None Other: CRPR 1B.1	Coastal salt marshes, playas, and vernal pools. Occurs between 1-1,220 meters (3-4,000 feet). Blooms February-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Robinson's pepper-grass *Lepidium virginicum* var. *robinsonii*	Federal: None State: None Other: CRPR 4.3	Chaparral and coastal scrub. Occurs between 1-885 meters (3-2,900 feet). Blooms January-July.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
ocellated Humboldt lily *Lilium humboldtii ssp. ocellatum*	Federal: None State: None Other: CRPR 4.2	Prefers openings in chaparral, cismontane woodland, coastal scrub, lower montane coniferous forest, and riparian woodland. Occurs between 30-1,800 meters (100-5,900 feet). Blooms March-August.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
San Gabriel linanthus *Linanthus concinnus*	Federal: None State: None Other: CRPR 1B.2	Prefers rocky openings in chaparral, lower montane coniferous forest, and upper montane coniferous forest. Occurs between 1,520-2,800 meters (4,990-9,180 feet). Blooms April-July.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
Davidson's bush-mallow *Malacothamnus davidsonii*	Federal: None State: None Other: CRPR 1B.2	Chaparral, cismontane woodland, coastal scrub, and riparian woodland. Occurs between 185-855 meters (610-2,800 feet). Blooms June-January)	Absent	**Not expected.** Potentially suitable habitat for this species is absent. This species was documented in the CNDDB to occur in the BSA of the HSG, along Tujunga Wash; however, this record is from 1928 and habitat suitable for this species currently does not exist along Tujunga Wash.
white-veined monardella *Monardella hypoleuca* ssp. *hypoleuca*	Federal: None State: None Other: CRPR 1B.3	Chaparral and cismontane woodland. Occurs between 50-1,525 meters (100-5,000 feet). Blooms April-December.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
mud nama *Nama stenocarpa*	Federal: None State: None Other: CRPR 2B.2	Marshes and swamps; lake margins and riverbanks). Occurs between 5-500 meters (15-1,640 feet). Blooms January-July.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Gambel's water cress *Nasturtium gambelii*	Federal: FE State: ST Other: CRPR 1B.1	Freshwater or brackish marshes and swamps. Occurs between 5-330 meters (15-1,080 feet). Blooms April-October.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
prostrate vernal pool navarretia *Navarretia prostrata*	Federal: None State: None Other: CRPR 1B.1	Prefers mesic coastal scrub, meadows and seeps, alkaline valley and foothill grassland, and vernal pools. Occurs between 15-1,210 meters (50-3,970 feet). Blooms April-July.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
California orcutt grass *Orcuttia californica*	Federal: FE State: SE Other: CRPR 1B.1	Vernal pools. Occurs between 15-660 meters (50-2,160 feet). Blooms April-August.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Hubby's phacelia *Phacelia hubbyi*	Federal: None State: None Other: CRPR 4.2	Prefers gravelly, rocky, or talus sites in chaparral, coastal scrub, and valley and foothill grasslands. Occurs between 0-1,000 meters (0-3,280 feet). Blooms April-July.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
white rabbit-tobacco *Pseudognaphalium leucocephalum*	Federal: None State: None Other: CRPR 2B.2	Prefers sandy or gravelly sites in riparian woodland, cismontane woodland, coastal scrub, and chaparral. Occurs between 0-2,100 meters (0-6,890 feet). Blooms July-December.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
Nuttall's scrub oak *Quercus dumosa*	Federal: None State: None Other: CRPR 1B.1	Prefers sandy or clay loam sites in closed-cone coniferous forest, chaparral, and coastal scrub. Occurs between 15-400 meters (50-1,310 feet). Blooms February-August.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Salt Spring checkerbloom *Sidalcea neomexicana*	Federal: None State: None Other: CRPR 2B.2	Prefers alkaline or mesic sites in chaparral, coastal scrub, lower montane coniferous forest, Mojavean desert scrub, and playas. Occurs between 15-1,530 meters (50-5,020 feet). Blooms March-June.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
San Bernardino aster *Symphyotrichum defoliatum*	Federal: None State: None Other: CRPR 1B.2	Prefers sites near ditches, streams and springs in coastal scrub, cismontane woodland, lower montane coniferous forest, valley and foothill grassland, and in meadows and seeps. Occurs between 2–2,040 meters (6-6,690 feet). Blooms July–November.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Greata's aster *Symphyotrichum greatae*	Federal: None State: None Other: CRPR 1B.3	Mesic sites in broad-leafed upland forest, chaparral, cismontane woodland, lower montane coniferous forest, and riparian woodland. Occurs between 300-2,010 meters (980-6,590 feet). Blooms June-October.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components occur outside the known elevation range of this species.
Sonoran maiden fern *Thelypteris puberula* var. *sonorensis*	Federal: None State: None Other: CRPR 2B.2	Meadows and seeps. Along streams, seepage areas. Occurs between 50-610 meters. Blooms January-September.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
SENSITIVE NATURAL COMMUNITIES				
California Walnut Woodland				Not present within the BSA of onsite and offsite components, or the VGS alternative.
Riversidian Alluvial Fan Sage Scrub				Not present within the BSA of onsite and offsite components, or the VGS alternative.
Southern California Arroyo Chub/Santa Ana Sucker Stream				Not present within the BSA of onsite and offsite components, or the VGS alternative.
Southern Coast Live Oak Riparian Forest				Not present within the BSA of onsite and offsite components, or the VGS alternative.

Common Name *Scientific Name*[2]	**Status**[3]	**General Habitat Description**[4]	**Potentially Suitable Habitat Present/ Absent**	**Potential for Occurrence**
Southern Cottonwood Willow Riparian Forest				Not present within the BSA of onsite and offsite components, or the VGS alternative.
Southern Mixed Riparian Forest				Not present within the BSA of onsite and offsite components, or the VGS alternative.
Southern Sycamore Alder Riparian Woodland				Not present within the BSA of onsite and offsite components, or the VGS alternative.

[1] Special-Status species known from the CNDDB and CNPS to occur from the Van Nuys and surrounding eight quadrangles.
[2] Nomenclature for special-status plant species conforms to CNPS.
[3] Sensitivity Status Codes

Federal
- **FT** - Federally Threatened under the Federal Endangered Species Act
- **FE** - Federally Endangered under the Federal Endangered Species Act
- **FC** – A Federal Candidate for listing under the Federal Endangered Species Act

State
- **ST** - State Threatened under the California Endangered Species Act
- **SE** - State Endangered under the California Endangered Species Act

Other
- California Rare Plant Rank (CRPR)
- **1A:** Plants presumed extinct in California
- **1B**: Plants rare, threatened, or endangered in California and elsewhere
- **2**: Plants rare, threatened, or endangered in California, but more common elsewhere
- **3**: Plants more information is needed for
- **4**: Plants of limited distribution – a watch list
  - **0.1**: Seriously threatened in California
  - **0.2**: Fairly endangered in California
  - **0.3**: Not very endangered in California

[4] General Habitat Descriptions from CNPS.

Table B. Regional Special-Status Wildlife Species[1]

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
Invertebrates				
Santa Monica shieldback katydid *Aglaothorax longipennis*	Federal: None State: None Other: CNDDB	Occurs nocturnally in chaparral and canyon stream bottom vegetation in Santa Monica Mountains. Also on introduced iceplant (*Mesembryanthemum*).	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Busck's gallmoth *Carolella busckana*	Federal: None State: None Other: CNDDB	Coastal scrub dune. More specific habitat requirements are currently unknown.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
sandy beach tiger beetle *Cicindela hirticollis gravida*	Federal: None State: None Other: CNDDB	Inhabits areas adjacent to non-brackish water along the coast of California from San Francisco bay to northern Mexico. Inhabits clean, dry, light-colored sand in the upper zone. Subterranean larvae prefer moist sand not affected by wave action.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
globose dune beetle *Coelus blobosus*	Federal: None State: None Other: CNDDB	Inhabits coastal sand dune habitats, from Bodega Head in Sonoma County, south to Ensenada, Mexico. Found in foredunes and sand hummocks, burrowing beneath the sand surface. Most common beneath dune vegetation.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Monarch butterfly-California overwintering population *Danaus plexippus pop. 1*	Federal: None State: None Other: CNDDB	Winter roosts occur along California coast from Mendocino County, south to Baja California, Mexico. Roosts in wind-protected tree groves (eucalyptus, Monterey pine, cypress) with nectar and water sources nearby.	Absent	**Not expected.** Potentially suitable habitat for this species is absent. Groves of eucalyptus trees and sources of nectar () were not observed during the field survey,
Gertsch's socalchemmis spider *Socalchemmis gertschi*	Federal: None State: None Other: CNDDB	Inhabits sage scrub, chaparral, oak woodland, and coniferous forest, generally in rocky outcrops or talus slopes in non-arid climates. Known only from Brentwood and Topanga Canyon.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and project components do not occur near known populations of this species.
Fish				
arroyo chub *Gila orcuttii*	Federal: None State: None Other: SSC	Los Angeles basin south coastal streams. Slow water stream sections with mud or sand bottoms, feeds heavily on aquatic vegetation and associated invertebrates	Absent	**Not expected**. Potentially suitable habitat for this species is absent.

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
southern steelhead-southern California DPS *Oncorhynchus mykiss irideus*	Federal: FE State: None Other: SCC	Federal listing refers to populations from the Santa Maria River south to the Tijuana River at the US and Mexico border, in seasonally accessible rivers and streams.	Absent	**Not expected.** Potentially suitable habitat for this species is absent and it is not previously known from waterways within proximity of project components, including the Los Angeles River and Tujunga Wash.
Santa Ana speckled dace *Rhinichthys osculus* ssp. 3	Federal: None State: None Other: SSC	Headwaters of the Santa Ana and San Gabriel Rivers. May be extirpated from the Los Angeles River system. Require permanent flowing streams with summer water temperatures of 17-20 degrees Celsius. Usually inhabits shallow cobble and gravel riffles.	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
Amphibians				
arroyo toad *Anaxyrus californicus*	Federal: FE State: None Other: SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill, desert riparian, and desert washes. Occurs in rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
southern mountain yellow-legged frog *Rana muscosa*	Federal: FE State: SE Other: SSC	Federal listing refers to populations in the San Gabriel, San Jacinto, and San Bernardino Mountains only. Always encountered within a few feet of water. Tadpoles may require 2-4 years to complete their aquatic development.	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
western spadefoot *Spea hammondii*	Federal: None State: None Other: SSC	Occurs primarily in grassland habitats, but can be found in valley-foothill hardwood woodlands. Vernal pools are essential for breeding and egg-laying.	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
REPTILES				
silvery legless lizard *Anniella pulchra pulchra*	Federal: None State: None Other: SSC	Sandy or loose loamy soils under sparse vegetation. Prefers soils with high moisture content.	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
coastal western whiptail *Aspidoscelis tigris stejnegeri*	Federal: None State: None Other: CNDDB	Found in deserts and semiarid areas with sparse vegetation and open areas. Also in woodland and riparian areas. Substrate may be firm soils, sandy, or rocky.	Absent	**Not expected**. Disturbed riparian habitat occurring along Haskell Creek in the BSA of the brine line does not provide suitable habitat for this species.

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
San Bernardino ringneck snake *Diadophis punctatus modestus*	Federal: None State: None Other: CNDDB	Found in open, relatively rocky areas within valley foothill, mixed chaparral, and annual grass habitats. In coastal regions, periods of winter inactivity are passed under surface objects or in other suitable refuges. Common under boards and flat rocks.	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
western pond turtle *Emys marmorata pallida*	Federal: None State: None Other: SSC	Inhabits permanent or nearly permanent bodies of water in many habitat types, below 6,000 feet (1,830 meters). This species requires basking sites such as partially submerged logs, vegetation mats, or open mud banks. Also needs suitable nesting sites.	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
desert tortoise *Gopherus agassizii*	Federal: FT State: ST	Occurs in the Mojave and Sonoran deserts north and west of the Colorado River, in sandy flats to rocky foothills, including alluvial fans, washes, and canyons where suitable soils for den construction are found.	Absent	**Not expected**. Potentially suitable habitat for this species is absent
coast horned lizard *Phrynosoma blainvillii*	Federal: None State: None Other: SSC	Inhabits coastal sage scrub and chaparral in arid and semiarid climates. Prefers friable, rocky, or shallow sandy soils.	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
two-striped garter snake *Thamnophis hammondii*	Federal: None State: None Other: SSC	Highly aquatic, found in or near permanent freshwater, often along streams with rocky beds and riparian growth. Known from coastal California from the vicinity of Salinas to northwest Baja California, from sea to about 7,000 feet (2,135 meters).	Absent	**Not expected**. Potentially suitable habitat for this species is absent. Disturbed riparian habitat occurring along Haskell Creek in the BSA of the brine line does not provide suitable habitat for this species.
Mojave fringe-toed lizard *Uma scoparia*	Federal: None State: None Other: SSC	Endemic to southern California. Restricted to Aeolian sand habitats in the deserts of Los Angeles, Riverside, and San Bernardino Counties. Associated with present-day and historical drainages and sand dune complexes of the Mojave and Amargosa Rivers	Absent	**Not expected**. Potentially suitable habitat for this species is absent.
BIRDS				
Cooper's hawk *Accipiter cooperii*	Federal: None State: None Other: WL	Inhabits various types of mixed deciduous forests and open woodlands, including small woodlots, riparian woodlands in dry country, open and pinyon woodlands, and forested mountainous regions. Also now nests in many cities.	Present	**Low.** Potentially suitable foraging and nesting habitat for this species is present with in the BSA. Although riparian habitat along Haskell Creek may not be suitable, this species is known to nest in tall trees and buildings in urban areas.

Common Name *Scientific Name*[2]	**Status**[3]	**General Habitat Description**[4]	**Potentially Suitable Habitat Present/ Absent**	**Potential for Occurrence**
tricolored blackbird *Agelaius tricolor*	Federal: None State: SE Other: BCC, SSC	Highly colonial species, most numerous in Central Valley and vicinity. Largely endemic to California. Requires open water, protected nesting substrate and foraging area with insect prey within a few kilometers of the colony.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
burrowing owl *Athene cunicularia*	Federal: None State: None Other: BCC, SSC	Inhabits open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, California ground squirrel.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Swainson's hawk	Federal: None State: ST Other: BCC	Breeds in grasslands with scattered trees, juniper-sage flats, riparian areas, savannahs, & agricultural or ranch lands with groves or lines of trees.	Absent	**Low.** Potentially suitable foraging habitat for this specie is present within the BSA of onsite and offsite components. May occur in the BSA as a rare migrating transient. Disturbed riparian habitat occurring along Haskell Creek in the BSA of the brine line does not provide suitable habitat for this species.
western yellow-billed cuckoo *Coccyzus americanus occidentalis*	Federal: FT State: SE Other: BCC	Nests in riparian forest along broad, lower flood-bottoms of larger river systems. Prefers riparian jungles or willow, often mixed with cottonwoods, with a lower story of blackberry, nettles, or wild grape.	Absent	**Not expected.** Potentially suitable habitat for this species is absent. Disturbed riparian habitat occurring along Haskell Creek in the BSA of the brine line does not provide suitable habitat for this species.
southwestern willow flycatcher *Empidonax traillii extimus*	Federal: FE State: SE	Riparian woodlands in southern California. Nests in extensive thickets of low, dense willows on edge of wet meadows, ponds, or backwaters, between 2,000 and 8,000 feet (610-2,440 meters). Dense willow thickets are required for nesting and roosting. Low, exposed branches are used for singing posts/hunting perches.	Absent	**Not expected.** Potentially suitable habitat for this species is absent. Disturbed riparian habitat occurring along Haskell Creek in the BSA of the brine line does not provide suitable habitat for this species.
coastal California gnatcatcher *Polioptila californica californica*	Federal: FT State: None Other: SSC	Obligate, permanent resident of coastal sage scrub below 2.500 feet (760 meters) in southern California. Inhabits low, coastal sage scrub in arid washes, on mesas and slopes.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
bank swallow *Riparia riparia*	Federal: None State: ST	Colonial nester; nests primarily in riparian and other lowland habitats west of the desert. Requires vertical banks/cliffs with fine-textured/sandy soils near streams, rivers, lakes, and ocean to dig nesting hole.	Absent	**Not expected.** Potentially suitable habitat for this species is absent. Disturbed riparian habitat occurring along Haskell Creek in the BSA of the brine line does not provide suitable habitat for this species.

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
least Bell's vireo *Vireo bellii pusillus*	Federal: FE State: SE	Summer resident of southern California in low riparian habitat in vicinity of water or in dry river bottoms, below 2,000 feet (610 meters).	Absent	**Not expected.** Potentially suitable habitat for this species is absent. A historical record from 2004 of this species is documented in the CNDDB to overlap the DCTWRP site. A lone male vireo was detected, indicating it was likely a transient in the area. Disturbed riparian habitat occurring along Haskell Creek in the BSA of the brine line does not provide suitable habitat for this species.
MAMMALS				
pallid bat *Antrozous palidus*	Federal: None State: None Other: SCC, WBWG-H	Deserts, grasslands, shrublands, woodlands and forests. Most common in open, dry habitats with rock areas for roosting. Roosts must protect bats from high temperatures; very sensitive to disturbance of roosting sites.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
Townsend's big-eared bat *Corynorhinus townsendii*	Federal: None State: SC Other: SCC, WBWG-H	Arid scrub, pine forests, and wooded canyons in the west. Common in human-made structures (e.g. old mine workings and buildings), generally in buildings along the coast. Roosts in the open, hanging from walls and ceilings.	Present	**Not expected.** Although buildings occur in the BSA of project components, this species is not expected to utilize the project.
western mastiff bat *Eumops perotis californicus*	Federal: None State: None Other: SCC, WBWG-H	Known from open semiarid to arid habitats, including conifer and deciduous woodlands, coastal scrub, grassland, and chaparral. Roosts in crevices in cliff faces, high buildings, trees, and tunnels. Roost locations are generally high above the ground providing a 3-meter minimum clearance below the entrance for flight. Requires large open-water drinking sites.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
silver-haired bat *Lasionycteris noctivagans*	Federal: None State: None Other: CNDDB, WBWG-M	Common, but erratic in abundance. During spring and fall migrations the silver-haired bat may be found anywhere in California. Primarily a coastal and montane forest dweller feeding over streams, ponds, and open brushy areas. Roosts in hollow trees, beneath exfoliating bark, abandoned woodpecker holes and rarely under rocks. Needs drinking water.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.

Common Name *Scientific Name*[2]	**Status**[3]	**General Habitat Description**[4]	**Potentially Suitable Habitat Present/ Absent**	**Potential for Occurrence**
hoary bat *Lasiurus cinereus*	Federal: None State: None Other: CNDDB, WBWG-M	May be found at any location in California. Winters along the coast and in southern California, breeding inland and north of the winter range. During migration, may be found at locations far from the normal range. Prefers open habitats or habitat mosaics, with access to trees for cover and open areas or habitat edges for feeding. Roosts in dense foliage of medium to large trees, feeds primarily on moths; requires water.	Present	**Low.** Potentially suitable habitat and trees for cover and roosting are present in the BSA of onsite and offsite components.
western yellow bat *Lasiurus xanthinus*	Federal: None State: None Other: CNDDB, WBWG-M	Found in valley foothill riparian, desert riparian, desert wash, and palm oasis habitats. Roosts in dead palm fronds and other trees, sometimes in urban areas.	Absent	**Low.** Potentially suitable habitat for this species is present along the conveyance pipeline where palms trees are common.
San Diego black-tailed jackrabbit *Leppus californicus bennettii*	Federal: None State: None Other: SCC	Intermediate canopy stages of shrub habitats & open shrub / herbaceous & tree / herbaceous edges.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
south coast marsh vole *Microtus californicus stephensi*	Federal: None State: None Other: SCC	Tidal marshes in Los Angeles, Orange and southern Ventura Counties.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
San Diego desert woodrat *Neotoma lepida intermedia*	Federal: None State: None Other: SCC	Coastal scrub of southern California from San Diego County to San Luis Obispo County. Moderate to dense canopies preferred. They are particularly abundant in rock outcrops and rocky cliffs and slopes.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
big free-tailed bat *Nyctinomops macrotis*	Federal: None State: None Other: SCC, WBWG-MH	Low-lying arid hilly areas in Southern California to about 6,000 feet amsl. Roosts in crevices and cliffs, buildings, and cavities in trees.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
southern grasshopper mouse *Onychomys torridus ramona*	Federal: None State: None Other: SCC	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.

Common Name *Scientific Name*[2]	Status[3]	General Habitat Description[4]	Potentially Suitable Habitat Present/ Absent	Potential for Occurrence
Los Angeles pocket mouse *Perognathus longimembris brevinasus*	Federal: None State: None Other: SCC	Lower elevation grasslands and coastal sage communities in and around the Los Angeles Basin; open ground with fine sandy soils; may not dig extensive burrows, instead may be found hiding under weeds and dead leaves.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.
American badger *Taxidae taxus*	Federal: None State: None Other: SCC	Most abundant in drier open stages of most shrub, forest, and herbaceous habitats, with friable soils.	Absent	**Not expected.** Potentially suitable habitat for this species is absent.

[1] Special-Status species known from the CNDDB to occur from the Van Nuys and surrounding eight quadrangles.
[2] Nomenclature for special-status wildlife conforms to CNDDB
[3] Sensitivity Status Codes

Federal
- **FT** - Federally Threatened under Federal Endangered Species Act (FESA)
- **FE** - Federally Endangered under FESA

State
- **ST** - State Threatened under California Endangered Species Act (CESA)
- **SE** - State Endangered under CESA
- **SC** – State Candidate for listing under CESA

Other
- **BCC** – Designated as Birds of Conservation Concern by US Fish & Wildlife Service
- **SSC** – Designated as Species of Special Concern by California Department of Fish and Wildlife
- **CNDDB** - Tracked by the California Natural Diversity Data Base or otherwise considered locally sensitive
- **WBWG-H** - Designated by the Western Bat Working Group (WBWG) as High Priority - species that are imperiled or are at high risk of imperilment
- **WBWG-M** - Designated by the WBWG as Medium Priority – a level of concern that should warrant closer evaluation, more research, and conservation actions of both species and possible threats.

[4] General Habitat Description taken from CNDDB.

APPENDIX E

Phase I Archaeological Assessment

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT
PHASE I ARCHAEOLOGICAL ASSESSMENT
LOS ANGELES COUNTY, CALIFORNIA

Prepared for:
Los Angeles Department of Water and Power
Environmental Affairs
111 North Hope Street, Room 1044
Los Angeles, California 90012

Prepared by:
AECOM
515 South Flower Street, 8th Floor
Los Angeles, California 90071

Authors:
Marc A. Beherec, Ph.D., RPA
Linda Kry, B.A.
M.K. Meiser, M.A.
James R. Wallace, M.A., RPA

September 2015
Updated April 2016

Acres:520 U.S.G.S. 7.5' Quadrangles: San Fernando, Van Nuys

Keywords: San Fernando Valley, Donald C. Tillman Water Reclamation Plant, Hansen Spreading Grounds, Pacoima Spreading Grounds, Valley Generating Station Transmission School, San Fernando Road

TABLE OF CONTENTS

Section **Page**

LIST OF FIGURES

LIST OF PLATES

LIST OF TABLES

EXECUTIVE SUMMARY

AECOM was retained by the Los Angeles Department of Water and Power (LADWP) to conduct a Phase I cultural resources assessment for the Los Angeles Groundwater Replenishment Project. This report was prepared by AECOM to assist the LADWP in implementing a plan to maintain the reliability of the City's water supply by reducing dependence on imported sources of water through reuse of up to 30,000 acre-feet per year (AFY) of recycled water from the Donald C. Tillman Water Reclamation Plant (DCTWRP) for groundwater replenishment into the San Fernando Groundwater Basin (SFB).

This document seeks to identify potential impacts to cultural resources in compliance with provisions of the California Environmental Quality Act (CEQA). This project may also receive federal funding from the Environmental Protection Agency (EPA) through the Clean Water State Revolving Fund of the State Water Resources Control Board. Therefore, under the additional provisions of CEQA-Plus, potential impacts to cultural resources were also evaluated in accordance with Section 106 of the National Historic Preservation Act (NHPA) (16 U.S. Code Section 470f) and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800). This project will have no adverse effect to historic properties pursuant to Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations (36 CFR 800.4).

A records search in connection with this project was conducted in September 2015 at the South Central Coastal Information Center (SCCIC) housed at California State University, Fullerton. The records search revealed that approximately 70 percent of the Project area has been subject to previous cultural resources study. One cultural resource, San Fernando Road, is recorded within the Project area.

A Native American contact program was implemented consisting of an information letter, response form, and map that were sent to local Native American representatives as designated by the Native American Heritage Commission (NAHC). Additionally, a Sacred Lands File search conducted by the NAHC did not result in the identification of documented sacred lands within, or in the vicinity of, the project area. To date, only one response has been received.

In addition, a field survey was conducted as part of this assessment to identify the presence of any cultural resources in the Project area. The field survey resulted in the identification of 3 cultural resources: the Hansen Spreading Grounds, the Pacoima Spreading Grounds, and the Valley Generating Station (VGS) Transmission School.

Of the resources identified in the records search, contact program, and field survey, only San Fernando Road appears eligible for the California Register of Historical Resources (CRHR). However, the Project would not impact those elements of the resource which make it eligible for the CRHR. Thus, the Project would not impact known cultural resources.

The lack of surface evidence of archaeological materials does not preclude the possibility that subsurface archaeological materials may exist. The presence of alluvium may mean that any surface evidence of archaeological materials has been buried and could be encountered during excavation. Based on the results of this cultural resources assessment, the Project area is culturally sensitive for prehistoric and/or historic archaeological resources. The following recommendations are intended to reduce impacts to unanticipated archaeological resources. Because the potential to encounter archaeological resources exists for this Project, archaeological monitoring should be conducted during ground-disturbing activities over 10 feet in depth. The archaeological monitor will have the authority to redirect construction equipment in the event potential archaeological resources are encountered. If archaeological resources are encountered, work in the vicinity of the discovery will halt until appropriate treatment or further investigation of the resource is determined by a qualified archaeologist in accordance with the provisions of CEQA Guidelines Section 15064.5.

In addition, it is recommended that the construction personnel and staff be given training on possible archaeological resources that may be present in the area in order to establish an understanding of what to look for during ground-disturbing activities.

If Native American cultural materials are encountered during Project-related ground disturbance, a trained Native American consultant should be engaged to monitor ground-disturbing work in the area containing the Native American cultural resources. This monitoring would occur on an as-needed basis and would be intended to ensure that Native American concerns are taken into account during the construction process.

If human remains are discovered, work in the immediate vicinity of the discovery will be suspended and the Los Angeles County Coroner contacted. If the remains are deemed Native American in origin, the Coroner will contact the NAHC and identify a Most Likely Descendant (MLD) pursuant to Public Resources Code Section 5097.98 and California Code of Regulations Section 15064.5. Work may be resumed at the landowner's discretion but will only commence after consultation and treatment have been concluded. Work may continue on other parts of the Project while consultation and treatment are conducted. Any archaeological materials recovered should be prepared for and curated at an approved facility.

INTRODUCTION

This document reports a Phase I cultural resources assessment conducted in connection with the Los Angeles Groundwater Replenishment Project (Project). This report was prepared by AECOM to assist the LADWP in implementing a plan to maintain the reliability of the City's water supply by reducing dependence on imported sources of water through reuse of up to 30,000 acre-feet per year (AFY) of purified recycled water from the Donald C. Tillman Water Reclamation Plant (DCTWRP) for groundwater replenishment into the San Fernando Groundwater Basin (SFB).

The primary purpose of the Proposed Project is to reduce the City's dependence on imported water sources by increasing the local groundwater supply available for potable use. The Project would consist of three basic elements: 1) *treatment* would entail the construction of a new advanced water purification facilities (AWPF) and related facilities that would provide additional levels of treatment of recycled water generated by the existing DCTWRP facilities to produce purified water; 2) *conveyance* would entail the use of existing and newly constructed pipelines to transport the purified water from the AWPF to existing spreading grounds; and 3) *replenishment* would entail the spreading of the purified water at the existing spreading grounds so that it would percolate into the SFB.

This document was prepared in support of a Draft Environmental Impact Report prepared in accordance with the California Environmental Quality Act (CEQA), Public Resources Code Section 21000 et seq., and the State CEQA Guidelines, California Code of Regulations Section 15000 et seq. Under the additional requirements of CEQA-Plus, it is also prepared in accordance with Section 106 of the National Historic Preservation Act (NHPA) (16 U.S. Code Section 470f) and its implementing regulations (36 Code of Federal Regulations [CFR] Part 800).

REPORT ORGANIZATION

This report is organized following the *Archaeological Resource Management Reports (ARMR): Recommended Contents and Format* guidelines, Department of Parks and Recreation (DPR), Office of Historic Preservation, State of California, 1990. These guidelines provide a standardized format and suggested report content, scaled to the size of the project. This report first includes a project description including project location and setting. Next, the environmental and cultural settings of the project area are presented. This is followed by the archival research methods and results which also includes a description of the Sacred Lands File search and discussion of the results including the Native American Contact Program. In addition, a paleontological records search and the results are provided. Then survey methodology and results are described. The final section summarizes the results of the cultural resources investigation and provides recommendations and conclusions for project mitigation.

PROJECT PERSONNEL

AECOM personnel involved in the cultural resources assessment are as follows: Marc Beherec, Ph.D. RPA, served as report author, conducted archival research and Native American contact, and performed the archaeological survey; M.K. Meiser, M.A., evaluated the built environment; James R. Wallace, M.A., RPA, and Linda Kry, B.A., co-authored the report; Christy Dolan, M.A., RPA, performed senior review; Frank Humphries, B.A., assisted with the archaeological survey; Maria Wiseman, M.A., RPA, Allison Hill, B.A., and Alec Stevenson, B.A., assisted with Native American contact; and Jang Seo, GISP, Dao Lee, GISP, and Kyle Griffith, B.A., provided GIS support. Resumes of key personnel are included in Appendix A.

PROJECT DESCRIPTION

PROJECT LOCATION AND SETTING

The Project area is situated in developed areas within the San Fernando Valley area of the City of Los Angeles, which is bordered by the San Gabriel Mountains to the northeast, Santa Susanna Mountains to the northwest, and the Santa Monica Mountains to the south (Figure 1). The Project area is located within un-sectioned land of the former Rancho los Encinos and Rancho Ex Mission San Fernando land grants, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute topographic quadrangles (Figures 2 and 3).

The Proposed Project includes several segments at existing facilities and within roadways (Figure 4). These include:

- Construction of an AWPF and supporting facilities at the DCTWRP plant. The DCTWRP plant is located at 6100 Woodley Avenue, in the Van Nuys community of the City of Los Angeles and is bordered by Densmore Avenue to the north, Woodley Avenue Park to the south, Woodley Avenue to the west, and Interstate 405 (I-405) to the east.
- Construction of approximately 3,000 feet linear feet of new 24-inch-diameter brine line routed easterly from the AWPF beneath the existing flood control berm, northerly along the service road located west of the Cricket Fields, easterly and then northeasterly along the DCTWRP access road, passing beneath the Orange Line Busway, and following Haskell Avenue to connect with the VORS in Victory Boulevard west of the I-405
- Construction of approximately 12,740 linear feet of new 42-inch-diameter recycled water pipeline along Arleta Avenue, connecting the existing East Valley Recycled Water Line (EVRWL) to the Pacoima Spreading Grounds.
- Improvements to the Hansen Spreading Grounds (HSG). HSG is located along the northwest side of the Tujunga Wash Channel immediately northeast of San Fernando Road.
- Improvements to the Pacoima Spreading Grounds (PSG). PSG is located on both sides of old Pacoima Wash Channel from Arleta Avenue southwesterly to Woodman Avenue.

Similar to the Proposed Project, the Valley Generating Station (VGS) Alternative includes several existing segments at existing facilities and within roadways and a transmission line right-of-way (Figure 5). These include:

- Construction of an AWPF and supporting facilities at the VGS site. The VGS site is located in the Sun Valley community, bounded by the Tujunga Wash to the north, Sheldon Street to the south, San Fernando Road to the west, and Glenoaks Boulevard to the east.
- Construction of a 36-inch-diameter brine line starting at HSG, following San Fernando Road southeast to Peoria Street. The brine line will then turn southwest and follow Peoria Street to

Laurel Canyon Boulevard then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue and turn south again and follow Colfax Avenue to its termination in Studio City. The entire brine line is approximately 7 miles long.

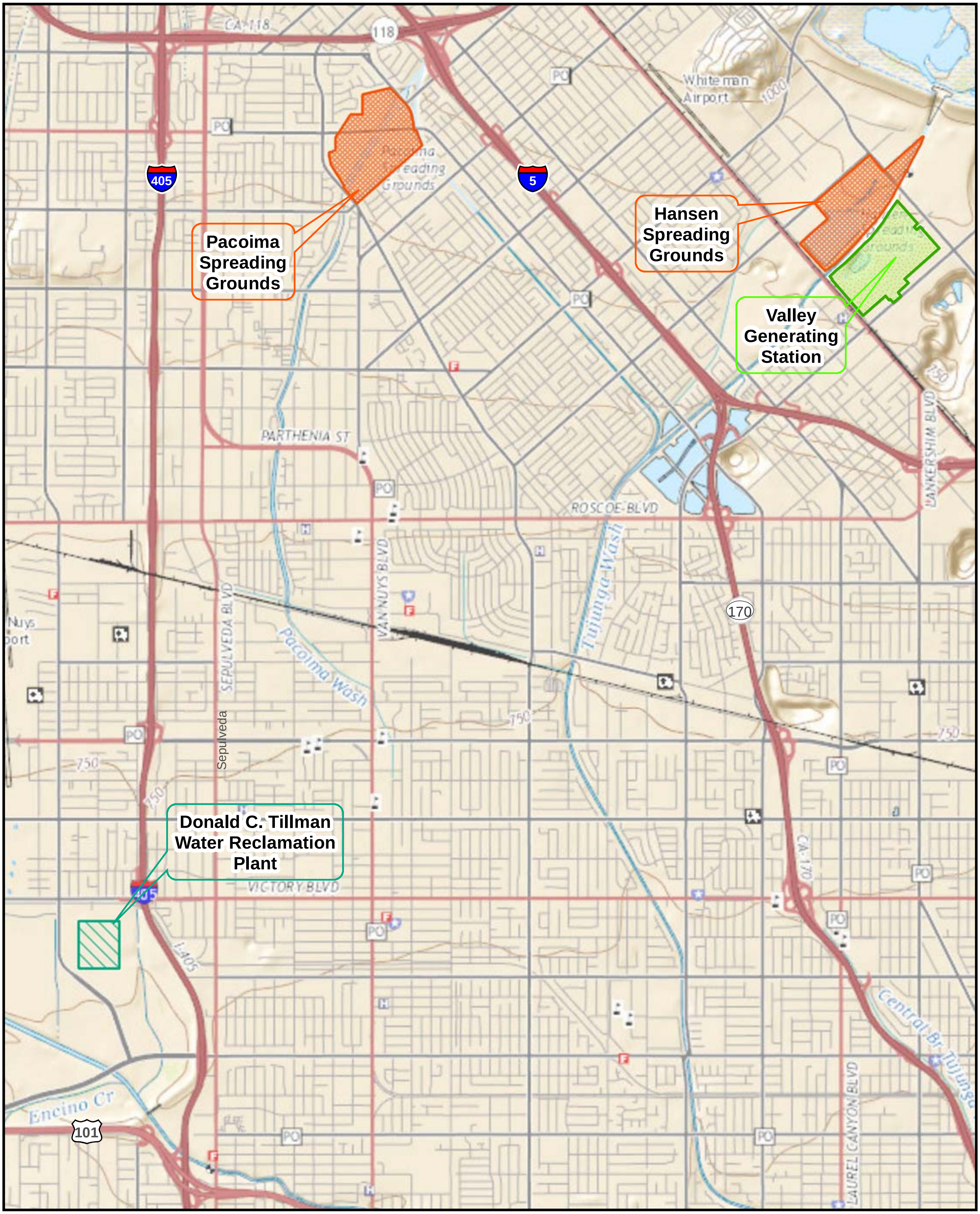
- Construction of approximately 22,260 feet of new 42-inch-diameter recycled water pipeline beginning from the VGS site, north on San Fernando Road, west on Branford Street, and north on Arleta Avenue to the PSG.
- The improvements at HSG and PSG under the VGS Alternative would be the same as the Proposed Project.

Service Layer Credits: Esri, HERE, DeLorme, MapmyIndia, © OpenStreetMap contributors, and the GIS user community

0 5 10 Miles

Figure 1

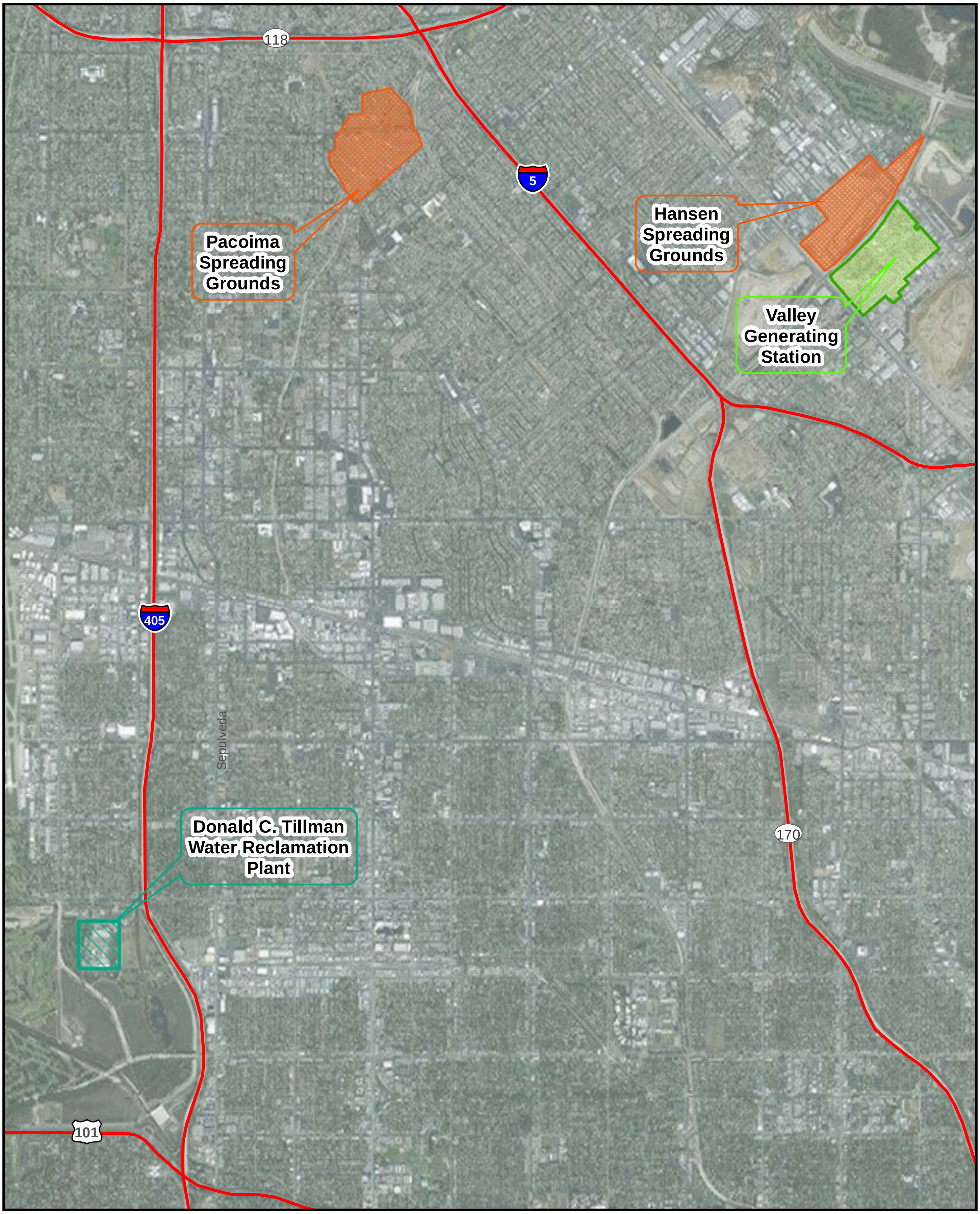
Regional Location Map



Service Layer Credits: USGS The National Map: National Boundaries Dataset, National Elevation Dataset, Geographic Names Information

0 0.5 1 2 Miles

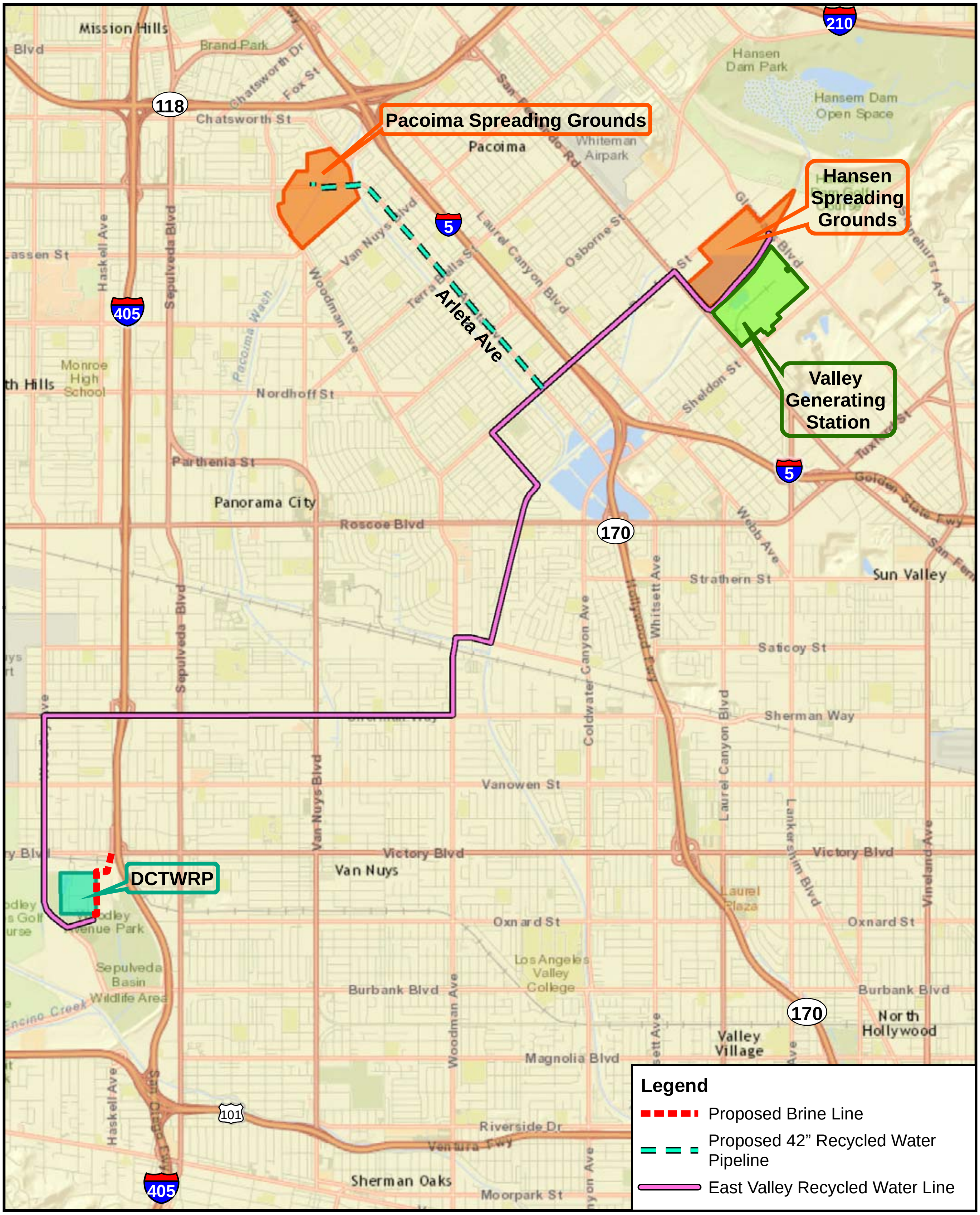
Figure 2
Project Location Map



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AEX, Getmapping,

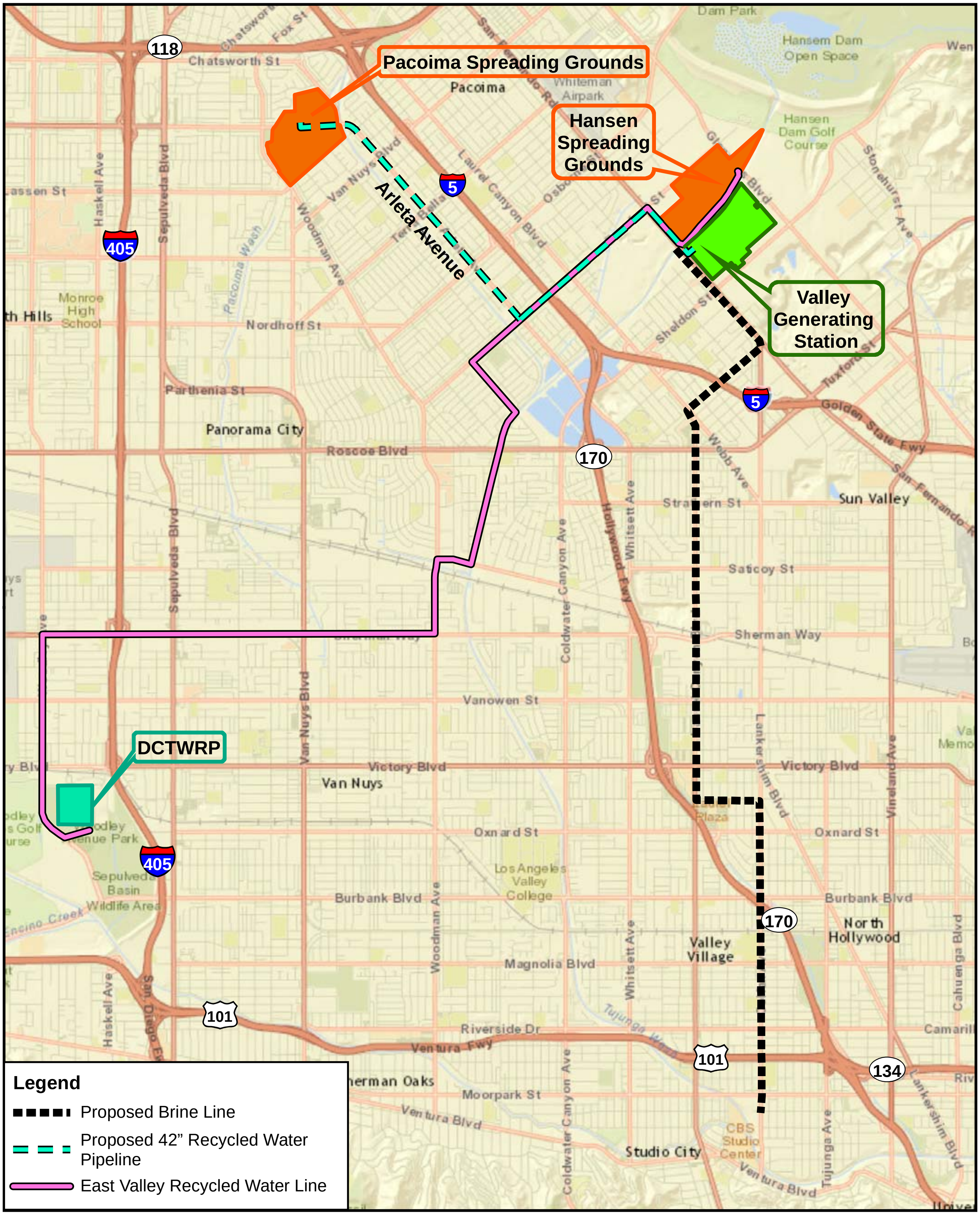
0 0.5 1 2 Miles

Figure 3
Project Area Map



Source: ESRI, 2016

Figure 4
Proposed Project



Source: ESRI, 2016.

0 1 2 Miles

Figure 5
VGS Alternative

PROPOSED UNDERTAKING

To maintain the reliability of the City's water supply by reducing dependence on imported sources of water, LADWP proposes to replenish the SFB with up to 30,000 acre-feet per year AFY of purified recycled water from DCTWRP.

The project would include the construction of numerous facilities to support the ground water replenishment efforts (Figure 6). An AWPF would be constructed within the DCTWRP to treat recycled water effluent produced by the DCTWRP using advanced treatment technology. The AWPF would be located in the southeast corner of the DCTWRP property adjacent to the Balboa Pump Station The site for the AWPF is approximately 1.75 acres and is currently vacant. The AWPF building would be up to 54 feet in height.

Due to increased electric power demand to operate the AWPF, the project includes construction of a new substation. The substation would be constructed in the south-central part of DCTWRP, between the existing disinfection contact tanks. This site is approximately 0.2 acres and is currently occupied by a dechlorination facility, which is no longer utilized and would be demolished.

Other AWPF functions would be housed in single story structures or under canopies. In addition, a portion of the existing disinfection contact tanks, which would not be required for either the recycled water treatment or the water purification process, would be converted for the ozonation and BAC processes. To support the AWPF processes, additional functions, such as pumps, filters, tanks, piping, chemical storage, alarm systems, security surveillance, and distributed control systems for remote monitoring and controls, would be required within or adjacent to the AWPF. The existing Balboa Pump Station, located adjacent to the berm in the far southeast corner of DCTWRP, would also be expanded to support the pumping of the purified water produced at the AWPF to HSG via the existing EVRWL and to PSG via the EVRWL and a proposed 42-inch recycled water pipeline. The improvements at the pump station would involve adding three additional pumps at a previously constructed but unused connection to the EVRWL.

Although maintenance and warehouse facilities currently exist at DCTWRP, they would require expansion to support the advanced water purification processes in terms of material, equipment, and shops. Therefore, in order to provide for the expansion of these facilities and to consolidate like functions (i.e., all warehouse functions and all maintenance functions) at DCTWRP, a new warehouse would be constructed in the northwest corner of the complex. Excavation depths at DCTWRP would extend a maximum of 15.5 feet, with excavation for the brine line extending a maximum of 8 feet.

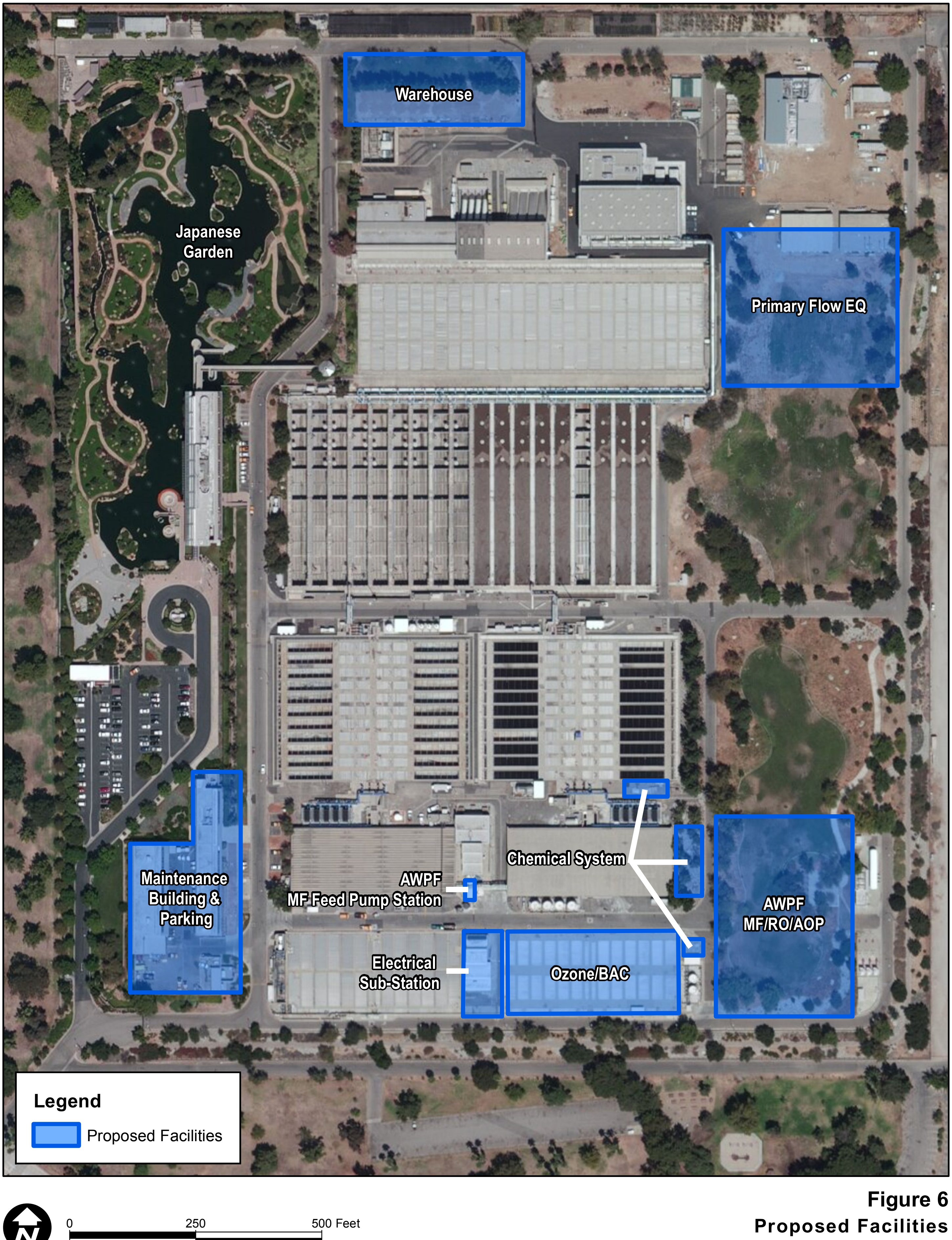


Figure 6
Proposed Facilities

Recycled Water Pipelines

Existing non-potable Title 22 recycled water users northeast of the DCTWRP, outside of the Sepulveda Basin Area, are currently served by the existing EVRWL. Sepulveda Basin customers, such as golf courses and other irrigation users who are nearby and southwest of the DCTWRP are also currently served by the existing EVRWL. The existing EVRWL would be used to convey purified water to the HSG and the PSG. A new pipeline branch would need to be constructed from the EVRWL to PSG. The new 42-inch-diameter pipeline would start at the intersection of Branford Street and Arleta Avenue and proceed northwesterly along Arleta Avenue to PSG. The proposed recycled water pipeline would be approximately 10,000 linear feet. A 10-foot-wide trench would be excavated for this pipe. Excavation depths for this pipeline would reach approximately 12 to 15 feet.

Valley Generating Station Alternative

VGS is located in the Sun Valley community in the City of Los Angeles. It is bounded by the Tujunga Wash to the north, Sheldon Street to the south, San Fernando Road to the west, and Glenoaks Boulevard to the east. VGS land is currently owned by the City of Los Angeles. The facility address is 11801 Sheldon Street, and it was constructed approximately in 1951 (Right-to-Know Network 2013).

The AWPF site at VGS would be located in the northwest portion of VGS within the property line. The AWPF site would be bordered by the Tujunga Wash to the north, an access road to the south, San Fernando Road to the west, and a gravel pit to the east.

The AWPF would be a single story building at this location because available space would be sufficient. The site at VGS currently has six training towers that would need to be removed or relocated to provide space for the AWPF. The AWPF would operate independently of and separate from the existing VGS power plant. Therefore, the AWPF at VGS would include a new administration building (assumed 9,000 square foot footprint); new security, including a fence and a guard shack; and a new parking lot. Excavations at VGS would reach no deeper than 13.5 feet.

Improvements to HSG and PSG

Both the Proposed Project and the VGS Alternative would require modifications to the existing spreading grounds. These include construction of pipelines and outlet structures within the grounds. These excavations would reach depths of up to 10 feet.

Construction Schedule

Construction of the Project would commence in fourth quarter 2018 and is expected to last up to 48 months, ending in late 2022.

SETTING

ENVIRONMENTAL SETTING

The Project is located within the San Fernando Valley of the Los Angeles Basin. The Central Transverse Ranges Province forms an east-west trending northern backdrop, while the northwest-oriented Peninsular Ranges Province bounds to the south. The Los Angeles Reservoir is nestled at the foot of San Fernando Pass that straddles the San Gabriel Mountains to the northeast and Santa Susana Mountains to the north. The generally Mediterranean climate is characterized as mild, with warm, nearly rainless summers and mild winters with only occasional storms.

The San Fernando Valley is located within a valley floor with elevations ranging from 500 feet above sea level in the southeast to 1,000 feet above sea level in the west. Natural vegetation communities located within the vicinity of the Project consist mostly of willow woodland, mulefat scrub, and coastal sage scrub. Also present are areas of disturbed and non-native vegetation including park, ruderal, and pond that can be characterized as primarily park/ruderal habitat. Landscaping consists of ornamental tree plantings and maintained grass lawns, as well as areas comprised of ornamental trees with understory of ruderal species. Ruderal grassland occurs in disturbed areas where vegetation consists mainly of early successional native herbaceous plants. Black mustard and wild radish (*Ralphanus sativus*) are common in this habitat as are several nonnative grasses, including ripgut brome (*Bromus diandrus*) and foxtail chess (*Bromus rubens*). Fauna historically found in the area include black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), and numerous rodents such as Botta's pocket gopher (*Thomomys bottae*), and pocket mice (*Perognathus* spp.). Red-tailed hawks (*Buteo jamaicensis*) were commonly found, as were western scrub jays (*Alphelocoma californica*), mourning doves (*Zenaida macroura*), and California quail (*Callipepla californica*).

CULTURAL SETTING

As a framework for discussing the types of cultural resources that might be encountered in the vicinity of the Project, the following section summarizes our current understanding of major prehistoric and historic developments in and around Los Angeles and the San Fernando Valley. This is followed by a more focused discussion of the history of the Project area itself.

Prehistoric and Ethnographic Overview

The earliest occupation of Southern California may be associated with the peoples who first colonized North America in the terminal Pleistocene/earliest Holocene. The material culture associated with these peoples is characterized by fluted bifaces. Among Southern California's fluted bifaces is a fluted obsidian point found at CA-SDI-2506. That point was shaped from obsidian from the Casa Diablo source in Mono County, but was found in a stratified deposit beside what may be an ancient lake bed in Lost Valley, in the mountains of eastern San Diego County (Kline and Kline 2007). Other fluted bifaces have been reported at other locations in Santa Barbara and San Diego

Counties (Rondeau 2009). Closest to the project area, the Farpoint Site near Malibu (CA-LAN-451) has yielded a fluted point, and its excavator argues the point is a Clovis point and that the site should be associated with the Clovis culture (Stickel 2008). Clovis is the earliest universally-recognized material culture in North America, and dates to approximately 11,500 radiocarbon years before present (B.P.).

While people are known to have inhabited southern California beginning at least 13,000 years Before Present (B.P.) (Arnold et al. 2004), the first evidence of human occupation in the Los Angeles area dates to at least 9,000 years B.P. and is associated with a period known as the Millingstone Cultural Horizon (Wallace 1955; Warren 1968). Millingstone populations established permanent settlements that were located primarily on the coast and in the vicinity of estuaries, lagoons, lakes, streams, and marshes where a variety of resources, including seeds, fish, shellfish, small mammals, and birds, were exploited. Early Millingstone occupations are typically identified by the presence of handstones (manos) and millingstones (metates), while those Millingstone occupations dating later than 5000 B.P. contain a mortar and pestle complex as well, signifying the exploitation of acorns in the region.

Although many aspects of Millingstone culture persisted, by 3500 B.P., a number of socioeconomic changes occurred (Erlandson 1994; Wallace 1955; Warren 1968). These changes are associated with the period known as the Intermediate Horizon (Wallace 1955). Increasing population size necessitated the intensification of existing terrestrial and marine resources (Erlandson 1994). This was accomplished in part through use of new technological innovations such as the circular shell fishhook on the coast, and in inland areas, use of the mortar and pestle to process an important new vegetal food staple, acorns; and the dart and atlatal resulting in a more diverse hunting capability. Evidence for shifts in settlement patterns has been noted as well at a variety of locations at this time and is seen by many researchers as reflecting increasingly territorial and sedentary populations. The Intermediate Horizon marks a period in which specialization in labor emerged, trading networks became an increasingly important means by which both utilitarian and non-utilitarian materials were acquired, and travel routes were extended.

One of the most significant prehistoric sites in Southern California is located north of Hansen Dam Park, near the mouth of Tujunga Wash. The Big Tujunga Wash Site, CA-LAN-167, is identified with the ethnohistoric village Tujunga, but appears also to have been utilized during the Intermediate Horizon. Among the many finds at the site, which also included stone cairns, burials, and cremations, were 40 Hohokam sherds. Although these sherds may all be from the same vessel, they indicate some degree of trade with or travel from the Southwest in the 1300 to 1100 B.P. (Ruby 1964). The Big Tujunga Site has been found eligible for the NRHP through the Section 106 process.

The Late Prehistoric period, spanning from approximately 1500 years B.P. to the Spanish mission era, is the period associated with the florescence of contemporary Native American groups. The northern San Fernando Valley was the northernmost extent of the territory occupied by people whom the Spanish referred to as the *Fernadeño*, whose name was derived from nearby Mission San Fernando. The *Fernadeño* spoke one of four regional Uto-Aztecan dialects of Gabrielino, a Cupan language in the Takic family, and were culturally identical to the Gabrielino. The Tataviam and Chumash, of the Hokan Chumashan language family, lived to the north and west of this territory,

respectively, and it is likely that the territorial boundaries between these linguistically distinct groups fluctuated in prehistoric times (Bean and Smith 1978; Shipley 1978).
Occupying the southern Channel Islands and adjacent mainland areas of Los Angeles and Orange counties, the Gabrielino are reported to have been second only to their Chumash neighbors in terms of population size, regional influence, and degree of sedentism (Bean and Smith 1978). The Gabrielino are estimated to have numbered around 5,000 in the pre-contact period (Kroeber 1925). Maps produced by early explorers indicate the existence of at least forty Gabrielino villages, but as many as 100 may have existed prior to contact with Europeans (Bean and Smith 1978; McCawley 1996; Reid 1939[1852]).

Prehistoric subsistence consisted of hunting, fishing, and gathering. Small terrestrial game was hunted with deadfalls, rabbit drives, and by burning undergrowth, while larger game such as deer were hunted using bows and arrows. Fish were taken by hook and line, nets, traps, spears, and poison (Bean and Smith 1978; Reid 1939[1852]). The primary plant resources were the acorn, gathered in the fall and processed with mortars and pestles, and various seeds that were harvested in late spring and summer and ground with manos and metates. The seeds included chia and other sages, various grasses, and islay or holly leafed-cherry (Reid 1939[1852]).

Historic Overview

Spanish explorers made brief visits to Gabrielino territory in both 1542 and 1602, and on both occasions the two groups exchanged trade items (McCawley 1996). Sustained contact with Europeans did not commence until the onset of the Spanish Period, which began in 1769 when Gaspar de Portola and a small Spanish contingent began their exploratory journey along the California coast from San Diego to Monterey. Mission *San Fernadiño Rey de España*, the seventeenth of the 21 Franciscan missions in Alta California, was founded on September 8, 1797 and completed less than a year later. Its location was chosen as a stopping point between Mission San Gabriel and Mission San Buenaventura, and prospered by selling cattle hides and tallow and various fruit crops to the nearby Pueblo of Los Angeles (Wright 1992). Agriculture was made possible in the relatively dry area through the construction of a stone masonry dam in 1808, bringing water from the mountains to mission vineyards by way of a 1.3-mile long aqueduct, completed in 1811.

Gabrielino villages are reported by early explorers to have been most abundant along the dominant rivers of the Los Angeles Basin, including the Los Angeles, San Gabriel, and Santa Ana Rivers. Ten important villages were located within the San Fernando Valley, and the most populous of these was *Pasheeknga*, located near where the Mission was established. In addition, according to mission baptismal records, a rancho called *'Achooykomenga* was at the site where the mission was founded. Other northern San Fernando Valley communities included *Tohuunga* and *Muuhonga*. *Tohuunga* was likely located near the mouth of Little Tujunga Canyon, while according to Gabrielino informant Jose Zalvidea, *Muuhonga* was located "about two and a half miles from San Fernando, farther up the canyon from San Fernando" (McCawley 1996:40). Mission records also list a community or settlement called *Pakooynga*, which probably lends its name to the modern community Pacoima. One of J. P. Harrington's informants claimed the name *Pakooynga* means "The Entrance" (McCawley 1996: 38-39). Other sources claim the name Pacoima means "Rushing Waters" (e.g. Meagher 1955; Pacoima Chamber of Commerce n.d.).

One band descended from Fernandeno and Tataviam peoples, The Fernandeno Tataviam Band of Mission Indians, plots several ethnohistoric villages near the project area. They chart *Tujunga*, “Place of the Old Woman,” north of Hansen Dam. Adjacent to Mission San Fernando are the village *Achoicominga* and *Passenga*, “Place in the Shade.” *Vijanga* they place southeast of the intersection of Roscoe Boulevard and Laurel Canyon Boulevard. They chart Sjutkanga, “Place of the Live Oak,” on the former Rancho el Encino, south of the Donald C. Tillman Water Reclamation Plant.

By the early 1800s, the majority of the surviving Gabrielino and Fernandeno populations had entered the mission system. Mission life offered the Indians security in a time when their traditional trade and political alliances were failing and epidemics and subsistence instabilities were increasing (Jackson 1999). This lifestyle change also brought with it significant negative consequences for Gabrielino health and cultural integrity.

Alta California became a state, with its capital at Monterey, when Mexico won its independence from Spain in 1821. The authority of the California missions gradually declined, culminating with their secularization in 1834. Although the Mexican government directed that each mission’s lands, livestock, and equipment be divided among its converts, the majority of these holdings quickly fell into non-Indigenous hands. Mission buildings were abandoned and quickly fell into decay. If mission life was difficult for Native Americans, secularization was typically worse. After two generations of dependence on the missions, they were suddenly disenfranchised. After secularization, “nearly all of the Gabrielinos went north while those of San Diego, San Luis, and San Juan overran this county, filling the Angeles and surrounding ranchos with more servants than were required” (Reid 1977 [1851]:104). Upon his 1852 visit to Los Angeles, John Russel Barlett wrote:

> I saw more Indians about this place than in any part of California I had yet visited. They were chiefly mission Indians, i.e., those who had been connected with the missions and had derived their support from them until the suppression of those establishments. They are a miserable, squalid-looking set, squatting or lying about the corners of the streets with no occupation. They have no means of obtaining a living, as their lands are taken from them, and the missions for which they labored and which provided after a sort for many thousands of them, are abolished (as cited in Sugranes 1909:77).

The first party of U.S. immigrants arrived in Los Angeles in 1841, although surreptitious commerce had previously been conducted between Mexican California and residents of the United States and its territories. Included in this first wave of immigrants were William Workman and John Rowland, who soon became influential landowners. As the possibility of a takeover of California by the United States loomed large, the Mexican government increased the number of land grants in an effort to keep the land in the hands of upper-class *Californios* like the Domínguez, Lugo, and Sepúlveda families (Wilkman and Wilkman 2006:14–17). Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state’s lands into private ownership for the first time (Gumprecht 1999). Alta California Governor Pio Pico sold the San Fernando Valley to Eulogio de Celis for $14,000 around this time. Having been established as a pueblo, property within Los Angeles could not be dispersed by the governor, and this task instead fell under the city council's jurisdiction (Robinson 1979).

The United States took control of California after the Mexican–American War of 1846, and seized Monterey, San Francisco, San Diego, and Los Angeles (then the state capital) with little resistance. Local unrest soon bubbled to the surface, and Los Angeles slipped from U.S. control in 1847. Hostilities officially ended with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for the conquered territory, which included California, Nevada, and Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. The conquered territory represented nearly half of Mexico's pre-1846 holdings. California joined the United States in 1850 as the 31st state (Wilkman and Wilkman 2006:15).

The discovery of gold in northern California led to an enormous influx of American citizens in the 1850s and 1860s, and these settlers rapidly displaced the old rancho families. In 1873, the U.S. government confirmed legal title to old Rancho ex-Mission San Fernando at 116,858.43 acres, the largest private land parcel in California. The Southern Pacific Railroad extended its line from San Francisco to Los Angeles in 1876, passing through the San Fernando Valley thanks to a new tunnel through Newhall Pass. Newcomers continued to pour into Los Angeles and the population nearly doubled between 1870 and 1880. The completion of the second transcontinental line, the Santa Fe, took place in 1886 causing a fare war which drove fares to an unprecedented low. More settlers continued to head west and the demand for real estate skyrocketed. The city's population rose from 11,000 in 1880 to 50,000 by 1890 (Meyer 1981:45).

At the dawn of the 20th century, the pace of development within the Los Angeles Basin was stifled due to a limited water supply. Under the direction of city engineer William Mulholland, the Los Angeles Bureau of Water Works and Supply constructed the 238-mile long Los Angeles Aqueduct. This five year project, completed in 1913, employed the labor of over 5000 men and brought millions of gallons of water into the San Fernando (now Van Norman) Reservoir. During the first three decades of the 20th century, more than 2 million people moved to Los Angeles County, transforming it from a largely agricultural region into a major metropolitan area (Gumprecht 1999).

The beginning of the 20th century saw the florescence of a uniquely suburban metropolis, where a vast network of residential communities overshadowed city centers, where the single-family home was valued over the high-rise, and where private space took precedence over public space (Hawthorne 2006). This landscape demanded an innovative transportation solution, and Los Angeles embraced automobiles and freeways like no other city had. The first homemade car puttered down city streets in 1897. Seven years later, the first grand theft auto was reported by Los Angeles Police (Wilkman and Wilkman 2006:50). Inexpensive automobiles gained popularity in the 1920s, soon creating tremendous congestion in the centers of cities and necessitating alternate transportation routes. The Arroyo Seco Parkway, connecting Los Angeles to Pasadena, was among the earliest "express auto highways" in the United States, opening in December 1940 (Balzar 2006). Dozens of freeways were constructed in the post-World War II years, radically altering the character of Los Angeles by simultaneously dividing local neighborhoods and connecting outlying communities.

During the first three decades of the 20th century, more than two million people moved to Los Angeles County, transforming it from a largely agricultural region into a major metropolitan area. By 1945, Los Angeles had undertaken 95 annexations, expanding from a 28-square-mile agrarian pueblo into a densely populated city covering more than 450 square miles (Robinson 1979:245).

History of the Project Area

San Fernando Valley

Mission *San Fernando Rey de España* was founded by Fermín Francisco de Lasuén, Junipero Serra's successor, in 1797. The mission was established midway between San Gabriel and San Buenaventura missions, at a site approximately 1 mile northwest of PSG. The placement of Mission San Fernando, and missions in Alta California in general, was far from incidental since Franciscans carefully selected spaces with ample room for agriculture, access to water, and nearby sizeable Native American populations (Gentilcore 1961), which were needed in order to first erect the mission and second, to maintain an eventual mission system.

Under the direction of Father Francisco Dumetz and Father Juan Cortés, Native Americans built an adobe church, a storeroom, a weaving room, and a granary within one year of the mission's founding. Larger churches to accommodate the increasing numbers of Native Americans were built in 1800 and 1806 (MacMillan 1996). Construction efforts were not simply large scale, but also scaled down in the quotidian production activities at Mission San Fernando. Native Americans produced shoes and saddles from the extensive mission cattle. Rawhides were also used in the architectural construction of the mission as they were used to hold boards together. Native Americans also produced cloth, brick, tile, soap, olive oil, and wine. The Mission also had a blacksmith shop where Natives fashioned iron tools and plows (MacMillan 1996). The new work schedules at Mission San Fernando undoubtedly contrasted to how time was perceived and made use of by the Gabrielinos and Chumash before Spanish contact. MacMillan (1996) notes that many Native Americans at Mission San Fernando rebelled by refusing to work or by working slow. It was also common for Native Americans to flee from the missions.

The San Fernando Valley mission life, in particular, was not immediately affected in 1822 when New Spain gained its independence from Spain. In 1822, there were 1,001 indigenous individuals living within the mission. Native Americans continued agricultural work and cultivated wheat, barley, corn, beans, and peas. They also tended to their fruit trees, cattle, horses, and sheep, and vineyards (Robinson 1942). In 1834, though, the desecularization mission of post-Independence Mexico reached the San Fernando Mission (Robinson 1942). Secularization brought about a progressive deterioration at Mission San Fernando. Annual losses in farming were recorded and the indigenous population also increasingly drifted away from the mission center (Robinson 1942, 1963). With the decline of mission life, the physical mission itself, the symbol of centrality, also dissolved. Indians disbanded and mission celebrations broke down.

The new republic was characterized by chaotic rule. This characterization did not circumvent Alta California and added to the post-Mexican independence social cataclysm. In California, the disorder was witnessed in the dozen governors that ruled in the 26 years following independence and in the several uprisings that took place. Two of these rebellions took place near the Cahuenga Pass (Link

1991). In 1831, Jose Carillo and Abel Stearns battled the governor, Manuel Victoria, near the pass. Soon after the skirmish, Victoria resigned. In 1845, then Governor Manuel Micheltorena was met by a band of 284 rebels led by Juan Bautista Alvarado and Jose Castro. Peace was negotiated and again, a governor resigned from office. Micheltorena was followed by Pio Pico, the last governor under Mexican rule (Link 1991).

Amid the rebellions, gold was discovered in 1842, north of the ex-Mission San Fernando in Placerita Canyon. The discovery of gold prompted the migration of many prospectors who worked the canyon for several years and yielded six to eight thousand dollars each year (Robinson 1942).

The Mexican-American war was yet another circumstance that added to the San Fernando Valley's early 19th century turmoil. In 1846, the Mexican government authorized Pio Pico to take any steps necessary to protect Alta California from American invasion. Consequently, Pico sold the greater part of what was referred to as "*Rancho Ex-Mision de San Fernando*" in 1846 for $14,000. More than 116,000 acres were sold to a native of Spain, Eulogio de Celis. With the exception of Rancho Encino, Rancho El Escorpion, and a few hundred acres around the mission, de Celis purchased almost the entire valley. This sale effectively marked the valley's transition to private ownership. In addition to payment, de Celis agreed to tend to the aging Native Americans on his newly acquired land and their respective agricultural autonomy.

The Mexican-American war terminated in Alta California with the Treaty of Cahuenga. The agreement was signed in the San Fernando Valley on January 13, 1847. Andres Pico and John C. Fremont, along with five men from each side, signed the treaty.

In 1852, de Celis filed a claim with the Board of Land Commission, a board specifically created by Congress to investigate Spanish and Mexican land titles in their newly acquired territories. The divergent Mexican and American legal as well as social practices often clashed in these investigations. These proceedings were also stagnant processes. For example, although de Celis' proprietary rights were validated by the Board after his appeal (Link 1991), it was not until 1873 that the United States District Court upheld the Board's findings (Robinson 1942).

De Celis, though, returned to Spain in 1853. His lessee (and later part owner), Andres Pico, remained at Rancho Ex-Mission of San Fernando and occupied the former mission buildings. In 1862, Andres Pico transferred his interests in the San Fernando Rancho to his brother, Pio. On July 2, 1869, Pio Pico once again sold the land. This time, however, the sale excluded certain areas such as 1,000 acres near the mission. Pico in turn used the money to build a hotel in Los Angeles which stands today, the Pico House. The sale was made to the San Fernando Farm Homestead which was headed by Isaac Lankershim and I.N. Van Nuys. The Association fought the heirs of Eulogio de Celis in court and in 1871, the District Court granted the Association full title to the southern portion of the valley. Under the administration of Lankershim and Van Nuys, the southern portion of the valley focused on wheat farming.

The northern portion was bought by George K. Porter and Charles Maclay from Eulogio de Celis' son in 1874. Also in 1874, Maclay registered the city of San Fernando with the County Recorder in Los Angeles. He presented a map depicting streets, blocks, and several thousand twenty-five foot lots. The Southern Pacific Railroad extended from Los Angeles to the new city and essentially helped colonize it. The Southern Pacific offered passengers from Los Angeles to San Fernando half-rate if they traveled with the intention to purchase lands (Keffer 1934; Robinson 1942). The novelty of a new city created a tourist attraction. Having a leisurely lunch at the old mission (Robinson 1942) likely aided in constructing a tourist attraction as feelings of charm, fantasy and exoticism were created by the aged mission (Plate 1). Affective qualities were also likely drawn from the new city's comparison to the clamor of Los Angeles. San Fernando, its mission and its quiet and calm, represented a time and space gone by. San Fernando was thus packaged and consumed at $10-$25 for each town lot or $5-$40 an acre for farming lands (Robinson 1942).

Plate 1. San Fernando Mission around 1900 (Oviatt Digital Collection).

However, the San Fernando Valley was not simply a romanticized, remote oasis. In addition to having Los Angeles readily accessible in 1874 through the Southern Pacific Railroad line, in just 2 short years the San Fernando Valley was connected to San Francisco. With Chinese men as the primary labor, the San Fernando Tunnel was completed in a near 16-month construction feat by 1876 (Robinson 1942, 1961).

In addition, the valley experienced a real estate boom from 1887-88 and its immense fertile lands lured residents and developers. The Lankershim Ranch Land and Water Company purchased the east 1,200 acres of the southern half of the Rancho Ex-Mission of San Fernando from the Los Angeles Farm and Milling Company (formerly known as the San Fernando Homestead Association mentioned above). These acres were subdivided by the company in ten to forty-acre parcels that sold for $5 to $150 each. In the northern half of the valley, land was also purchased for subdivision, and once again the San Fernando Valley was packaged and sold on the real estate market as a fertile agriculture endeavor. This agronomic promise was also a reality, however. The wheat producing business that was pioneered by Lankershim and Van Nuys in the early 1870s had become a production machine by the late 1800s. Flour milling was supplemented to wheat farming and in 1888; 510,000 bushels of wheat were produced and milled by the Los Angeles Farm and Milling Company (Robinson 1961).

Another critical moment in the valley's history came in 1913 when the irrigation plan proposed by Los Angeles mayor, Fred Eaton, and Los Angeles water department engineer, William Mulholland, took its material form. The Los Angeles Aqueduct brought water from the Owens Valley in the High Sierra to Los Angeles. The construction of the aqueduct, and President Theodore Roosevelt's prohibition of selling Owens Valley water outside the City of Los Angeles, lead to the annexation of most of the San Fernando Valley into the City of Los Angeles (Kahrl 2013). In order to take advantage of the water supply for the dry farming area, the various valley communities agreed to be annexed by Los Angeles at different times from 1915 to 1923 (Robinson 1963). Because of the prosperity the aqueduct brought to the San Fernando Valley, Pacoima was briefly renamed Mulholland (Pacoima Chamber of Commerce n.d.).

Flood Control and Public Works

The history of the Project area is intimately tied to another Los Angeles engineering feat, the mastery of its rivers and floodwaters. The Los Angeles River and its tributaries were notoriously mercurial in the nineteenth and early twentieth centuries. Big Tujunga Creek, Little Tujunga Creek, and Pacoima Creek at times merged and inundated the San Fernando Valley. Already in 1921 the Los Angeles County Board of Supervisors proposed building what would be the highest dam in the world to control Pacoima Creek (LAT 1921). However, money for such a venture was not forthcoming. Instead, four different dams were decided upon, the first of which was constructed in Big Tujunga Canyon (LAT 1929). Spreading grounds were considered essential element of water conservation in the region (LAT 1931). Canal construction in Pacoima Wash for spreading grounds began at about the same time that the Big Tujunga Dam was constructed (LAT 1932), and flood control was an important topic in Los Angeles political discourse (LAT 1930; Cecil 1931).

In 1938, Los Angeles was struck by a 50-year flood event. Four days of rain from February 27 to March 2 swamped Southern California. The storm was centered in the San Bernardino and San Gabriel Mountains, and hit the San Fernando Valley particularly hard. By the end of the disaster, 87 lives had been lost and $78.5 million in damages inflicted across Southern California. In many cases, the extent of the flooding could not be officially recorded because so many stream gaging stations were damaged or destroyed (Troxell and others 1942). The dam and spreading grounds at Tujunga were credited with preventing more lives from being lost.

The 1930s to 1950s saw increased public works construction in the San Fernando Valley. The 1938 flood underscored the need for flood-control efforts, but efforts were already in motion to involve the Federal government in this work. Army Corps of Engineers work began on the Hansen Dam in 1938 (LAT 9/15/1938). Among the lands seized for the construction of the dam was the Hansen family horse ranch, established at the confluence of Big Tujunga and Little Tujunga Washes in the nineteenth century. This ranch hosted celebrity guests in the 1920s, but many of the buildings were destroyed in the 1938 disaster. The dam was named for the Hansen family, and in particular Dr. Homer Hansen, who founded the ranch (Pitt and Pitt 1997: 189; Pitarre 2005). At the time of completion, the dam was the largest in the world. In 1943, plans were laid by the County Board of

Supervisors for developing 160 acres below Hansen Dam as spreading grounds (Plate 2; LAT 1943). On May 17, 1957, the LADWP dedicated the VGS next to the spreading grounds to provide power to the burgeoning San Fernando Valley population (Plate 3; *Intake* 2002: 19).

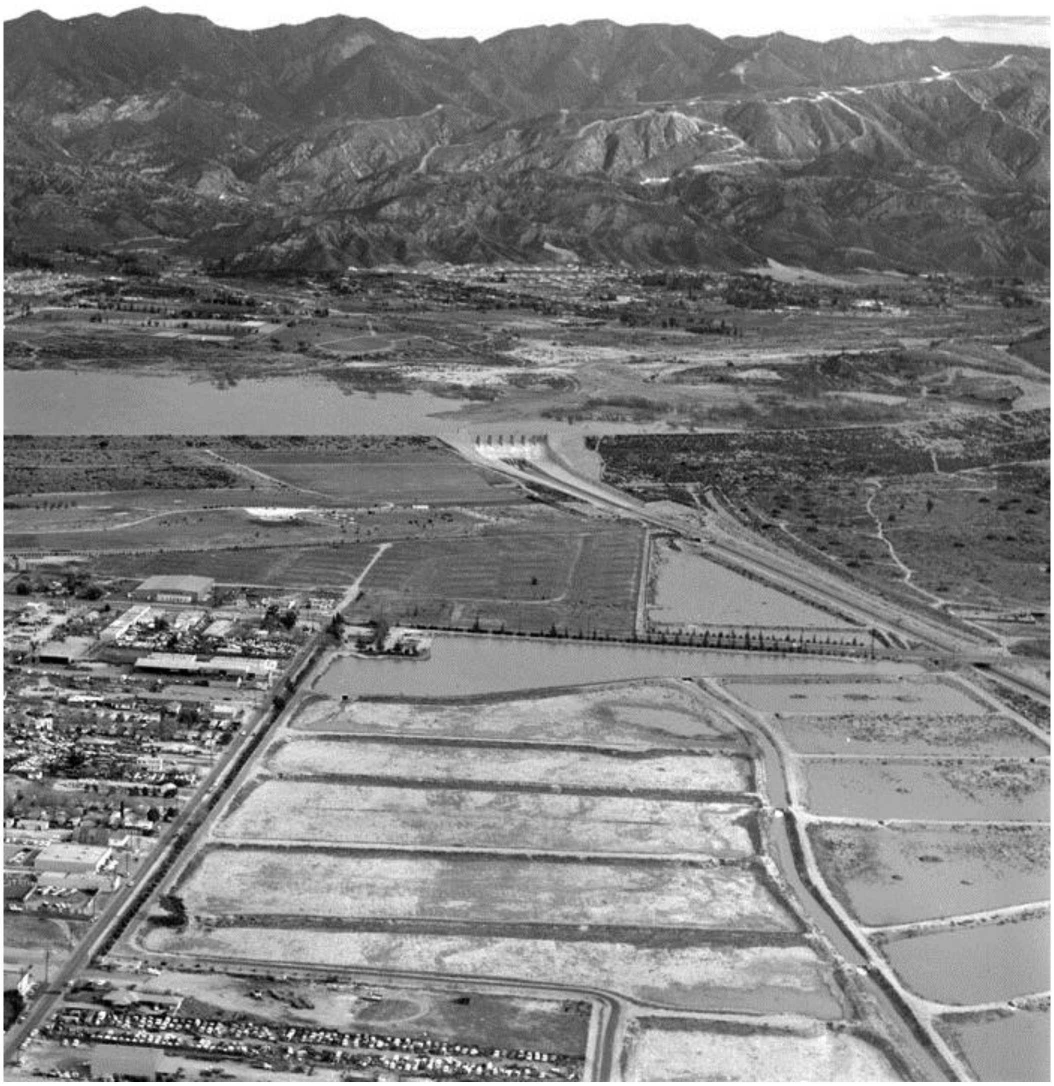


Plate 2. Hansen Dam and Spreading Grounds, 1966 (LADWP Archives).

Plate 3. Valley Generating Station, 1957 (Water and Power Associates n.d.).

ARCHIVAL RESEARCH
AND CONTACT PROGRAM

The cultural resources investigation for this Project involved archival research, including cultural resources records search, a paleontological records check, a search of Sacred Lands File, and other background research.

ARCHIVAL RESEARCH

Archival research for this project was originally conducted in October 2013, at the SCCIC housed at California State University, Fullerton. In early September 2015 the record search was updated to account for any changes to the archival data in the intervening years. On March 29, 2016, the records search was updated again to account to minor modifications to the project APE. The research focused on the identification of previously recorded cultural resources within the Project area as well as within a 0.5-mile radius of the Project area (study area). The archival research included review of previously recorded archaeological site records and reports, historic site and property inventories and historic maps. Inventories of the National Register of Historic Places (NRHP), the California Register of Historical Resources (CRHR), the California State Historic Resources Inventory (HRI), California Historical Landmarks and Points of Interest were also reviewed to identify cultural resources within both the Project and study areas.

The Proposed Project Area of Potential Effects (APE) map is shown in Figure 7, with a 0.5-mile buffer. The Proposed Project vertical APE is shown in Figure 8.

The VGS Alternative APE map is shown in Figure 9, with a 0.5-mile buffer. The VGS Alternative vertical APE is shown is shown in Figure 10.

Records Search

The records search revealed that a total of 92 cultural resource investigations were previously conducted within 0.5-mile of the Proposed Project and VGS Alternative Project areas (Table 1). Approximately 70 percent of the Proposed Project and VGS Alterative APEs have been previously surveyed or otherwise investigated (Figure 11 and 12). Table 1 includes a list of previous surveys conducted within both 0.5-mile of the Proposed Project site and the VGS Alternative site.

Table 1. Previous Surveys Conducted within 0.5-mile of the Proposed Project and VGS Alternative Project Areas

Author	Report (LA-)	Description	Date
Anonymous	160	Phase I Cultural Resources Survey Fiber Optic Cable Project, Burbank to Santa Barbara, California	1988

Author	Report (LA-)	Description	Date
Anonymous	2903	Draft Environmental Assessment Tillman Water Reclamation Plant Flood Protection Project	1990
Anonymous	2645	Class 3 Cultural Resource Assessment of the Proposed Carpinteria and Southern Reroutes, Santa Barbara, Ventura, and Los Angeles Counties, California	1991
Anonymous	2908	Draft Environmental Assessment Tillman Water Reclamation Plant Flood Protection Project	1990
Anonymous	2950	Consolidated Report: Cultural Resource Studies of the Proposed Pacific Pipeline Project	1992
Anonymous	3789	Phase 1 Archaeological Survey/Class III Inventory, San Fernando Valley East-West Transportation Corridor Study Area, Los Angeles, California	1996
Arrington, Cindy, and Nancy Sikes	8255	Cultural Resources Final Report of Monitoring and Findings for the Qwest Network Construction Project, State of California (2 Volumes)	2006
Baker, Cindy, and Mary L. Maniery	8898	Cultural Resource Inventory and Evaluation of United States Army Reserve 63d Regional Readiness Command Facilities	2007
Billat, Lorna	8878	Newman 5 Fwy & Tuxford/LA-0069B, Cellular Facility Installation, 9005 Bradley Avenue, Sun Valley, Los Angeles County, CA	2007
Billat, Lorna	10791	Public Storage Sheldon – LA5424A – Submission Packet	2010
Bonner, Wayne H.	7786	Cultural Resources Records Search Results and site Visit for T-Mobile U[SA] Candidate Sv01587a ([HWY] 101 Light Standard), North Hollywood, Los Angeles County, California	2006
Bonner, Wayne H.	7787	Cultural Resources Records Search Results and site Visit for T-Mobile Candidate Sv01885e (vy885 Cadillac Jack's Diner), 9457 San Fernando Road, Sun Valley, Los Angeles County, California	2006
Bonner, Wayne H.	7789	Cultural Resources Records Search and Site Visit for Cingular Telecommunications Facility Candidate Vy-321-01 (Victory Outreach), 13580 Osborne Street, Arleta, Los Angeles County, California	2004
Bonner, Wayne H.	7790	Records Search Results and Site Visit for Sprint Telecommunications Facility Candidate La60x508d (Victory Outreach), 13580 Osborne Street, Arleta, Los Angeles County, California	2004
Bonner, Wayne H.	7794	Cultural Resource Records Search Results and Site Visit for T-[M]obile Telecommunications Facility Candidate Sv1881 (studio Self Storage), 6200 Lankershim Boulevard, North Hollywood, Los Angeles County, California	2006
Bonner, Wayne H.	7795	Records Search Results and Site Visit for Sprint Telecommunications Facility Candidate La60x507a (studio Self Storage), 6200 Lankershim Boulevard, North Hollywood, Los Angeles County, California	2004
Bonner, Wayne H.	7798	Cultural Resource Records Search Results and Site Visit for Cingular Site Candidate La-550-01 (nl-056-01), Raoff Shopping Center	2005

Author	Report (LA-)	Description	Date
Bonner, Wayne H.	7821	Cultural Resource Records Search Results and Site Visit for Sprint Telecommunications Facility Candidate La60xc560f (170 F[WY] Park-n-Ride), Oxnard Street Off Ramp/170 Freeway, North Hollywood, Los Angeles County, California	2004
Bonner, Wayne H.	9091	Cultural Records Search Results and Site Visit for Cingular Wireless NI-104-01 (sbc-lankershim), 7744 Lankershim Boulevard, North Hollywood, Los Angeles County, California	2005
Bonner, Wayne	9179	Cultural Resources Records Search and Site Visit Results for T-Mobile Candidate SV11270B (Wingo and Bromwich Near I-5), 12222 Osborne Street, Arleta, Los Angeles County, California	2007
Bonner, Wayne	9595	Cultural Resources Records Search and Site Visit Results for Global Tower, LLC Candidate CA-5190 (Newman & Sons), 9005 Bradley Avenue, Sun Valley, Los Angeles County, California	2009
Bonner, Wayne	10267	Cultural Resources Records Search and Site Visit Results for Clearwire Candidate CA-LOS5223 (LA223A), 12444 Victory Boulevard, North Hollywood, Los Angeles County, California	2009
Bonner, Wayne	11969	Cultural Resources Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV00319A (Vy319 Chow), 6829 Lankershim Boulevard, North Hollywood, Los Angeles County, California	2012
Bonner, Wayne	12075	Cultural Resources Collocation Records Search and Site Visit Results for T-Mobile West, LLC Candidate SV01881B (VY881 Studio Self Storage), 6200 Lankershim Boulevard, North Hollywood, Los Angeles County, California	2012
Bonner, Wayne H. and Kathleen Crawford	8874	Cultural Resources Records Search and Site Visit Results for Royal Street Communications, L[LC] Candidate La0125a (Studio Self Storage), 6200 Lankershim Boulevard, North Hollywood, Los Angeles County, California	2006
Bonner, Wayne H. and James M. Keasling	7930	Cultural Resource Records Search and Site Visit Results for Global Signal Telecommunications Facility Candidate 3019406 (Hollywood park), 11676 Burbank Boulevard, North Hollywood, Los Angeles County, California	2006
Bonner, Wayne H., and Arabesque Said	10293	Cultural Resource Records Search and Site Visit Results for T-Mobile USA Candidate SV12191B (Muscatine), 12860 Muscatine Street, Pacoima, Los Angeles County, California	2009
Bonner, Wayne H., and Christeen Taniguchi	7791	Indirect APE Historic Architectural Assessments for Sprint Telecommunications Facility Candidate La 60xc508d (Victory Outreach), 13588 Osborne Street, Arleta, Los Angeles County, California	2004
Brock, James P., John F. Elliot, and Nina M. Harris	3095	A Cultural Resources Assessment of the Hansen Dam Flood Control Basin, City of Los Angeles, California	1993.

Author	Report (LA-)	Description	Date
Christy, Juliet L.	5676	Department of Transportation Negative Archaeological Survey Report, Van Nuys Blvd., between Arleta and Beachy Avenues	2001
Davis, Gene	3289	Mobil M-70 Pipeline Replacement Project Cultural Resource Survey Report	1990
Depew, Janice, Neil Liddie, and Anne Moore	11750	Final Cultural Resources Survey, Sepulveda Air National Guard Station, Van Nuys, Los Angeles County, California	2009
Duke, Curt	4567	Cultural Resource Assessment for Pacific Bell Mobile Services Facility LA 550-02, in the County of Los Angeles, California	1999
Duke, Curt	4569	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 581-02, County of Los Angeles, California	1999
Duke, Curt	4588	Cultural Resource Assessment for Pacific Bell Mobile Services Facility La 672-03, County of Los Angeles, California	1999
Duke, Curt	4847	Cultural Resource Assessment for AT&T Fixed Wireless Services Facility Number La_2009_a, County of Los Angeles, California	2000
Duke, Curt	4966	Cultural Resource Assessment for AT&T Fixed Wireless Services Facility Number La_121_a, County of Los Angeles, California	2000
Duke, Curt	5607	Cultural Resource Assessment for AT&T Wireless Services Facility Number La_191_a, County of Los Angeles, California	2001
Duke, Curt	5635	Cultural Resource Assessment: Cingular Wireless Facility No. Vy 106-01, Los Angeles County, California	2001
Duke, Curt	5876	Cultural Resource Assessment: AT&T Wireless Services Facility No. Sm 117-04, Los Angeles County, California	2002
Ehnnger, Candace, Katherine Ramirez, and Michael Vader	12526	Santa Clarita Valley Sanitation District Chloride TMDL Facilities Plan Project. Phase I Cultural Resource Assessment	2013
Ewing-Toledo, Kelly	8953	Historic Property Survey Report for the Southbound Interstate 405 (San Diego F[WY]) to US Highway 101 (Ventura F[WY]) Connector Improvement Project, Los Angeles County, California	2007
Feldman, J., and A. Hope	7430	Caltrans Historic Bridges Inventory Update: Concrete Box Girder Bridges	2004
Foster, John M.	7014	Highway Project for Devonshire Street Bridge Improvement Program in the City of Los Angeles	2002
Foster, John M.	7833	Archaeological Survey for Sun Valley Watershed Management Plan, County of Los Angeles, California	2003
Fulton, Phil and Casey Tibbet	2013	Cultural Resource Assessment Class III Inventory, Verizon Wireless Services, Beachy Facility, City of Los Angeles, Los Angeles County, California	12460
Hale, Alice E.	7815*	Cultural Resources Survey Report, Wentworth Street Bridge Over Pacoima Diversion Channel, Los Angeles County, California, Project No. 071502-h	2002
Hale, Alice E.	7816*	Highway Project Bridge Improvement Program-Wentworth Street Bridge Improvement Program	2002

Author	Report (LA-)	Description	Date
Hatheway, Roger G.	10180	Determination of Eligibility Report, North Hollywood Redevelopment Project	1981
Kry, Linda, Sara Dietler, and James R. Wallace	11300	Hansen Dam Golf Course water Recycling Project Phase I Archaeological Assessment, Los Angeles County, California	2010
Lapin, Philippe	5597	Cultural Resource Assessment for Pacific Bell Wireless Facility La 958-11, County of Los Angeles, California	2000
Larocque, Mark	11280	Hollywood Park 878062, 11676 Burbank Blvd., No. Hollywood	2011
Loftus, Shannon	11705	Cultural Resource Records Search and Site Survey, AT&T Site LAC209, North Hollywood, 12444 Victory Boulevard, North Hollywood, Los Angeles County, CA	2011
Loftus, Shannon	11703	Cultural Resource Records Search and Site Survey, AT&T Site LA0317(26554), Devonshire & Lemona, 14941 Devonshire, Mission Hills, Los Angeles County, CA	2011
Loftus, Shannon	12538	Cultural Resource Records Search and Site Survey, AT&T Site LAC026, Sun Valley Overlay, 8125 Lankershim Boulevard, North Hollywood, Los Angeles County, CA	2012
Loftus, Shannon	12358	Cultural Resource Records Search and Site Survey, AT&T Site LAC027, Victory and Hayvenhurst LTE, 6421 Unit CEL #1, Odessa Avenue, Los Angeles, Los Angeles County, CA	2012
Maki, Mary K.	4907	Phase I Archaeological Investigation of Limited Areas Within the Los Angeles Department of Water & Power's Harbor, Scattergood, and Valley Generating Stations, Los Angeles County, California	2000
Martz, Patricia	384	Description and Evaluation of the Cultural Resources within Haines Debris Basin, Hansen Dam, Lopez Dam, and Sepulveda Dam, Los Angeles County	1977
Mason, Roger D., and Patricia A. Peterson	7777	Cultural Resources Records Search and Literature Review Report for the City Trunk Line South Project, City of Los Angeles Department of Water and Power, Los Angeles County, California	2002
Mason, Roger D., and Jay K. Sander	7806	Cultural Resources Survey of the Proposed Sepulveda Basin Water Recycling Project, Los Angeles County, Los Angeles, California	2003
McIntyre, Michael J	1037	Assessment of the Archaeological Impact by the Proposed Development of the East Valley Interceptor Sewer-Unit 1	1976
McKenna et al.	7807	Polytechnic High School in the Sun Valley Area of Los Angeles	2003
McKenna, Jeanette A.	5611	A Phase 1 Cultural Resource Investigation of the Proposed Los Angeles Unified School District East Valley High School #2 in the Community of Pacoima, City of Los Angeles, Los Angeles County, California	2001
McKenna, Jeanette	10756	A Cultural Resources Overview and Preliminary Assessment of the Pacoima/Panorama City Redevelopment Plan Amendment/Expansion Project Area, Los Angeles County, California	2010

Author	Report (LA-)	Description	Date
McLean, Deborah K.	3976	Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility La 129-02, 12043 Oxnard Street, North Hollywood, City and County of Los Angeles, California	1998
McLean, Deborah K.	4022	Archaeological Assessment for Pacific Bell Mobile Services Telecommunications Facility La 694-01, 11605 Magnolia Boulevard, North Hollywood, City and County of Los Angeles, California	1998
McMorris, Christopher	7427	Caltrans Historic Bridge Inventory Update: Metal Truss, Movable, and Steel Arch Bridges	2004
Preston, Randall	4099	Historic Property Survey Report Negative Findings for the Proposed Tillman Flood Protection Project, Sepulveda Flood Control Basin, Los Angeles, California	1990
Romani, Gwendolyn R., John F. Romani, and Bradley L. Sturm	2969	Historic Properties Management Plan for the US Army Corps of Engineers Hansen Dam Flood Control Basin	1994
Smith, Phil, and Gary Iverson	10179	Highway Project Description – 1Y0201	2000
Smith, Philomene C.	4858	Nasr Cold Plane Existing Pavement on Various On/off –ramps on Route 170 and One on Ramp Route 5 with Rubberized Asphalt Concrete	2000
Stewart, Noah	11975	Finding of No Adverse Effect, Bridge Preservation Project in L.A. County on Interstate 5, State Route 14, and United States Highway 101	2012
Stickel, Gary E.	3486	A Cultural Resources Inventory of the East Valley Water Reclamation Project	1994
Stickel, Gary E.	7819	A Cultural Resources Monitoring Report for the L.a. Cellular Installation of a Monopole and Attendant Facilities at Cell Site #370rl Located at 11674 Burbank Blvd. in North Hollywood, California	1997
Supernowicz, Dana	11314	Architectural Study of the 405 Freeway/Victory Boulevard Project, AT&T Site No. LAT026, 15900 Victory Boulevard, Van Nuys, Los Angeles County, California 91406	2010
Sylvia, Barbara	5546	Negative Archaeological Survey Report	2001
Sylvia, Barbara	7840	Negative Archaeological Survey Report	2001
Sylvia, Barbara	5935	Negative Archaeological Survey Report: 07-LA-San Fernando Rd.-N/A-07-174-965120	2002
Sylvia, Barbara	6471	Highway Project Off Route 170. Location 1 is at Hollywood Bowl Drive, Location 2 is in North Hollywood at Sherman Way Overcrossing	2002
Sylvia, Barbara	6740	Highway Project to Construct Soundwalls at Three Locations Along Interstate 5 in the San Feranando Valley Area of Los Angeles County	2000
Sylvia, Barbara	10208	Negative Archaeological Survey Report: Metal Beam Guardrail (MBGR) Along Sections of Route 101 from Route 134 to the Ventura County Line	2001
Tang, Bai “Tom”	10642	Preliminary Historical/Archaeological Resources Study, Antelope Valley Line Positive Train Control (PTC) Project, Southern California Regional Rail Authority, Lancaster to Glendale, Los Angeles County, California	2010

Author	Report (LA-)	Description	Date
Taniguchi, Christeea and Wayne H. Bonner	7793	Records Search Results and Site Visit for Sprint Telecommunications Facility Candidate LA60X526A (Diamond Auto Parts), 7600 Laurel Canyon Boulevard, North Hollywood, Los Angeles County, California	2004
Unknown	4671	Interim Cultural Resources Report on Proposed Swimming Area at Hansen Dam (P.O. No. Dacw09-92-m-0505)	1992
Unknown	12100	Sheldon Skate Plaza, Final Initial Study/Mitigated Negative Declaration	2011
Wallace, James, Dietler, S., and Kry, Linda	12505	Draft Phase I Cultural Resources Assessment San Fernando Valley Water Recycling Project, City of Los Angeles, California	2012
Wallock, Nicole	4850	Cultural Resource Assessment, Cingular Wireless Facility No. Vy-025-01, Los Angeles County, California	2001
Wallock, Nicole	4852	Cultural Resource Assessment Cingular Wireless Facility No. Vy 067-01, Los Angeles County, California	2001
Whitley, David S., and Joseph M. Simon	7835	Phase I Archaeological Survey/Class III Inventory, San Fernando Valley East-West Transit Corridor, Brt Alternative Study Area, Los Angeles, California	2000
Wlodarski, Robert J.	5612	A Phase I Archaeological Study for a Proposed Senior Housing Project Located at 5000 Colfax Avenue City of North Hollywood, County of Los Angeles, California	2000
Wlodarski, Robert J.	7779	A Phase 1 Archaeological Study for the Proposed Palm Village Senior Apartments Project Located at 9040-9060 Laurel Canyon Boulevard, City of Los Angeles, County of Los Angeles, California	2004
Wood, Catherine M.	7805	Archaeological Survey Report Villas Las Americas 9618 N. Van Nuys Boulevard, Panorama City, California	2006

*Surveys overlapping the Proposed Project and VGS Alternative Project areas.

Previously Recorded Cultural Resources within 0.5-Mile of the Proposed Project

The records search indicated that nine cultural resources have been previously recorded within 0.5-mile of the Proposed Project area (Table 2). These resources include: three single-family residences; a pair of transmission towers; one concrete bridge; one urban roadway; a former Nike Missile base; one military support building; and the Sepulveda Flood Control Dam. Of these nine resources, none overlap the Proposed Project site.

Table 2. Previously Recorded Cultural Resources within 0.5-Mile of the Proposed Project Area

Primary Number (P-19-)	Address or Location	Description	Time Period	Eligibility Status
187258	12507 Montague Street	Single-family wood frame residence	1941	Not eligible for NRHP

Primary Number (P-19-)	Address or Location	Description	Time Period	Eligibility Status
187806	13571 Osborn Street	Single-family residence, Modern Ranch style	Ca. 1952	Not eligible for NRHP or CRHR
187807	13577 Osborn Street	Single-family residence, Modern Ranch style	Ca. 1952	Not eligible for NRHP or CRHR
187950	6357 Woodley Avenue	Air Maintenance Support Activity 32	1943-1959	Not eligible for NRHP or CRHR
188007	San Fernando Road between Glendale Avenue, Glendale, and Elm Street, Los Angeles	Urban roadway	Ca. 1880s to present	Appears eligible for NRHP
188093	Sepulveda Flood Control Basin	Sepulveda Flood Control Dam	1941-1949	Not eligible for NRHP
188174	Northeast corner Canterbury Avenue and Sunburst Street	2 LADWP Transmission Towers	1954	Not eligible for NRHP
189773	15900 Victory Boulevard	Van Nuys Air National Guard Facility, former Nike Missile base	1954-1968	Not eligible for NRHP
190313	San Fernando Road over Tujunga Wash	Close spandrel concrete arch bridge	1935 (widened 1951)	Eligible as contributing feature to San Fernando Road

Previously Recorded Cultural Resources within 0.5-Mile of the VGS Alternative

The records search indicated that 21 cultural resources have been previously recorded within 0.5-mile of the VGS Alternative Project area (Table 3). These resources include: one deeply buried prehistoric site including human remains; three single-family residences; six commercial buildings; one high school; one library; the San Fernando Valley Generating Plant; a pair of transmission towers; two concrete bridges; one urban roadway; a former Nike Missile base; one military support building; and the Sepulveda Flood Control Dam.

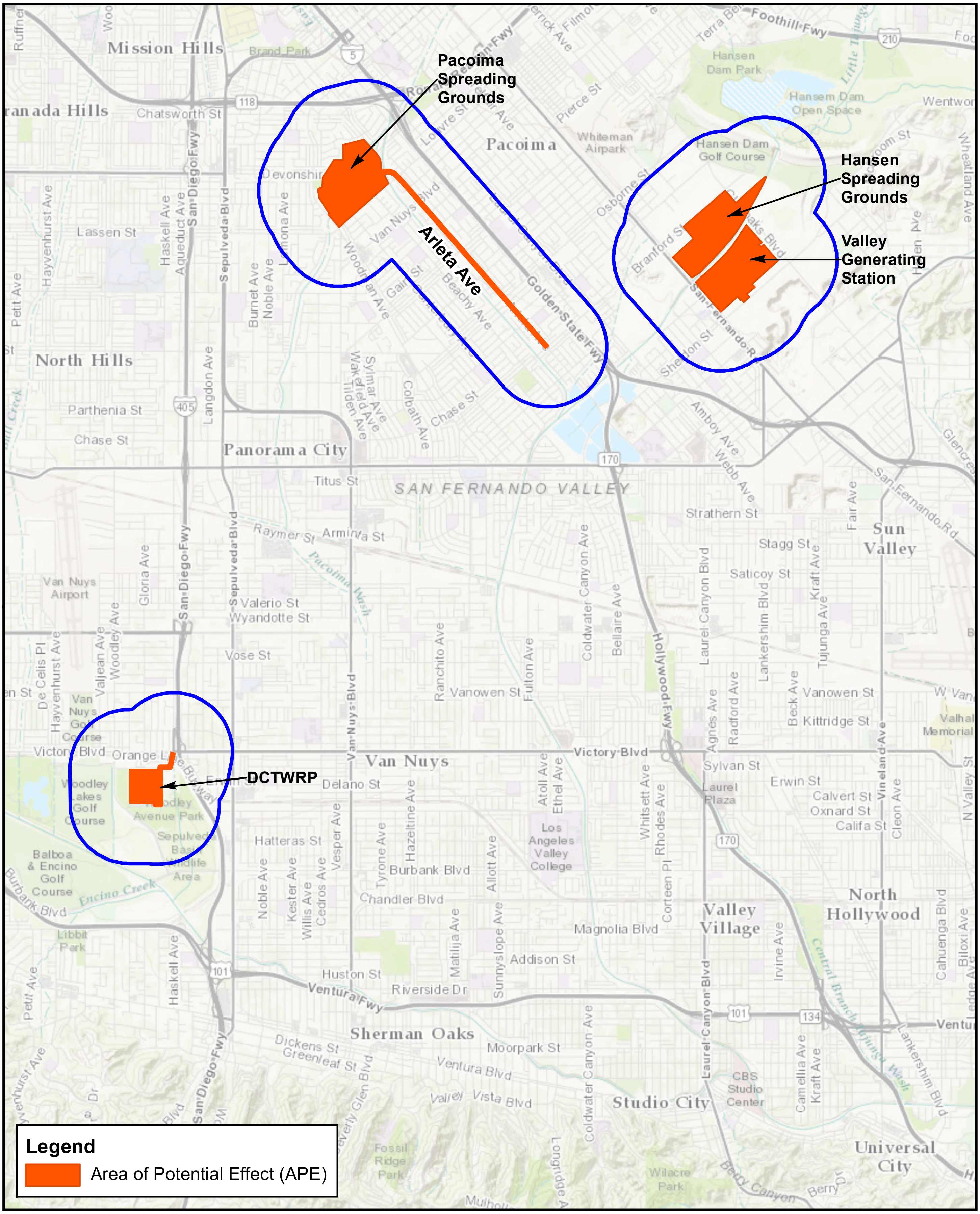
Of the 21 resources, one is within the VGS Alternative APE. The resource, P-19-188007, is the segment of the San Fernando Valley Road located between Glendale Avenue in Glendale and Elm Street in Los Angeles. The road dates to at least the 1870s and was a major thoroughfare from that time until 1963. In 1993, the California legislature designated the road "Historic U.S. Highway 99." The road alignment is intact, but its integrity has been compromised by numerous changes throughout its alignment. Nevertheless, it was found to be eligible for the National Register of Historic Places in 2013 (Ehringer 2011).

Table 3. Previously Recorded Cultural Resources within 0.5-Mile of the VGS Alternative Project Area

Primary Number (P-19-)	Address or Location	Description	Time Period	Eligibility Status
001110	Restricted (Studio City)	Human remains, flaked and ground stone, steatite vessels and pipes, slate palette fragments, found 12-14 feet below surface	Prehistoric	Unevaluated
167303	5211 N. Tujunga Avenue	Los Angeles Branch Library – North Hollywood Branch	1930	Listed on NRHP
175325	11845 Vose Street	San Fernando Valley Generating Plant,	1924-1944	Determined eligible for NRHP; listed on CRHR
175261	5231 Colfax Avenue	North Hollywood High School	1926	Determined eligible for NRHP; listed on CRHR
187258	12507 Montague Street	Single-family wood frame residence	1941	Not eligible for NRHP
187568	Moorpark Street at West Branch, Tujunga Wash	Single-span concrete bridge	1952 (widened 1960)	Not eligible for NRHP or CRHR
187806	13571 Osborn Street	Single-family residence, Modern Ranch style	Ca. 1952	Not eligible for NRHP or CRHR
187807	13577 Osborn Street	Single-family residence, Modern Ranch style	Ca. 1952	Not eligible for NRHP or CRHR
187950	6357 Woodley Avenue	Air Maintenance Support Activity 32	1943-1959	Not eligible for NRHP or CRHR
188007*	San Fernando Road between Glendale Avenue, Glendale, and Elm Street, Los Angeles	Urban roadway	Ca. 1880s to present	Appears eligible for NRHP
188093	Sepulveda Flood Control Basin	Sepulveda Flood Control Dam	1941-1949	Not eligible for NRHP
188174	Northeast corner Canterbury Avenue and Sunburst Street	2 LADWP Transmission Towers	1954	Not eligible for NRHP
188175	6200 Lankershim Boulevard	5-story commercial building	1948	Not eligible for NRHP
188176	6165 Lankershim Boulevard	1-story commercial building	1959	Not eligible for NRHP
188177	6171 Lankershim Boulevard	2-story commercial building	1946	Not eligible for NRHP
189773	15900 Victory Boulevard	Van Nuys Air National Guard Facility, former Nike Missile base	1954-1968	Not eligible for NRHP
189989	12444 Victory Boulevard	Multistory commercial building	1963-1964	Not eligible for NRHP

Primary Number (P-19-)	Address or Location	Description	Time Period	Eligibility Status
190097	6829 Lankershim Boulevard	Two-story commercial office building	1962	Not eligible for NRHP
190313	San Fernando Road over Tujunga Wash	Close spandrel concrete arch bridge	1935 (widened 1951)	Eligible as contributing feature to San Fernando Road
190649	13500 Branford Street	Han Yang Presbyterian Church and Korean School	1953	Not eligible for NRHP
190682	5540 Laurel Canyon Boulevard	David Familian Chapel of Temple Adat Ariel	1949	Listed on CRHR; not evaluated for NRHP
190749	8125 Lankershim Boulevard	Single story flat roofed brick building	1960's	Not eligible for NRHP

*Indicates a resource overlapping the project area



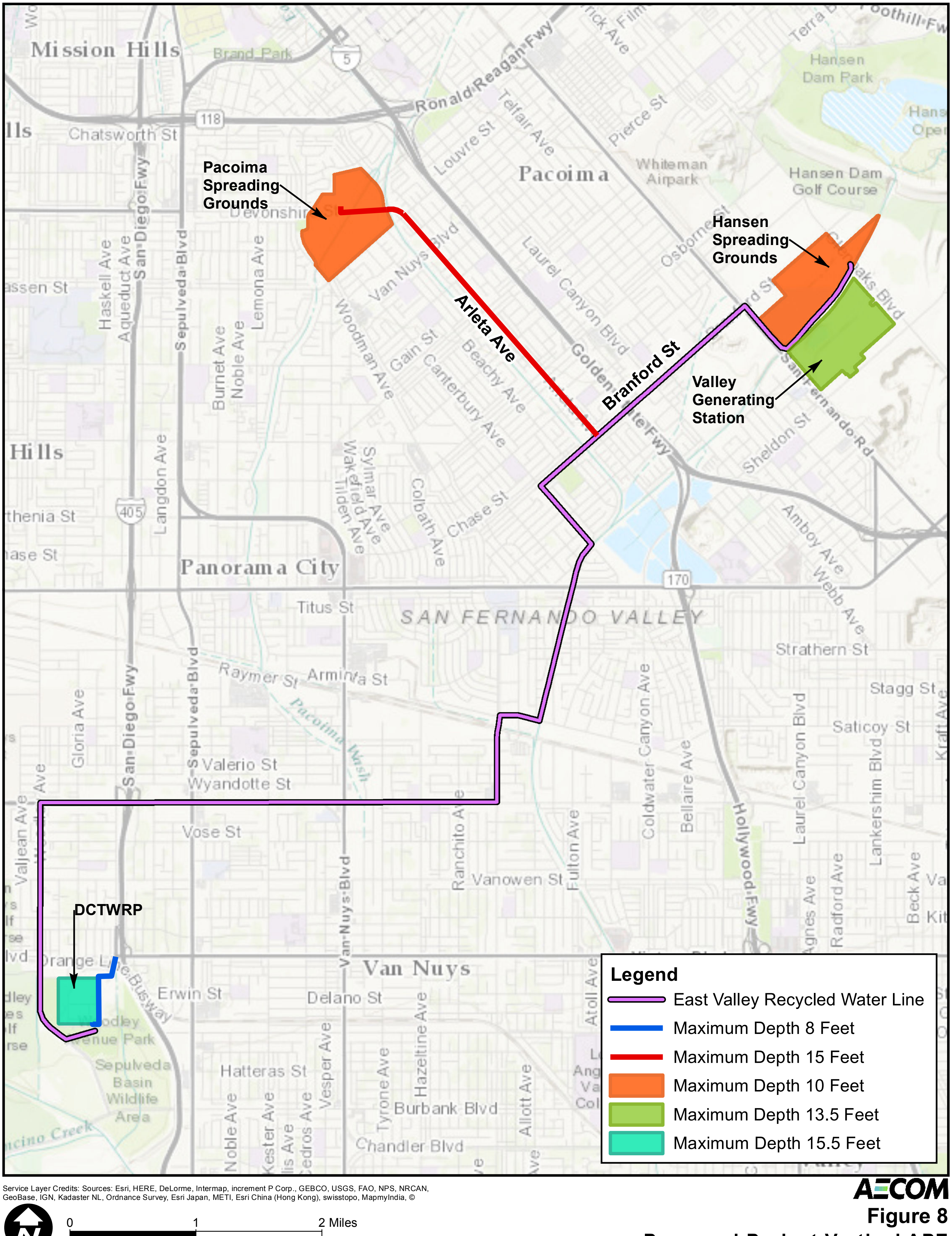
Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, ©

0 1 2 Miles

Figure 7

Proposed Project Area of Potential Effect (APE)

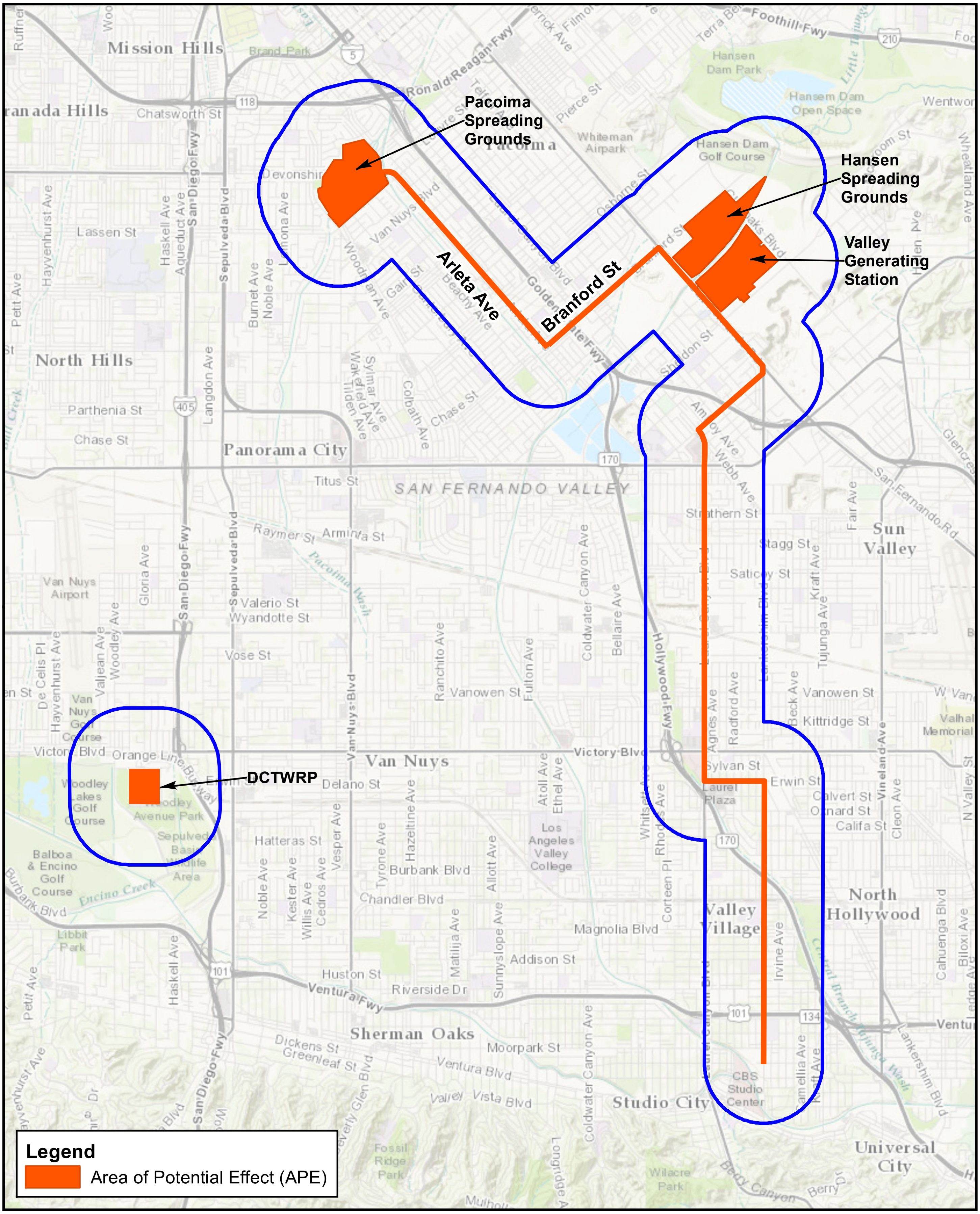
Los Angeles Groundwater Replenishment Project Phase I Archaeological Assessment



AECOM

Figure 8

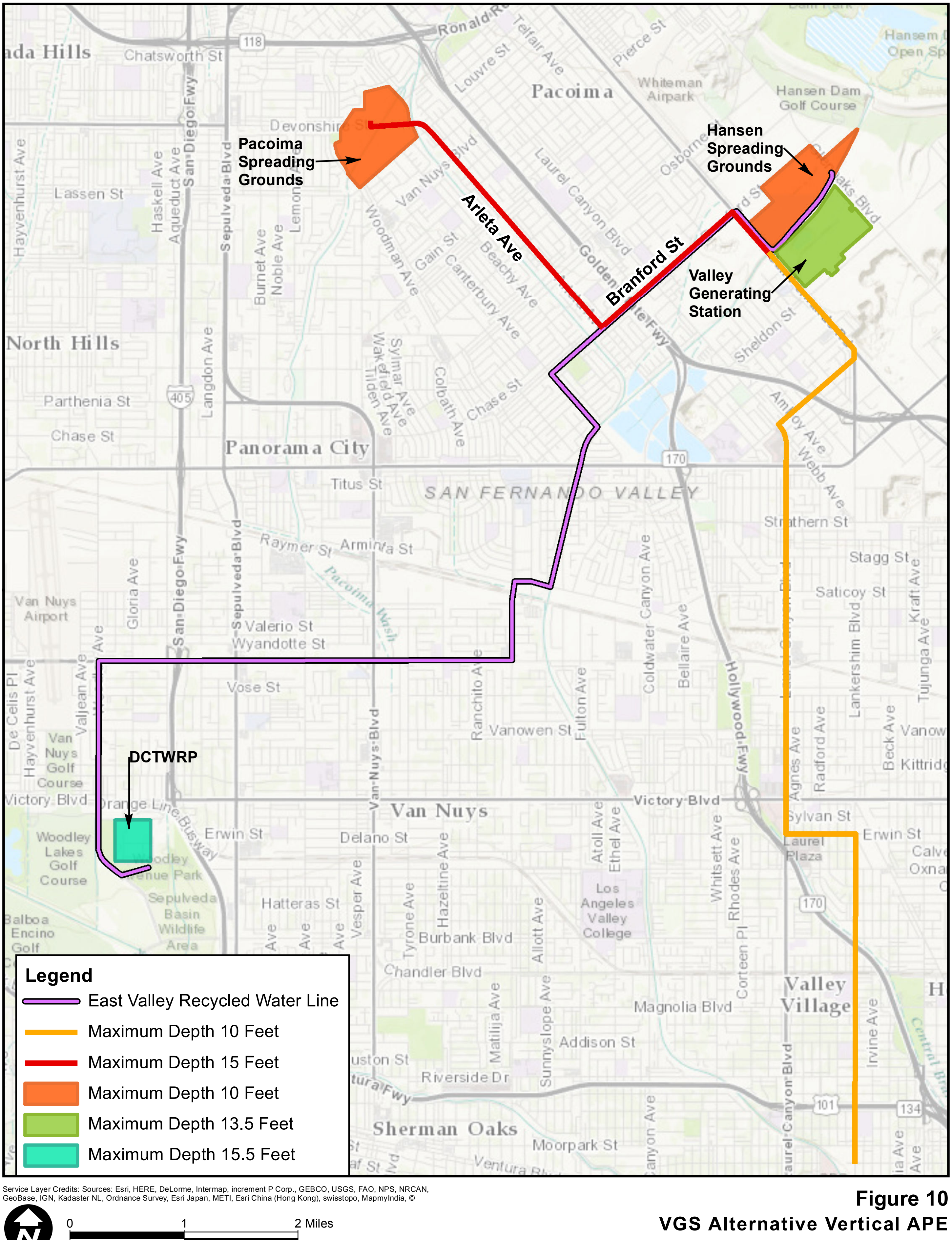
Proposed Project Vertical APE



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, ©

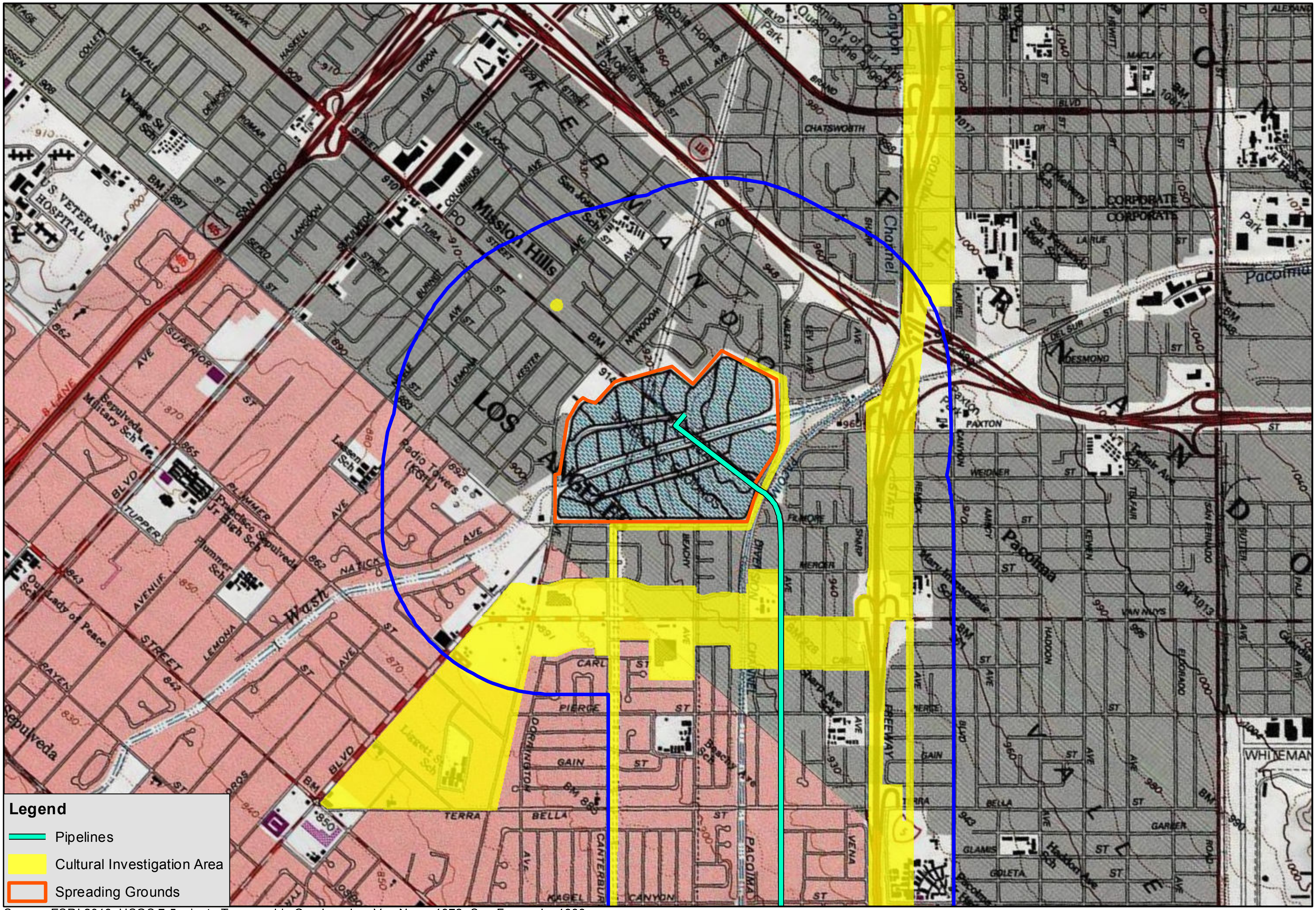
0 1 2 Miles

Figure 9
VGS Alternative APE



Service Layer Credits: Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, ©

Figure 10
VGS Alternative Vertical APE



Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

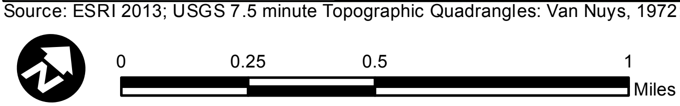
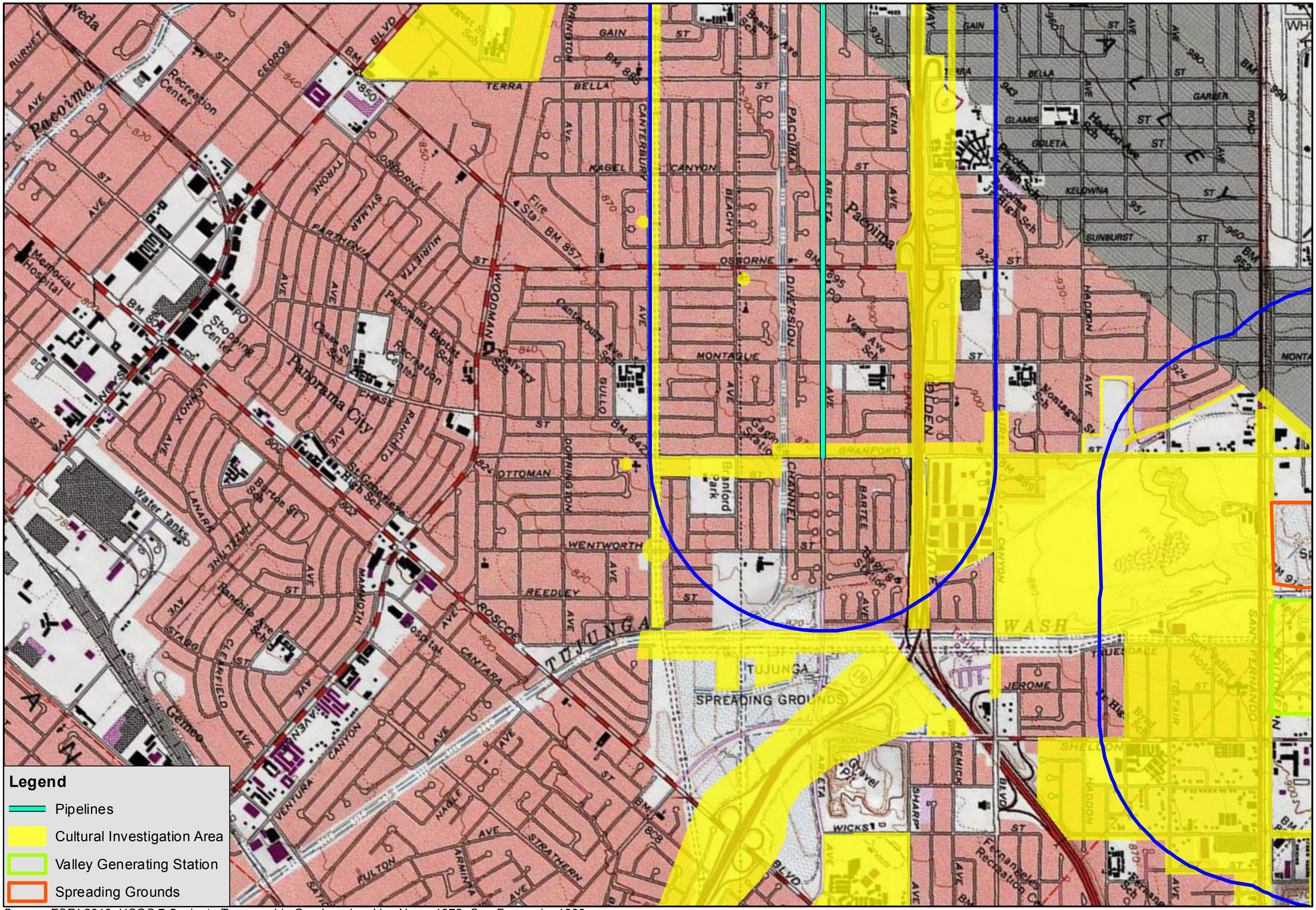


Figure 11 - Page 1 of 4

Previous Cultural Investigations Within 0.5 Mile of the Proposed Project APE

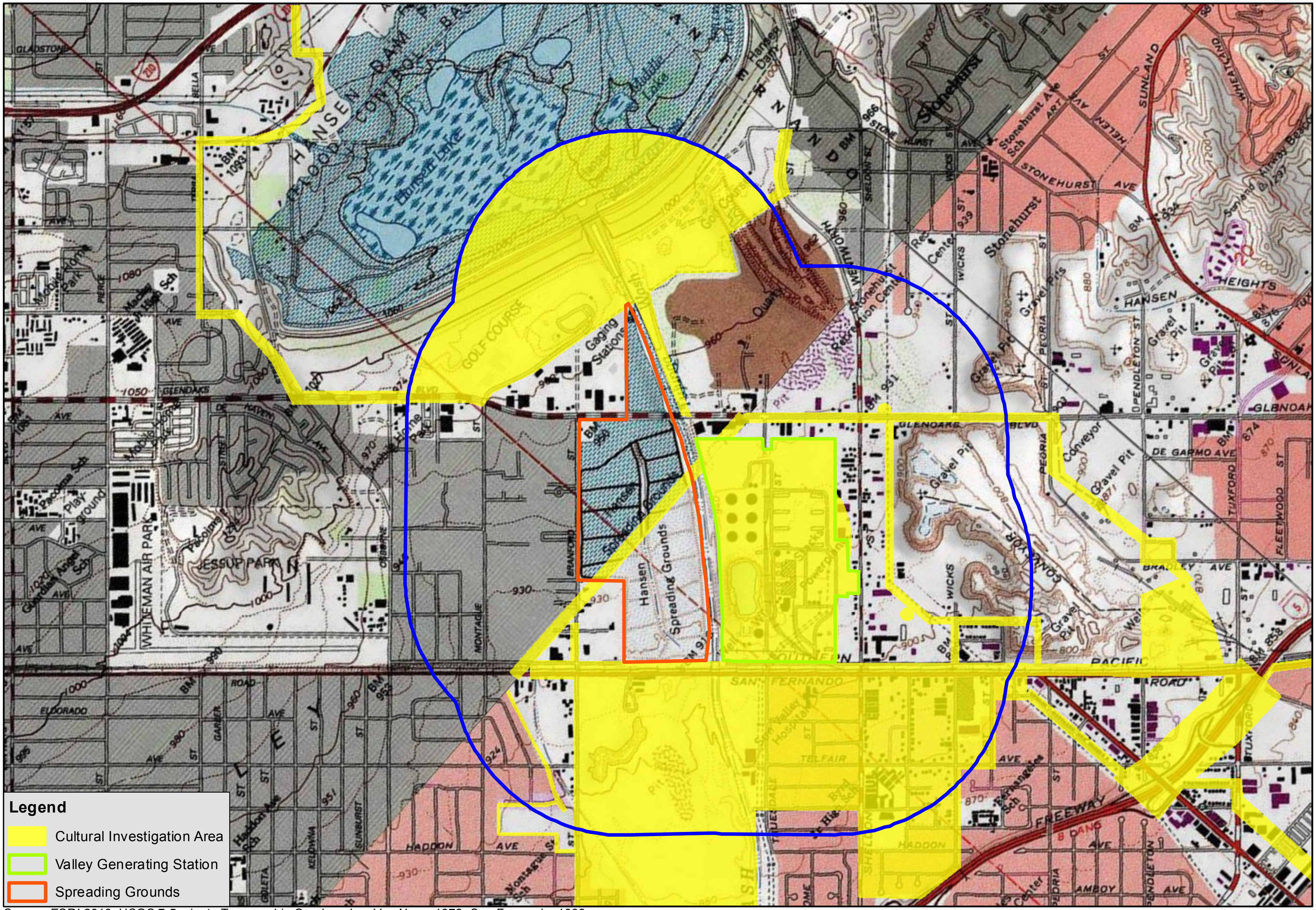


Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Figure 11 - Page 2 of 4

Previous Cultural Investigations Within 0.5 Mile of the Proposed Project APE



Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

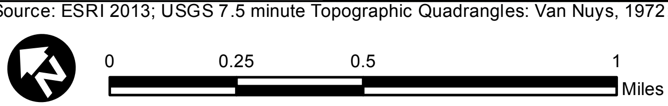
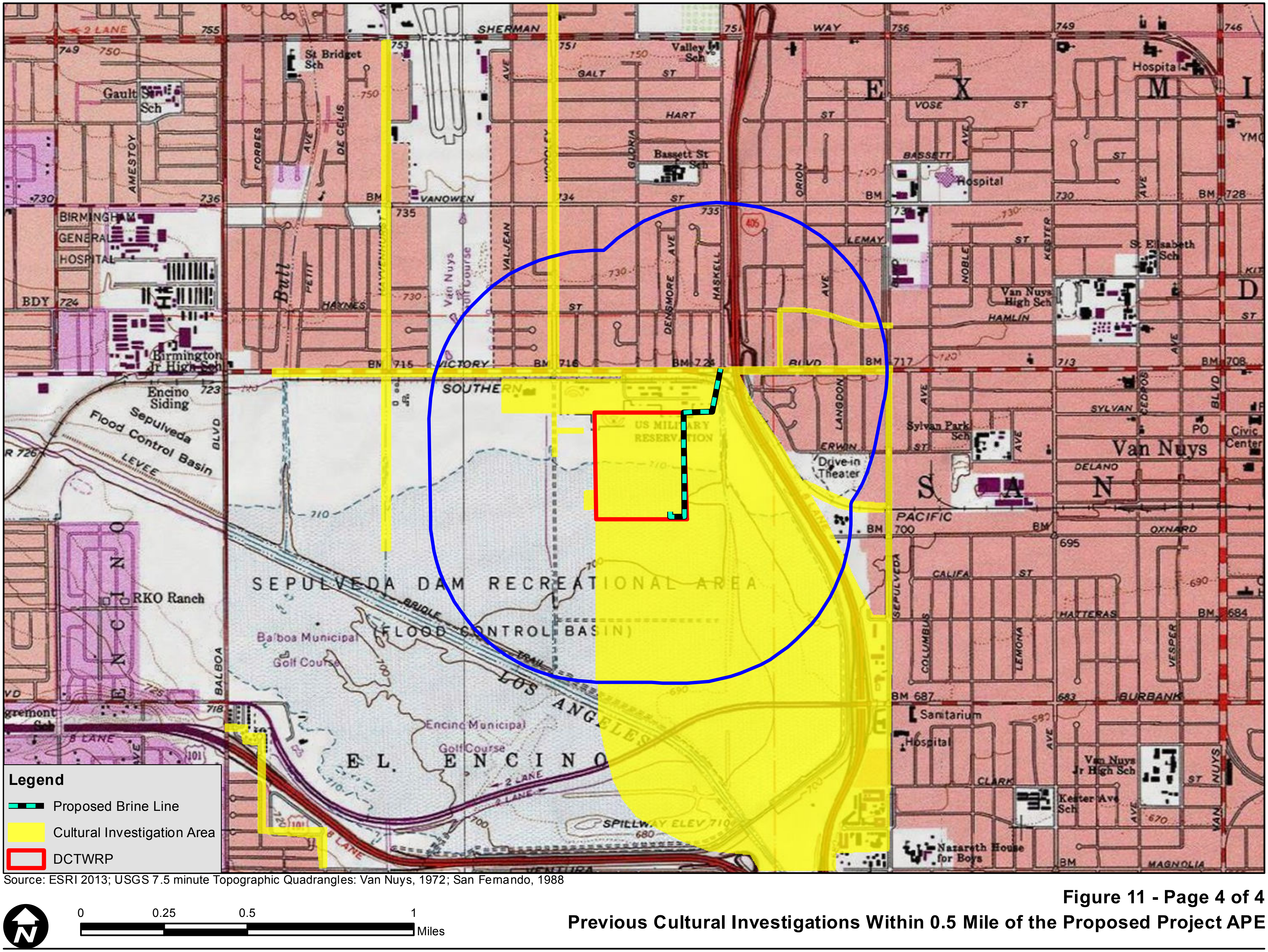


Figure 11 - Page 3 of 4

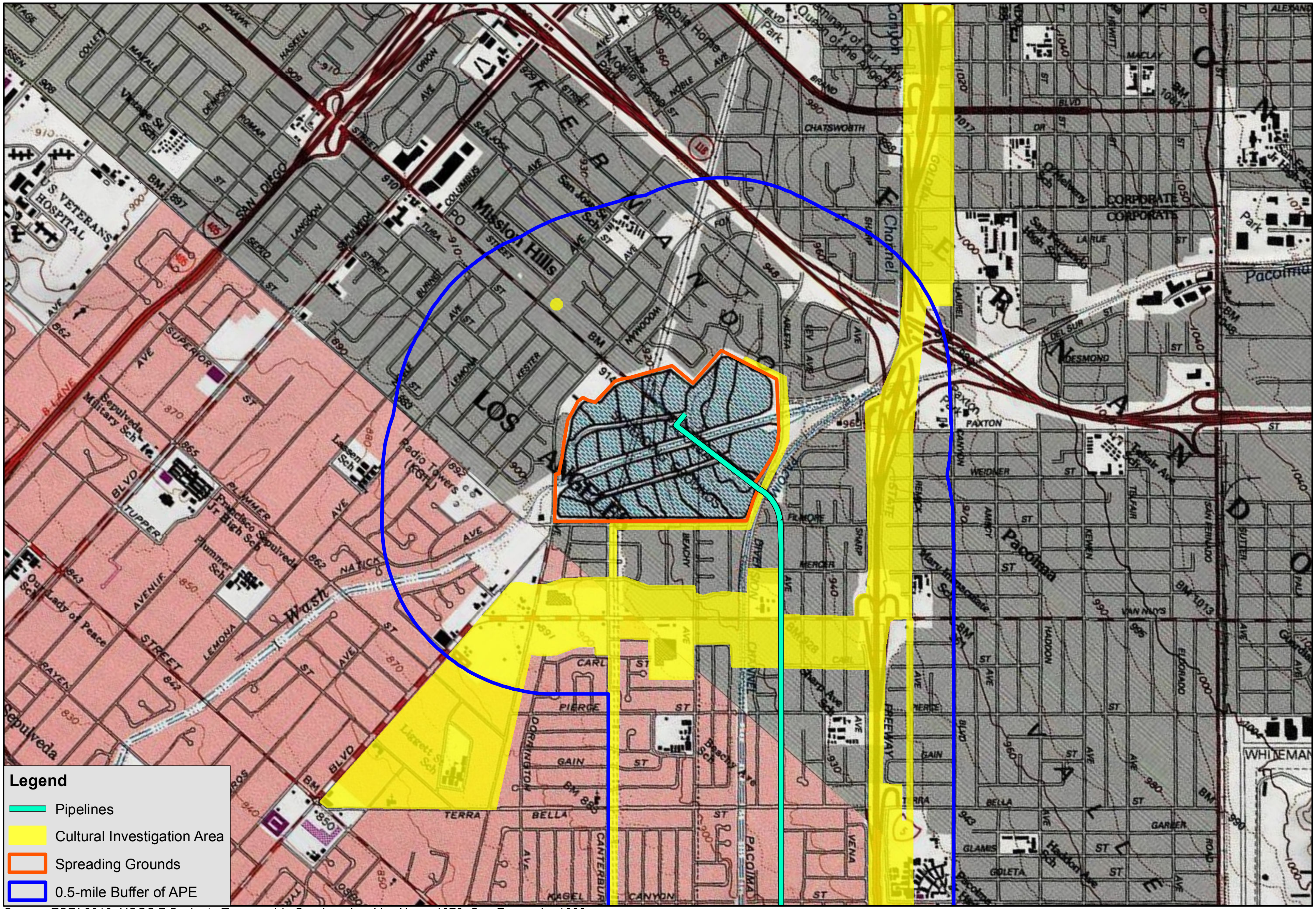
Previous Cultural Investigations Within 0.5 Mile of the Proposed Project APE



Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

Figure 11 - Page 4 of 4

Previous Cultural Investigations Within 0.5 Mile of the Proposed Project APE

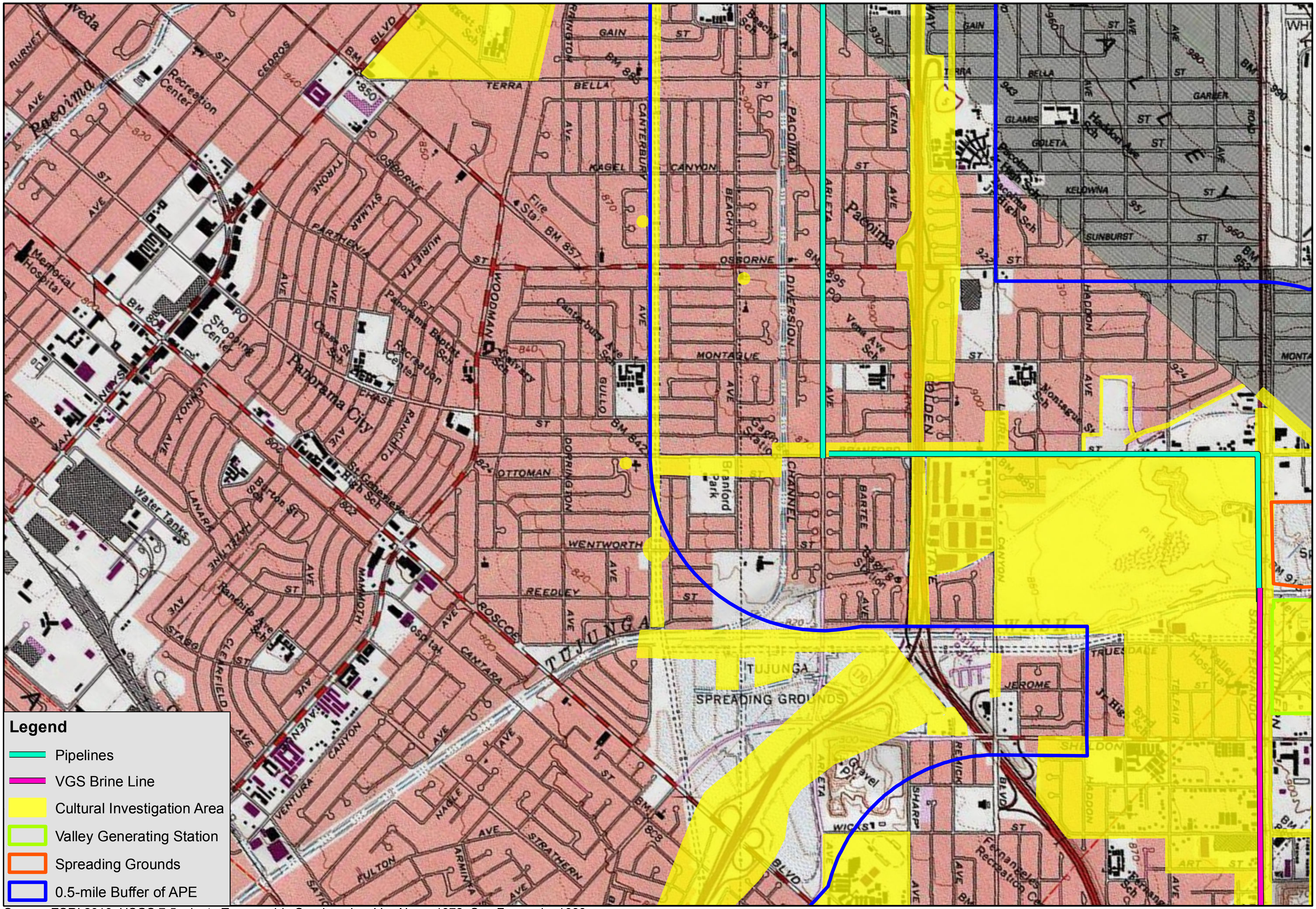


Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Figure 12 - Page 1 of 7

Previous Cultural Investigations Within 0.5 Mile of the VGS Alternative APE

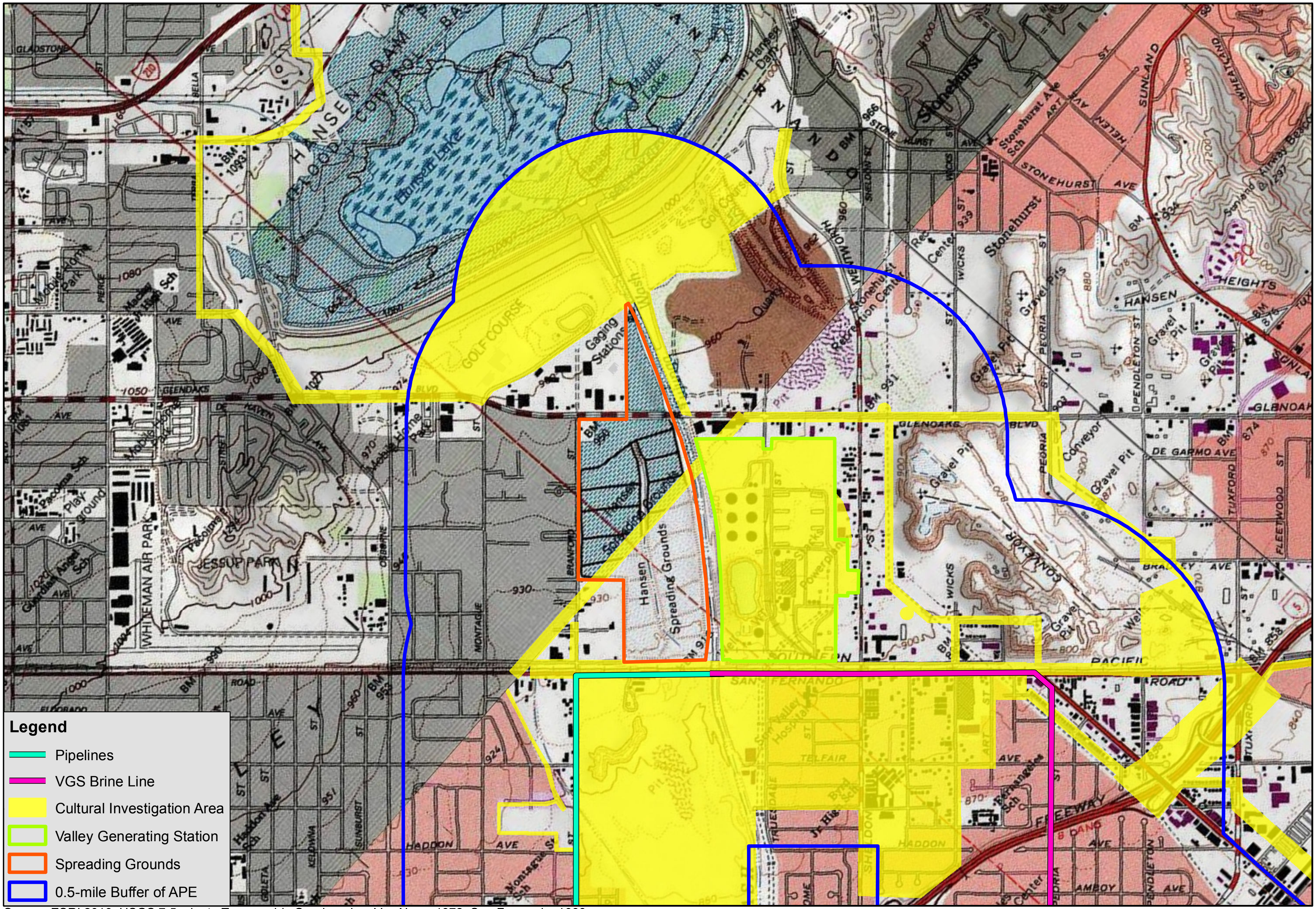


Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Figure 12 - Page 2 of 7

Previous Cultural Investigations Within 0.5 Mile of the VGS Alternative APE

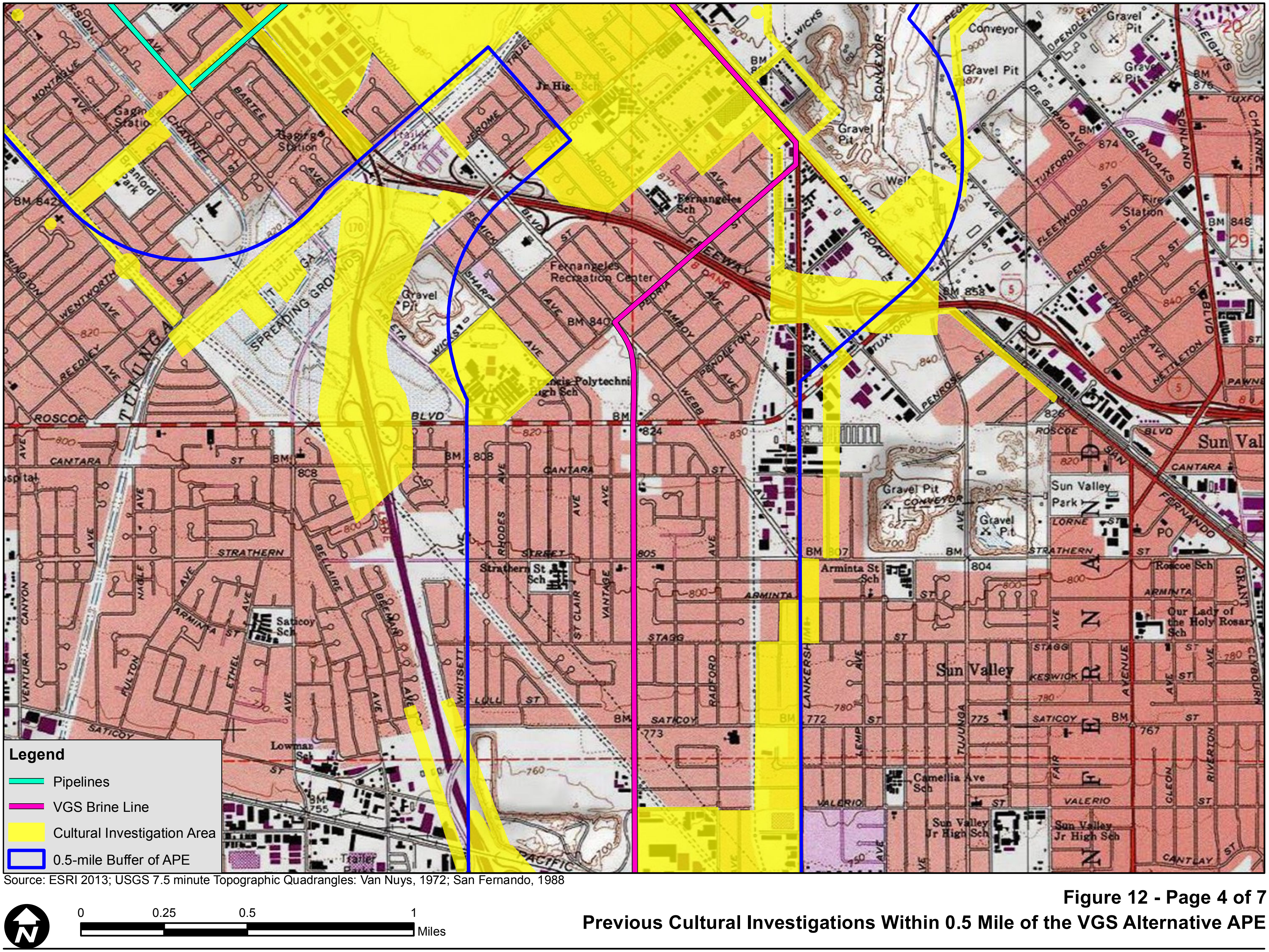


Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Figure 12 - Page 3 of 7

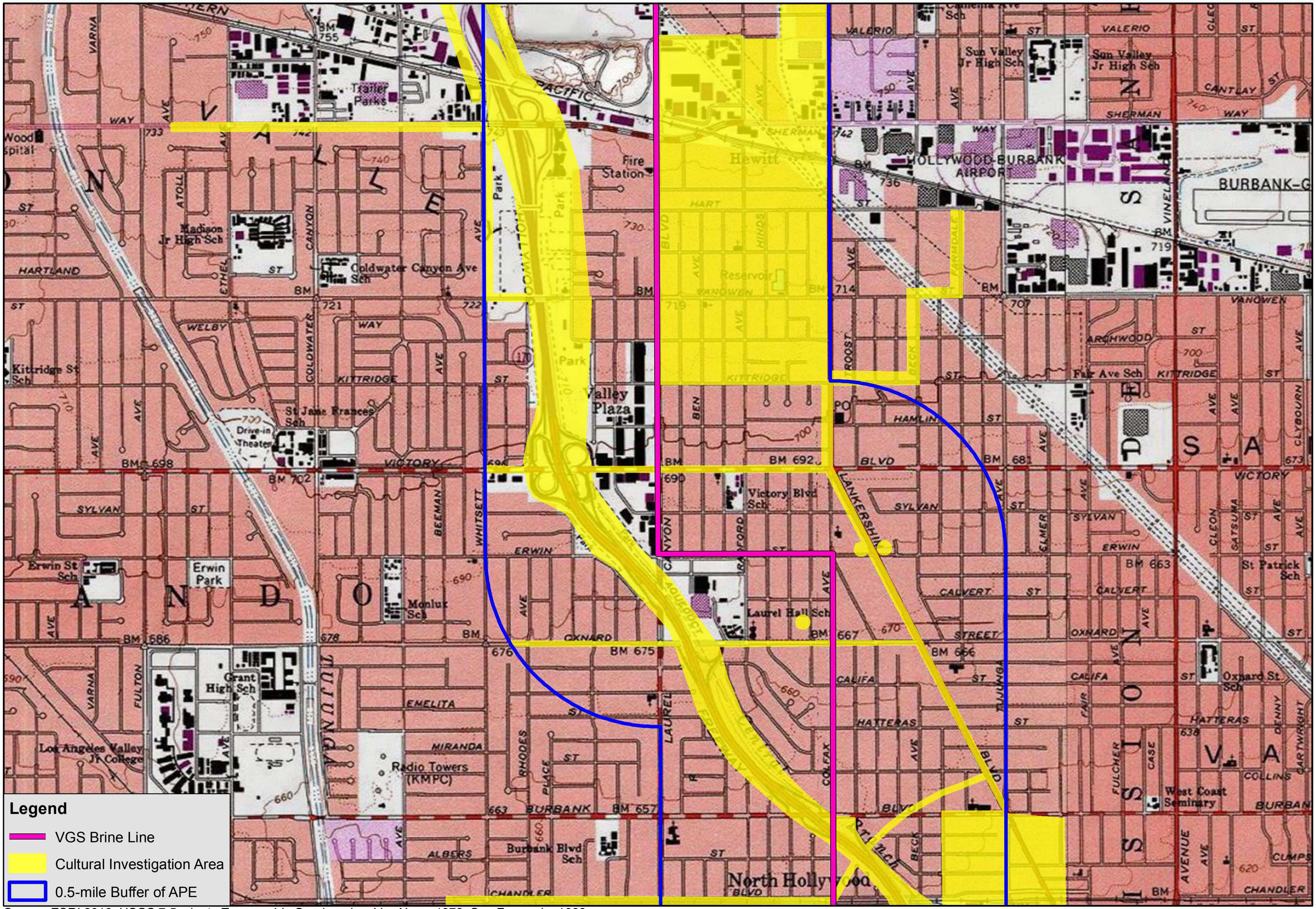
Previous Cultural Investigations Within 0.5 Mile of the VGS Alternative APE



Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

Figure 12 - Page 4 of 7

Previous Cultural Investigations Within 0.5 Mile of the VGS Alternative APE

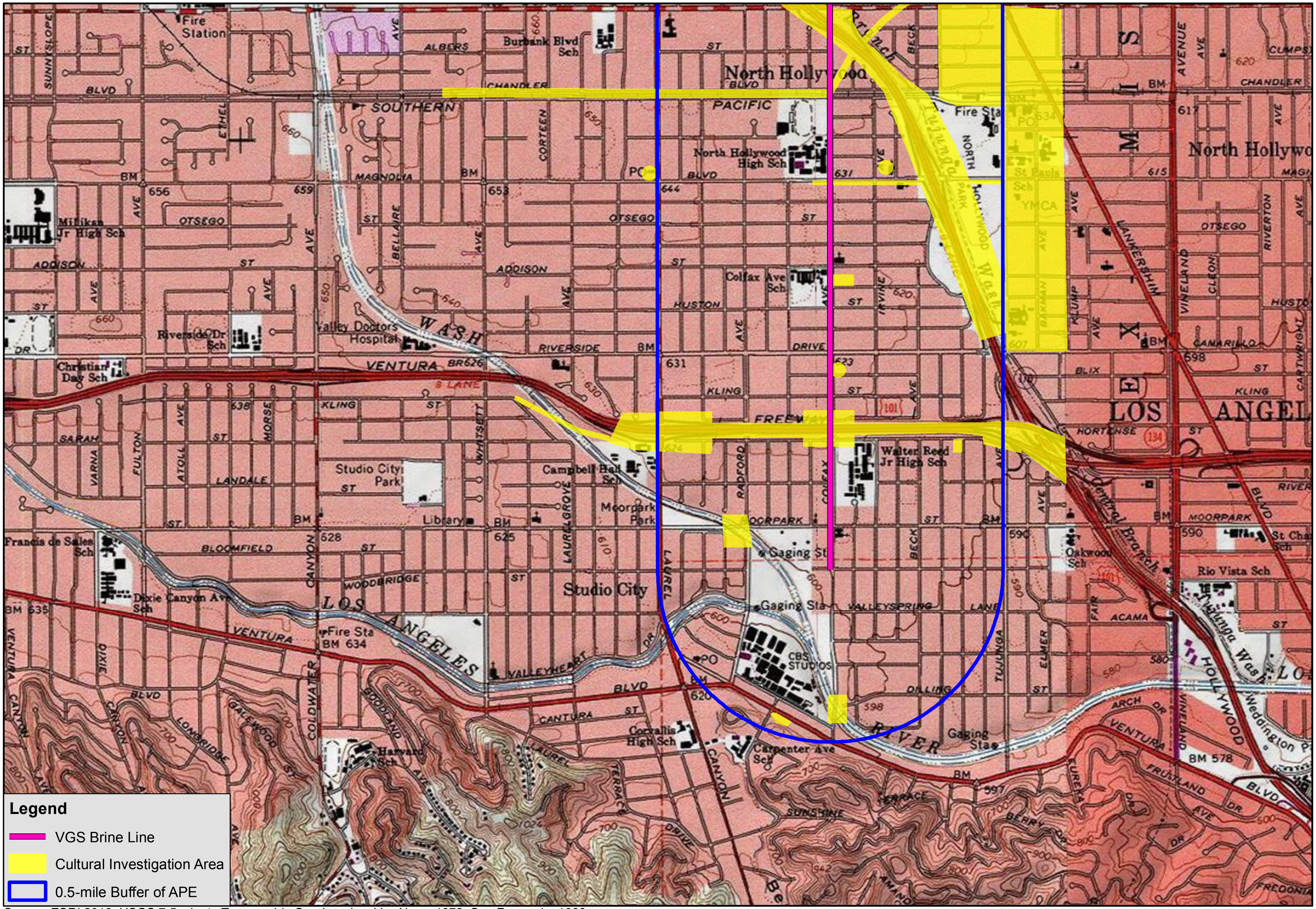


Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Figure 12 - Page 5 of 7

Previous Cultural Investigations Within 0.5 Mile of the VGS Alternative APE

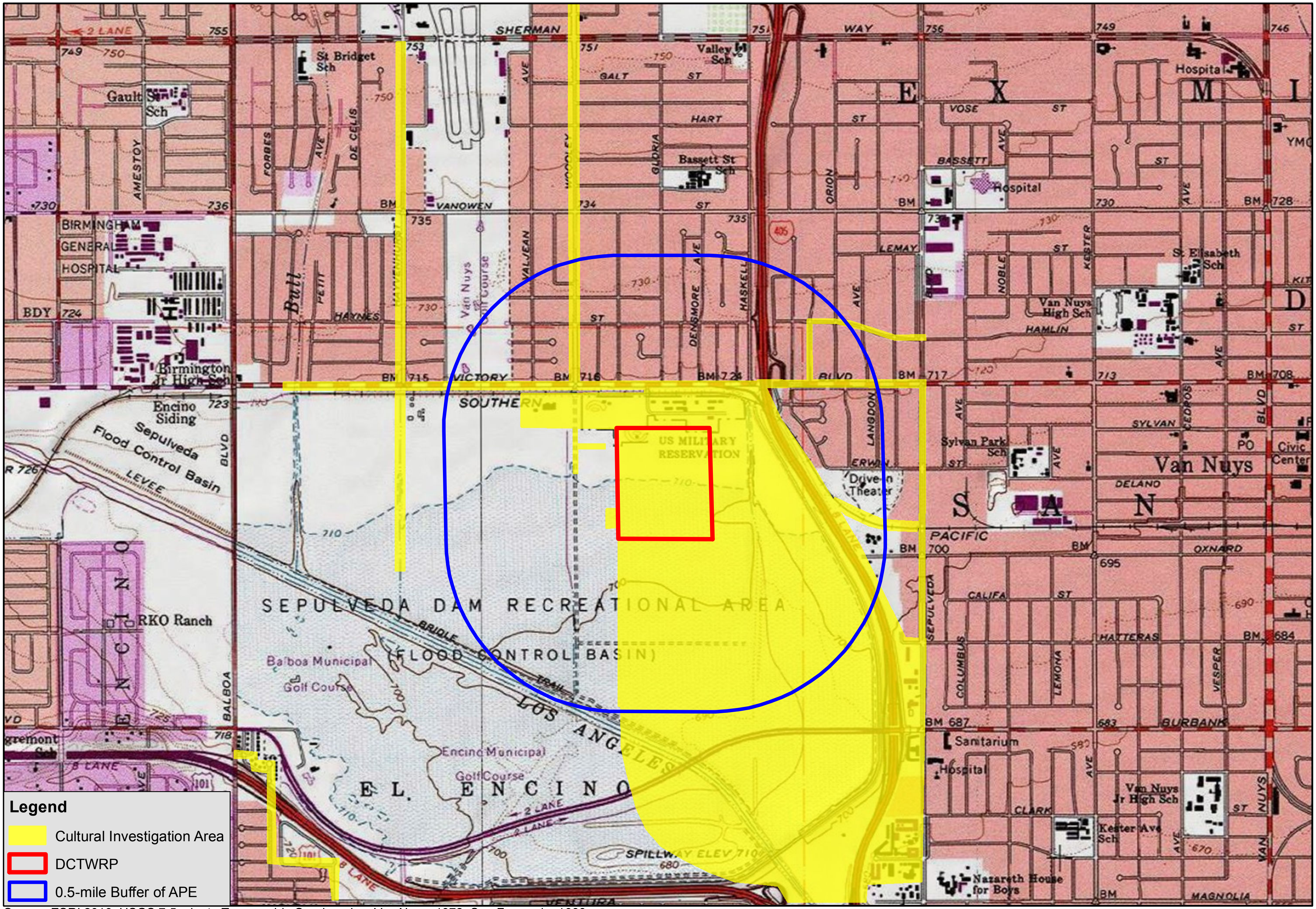


Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Figure 12 - Page 6 of 7

Previous Cultural Investigations Within 0.5 Mile of the VGS Alternative APE



Source: ESRI 2013; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Figure 12 - Page 7 of 7

Previous Cultural Investigations Within 0.5 Mile of the VGS Alternative APE

California Historical Landmarks

A search of the California Historic Landmarks did not identify any resources within a 0.5-mile radius of the Proposed Project area or VGS Alternative Project area.

Los Angeles Historic-Cultural Monuments

A search of the mapped Los Angeles Historic-Cultural Monuments (LAHCM) revealed that two LAHCMs are located within 0.5-mile of the VGS Alternative Project area (Table 4). No LAHCMs are located within 0.5-mile of the Proposed Project area.

Table 4. Los Angeles Historic-Cultural Monuments within 0.5-Mile of the VGS Alternative Project Area

Monument Number (LAHCM)	Address	Description
199	12014-12024 Burbank Boulevard; 5540 Laurel Canyon Boulevard	David Familian Chapel of Temple Adat Ari El
302 (2359)	5211 N. Tujunga Avenue	Los Angeles Public Library, Amelia Earhart Branch (North Hollywood Branch Library)

LAHCM 199 is the David Familian Chapel of Temple Adat Ari El. The Chapel was erected in 1949 and named in honor of the main donors' father. It was built to house the first Jewish congregation organized in the San Fernando Valley, the Valley Jewish Community Center, founded in 1938 and now known as Adat Ari El (Congregation of the Lion of God). In 1950, the chapel was also the site of the first bat mitzvah held in the Valley, and one of the first in the western United States (LAT 1999). The chapel is also California Point of Historic Interest 835.

LAHCM 302—also LAHCM 2359—is the Los Angeles Public Library Amelia Earhart Branch (North Hollywood Branch). The monument is a Spanish Colonial Revival style branch library built in 1929, with a large 1957 extension. The library was originally dedicated to poet Sidney Lanier, but was renamed for Los Angeles resident and aviatrix Amelia Earhart in 1981 (Kazmin 1989). The building is also listed on the NRHP.

Historic Property Data File

The Directory of Properties in the Historic Property Data File was consulted to identify historic properties within or facing the Proposed Project and VGS Alternative footprints. Two properties were identified as facing the Proposed Project footprint, P-19-150950 and P-19-175545 Ten properties were identified as facing the VGS Alternative Project footprint (Table 5).

Table 5. Previously Recorded Historic Properties Facing the Proposed Project and VGS Alternative Project Footprints

P-Number (P-19-)	Address/Description	Time Period	Eligibility Status
121354	David Familian Chapel, 5540 Laurel Canyon	1949	Listed on CRHR; not evaluated for NRHP
150950*	Canterbury Avenue DWP Transmission Towers	1954	Not eligible for NRHP
175545*	9321 San Fernando Road	1933	Not eligible for NRHP
175392	5000 Colfax Avenue	1948	Not eligible for NRHP
175261	North Hollywood High School, 5231 Colfax Avenue	1926	Eligible for NRHP; listed on CRHR
176266	Randolph Hall, North Hollywood High School, 5231 Colfax Avenue	1926	Eligible for NRHP; listed on CRHR
176265	Frasher Hall, North Hollywood High School, 5231 Colfax Avenue	1926	Eligible for NRHP; listed on CRHR
176264	Auditorium, North Hollywood High School, 5231 Colfax Avenue	1926	Eligible for NRHP; listed on CRHR
176263	Library, North Hollywood High School, 5231 Colfax Avenue	1926	Eligible for NRHP; listed on CRHR
176262	Main Building, North Hollywood High School, 5231 Colfax Avenue	1926	Eligible for NRHP; listed on CRHR

*Historic property that faces both the Proposed Project footprint and the VGS Alternative footprint.

Caltrans Bridge Survey

Study of the California Department of Transportation (Caltrans) Historic Bridge Inventory focused on bridges within the Proposed Project and VGS Alternative Project footprints (Caltrans 2010). One bridge was identified within both the Proposed Project APE and the VGS Alternative Project APE. Bridge 55C1152 carries Arleta Avenue over the Pacoima Diversion Channel; it was built in 1952 and modified in 1969. A second bridge was identified only within the VGS Alternative APE (Table 6). Bridge 55 1119, carrying Peoria Street over I-5, was built in 1963 and modified in 1972. Each bridge was found not eligible for the NRHP. But Caltrans notes that "Bridges constructed in 1965 and later may need to be evaluated as they reach fifty years of age" (Caltrans 2010), so Bridge 55 1119 within the VGS Alternative Project may require reevaluation after 2022..

Table 6. Bridges within the Proposed Project and the VGS Alternative Project Footprints

Bridge Number	Bridge Name	Location	Caltrans Historical Evaluation	Year Built/ Modified
55 1119	Peoria Street Over Crossing	Peoria Street over I-5	Not eligible for NRHP*	1963; 1972
53C1152	Pacoima Diversion Channel (Arleta Avenue)	Arleta Avenue Over Pacoima Pacoima Diversion Channel	Not eligible for NRHP	1952; 1969

*May need reevaluation after modifications reach 50 years of age.

NATIVE AMERICAN CONTACT PROGRAM

As part of this investigation, AECOM conducted a Native American contact program on behalf of LADWP, to inform interested parties of the Project and to address any concerns regarding Traditional Cultural Properties or other resources that might be affected by the Project. The program involved contacting Native American representatives provided by the Native American Heritage Commission (NAHC) to solicit comments and concerns regarding the Project. Documents pertaining to the Native American contact program are attached as Appendix C.

During the course of this study, the proposed Project was revised. A new round of Native American contact was initiated after each significant change to the Project description. In total, three rounds of Native American contact were carried out, and 18 individuals were contacted about the project.

Letters were prepared and mailed to the NAHC on October 21, 2013, July 20, 2015, and March 30, 2016. The letters requested that a Sacred Lands File (SLF) check be conducted for the project and that contact information be provided for Native American groups or individuals that may have concerns about cultural resources in the project site. The NAHC responded to the first request with a fax dated November 5, 2013. The fax stated that a records search of the NAHC SLF, "failed to indicate the presence of Native American traditional cultural place(s)," in the Project area. However, it stressed that the, "absence of archaeological recorded items does not preclude their existence within the footprint of the proposed." The letter also provided a list of Native American groups to contact for their knowledge and interests in this Project.

The NAHC responded to the second request regarding revisions to the project in a letter via email dated August 6, 2015. The letter indicated that "A records search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate Project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites." The letter also included an attached list of Native American contacts.

The NAHC responded to the third request on April 5, 2016. The response stated, "A search of the SFL was completed for the USGS quadrangle information provided with negative results." The letter included a Tribal Consultation List.

Letters were mailed on November 6, 2013, to the eight parties indicated on the contact list (Table 7). Maps depicting the Project area and response forms were attached to each letter. Follow-up phone calls were made on December 6, 2013. As a result of the letters and follow-up phone calls, two individuals expressed concerns about the project (see Table 7). Chairman Andrew Salas of the Gabrieleno Band of Mission Indians responded via email. Mr. Salas stated that his great-grandmother is from the project vicinity, and attached a letter from genealogist Lorraine "Rain Cloud" Escobar to support his assertions. In his email, he writes, "The village sites and hunting grounds of my great grandmother were with your project area 'Tujubit' or known as Tujunga and are known sacred grounds, so in order to protect our resources we're requesting one of our experienced & certified Native American monitors to be on site during all ground disturbances." In addition, Tribal Historic and Cultural Preservation Director Caitlin Gulley, Fernandeno Tataviam Band of Mission Indians, sent a letter to AECOM requesting consultation. For complete details on the Native American Contact Program, see Appendix C.

Table 7. First Round of Native American Contact Program

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Beverly Salazar Folkes	11/06/2013	N/A	12/06/2013	Left voicemail on cell
Chairperson Larry Ortega Fernandeno Tataviam Band of Mission Indians	11/06/2013	03/06/2014	12/06/2013	Called office number and spoke with Mr. Michael Villasenor. Spoke with Mr. Villasenor about the project, and per his request emailed him a note regarding the project to forward to Chairperson Ortega. Tribal Historic and Cultural Preservation officer Caitlin Gulley sent a letter to AECOM on behalf of the Fernandeno Tataviam Band of Mission Indians stating that consultation is mandatory for the project and providing a fee schedule for services.
Director Ron Andrade L.A. City/County Native American Heritage Commission	11/06/2013	N/A	12/06/2013	Left an answering machine message.
Chairperson Delia Dominguez Kitanemuk & Yowlumne Tejon Indians	11/06/2013	N/A	12/06/2013	Left an answering machine message.
Chairperson John Valenzuela San Fernando Band of Mission Indians	11/06/2013	N/A	12/06/2013	Chairperson Valenzuela says he usually restricts his activities to the Barstow area and surrounding desert region. Chairperson Valenzuela stated that he would have no comment other than to please contact representatives of the Tataviam or Tongva.
Randy Guzman-Folkes	11/06/2013	N/A	12/06/2013	Left a voicemail message.
Chairperson Andrew Salas Gabrieleno Band of Mission Indians	11/06/2013	12/06/2013	12/06/2013	Chairperson Salas emailed a reply, and spoke with us via telephone on 12/06/2013. Chairperson Salas stated that his great-grandmother is from the project vicinity, and attached a letter from genealogist Lorraine “Rain Cloud” Escobar to support his assertions. In his email, he writes, “The village sites and

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
				hunting grounds of my great grandmother were with your project area 'Tujubit' or known as Tujunga and are known sacred grounds, so in order to protect our resources we're requesting one of our experienced & certified Native American monitors to be on site during all ground disturbances." In our telephone conversation, he emphasized his connection to the Hansen Dam area, and reiterated his concerns.
Cultural Resources Director Sam Dunlap Gabrielino/Tongva Nation	11/06/2013	N/A	12/06/2013	Mr. Dunlap stated that he was in the field and behind in his correspondence. He said he would get back to us.

A second round of Native American contact letters were mailed on August 10, 2015, to each group or individual provided on the updated contact list provided by the NAHC on August 6, 2015 as well as those individuals provided on the original contact list on November 5, 2013. Follow-up phone calls were conducted on August 25, 2015, as described below (Table 8). A total of four individuals expressed concern about the project. Mr. Salas reiterated his concerns from the first round of contact and recommended a Native American monitor from his organization be present during ground disturbance. Mr. Anthony Morales stated that the area is culturally sensitive and recommended a Native American monitor from his tribe. Mr. John Tommy Rosas responded with a confidential email; this is included in Appendix C. Ms. Caitlin Gulley, calling on behalf of Chairperson Larry Ortega, requested direct government-to-government consultation. For complete details on the Native American Contact Program, see Appendix C.

Table 8. Second Round of Native American Contact Program

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Beverly Salazar Folkes	08/10/2015	N/A	08/25/2015	Left a voicemail message.

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Chairperson Andrew Salas Gabrielino Band of Mission Indians – Kizh Nation	08/10/2015	N/A	08/25/2015	Left a voicemail message. Mr. Salas returned our call on 08/26/2015 and requested to have the letter that was mailed to him regarding the project re-sent via email. In addition, Mr. Salas stated that the project area is archaeologically sensitive and recommends monitoring. In addition, Mr. Salas believes he has a map with Native American sites in that area. This was provided to AECOM during the third round of contact.
Chairperson Anthony Morales Gabrielino/Tongva San Gabriel Band of Mission Indian[s]	08/10/2015	N/A	08/25/2015	Mr. Morales stated that the project area is Gabrielino territory and is archaeologically sensitive. He recommends a monitoring of the ground disturbance work and would prefer that the Native American monitor be from his group.
Co-Chairperson Bernie Acuna Gabrielino-Tongva Tribe	08/10/2015	N/A	08/25/2015	Left a voicemail message.
Conrad Acuna Gabrielino-Tongva Tribe	08/10/2015	N/A	N/A	A follow-up call could not be conducted as a contact number was not provided by the NAHC for Mr. Acuna.
Chairperson Delia Dominguez Kitanemuk & Yowlumne Tejon Indians	08/10/2015	N/A	08/25/2015	Left a voicemail message.
Chairperson John Valenzuela San Fernando Band of Mission Indians	08/10/2015	N/A	08/25/2015	Left a voicemail message.
Tribal Admin. John Tommy Rosas Tongva Ancestral Territorial Tribal Nation	08/10/2015	08/10/2015	N/A	Mr. Rosas emailed a reply on 8/10/2015. Confidentiality was noted in the signature of Mr. Rosas's email and therefore the email is not included in Appendix C.

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Chairperson Larry Ortega Fernandeno Tataviam Band of Mission Indians	08/10/2015	09/15/15	08/25/2015	Mr. Ortega was unavailable. A message was left with a receptionist. On 9/15/2015, Tribal Historic and Preservation Officer Caitlin Gulley called. Ms. Gulley stated that she did have concerns about the project, but that she wanted to discuss them with the City during direct government to government consultation. She was informed that consultation occurs later in the CEQA process, but that the fact that she had concerns would be noted in our report.
Co-Chairperson Linda Candelaria Gabrielino-Tongva Tribe	08/10/2015	N/A	08/25/2015	Left a voicemail message.
Randy Guzman-Folkes	08/10/2015	N/A	08/25/2015	Mr. Guzman-Folkes requested to have the letter that was mailed to him regarding the project re-sent via email.
Tribal Chair/Cultural Resources Robert F. Dorame Gabrielino Tongva Indians of California Tribal Council	08/10/2015	N/A	08/25/2015	Mr. Dorame requested to have the letter that was mailed to him regarding the project re-sent via email.
Director Ron Andrade LA City/County Native American Indian Comm[ission]	08/10/2015	N/A	08/25/2015	Contact number provided by the NAHC is invalid. The phone number has been disconnected.
Cultural Resources Director Sam Dunlap Gabrielino/Tongva Nation	08/10/2015	N/A	08/25/2015	Left a voicemail message.
Chairperson Sandonne Goad Gabrielino/Tongva Nation	08/10/2015	N/A	08/25/2015	A voicemail message was left for Ms. Goad when the call was not answered. Shortly thereafter, Ms. Goad returned the call. Ms. Goad stated that she wanted AECOM to contact Sam Dunlap, her Tribe's monitor, regarding the project. She stated that Mr. Dunlap could speak for her Tribe. She also stated that if we were unable to contact him, she would like us to contact her again. Mr. Dunlap was contacted as part of the follow-up calls.

A third round of Native American contact letters were mailed on March 30 or April 5, 2016, to each group or individual provided on the updated contact list provided by the NAHC on April 5, 2016, as well as those individuals provided on the contact lists on November 5, 2013 and August 6, 2015. Follow-up phone calls were conducted on April 13, 2016, as described below (Table 9). Four individuals expressed concerns about the project. Mr. Adrian Morales and Mr. Andrew Salas both repeated their concerns that work is in an area culturally sensitive for their tribes and repeated requests for Native American monitoring. Ms. Beverly Salazar Folkes also stated that the area is culturally sensitive and requested Native American monitoring. Ms. Caitlin Gulley, calling on behalf of President Rudy Ortega, Jr., stated that her tribe has concerns about the project which they did not wish to share with a consulting firm and requested direct consultation with LADWP. For complete details on the Native American Contact Program, see Appendix C.

Table 9. Third Round of Native American Contact Program

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Beverly Salazar Folkes	03/30/2016	04/03/2016	04/13/2016	Ms. Salazar Folkes responded using our Native American Response Form. She notes, "This was a dwelling area for the local native people" and states that she would like to be kept informed about the project. She also included a business card for her business, the Native American Monitoring Group.
Chairperson Andrew Salas Gabrielino Band of Mission Indians – Kizh Nation	03/30/2016	04/05/2016	04/13/2016	Mr. Salas responded via letter appended to email. He states, "*The project locale within the Arieta, Pacoima, Sun Valley, and Van Nuys lies in an area where the Ancestral & traditional territories of the Kizh(Kitc) Gabrieleño villages , adjoined and overlapped with each other . . . Therefore in order to protect our resources we're requesting one of our experienced certified* ***Native American monitor as well as a Archeo- Monitor*** *to be on site during any & all ground disturbances"*. He also provided a map of Gabrielino communities located within the San Fernando Valley taken from McCawley 1996: 36.

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Chairperson Anthony Morales Gabrielino/Tongva San Gabriel Band of Mission Indian[s]	03/30/2016	N/A	04/13/2016; 04/14/2016	Mr. Morales asked about the results of the records search, and we informed him that no Native American resources were reported within the project footprint, although there were sites reported within the 0.5-mile buffer. Mr. Morales also asked about our mitigation recommendations, and we informed him that we recommended worker training and archaeological monitoring below about 10 feet. Mr. Morales stated that he is doubtful about worker training, since construction workers are focused on their work, not on archaeology. Mr. Morales stated that the area has cultural sensitivity, and requested a Native American monitor from his tribe be on hand to monitor excavations.
Co-Chairperson Bernie Acuna Gabrielino-Tongva Tribe	03/30/2016	N/A	04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.
Conrad Acuna Gabrielino-Tongva Tribe	03/30/2016	N/A	04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.
Chairperson Delia Dominguez Kitanemuk & Yowlumne Tejon Indians	03/30/2016	N/A	04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.
Chairperson John Valenzuela San Fernando Band of Mission Indians	03/30/2016	N/A	04/13/2016	Mr. Valenzuela responded and said that he does not have time to look into the project.
Tribal Admin. John Tommy Rosas Tongva Ancestral Territorial Tribal Nation	03/30/2016	N/A	04/13/2016	Letter sent via email; Mr. Rosas confirmed receipt on 03/30. On 4/13/2016 Mr. Rosas said he will respond to the letter in the next few weeks.

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
Chairperson Larry Ortega Fernandeno Tataviam Band of Mission Indians	03/30/2016	N/A	04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.
Co-Chairperson Linda Candelaria Gabrielino-Tongva Tribe	03/30/2016	N/A	04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.
Randy Guzman-Folkes	03/30/2016	N/A	04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.
Tribal Chair/Cultural Resources Robert F. Dorame Gabrielino Tongva Indians of California Tribal Council	03/30/2016	N/A	04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.
Director Ron Andrade LA City/County Native American Indian Comm[ission]	03/30/2016	N/A	04/13/2016	Number is disconnected.

Native American Contact	Letter Sent	Date of Reply	Follow-Up Phone Call	Notes
President Rudy Ortega, Jr. Fernandeno Tataviam Band of Mission Indians	04/05/2016	04/12/2016	04/13/2016; 04/14/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information. Tribal Historic and Cultural Preservation Department Director Caitlin Gulley emailed on behalf of the Fernandeno Tataviam Band of Mission Indians, saying “We have been interested in providing cultural resource report support to this project since we were notified of it several years ago. If LADWP or AECOM is interested in contracting us, we would be happy to contribute.” AECOM called Ms. Gulley, who said her tribe has concerns about the project. She stated that even though much of the area has previously been disturbed, artifacts may be found in disturbed soil and fill which still have cultural significance to the tribe. She requested consultation with LADWP to develop mitigation concepts, and stated that her tribe’s practice is to deal directly with government agencies. She said that her tribe’s information is sensitive and cannot be shared with consulting firms.
Cultural Resources Director Sam Dunlap Gabrielino/Tongva Nation	03/30/2016	N/A	04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.
Cultural Resources Department Joseph Ontiveros Soboba Band of Luiseno Indians	03/30/2016	04/27/2016	04/13/2016	Deferred consultation to the San Gabriel Band of Mission Indians (Anthony Morales)
Chairperson Sandonne Goad Gabrielino/Tongva Nation	03/30/2016		04/13/2016	No answer in follow-up phone call. Message was left discussing the letter and providing call back contact information.

PALEONTOLOGICAL RECORDS SEARCH

A paleontological records search was requested from the Los Angeles Natural History Museum on October 21, 2013 in order to determine the level of paleontological sensitivity within the Proposed Project and VGS Alternative areas. The request was accompanied by a project description and a map of the Proposed Project and VGS Alternative areas.

Results

The results of the paleontological records search were reported by Dr. Samuel McLeod, Vertebrate Paleontology Division of the Natural History Museum of Los Angeles County (NHMLAC), in a letter dated December 6, 2013 (Appendix D).

The records search indicated that the surficial deposits in the Project area consist of Quaternary Alluvium. Within the Pacoima Wash and the Tujunga Wash, these deposits are coarse and gravelly, while in the other portions of the Project area the deposits are finer-grained. There are no vertebrate fossil localities exist within the Project area boundaries in the NHMLAC records.

However, there are fossil localities nearby from the same Quaternary Alluvium deposits. The closest NHMLAC fossil vertebrate localities are LACM 3397, LACM 5745, and LACM 7152 near the Van Norman Reservoir, locality LACM 1146 north of the north-central Project area, and LACM 6970 east of the southern portion of the Project area. These localities yielded specimens of bison (unidentified *Bison* species and *Bison antiquus*) mastodon (*Mammut*), mammoth (*Mammuthus*), horse (*Equus*), camel (unidentified Camelidae and *Camelops hesternus*), and ground sloth (*Glossotherium harlani*) at depths ranging from 60 to 170 feet below grade.

Because of its age (generally less than 10,000 years old), younger Quaternary Alluvium is unlikely to yield significant fossil remains. However, older Quaternary alluvium exists at varying depths below the younger Quaternary alluvium and may contain significant fossil materials.

HISTORIC MAPS

Historic map research was conducted in order to gain an understanding of the level of disturbance in the area as well as identify possible locations of archaeological sensitivity within the Proposed Project and VGS Alternative Project areas. Because of its late development, historic Sanborn Fire Insurance (Sanborn) maps do not exist for the Proposed Project and VGS Alternative Project areas. General Land Office (GLO) maps based on land surveys conducted between 1852 and 1876 are held at the SCCIC. These maps show little development in the project area during their periods of coverage, but they do show the Southern Pacific Railroad and a parallel road, no doubt the San Fernando Road. However, research of historic USGS topographic maps provides insight into the development of the project area and the surrounding area. Table 10 lists the historical maps that were consulted.

Table 10. Historical Maps Reviewed

Map Name	Scale	Date
U.S. Geological Survey California, Pacoima Quadrangle	1:24,000	1927
U.S. Geological Survey California, San Fernando Quadrangle	1:50,000	1900
U.S. Geological Survey California, San Fernando Quadrangle	1:24,000	1953
U.S. Geological Survey California, San Fernando Quadrangle	1:24,000	1966
U.S. Geological Survey California, Sunland Quadrangle	1:24,000	1926
U.S. Geological Survey California, Sunland Quadrangle	1:24,000	1932
U.S. Geological Survey California, Sunland Quadrangle	1:24,000	1942
U.S. Geological Survey California, Van Nuys Quadrangle	1:24,000	1953
U.S. Geological Survey California, Van Nuys Quadrangle	1:24,000	1966

Pacoima Spreading Grounds

In the earliest USGS map, the 1900 San Fernando 15' USGS quadrangle, the Pacoima Spreading Grounds are an entirely undeveloped part of Pacoima Wash. By the time of the 1927 Pacoima 7.5' USGS Quadrangle, the spreading grounds are still largely undeveloped. However, two unimproved roads run into the grounds. Two power lines also span the grounds, along still-existing rights-of-way. The northern right-of-way belongs to Southern California Edison, and the southern belongs to the City of Los Angeles.

In the 1953 San Fernando 7.5' USGS topographic map, the spreading grounds have been developed (Plate 4). A canal flows through grounds northeast-southwest. Three power lines (two together, and one separate) pass northwest-southeast through middle of grounds. One of the unimproved roads seen in 1927 Pacoima, has been slightly realigned; this is Woodman Avenue.

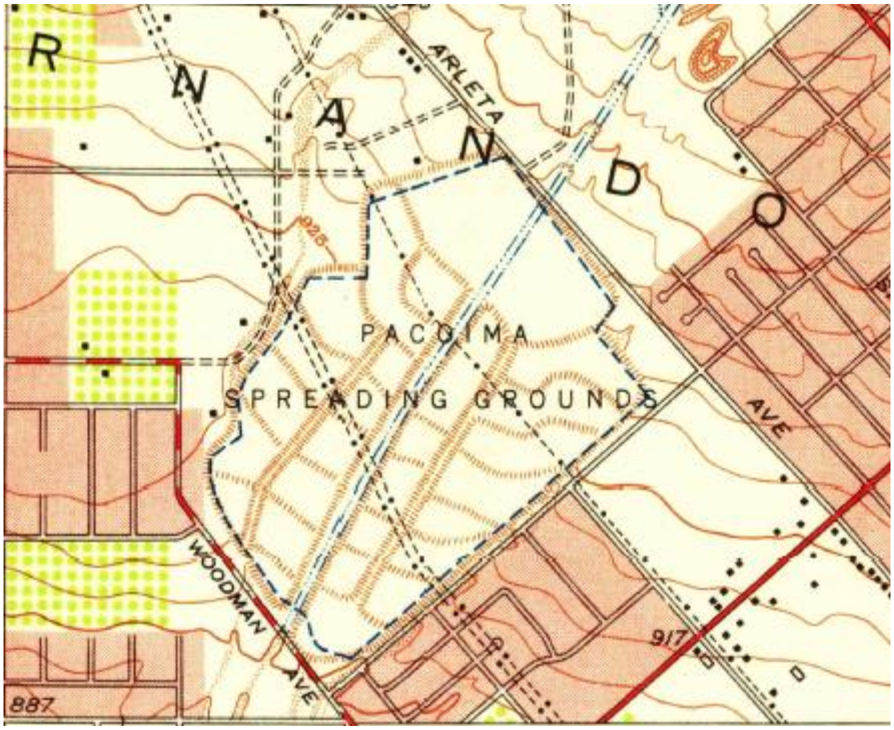


Plate 4. 1953 San Fernando 7.5' USGS Topographic Map, Detail, Showing PSG.

Hansen Spreading Grounds

In the 1942 Sunland USGS 7.5' quadrangle, the future site of HSG appears as part of Tujunga Wash. One unimproved road runs through spreading grounds. Three structures stand along Branford Street in the future spreading grounds, and one structure stands beside the unimproved road in the future spreading grounds. In the 1953 San Fernando quadrangle, one building stands in northwest corner of future spreading grounds. All buildings and structures within the future spreading grounds have disappeared by the time of the 1966 San Fernando quadrangle. In the 1966 Van Nuys 7.5' quadrangle, the HSG appears as it does today.

Valley Generating Station

In the 1926 Sunland 7.5' USGS topographic map, the earliest map of the area with such resolution, the VGS is the site of a short Southern Pacific Railroad spur and the Wahoo Station. The main Southern Pacific Railroad track runs northwest-southeast. The spur curves off the main track and parallels the Tujunga Wash, running northeast-southwest, extending to a point now occupied by the Hansen Flood Control Basin. The Project area persists relatively unchanged in the 1932 Sunland 7.5' USGS map. However, in the 1942 map, buildings are now shown at the Wahoo Station, and the spur track has been cut short, terminating at a point within the present LADWP VGS campus.

By the time of the 1953 Van Nuys 7.5' USGS topographic map, the VGS has been constructed. It is labeled "Valley Steam Plant" on the map. More railroad sub-spurs have been constructed on the VGS compound. The gravel pit appears for the first time.

The 1966 Van Nuys 7.5' USGS topographic map shows two small buildings and a railroad spur in the Project area (Plate 5). The gravel pit is expanded and is shown full of water. A water tower appears between the gravel pit and the Project area.

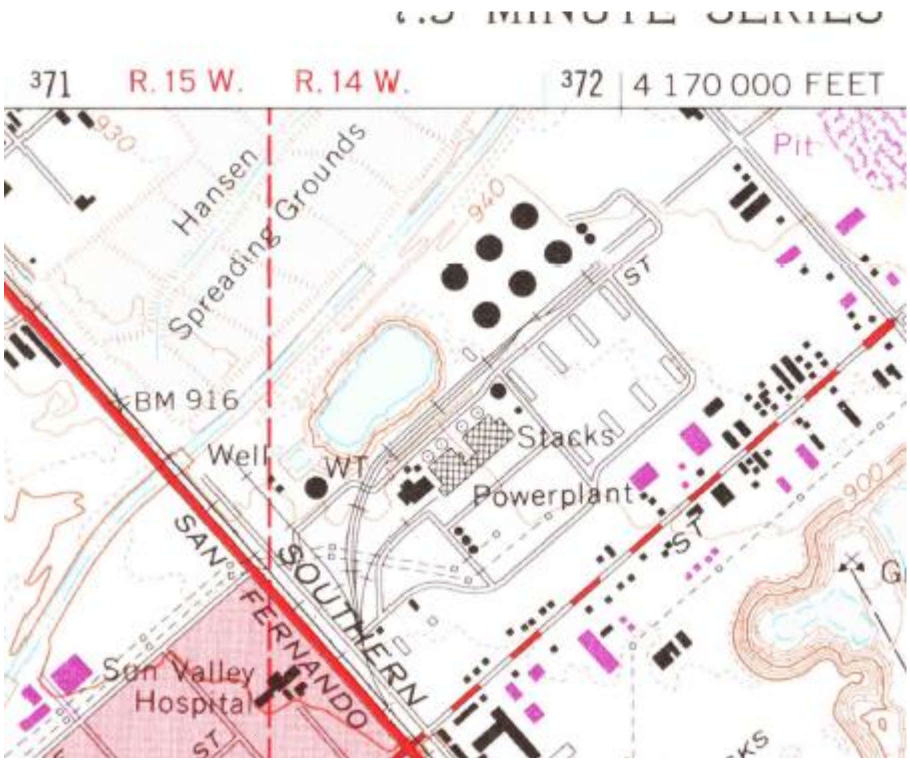


Plate 5. 1966 Van Nuys 7.5' USGS Topographic Map, Detail, Showing VGS.

San Fernando Road

San Fernando Road is one of the oldest roads in Los Angeles, linking the historic Mission San Fernando with the Pueblo of Los Angeles. San Fernando Road appears in a Sketch Map of Pueblo of Los Angeles to San Fernando Valley, depicting the area ca. 1858 (Hancock n.d.). It also appears approximately following its current alignment in all other maps consulted for this study.

Branford Street

Branford Street appears undeveloped in the 1900 San Fernando 15' map. The road appears and is named in the 1927 Pacoima 7.5’ topographic map, but its surroundings are sparsely developed. The street’s surroundings are progressively developed in the 1953 San Fernando and the 1953, 1966, and 1976 Van Nuys 7.5’ topographic maps.

Arleta Avenue

The land occupied by Arleta Avenue appears entirely undeveloped in the 1900 San Fernando 15' map. The road appears but is unlabeled on the 1927 Pacoima 7.5’ topographic map, but its surroundings are sparsely developed. The street’s surroundings are progressively developed in the 1953 San Fernando 7.5’ and the 1966 and 1976 Van Nuys 7.5’ topographic maps.The southeastern part of what is today Canterbury Avenue is shown in the 1927 Pacoima topographic map. In addition, the City of Los Angeles power line is shown in its present right-of-way, although the line is a single tower line. The 1953 topographic map shows Canterbury Avenue in its modern alignment, paralleled on the north by the two existing transmission lines. The 1966 Van Nuys topographic map shows the same, with the neighborhood around Canterbury Avenue completely developed.

VGS Alternative Brine Line: Peoria Street, Laurel Canyon Boulevard, Erwin Street, and Colfax Avenue

Laurel Canyon Boulevard and Colfax Avenue appear in the 1926 Sunland USGS topographic map. All of Colfax Avenue appears. Laurel Canyon Boulevard is interrupted by a wash south of Victory Avenue, but it is called Pacoima Avenue. Peoria Street, Laurel Canyon Boulevard, Erwin Street, and Colfax Avenue are all shown in their current alignments in the 1942 Sunland map. The area around road is shown as sparsely developed in both the 1926 and 1942 maps. In the 1966 Van Nuys map, however, buildings have sprung up along all the roads of the Project area.

Donald C. Tillman Water Reclamation Plant

The area now occupied by the DCTWRP appears mostly undeveloped in the 1924 Van Nuys quadrangle. A few structures stand within the future Sepulveda Flood Control Basin, including one which may stand within the Project area. By the time of the 1953 Van Nuys USGS map, these buildings have been demolished, and only a few dirt roads crisscross the Sepulveda Flood Control Basin.

SURVEY METHODS AND RESULTS

SURVEY METHODOLOGY

Surveys of the Project area were conducted by Marc Beherec and Frank Humphries on November 25, 2013 and December 10, 2013. Survey methodologies varied depending on accessibility and local conditions.

Archaeological Survey

A windshield survey was conducted along paved road segments of the Proposed Project and VGS Alternative Project areas. These areas include the paved portions of San Fernando Road and Branford Street, and the VGS Alternative brine line along Laurel Canyon Boulevard and Colfax Avenue. The built environment in these locations will not be impacted by the Project; therefore, the survey and evaluation of built resources here were excluded from this investigation.

Historic Architectural Resources Survey

An intensive pedestrian survey was conducted at proposed building locations and in unpaved portions of the Proposed Project and VGS Alternative Project areas, including the unpaved portions of San Fernando Road Northeast Roadway and the Project areas at the DCTWRP and VGS.

The previously-documented site within the Proposed Project and VGS Alternative Project area, San Fernando Road, was revisited.

Documentation

Cultural resources identified during the surveys were documented on appropriate Department of Parks and Recreation (DPR) 523 forms. Minimally, these included Primary Form (Form 523A) an Archaeological Site Record (Form 523C), Location Map (From 523J), and Sketch Map (Form 523K). Some resources required Continuation Sheets (Form 523L). Resource locations were determined using a handheld Global Positioning System (GPS) unit.

The DPR forms are included in this report in Appendix E (confidential appendix). All completed DPR forms will be sent to the SCCIC for inclusion in the state inventory system.

SURVEY RESULTS

Donald C. Tillman Water Reclamation Plant

DCTWRP consists of numerous modern buildings and structures. The plant was put into operation in 1985, and the buildings date to the 1980s and later. The plant is located in the Sepulveda Flood

Control Basin. The entire area within the plant boundaries is graded and built upon, paved, or landscaped (Plate 6).

Plate 6. Donald Tillman Plant, Buildings 13 Complex in Foreground, View Northeast.

All exposed surfaces were examined for the presence of cultural resources.

North of the Service Buildings 13 complex is a parking lot and landscaped areas. A proposed multipurpose and office building is planned for this area. This parking lot currently services the Administration Building and the Japanese Garden. Visibility in this area was less than 5 percent in the landscaped areas, which were planted and covered with mulch.

East of the Phase 2 Contact Basins and Filtration Units is a grassy area where the AWPF would be located. Visibility in this area was less than 5 percent due to cultivated grass.

Visibility at the proposed Maintenance Building site was approximately 75 percent. However, much of the ground surface is imported gravel. Potted trees and leaf litter obscured some areas. This location marks the northeast corner of the DCTWRP.

No cultural resources were identified at the DCTWRP location.

Valley Generating Station

Construction at the VGS would take place in the northwest corner of the site, at the VGS Transmission School. It is bounded on the northwest by the Tujunga Wash, on the northeast by the Sheldon Gravel Pit or Hansen Tank, on the northeast and southeast by the VGS campus, and on the southwest by San Fernando Road. No access was granted to the main campus of the VGS; this report only documents the portion of the VGS within the Project area; that is, the VGS Transmission School.

Building 1

The only permanent building within the VGS Alternative footprint is in the center of the VGS Alternative Project area. This building is a small one-story building. A sign on the building door states that it now serves a Transmission School, that is, a school for transmission line workers. This building does not lie within the footprint of any of the proposed new structures (Plate 7). This building may be one of those shown in the 1966 7.5' Van Nuys USGS topographic quadrangle.

Plate 7. Building 1, Transmission School, View Southeast.

Transmission Towers

The VGS property serves as a school for transmission line workers. A variety of inactive transmission towers are located on the property for training purposes. Six metal transmission towers and 11 wooden poles are located within the VGS Project footprint.

Four of the metal transmission towers are part of a connected line. Immediately south of these towers are a dual metal tower and a dual wooden tower (Plate 8). These do not appear to be historic in date.

Plate 8. Dual Metal Tower and Dual Wooden Tower. View to the Northwest.

Another inoperative transmission tower stands immediately northeast of this line.

In the southeast of the VGS Alternative footprint, within the footprint of the proposed MF System building, are 11 inoperative wooden power poles (Plate 9). These structures display a variety of construction techniques and technologies to offer students of the Transmission School the variety they may experience in servicing active transmission lines. They do not appear to be historic, and are inoperable.

Plate 9. Inoperative Wooden Power Poles, View Southeast.

Railroad spur

A railroad spur enters the VGS footprint from the southeast and bisects it, ending at the northwestern edge of the VGS footprint. The standard-gauge track measures 4 feet 8.5 inches across. The metal of the track is 2.75 inches wide and is not grooved. The asphalt comes up to within 2.5 to 3 inches on the outside of the track. The inside of the track is paved with concrete, which also comes to within 2.5 to 3 inches. The attributes of the track are consistent with a standard steam engine train. This track passes among the inoperative transmission towers (Plates 8, 10).

Plate 10. Railroad Spur, View Southeast.

This spur is a secondary spur. It departs a spur from the Southern Pacific Railroad outside the VGS Alternative Project area apparently associated with the historic Wahoo Station. This spur appears in the 1966 7.5' Van Nuys USGS topographic quadrangle.

This railroad spur appears on the 1960 but not the 1968 topographic map. However, it is visible in the earliest available historic aerial photo, dated 1953 (historicaerials.com). In the 1953 aerial photograph, this spur appears to continue west beyond the VGS Alternative Project area, crossing the diversion channel, but in the 1954 aerial it stops before the diversion channel.

Weather-station Tower

A metal tower stands either within or just to the north of the footprint of the VGS Alternative, approximately 35 feet northeast of the northernmost transmission tower (Plate 11). The original function of this tower is unknown. However, it was most recently used as a weather station and wind cups are still visible at the top of the tower. The tower stands approximately 30 feet tall and measures 6 feet 3 inches north/south by 6 feet 6 inches east/west. A wooden compartment approximately 5 feet tall with a porcelain light bulb fixture opens to the west and houses what appear to be inoperable instruments manufactured by Scientific Columbus, an Esterline Company. The tower predates the paving of this lot.

Plate 11. Metal Tower. View to the Northwest.

Water Towers

Northeast of the VGS Alternative Project area are two water towers. One is within the Sheldon Gravel Pit and is therefore not visible from the VGS Alternative Project area. The other, a demineralized water storage tank, may be the water tower depicted in the 1966 7.5' Van Nuys USGS topographic quadrangle (Plate 12).

Plate 12. Water Tower, View Northwest.

Overall, the VGS Transmission School includes three buildings or structures that appear to be historic in age: Building 1, the Railroad Spur Track, and the metal weather station tower. The inoperative transmission towers all appear to be recent in age, and were constructed to instruct workers in the most recent technology.

P-19-188007, San Fernando Road

San Fernando Valley Road is a previously recorded site that has been determined to be eligible for the NRHP. The road was mapped in 1871 and likely predates that time. The road has been actively improved and maintained at least since the 1870s. Both active and abandoned segments of San Fernando Road were identified during the survey.

The primary artery now known as San Fernando Road is a Class II Major Highway (Plate 13). An approximately 2,150 foot segment of the road was surveyed, stretching between Sheldon Street and Tujunga Wash. This segment of roadway is a four-lane, northwest-southeast asphalt paved roadway with turning lanes at it major intersections.

Plate 13. San Fernando Valley Road, Class II Major Highway, View Northeast from Branford Street.

Active railroad tracks of the Southern Pacific Railroad parallel the Class II highway on its northeastern side.

Northeast of the Southern Pacific Railroad tracks are other, partially abandoned, segments of the historic San Fernando Road. Together, these segments are classified as a Collector Street by the City of Los Angeles Bureau of Engineering. The City calls these road segments San Fernando Road Northeast Roadway.

Between Sheldon Street and a point approximately 1,450 feet northwest of the intersection of Sheldon Street and San Fernando Road is an asphalt-paved segment of San Fernando Road Northeast Roadway (Plate 14). The roadway is active but poorly maintained. It is primarily used as an access road for the VGS and the businesses southwest of the VGS. Immediately northwest of the VGS side entrance the paved road is blocked off with concrete barriers. Trees, including young pines and somewhat older eucalyptus trees, line the southwest side of the road.

Plate 14. Asphalt-Paved Segment of San Fernando Road Northeast Roadway. View to the Southeast.

This roadway is intersected by a spur of the Southern Pacific Railroad approximately 450 feet northwest of its intersection with Sheldon Street and enters the VGS property. That portion of the spur at the VGS location is described above. The railroad tracks are described below.

This paved segment of the San Fernando Road Northeast Roadway is part of an approximately 3,600 foot segment of road stretching between Art Street in the southwest and the road's end in the northeast that is labeled on Google Earth and some maps as South San Fernando Boulevard.

Approximately 1,450 feet northwest of the intersection with Sheldon Street, and approximately 175 northeast of the last driveway entering the VGS, the pavement abruptly ends. From this point and for another approximately 700 feet the San Fernando Road Northeast Roadway is unpaved (Plate 15). Either this road segment was never paved or the pavement was removed from the road in this location. A hump was built in the road at the end of the pavement to discourage use. However, the road is presently used as an access road for utility lines. This road segment ends at the Tujunga Wash Channel.

Plate 15. Unpaved Segment of San Fernando Road Northeast Roadway Southeast of Tujunga Wash, View Southeast.

Hansen Spreading Grounds

The HSG was viewed from an unpaved portion of San Fernando Boulevard south of the HSG (Plate 16). At a point approximately 100 feet northeast of the Tujunga Wash Channel the road is bisected by a Conrock Co. Conveyor Tunnel associated with the HSG. The Conrock Co. was active between 1972 and 1984, when it merged with California Portland Cement Co. to form CalMat Co. (International Directory of Company Histories 1998).

Plate 16. Conrock Co. Conveyor Tunnel Entering Hansen Spreading Grounds, View North.

The southwest boundary of the HSG is marked by Tujunga Wash. Tujunga Wash is presently diverted through a concrete channel below the Hansen Dam (Plate 17). The channel appears to date to the same period as the dam and spreading grounds, i.e., the early 1940s.

Plate 17. Tujunga Wash Southwest of San Fernando Road, View Northeast.

Branford Street Corridor

The Proposed Project and VGS Alternative require a pipeline along Branford Street between San Fernando Road and Arleta Avenue. Branford Street is four-lane Avenue II (Secondary Highway), measuring approximately 55 feet broad and paved in asphalt. Land use along Branford Avenue is industrial in the northeast, yielding to residential south of the Golden State Freeway. No cultural resources were observed along Branford Street.

Arleta Avenue Corridor

Both the Proposed Project and VGS Alternative would include a pipeline along Arleta Avenue. Arleta Avenue is an Avenue II (Secondary Highway). The proposed project extends between Branford Street in the southeast to the Pacoima Spreading Grounds in the northwest. It is a four-lane plus turning lane roadway, approximately 75 feet broad and paved in asphalt. Land use on either side of the road is primarily residential, with commercial buildings at major intersections. Most of the homes are single-family residences dating to the 1950s and later. At its intersection with the Pacoima Diversion Channel, Arleta Avenue crosses Bridge 53C1152, which Caltrans previously evaluated as not eligible for the NRHP. The entirety of Arleta Avenue is paved, with no visible ground surface, and the built environment on either side of Arleta Avenue will not be impacted in this portion of the project area. Arleta Avenue was not surveyed for this project.

Pacoima Spreading Grounds

The PSG could not be accessed. Regardless, the PSG is historic in age as it was constructed in 1932 and completed in 1933. The PSG covers approximately 169-acres and is one of the major water conservation facilities that provides groundwater recharge for the San Fernando Groundwater Basin. The facility consists of 12 spreading basins, radial intake gate, intake canal, spillways, overflow weir, and maintenance roads. Although access to the facility was limited, surveyors were able to assess that the PSG still functions to date as it was initially intended.

CULTURAL RESOURCES IDENTIFIED DURING SURVEY

Archaeological resources were not encountered within the Proposed Project and VGS Alternative Project areas. However, as part of the cultural resources field investigation, built environment resources were identified and documented. All resources within or immediately adjacent to the Proposed Project and VGS Alternative Project area were surveyed and recorded with digital photographs, regardless of age. The HSG, PSG, and VGS were evaluated to determine their potential significance as historical resources under CEQA. In addition, San Fernando Road was re-located and assessed and existing documentation available for this resource was updated as part of this assessment.

Potential for Archaeological Resources

Review of previous investigations in the vicinity of the Proposed Project and VGS Alternative and the prehistoric context for the area provides an understanding of the potential for encountering prehistoric and historic sites in the Project area. Subsequent land use is an essential factor in whether archaeological remains have been preserved.

As described in the context section of this report, the location of the Proposed Project and VGS Alternative Project areas are in the vicinity of the Mission San Fernando. Prehistoric villages have long been rumored to be, or are documented as having been, located in the vicinity of the Project area. The Project area’s location relative to the nearby water sources would have provided access to important resources during all periods of prehistory. Subsequent land use has included modern and historic development. It is possible that archaeological resources could be buried beneath the ground surface, especially in areas where development has included only minimal ground disturbance where the roadway may have effectively capped buried prehistoric or historic resources.

In addition, cultural resources may be deeply buried by alluvium. The records search identified one such deeply-buried site within the VGS Alternative 0.5-mile APE buffer, P-19-001110, located at a depth of 12-14 feet below surface south of the VGS Alternative Project area. Similarly buried sites may exist within the VGS Alternative Project area.

MANAGEMENT RECOMMENDATIONS

REGULATORY SETTING

Cultural and paleontological resources in California are protected by a number of federal, state, and local regulations, statutes, and ordinances. Cultural resources are defined as buildings, sites, structures, or objects, each of which may have historical, architectural, archaeological, cultural, and/or scientific importance. Paleontological resources are not only fossils themselves, but also the associated rocks or organic matter and the physical characteristics of the fossils' associated sedimentary matrix that provide evidence of past life on the planet.

National Environmental Policy Act and National Historic Preservation Act

Federal agencies must consider the effects of proposed projects on historic properties and natural resources. Lead agencies evaluate potential impacts under the National Environmental Policy Act (NEPA) and potential effects under the NHPA to "historic properties," which are defined as resources that are listed in or eligible for listing in the National Register of Historic Places (NRHP), in an effort to avoid potential significant impacts and adverse effects. Resources that may be eligible for listing in the NRHP include districts, sites, buildings, structures, and objects that are at least 50 years old and are significant in American history, prehistory, architecture, archaeology, engineering, and/or culture. To be eligible for listing, the resource must meet one of the NRHP Criteria for Evaluation (A–D) (36 CFR 60.4), as follows:

A. A property is associated with events that have made a significant contribution to the broad patterns of our history; or

B. A property is associated with the lives of a person or persons significant in our past; or

C. A property embodies the distinctive characteristics of a type, period, or method of construction, or that represent the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction; or

D. A property has yielded, or may be likely to yield, information important in prehistory or history.

In addition, historic properties must possess integrity of location, design, setting, material, workmanship, feeling, and association.

Resources younger than 50 years may be eligible if they have exceptional importance and meet Criteria Consideration G, as described in Bulletin No. 22 from the National Park Service (NPS), "How to Evaluate and Nominate Potential National Register Properties that have Achieved Significance Within the Last 50 Years" (NPS 1979). Other types of resources that are typically not eligible for the NRHP, including religious properties, moved properties, birthplaces or graves, cemeteries, reconstructed properties, and commemorative properties, may be eligible under other specific NRHP criteria considerations.

NEPA requires that environmental impacts to historic properties be evaluated and addressed during the environmental review process in coordination with procedures established by Section 106 of the NHPA to address effects on historic properties. A significant impact and/or an adverse effect would occur if a project would directly or indirectly diminish any of the characteristics that qualify a historic property for NRHP eligibility or listing. Under NEPA, a significant impact may be resolved with mitigation measures to avoid the impact or to reduce the impact to a level of less than significant. Under Section 106 of the NHPA, adverse effects must be resolved through a consultation process between the federal lead agency, the State Historic Preservation Office (SHPO), interested parties, and the Advisory Council on Historic Preservation (ACHP). If an adverse effect cannot be avoided, mitigation may be agreed upon and documented in a signed Memorandum of Agreement to resolve the adverse effect. If mitigation is not agreed upon through the Section 106 process, consultation is terminated and the ACHP may make comments on the procedure.

California Environmental Quality Act

CEQA and its guidelines (CERES 2009) require the evaluation of potential impacts to "historical resources" that are defined as resources listed in or eligible for listing in the California Register of Historical Resources (CRHR). Under California Public Resources Code (PRC) Section 5024.1, the CRHR was established to serve as an authoritative guide to the state's significant historical and archaeological resources. The CRHR consists of historical resources that are (a) listed automatically, (b) listed following procedures and criteria adopted by the State Historical Resources Commission, and/or (c) nominated by an application and listed after a public hearing process. The criteria for listing historical resources in the CRHR are consistent with those developed by the NPS for listing in the NRHP, but have been modified for state use to include a range of historical resources that better reflect the history of California.

A historical resource is significant at the local, state, or national level under one or more of the following four criteria (1–4):

1. Is associated with events that have made a significant contribution to the broad patterns of local or regional history, or the cultural heritage of California or the United States;
2. Is associated with the lives of persons important to local, California, or national history;
3. Embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of a master or possesses high artistic values; or
4. Has yielded, or has the potential to yield, information important to the prehistory or history of the local area, California, or the nation.

Historical resources must also possess integrity, the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance, and retain enough of this historic character or appearance to be recognizable as a historical resource and to convey the reasons for this significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association.

Historical resources may include built environment and archaeological resources, as well as "unique paleontological resources" or "unique geologic features." In addition to historic properties listed in or eligible for listing in the NRHP that are automatically considered historical resources under CEQA, the CRHR includes designated California Historic Landmarks, California Points of Historical Interest, and certain locally identified historic resources (see below). CEQA also requires that mitigation measures to reduce or avoid impacts to historical resources be incorporated into a project, and a range of alternatives be considered that could substantially lessen significant impacts to historical resources.

Under CEQA, a project would result in a significant impact to historical resources if it results in a direct or indirect substantial adverse change to the resource. A significant impact would occur if a project would directly or indirectly diminish any of the characteristics that qualify or define a historical resource. A significant impact may be resolved with mitigation measures to avoid the impact or to reduce the impact to a level of less than significant.

Treatment of paleontological resources under CEQA is generally similar to treatment of cultural resources, requiring evaluation of resources in the Project area; assessment of potential impacts on significant or unique resources; and development of mitigation measures for potentially significant impacts, which may include monitoring, combined with data recovery excavation and/or avoidance.

Application of the NRHP and CRHR Criteria

<u>HSG and PSG</u>

NRHP Criterion A and CRHR Criterion 1

The HSG and PSG are associated with water conveyance systems dating to the 1950s. The HSG and PSG do not appear to have played a significant individual role in local, state, or national history individually because they are representative of spreading grounds constructed throughout California in the 20th century. They do not meet NRHP Criterion A or CRHR Criterion 1.

NRHP Criterion B and CRHR Criterion 2

The HSG and PSG are associated with many organizations who contributed to the planning and implementation of their construction, such as the US Army Corps of Engineers and the Los Angeles Flood Control District. However, research has not revealed a direct association with any individual engineers or politicians involved with the construction or design of these two spreading grounds. The HSG and PSG have no direct association with important historic persons and, thus, do not meet NRHP Criterion B or CRHR Criterion 2.

NRHP Criterion C and CRHR Criterion 3

The HSG and PSG are representative of common spreading grounds and their associated features throughout California. The spreading grounds are two of 27 spreading facilities that were built between 1917 and 1994, owned and operated by the LADWP. These spreading grounds were designed from a standard set of plans applied to all spreading grounds in the Los Angeles Flood Control District. They have no known associations with individual engineers and do not represent the work of a master. The HSG and PSG do not possess high artistic values because they are basic spreading grounds designed for function and utility and not for aesthetic quality. In summary, the HSG and PSG do not have distinctive engineering or architectural features to meet NRHP Criterion C or CRHR Criterion 3.

NRHP Criterion D and CRHR Criterion 4
The HSG and PSG are not likely to yield further information important to history or prehistory, because the construction history and use of these resources is known. Therefore, the HSG and PSG do not meet NRHP Criterion D or CRHR Criterion 4.

The HSG and PSG retain integrity of location, feeling, and association, but do not retain integrity of design, materials, workmanship, or setting. They are in their original locations and retain their feeling and association because they express their historic purpose as functional water systems built to assist with controlling flooding and moving water to spreading grounds. However, the design, materials, and workmanship have lost integrity. The design of the spreading grounds has been substantially altered. Both spreading grounds have been actively maintained and upgraded during their lifespans. Integrity of workmanship is also lost because the system has been altered with modern construction methods of the spreading grounds and water conservation system. The spreading grounds do not retain integrity of materials because the alterations have removed or introduced new materials into the water system including: rubber dams, concrete weirs, and pump stations.

In summary, the HSG and PSG do not meet any NRHP or CRHR criteria for designation and do not retain sufficient integrity to be eligible for the NRHP or CRHR..

Valley Generating Station Transmission School

The three historic-in-age buildings and structures at the VGS Transmission School—Building 1, the metal weather station tower, and the railroad spur—are not eligible for listing in the NRHP or CRHR, either individually or as parts of a whole.

NRHP Criterion A and CRHR Criterion 1
The VGS Transmission School is associated with the maintenance and operation of infrastructure essential for community development. However, the Transmission School does not appear to have played a significant individual role in local, state, or national history. It and its constituent parts are representative of technologies constructed throughout California in the 20th century. It does not meet NRHP Criterion A or CRHR Criterion 1.

NRHP Criterion B and CRHR Criterion 2
Research has not revealed any direct associations with historic persons involved with the construction or design of the VGS Transmission School. The school and its constituent features have no direct association with notable individuals and, thus, do not meet NRHP Criterion B or CRHR Criterion 2.

NRHP Criterion C and CRHR Criterion 3

The Transmission School building and structures represent standard 20th century engineering designs, plans, and technologies common in California and the United States as a whole. They have no known associations with individual engineers and do not represent the work of a master. The VGS Transmission School and its constituent parts do not possess high artistic values because they it was were designed for function and utility in regards to training purposes and not for aesthetic quality. They do not meet NRHP Criterion C or CRHR Criterion 3.

NRHP Criterion D and CRHR Criterion 4

The Transmission School building and structures are not likely to yield information important to history, because the history of their construction and operation is known. Therefore, VGS Transmission School Building 1, water and transmission towers, weather station tower, and railroad spur do not meet NRHP Criterion D or CRHR Criterion 4.

<u>P-19-188007, San Fernando Road</u>

P-19-188007 was found to appear eligible for inclusion on the NRHP and CRHR during prior field surveys (Ehringer 2012). The resource was found eligible for the CRHR under Criterion 1, in that the road played a significant individual role in local and state history and was an essential feature of the infrastructure during the development of the greater Los Angeles area. Its use as a pathway probably extends into prehistory. Historically, the road served as the primary route between Mission San Fernando and the Pueblo of Los Angeles, and later was an important road between the City of Los Angeles and the San Fernando Valley. As such, it was one of the most heavily traveled roads entering the City of Los Angeles. Before the construction of the United States interstate highway system and subsequently Interstate 5, the road was integral to the development of the City of Los Angeles. It is therefore a property associated with events that have made a significant contribution to the broad patterns of our history.

This resource was revisited as part of the current survey. The road has been repeatedly paved and is now a four-lane thoroughfare, but the alignment of this road remains significant. It has been concluded that the resource meets NRHP Criterion A and continues to meet CRHR Criterion 1.

RECOMMENDATIONS

BUILT ENVIRONMENT

The HSG, PSG, and VGS Transmission School were not found to be eligible under any of the four CRHR criteria. DPR 523 forms for the HSG, PSG, and VGS Transmission School have been prepared and satisfy the minimum level of documentation required for cultural resources.

P-19-188007 is considered eligible for the CRHR. The Proposed Project would not impact this resource. Potential VGS Alternative impacts would return the road to its present state and not affect those qualities of the road which contribute to its eligibility for the CRHR.

The VGS Alternative would have no adverse effect on historic properties. The Proposed Project would have no effect on historic properties.

No additional work in connection with historic-era structures is recommended.

ARCHAEOLOGICAL

Although no archaeological resources were identified within the Proposed Project or VGS Alternative footprint during the course of this background research and cultural resources field survey, potentially eligible buried archaeological resources may exist. Archaeological deposits can be buried with no surface indications of their existence, particularly in developed areas or in areas of alluvial deposits. The level of potential site preservation below the modern roads remains unknown.

Based on the results of the records search and the Native American contact program, the Proposed Project and VGS Alternative Project areas are culturally sensitive for prehistoric and/or historic archaeological resources. Such resources may lie beneath the surface obscured by pavement or buried beneath alluvial sediment. Because the potential to encounter archaeological resources exists for this Project, archaeological monitoring is recommended during ground-disturbing activities over 10 feet in depth. The archaeological monitor would have the authority to redirect construction equipment in the event potential archaeological resources are encountered. In the event archaeological resources are encountered, work in the vicinity of the discovery would halt until appropriate treatment of the resource is determined by a qualified archaeologist.

In addition, it is recommended that construction personnel and supervisory staff be given training on possible archaeological resources that may be present in the area in order to establish an understanding of what to look for during ground disturbing activities.

If Native American cultural materials are encountered during Project-related ground disturbance, a trained Native American consultant should be engaged to monitor ground-disturbing work in the area containing the Native American cultural resources. This monitoring would occur on an as-needed basis and would be intended to ensure that Native American concerns are taken into account during the construction process.

If human remains are discovered, work in the immediate vicinity of the discovery shall be suspended and the Los Angeles County Coroner contacted. If the remains are deemed Native American in origin, the Coroner will contact the NAHC and a Most Likely Descendant (MLD) will be identified pursuant to PRC Section 5097.98 and CCR Section 15064.5. Work may be resumed at the landowner's discretion but will only resume after consultation and treatment have been concluded. Work may continue on other parts of the Project while consultation and treatment are conducted. Any archaeological materials recovered should be prepared for and curated at an approved facility.

This project will have no adverse effect to historic properties pursuant to Section 106 of the National Historic Preservation Act of 1966 and its implementing regulations (36 CFR 800.4).

PALEONTOLOGICAL

A consultation of the USGS *Preliminary Geologic Map of the Los Angeles 30' x 60' Quadrangle, Southern California* (Yerkes and Campbell 2005) and a records search at the NHMLAC shows that the surficial sediments of the Project area consist of younger Quaternary Alluvium and artificial fill. The field visit did not reveal the presence of any local conditions that would contradict this assertion or require special consideration. These deposits are younger than 10,000 years old. Consequently, such deposits have a low probability of yielding fossils, including vertebrate fossils or other scientifically significant fossils. No mitigation is typically required in deposits of this nature (Christensen 2007; Scott and Springer 2003).

However, older alluvium underlies the younger alluvium at unknown depths. This older alluvium has the potential to contain significant fossil deposits. If paleontological deposits are encountered during excavation, LADWP would contact a qualified paleontologist archaeologist to evaluate and determine appropriate treatment for the resource in accordance with California Public Resource Code (PRC) Section 21083.2(i). If any paleontological resources are encountered during ground-disturbing activities, work would be temporarily halted in the vicinity of the find and the archaeologist would be called to the project site to examine and evaluate the resource in accordance with the provisions of CEQA. Work may continue on other parts of the Project while consultation and treatment are conducted.

REFERENCES CITED

Arnold, Jeanne E., Michael Walsh and Sandra E. Hollimon

2004 The Archaeology of California. *Journal of Archaeological Research* 12(1):1-73.

Balzar, John

2006 We Gave Birth to the Signaler. *Los Angeles Times.* 3 December: S7. Los Angeles.

Bean, Lowell John and Charles R. Smith

1978 *Gabrielino*. In *Handbook of North American Indians*, vol. 9, pp. 538–562. Robert F. Heizer, editor. Smithsonian Institution, Washington, D.C.

Bernstein, Sid

1968 International Gardens Proposed for Dam Basin. *Los Angeles Times.* 3 April: SF8. Los Angeles, California.

Cecil, George H.

1931 Curbing Our Mad Rivers: Dry Beds of Dusty Watercourses May Excite Mirth in Strangers, but They're No Joke at Flood Time. *Los Angeles Times.* 14 June: J3.

Ehringer, Candice

2012 Department of Parks and Recreation Site Forms, P-19-188007. Document on file, South Central Coastal Information System.

Erlandson, Jon M.

1994 *Early Hunter-Gatherers of the California Coast*. Plenum Press, New York.

Fernandeno Tataviam Band of Mission Indians

N.d. Ancestral Villages of Tataviam Citizens. Available online: http://www.tataviam-nsn.us/heritage/tataviam-villages/tribal-citizens-ancestral-villages/ Accessed March 28, 2016.

Gumprecht, Blake

1999 *The Los Angeles River: Its Life, Death and Possible Rebirth.* John Hopkins University Press, Baltimore, MD.

Hawthorne, Christopher

2006 Hooray for Sprawlywood. *Los Angeles Times.* 3 December: S6. Los Angeles.

Historic Aerials

2013 Historic Aerials and Topographic Maps. Available online: http://www.historic aerials.com. Accessed December 20, 2013.

Intake
2002 Historical Timeline. *Intake* 79 (1) (Centennial Issue): 11-24.

International Directory of Company Histories
1998 CalMat Co. Vol, 19, pp. 69-72, in *International Directory of Company Histories.* Edited by Tina Grant. Detroit: St. James Press.

Jackson, Robert H.
1999 Agriculture, Drought & Chumash Congregation in the California Missions (1782-1834), *California Mission Studies Association*. Articles, May Newsletter.

Kahrl, William
2013 Mulholland's Long Shadow. *Los Angeles Times.* 3 November: A34.

Kazmin, Amy Louise
1989 Library Marks 60 Years of Lending Adventures. *Los Angeles Times* 25 September: A7. Los Angeles, California.

Kline, George E., and Victoria L.
2007 Fluted Point Recovered from San Diego County Excavation. *Proceedings of the Society for California Archaeology* 20: 55-59.

Kroeber, Alfred L.
1925 Handbook of Indians of California. *Bureau of American Ethnology Bulletin 78*, Smithsonian Institution, Washington D.C.

Link, Tom
1991 Universal City, North Hollywood: A Centennial Portrait. Windsor publications Inc. Chatsworth, CA.

Los Angeles Times (LAT)
1921 Select Brehm Type of Dam for Pacoima. 30 January: FT6. Los Angeles, California.

1929 Dam Work Near in Big Tujunga. 13 May: A1. Los Angeles, California.

1930 Flood-Control Plans Speeded. 11 December: A1. Los Angeles, California.

1931 Flood-Flow Test Success. 22 March: A1. Los Angeles, California.

1932 Canal Work to Start. 19 October: 4. Los Angeles, California.

1938 Hansen Dam Work Begun. 15 September: 13. Los Angeles, California.

1943 The Southland: Valley Water-Saving Project Awaits Action. 6 April: A7. Los Angeles, California.

1999 Valley Roundup; Valley Village; Jewish Chapel's 50th Anniversary Marked. 8 November: Valley Edition: 3. Los Angeles, California.

Lubas, Ken
1980 Sepulveda Water Reclamation Plant Goes to Bid—City's Biggest Public Project Ever. *Los Angeles Times.* 18 May: V2. Los Angeles, California.

MacMillan, Dianne
1996 Missions of the Los Angeles Area. Lerner Publications Company, Minneapolis, MN.

McCawley, William
1996 *The First Angelinos: The Gabrielino Indians of Los Angeles.* Malki Museum Press. Banning.

Meagher, Ed
1955 Pacoima Area Revamped by Awakened Citizenry: Los Angeles Program for Slum Clearance Puts End to Blight on Residence Section. 18 May: A1, A2.

Meyer, L.
1981 *Los Angeles, 1781–1981*. A special bicentennial issue of California history, Spring 1981. California Historical Society, Los Angeles.

Pacoima Chamber of Commerce
n.d. Pacoima's History. Available online: http://www.pacoimachamber.com/pacoimas-history/ Accessed October 31, 2013.

Pitarre, Alyson
2005 Where Country Living Sidles Up to the City. Los Angeles Times, 12 June: K3. Los Angeles, California.

Pitt, Leonard, and Dale Pitt
1997 Los Angeles A to Z: An Encyclopedia of the City and County. Berkeley: University of California Press.

Right-to-Know Network
2013 Valley Generating Station (Risk Management Report). Available online: http://www.rtknet.org/db/rmp/rmp.php?facility_id=100000175954&database=rmp&detail=3&datype=T. Accessed November 11, 2013.

Robinson, W. W.
1942 *San Fernando Valley, A Calendar of Events.* Title Guarantee and Trust Company. Los Angeles, CA.

1961 *The Story of San Fernando Valley*. Title Insurance and Trust Company. Los Angeles, CA.

1963 Myth-Making in the Los Angeles Area. *Southern California Quarterly* 15(1):83–94.

1979 *Land in California: The Story of Mission Lands, Ranchos, Squatters, Mining Claims, Railroad Grants, Land Scrip, Homesteads.* University of California Press, Berkeley, CA.

Rondeau, Michael F.
2008 Fluted Points of the Far West. *Proceedings of the Society for California Archaeology* 21: 265-274.

Shipley, William F.
1978 *Native Languages of California*, vol. 9, pp. 80–90. Robert F. Heizer, editor. Smithsonian Institution, Washington, D.C.

Simmons, Ann M.
2010 Van Nuys' 'Best-Kept Secret'; Dedicated in 1984, 6 ½-acre 'Gene's Garden' Remains a Hidden Gem. *Los Angeles Times*. 20 March: AA.3. Los Angeles, California.

State of California Office of Historic Preservation
1990 *Archeological Resource Management Reports (ARMR) Guidelines*. Department of Parks and Recreation, State of California, Sacramento.

Stickel, E. Gary
2008 The Farpoint Site (CA-LAN-451): A Unique Clovis Culture Site of the First Americans on the Malibu Coast. Available online: http://farpointsite.blogspot.com/2008/02/farpoint-site-ca-lan-451-unique-clovis.html Accessed December 27, 2013.

Sugranes, Eugene, C.M.F.
1909 *The Old San Gabriel Mission*. Father Eugene Sugranes, Los Angeles, CA.

Troxell, Harold C., and Others
1942 *Floods of March 1938 in Southern California* (United States Department of the Interior Geological Survey Water-Supply Paper 844). Washington, D.C.: United States Government Printing Office.

United States Department of Interior Geological Survey (USGS)
1927 Pacoima 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

1900 San Fernando 15' Quadrangle. Reston, VA: U.S. Department of the Interior.

1953 San Fernando 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

1966 San Fernando 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

1926 Sunland 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

1932 Sunland 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

1942 Sunland 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

1953 Van Nuys 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

1966 Van Nuys 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

1976 Van Nuys 7.5' Quadrangle. Reston, VA: U.S. Department of the Interior.

Wallace, William J.
1955 A Suggested Chronology for Southern California Coastal Archaeology. *Southwestern Journal of Anthropology* 11(3):214–230.

Warren, Claude N.
1968 Cultural Traditions and Ecological Adaptation on the Southern California Coast. In *Archaic Prehistory in the Western United States*, edited by Cynthia Irwin-Williams. Eastern New Mexico University Contributions in Anthropology 1(3):1–14.

Water and Power Associates
n.d. Early Power Generation. Available online: http://waterandpower.org/museum/Early_Power_Generation.html. Accessed November 1, 2013.

Wilkman, Nancy, and Jon Wilkman
2006 *Picturing Los Angeles.* Gibbs Smith Publishers, Salt Lake City.

Wright, Ralph B., editor
1992 *California's Missions.* Hubert A. Lowman. Arroyo Grande, California.

APPENDIX A

RESUMES

Marc A. Beherec, PhD, RPA
Archaeologist
Cultural Resources Group Leader

Education
PhD, Anthropology, University of California, San Diego, La Jolla, CA, 2011
MA, Anthropology, University of California, San Diego, La Jolla, CA, 2004
BA, Anthropology (Geology minor), University of Texas, Austin, Austin, TX, 2000

Professional Registration
Register of Professional Archaeologists (RPA)

Professional Affiliations
Member, Society for American Archaeology
Member, Society for California Archaeology

Dr. Marc Beherec is an archaeologist who has been involved in the field of cultural resources management for nearly fifteen years. He has worked throughout the southwest on projects within Federal and State regulatory framework, and is experienced in the identification and analysis of both prehistoric and historic era artifacts. Dr. Beherec also has extensive experience in Paleoindian and Archaic period sites in the western US and has taken part in large-scale excavations in Jordan. Over the past three years, he has served as Monitoring Coordinator and Lead Monitor for the NextEra Genesis Solar Energy Project and for the Los Angeles Metropolitan Transportation Authority's large Regional Connector and Crenshaw rail projects. At the same time, he has written cultural resources assessments for several clients.

Dr. Beherec also serves as Cultural Resources team leader for Los Angeles. In this capacity he manages a team of three full-time archaeologists and numerous project-specific part-time employees and subcontractors conducting work across the Greater Los Angeles area.

Selected Project Experience

Los Angeles Metropolitan Transportation Authority Compliance Monitoring
Monitoring Coordinator for the cultural resources compliance monitoring of multiple projects within the greater Los Angeles area, including the 8.5-mile Crenshaw rail transit corridor and associated stations and the 1.9-mile Regional Connector subway corridor and associated stations. Tasks involve instructing construction team in cultural resources compliance; the scheduling and coordination of multiple concurrent Native American and archaeological monitors on diverse construction efforts throughout the metropolitan area; compilation, QA/QC, and delivery of daily monitoring logs and other documentation for all on-site monitors; serving as a liaison between archaeological monitors, construction crew, and client project team; preparing weekly and monthly reports of activities and findings; and ensuring overall cultural resources compliance within the permitted conditions of the project.

Los Angeles Department of Water and Power; City of Los Angeles Bureau of Engineering; Water Replenishment District of Southern California; Los Angeles Metropolitan

Transportation Authority; City of Orange; City of Santa Ana; Port of Los Angeles
Cultural Resources Assessments
Assessed sites for pumping stations, pipelines, and other infrastructure improvements in compliance with CEQA and CEQA Plus. Tasks included archival research including researching known sites at the South Central Coastal Information Center at California State University, Fullerton; conducting archaeological and built environment surveys; assessing finds for inclusion on the California Register of Historic Places; writing reports of findings.

NextEra Genesis Solar Energy Project Cultural Resources Compliance Monitoring
Monitoring Coordinator and Lead Monitor for the cultural resources compliance monitoring of a 2000-acre solar power project under the jurisdiction of the California Energy Commission and Bureau of Land Management (BLM) on BLM land in the western Mojave Desert. Tasks involve the scheduling and coordination of between 5 and 20 concurrent archaeological monitors on diverse construction efforts throughout the project site; compilation, QA/QC, and delivery of daily monitoring logs for all on-site monitors; attending project construction scheduling and Health and Safety meetings; conducting and documenting daily monitoring crew Health and Safety meetings; serving as liaison between archaeological monitors, construction crew and client project team; ensuring overall cultural resources compliance with the permitted conditions of the project.

San Bernardino National Forest San Jacinto District Archaeologist, Idyllwild, CA
Archaeologist assigned to Idyllwild Ranger Station, San Jacinto District, San Bernardino National Forest, Riverside County, California. Over the course of one year, assisted District Archaeologist in cultural resources efforts, including supervision of crews conducting cultural resources inventories of mountainous terrain, GPS documentation of resources, preparation of DPR 523 forms, research of prehistoric and historic artifact parallels, including projectile point typologies, makers' marks, and tin can typologies, and authoring technical reports. Work was performed before joining this firm.

Border Field State Park, San Diego County, CA
Excavated coastal Early Archaic sites in and adjacent to Border Field State Park in conjunction with the construction of the Mexico-United States Border Barrier. Work was performed before joining this firm.

Lake Meredith National Recreational Area Cultural Resources Surveys, Amarillo, TX
Archaeologist for intensive pedestrian surveys of the Lake Meredith National Recreational Area, an area along the Canadian River with documented human occupation for over 12,000 years. Relocated previously documented archaeological sites and documented newly identified sites. Work was performed before joining this firm.

East Texas Pipeline Survey, Rural East Texas
Crew Chief for intensive pedestrian survey of a new east Texas pipeline corridor. Efforts included field survey, shovel testing, site recordation, and GPS operation. Work was performed before joining this firm.

Camp Swift Archaeological Project, Bastrop, TX
Archaeologist for test excavations at Camp Swift Army National Guard Base. Excavated test units at eighteen sites, documented excavations, and drilled rock cores for archaeomagnetic dating research. Work was performed before joining this firm.

Gault Site Archaeological Project, Bell County, TX
Excavated at the Gault Paleoindian site (41BL323), completed documents (unit forms and maps, profile maps, Munsell notations, artifact catalogs), conducted preliminary lithic analysis, measured lithic blades for statistical studies, and supervised student volunteers in washing lithics. Work was performed before joining this firm.

Linda Kry, B.A.
Archaeologist

Education
B.A. Anthropology, University of California Los Angeles
A.A. Anthropology, Cerritos College, Norwalk, California

Publications + Technical Papers + Presentations
Ehringer, C., L. Kry, S. Dietler, and M. Strauss. 2008. After the Bones Are Gone: The Role Of Personal Effects in Identifying Unmarked Historic Burials. Poster presentation at the Society for Historical Archaeology Annual Meeting, Albuquerque, NM.

Linda Kry is an archaeologist with nine years of experience in cultural resources management within Los Angeles County, Imperial County, Inyo County, Riverside County and the Mojave Desert. Linda has developed considerable expertise with all aspects of cultural resources investigations including managing field surveys and lab analysis. She assists in the management of cultural resources specialists who conduct various types of cultural resources compliance including phase I surveys, construction monitoring, Native American consultation, archaeological testing and treatment and prehistoric and historic resource significance evaluations.

In her current role, Linda has gained extensive experience with identification and classification of all types of historic materials including ceramics, glass bottles, metal cans, garment-related items, and coffin hardware, as well as processing artifact collections, including assessing conservation requirements and artifact reconstruction. Her work in various desert and coastal projects has broadened her experience to include the identification and recordation of prehistoric resources. In addition, Linda is proficient in historic and prehistoric record searches, general historic literature research, museum and archival research, Sanborn map research, Native American consultation, and the preparation of all related cultural resources documentation. Linda authors and co-authors technical reports and is familiar with requirements for CEQA and Section 106 compliance. Her present research interests include the historical development of Los Angeles and 19th to mid-20th century consumer practices.

Project Experience

Temple Street Widening, Los Angeles, CA
Served as an archaeological monitor during road construction and utilities relocation in downtown Los Angeles. Duties included documenting historic archaeological features, coordinating work schedules with on-site construction personnel, and maintaining detailed daily reports. Responsible for processing and sorting artifact collection.

Main Street Parking Facility and Motor Transport Division, Los Angeles, CA

Archaeological and paleontological monitor of construction site in downtown Los Angeles. Responsible for identification, recovery, and mapping of historic archaeological features, maintaining detailed daily reports, and coordinating work schedules with on-site construction foreman. Over 19 historic archaeological features dating from the 1860s to the 1920s were recovered on-site. Processed and sorted artifact collection.

Central Los Angeles High School #9, Los Angeles, CA
Duties included assessing artifact conditions and conservation needs, assisting with development and implementation of artifact cleaning procedures, assisting with artifact classification and cataloging using Excel, and reconstruction of artifacts. Over 3,000 historic-era artifacts were recovered from a 19th-century cemetery.

Alameda Street, Los Angeles, CA
Archaeological monitoring of street construction at Alameda Street in downtown Los Angeles resulted in the identification and recovery of over 300 historic-era artifacts. In addition, segments of both narrow-gauge and standard gauge rail lines, sections of brick foundations, and brick irrigation features were documented. A large section of late 19th to early 20th century brick pavement and part of the Zanja were also uncovered and documented during construction.

Lakeside Recreational Complex, Sylmar, CA
Led archaeological survey and authored report on a Phase I cultural resources evaluation of the historic-era Lakeside Debris Basin property. Tasks include a California Register eligibility assessment for the facility itself and archaeological features identified as a result of the survey, and prepared a Cultural Resources Technical Report with findings and recommendations for further work, pursuant to CEQA requirements.

First Street Trunk Line, Los Angeles CA
Conducted archaeological monitoring of utilities installation, responded to monitoring discoveries including historic-period utility pipes, and determined appropriate mitigation in the form of recordation. An archaeological monitoring report will be prepared at the conclusion of the project.

Van Norman Chloramination Station, San Fernando CA
Conducted archaeological monitoring with a Native American monitor during project construction. Co-author of archaeological monitoring report that will be prepared at the conclusion of the project.

Fire Station No. 48, Seal Beach, CA
Authored a report in connection with archaeological and Native American monitoring during project construction in support of cultural resources assessment pursuant to CEQA requirements.

Topanga Library Project, Topanga Canyon, CA
AECOM conducted archaeological monitoring during construction of the Topanga Library. Construction included the installation waterlines along the roadway outside of the main project area. Monitoring resulted in the discovery of materials associated with the recorded archaeological site CA-LAN-8. Served as crew chief during archaeological testing of this site. Resources were identified and evaluated for eligibility to the National Register of Historic Places.

Solar Millennium Blythe Project, Blythe, CA
Served as Crew Chief for an archaeological survey of a proposed solar electric generating facility in the Chuckwalla Valley. The project included an archaeological survey of the project site and buffer zones, the recordation of historic and prehistoric archaeological sites, and recordation of field data on Department of Parks and Recreation Forms.

Solar Millennium Palen Project, Chuckwalla Valley, CA
Served as Co-Crew Chief for an archaeological survey of a proposed solar electric generating facility in the Chuckwalla Valley. The project included an archaeological survey of the project site and buffer zones, the recordation of historic and prehistoric archaeological sites.

South Region Elementary School #1, Los Angeles, CA
Archaeological Monitor, Lab Technician. Conducted archaeological monitoring in south-central Los Angeles. The area had been in use since 1909 and was the home of several domestic, religious, and retail establishments. Responsible for processing and sorting artifact collection.

Exposition Corridor Light Rail Transit, Los Angeles County, CA
Field Archaeologist. Photo-documented potentially historic buildings along several proposed routes for the new Exposition Light Rail in West Los Angeles, Santa Monica, and Culver City.

Woodland Duck Farm Project, El Monte, CA
Field Archaeologist. Assisted with the Phase I investigation, including a historic structure and archaeological survey of the site of the former historic Woodland Duck Farm.

Lang Ranch, Thousand Oaks, CA
Field Archaeologist. Participated in the archaeological testing of the 46-acre project area. Project work involved the archaeological testing at two artifact isolate locations to determine presence of sub-surface deposits.

Santa Anita Reservoir, Los Angeles County, CA
Field Archaeologist. Assisted with the Phase I archaeological survey of the site of the Santa Anita Dam, Reservoir and Complex.

McCoy Solar, Blythe, CA
Field Archaeologist. Assisted in an archaeological survey of a proposed solar electric generating facility in the Chuckwalla Valley. The project

included an archaeological survey of the project site and buffer zones, the recordation of historic and prehistoric archaeological sites, and recordation of field data on Department of Parks and Recreation Forms.

California High Speed Train Project, Fresno, Madera, and Merced Counties, CA
Field Archaeologist. Assisted in archaeological survey of parcels for a proposed high speed train in Central California. The project included an archaeological survey of the project areas of potential effect and buffer zones, the recordation of historic and prehistoric archaeological resources, and recordation of field data on Department of Parks and Recreation Forms.

Mojave Solar One Project, San Bernardino County, CA
Field Archaeologist. Assisted in an archaeological survey. The project included an archaeological survey of the project areas of potential effect and buffer zones, the recordation of historic and prehistoric archaeological resources, and recordation of field data on Department of Parks and Recreation Forms.

Hansen Dam Project, Los Angeles, CA
Conducted a Phase 1 investigation comprised of an archaeological survey of the Project site, recordation of historic and prehistoric cultural resources, including features and identification of previously recorded sites. Authored an assessment report.

Dixieland TO IV 230 KV T-Line Project, Imperial County, CA
Field Archaeologist. Assisted in the archaeological survey of an alignment for a proposed transmission line. The project included an archaeological survey of the project site, the recordation of historic and prehistoric archaeological resources, and recordation of field data on Department of Parks and Recreation Forms.

Aiso Street Project, Los Angeles, CA
Served as an archaeological monitor during construction for a parking facility in downtown Los Angeles. Duties included documenting historic archaeological features, coordinating work schedules with AECOM staff and on-site construction personnel, and maintaining detailed daily reports. Responsible for processing, sorting and cataloguing the artifact collection for curation. Also made contributions to a report documenting the Project findings and results.

Greenline Right of Way Survey, Los Angeles County, CA
Participated in archaeological field survey of the Greenline right of way from Torrance to LAX in Los Angeles. Tasks included recording of historical and archaeological resources.

Santa Anita Reservoir, Los Angeles County, CA
Assisted in a Phase I investigation, including a historic structure and archaeological survey of the site of the Santa Anita Dam, Reservoir and Complex.

ILWU Local 13 Dispatch Hall Project, Los Angeles, CA
Conducted a Phase 1 investigation comprised of an archaeological survey of the Project site and recordation of archaeological resources. Wrote up the survey results, the Sacred Lands File search results and the Native American Contact program results for the Project cultural technical memo as part of a Draft Initial Study/Mitigated Negative Declaration Report.

Alcazar Yard, Los Angeles, CA
Conducted research for historic building evaluation through the review of building permits at various Department of Building and Safety facilities in Los Angeles County and review of Sanborn Fire Insurance Maps.

St. Jude Hospital, Fullerton, CA
Conducted a survey of the project area and authored survey results.

Octa I-5 Highway Improvements EIR
Orange County, CA
Conducted Native American contact program as part of CEQA.

New Long Beach Courthouse Project
Long Beach, CA
Served as archaeological and paleontological monitor during construction for a new courthouse in the City of Long Beach. Duties included providing worker's training regarding archaeological and paleontological resources for on-site personnel, documenting historic archaeological features and coordinating with clients and AECOM staff. Participated in the testing excavations of early twentieth century privies that were discovered during monitoring. Responsible for processing, sorting and cataloguing the artifact collection for curation.

Genesis Solar, Blythe, CA
Archaeological monitoring for the Genesis solar farm project. Monitored placement of transmission lines, large scale excavation for the placement of solar panels, and caisson drilling for solar panel footings. Aspects of the project included monitoring, survey, testing, and artifact collection. Responsibilities included field lead monitor, recordation and collection of cultural resources discovered during monitoring, survey and scheduling with archaeological, Native American and construction crews.

San Fernando Valley WRP, Los Angeles County, CA
Assisted in a Phase I portion of the project. Tasks included a records search and field survey for potential archaeological resources.

Civic Center Joint Use Project, Santa Monica, CA
Management of a Phase I process. Responsibilities include: a records search, survey of project area, scheduling with AECOM staff, and co-authoring the results. Project is on-going.

NRG Solar, Oasis Solar Field, Environmental Assessment for the City of Palmdale and the United States Air Force, Palmdale, CA
Served as Crew Chief for an archaeological survey. Responsibilities include data collection for historic sites and recordation of field data on Department of Parks and Recreation Forms.

NextEra Energy Resources, LLC: North Sky River Wind Farm Kern County, CA
Contributing author to a report documenting the historical findings and results.

Los Angeles Department of Water and Power, Inyo County, CA
Archaeological Testing for Division Creek and Talus Slope Creek Improvement Projects, Inyo County, California. Responsiblitilies include agency consultation, work plans, permitting, archival research and reporting.

Los Angeles Department of Water and Power: Archaeological Evaluation of Four Sites Near Scotty Spring, Inyo County, CA
Served as Crew Chief for an archaeological survey and assessment of historical structures associated with the Los Angeles Aqueduct. Provided support in US Forest Service consultation, project permitting, budgeting, work plans, and contributed to the report.

Selected Reports

Archaeological Assessment for the Temple Street Widening Project City of Los Angeles, California (contributing author).
Prepared for Los Angeles Department of Public Works-Engineering.
AECOM December 2009.

Negative Archaeological Monitoring Report for the Fire Station 48 Replacement Project City of Seal Beach, California (lead author).
Prepared for the City of Seal Beach.
AECOM August 2010.

Phase I Cultural Resources Assessment for the Topanga Underground Utility District Project City of Topanga, California (contributing author).
Prepared for the Los Angeles County Department of Public Works.
AECOM April 2011.

Archaeological Assessment for the Aiso Street Parking Facility Project, City of Los Angeles, California (contributing author).
Prepared for City of Los Angeles, Department of Public Works.
AECOM July 2011.

Phase I Cultural Resources Investigation 001B Turn-Out Structure, City of PicoRivera, California (lead author).
Prepared for the Water Replenishment District of California.
AECOM February 2013.

Archaeological Assessment for the New Long Beach Courthouse Project, City of Long Beach, California (contributing author).
Prepared for Clark Design Build and Administrative Office of the Courts.
AECOM April 2013.

Reseda Boulevard Pipeline Project, Phase I Archaeological Assessment, Los Angeles County, California (lead author).
Prepared for the Los Angeles Department of Water and Power.
AECOM October 2013.

Archaeological Evaluation of Four Sites and Limited Monitoring Efforts Conducted During Repair and Restoration of Flood Damaged Facilities in Division Creek, Inyo County, California (contributing author).
Prapared for the Los Angeles Department of Water and Power.
AECOM August 2015.

Trina Meiser
Historic Preservation Planner

Education
MA, Historic Preservation Planning, Cornell University, 2003
BA, History, Kenyon College, 1998

Years of Experience
With AECOM 5
With other firms 6

Technical Specialties
Historic Resources Evaluation
Cultural Resources Management

Professional Affiliations
National Trust for Historic Preservation
California Preservation Foundation

Trina Meiser is a Secretary of Interior-qualified historian and historic preservationist (36 CFR Part 61) with over 10 years of experience in identifying, evaluating, and planning for historic structures, districts, sites, and cultural resources. Ms. Meiser has conducted several cultural resources studies, including the preparation of survey and evaluation reports, impacts analyses and findings of effect, National Register of Historic Places nominations, Historic Structure Reports, and HABS/HAER documents. She has consulted on a variety of energy, transportation, military, housing, and community projects with clients, architects, engineers, and agency representatives for regulatory review, specifically NHPA Section 106 consultation. Her experience in historic preservation planning provides a strong understanding of historic preservation laws and a thorough knowledge of the *Secretary of the Interior's Standards for the Treatment of Historic Properties*. Ms. Meiser maintains a solid knowledge of architectural history and building materials conservation and has led seminars on architectural styles, workshops in materials conservation, and preservation design charrettes.

Abengoa Mojave Solar Project, Lockhart, CA
Prepared historical resources studies in support of an Environmental Assessment for a solar energy project. Conducted archival research,contact programs, and fieldwork, and prepared technical report for the evaluation

of historical resources and mitigation measures.

Solar Millennium Blythe Solar Power Project, Riverside County, CA
Prepared historical resources studies in support of an AFC application.Conducted archival research,contact programs, and fieldwork, and prepared technical report for the evaluation of historical resources and mitigation measures. Coordinated process with BLM and CEC.

Solar Millennium Palen Solar Power Project, Riverside County, CA
Prepared historical resources studies in support of an AFC application.Conducted archival research,contact programs, and fieldwork, and prepared technical report for the evaluation of historical resources and mitigation measures. Coordinated process with BLM and CEC.

IID Dixieland 230kV Transmission Line Project, Imperial County, CA
Conducted archival research and fieldwork to identify potential historic properties for the cultural resources survey. Coordinated with BLM.

Niland Solar Project, Imperial County, CA
Conducted archival research and fieldwork to identify potential historic properties for the cultural resources survey.

City of Temecula Main Street Bridge Replacement Project, Temecula, CA
Conducted a survey and historical research of historic resources in Old Town Temecula adjacent to the Main Street Bridge. Results were recorded on DPR forms and in the HPSR per Caltrans guidelines.

SR-76 Mission to I-15 Historical Resources Evaluation Report, San Diego County, CA
Conducted fieldwork to record and evaluate ranching buildings and residences. Prepared the HRER per Caltrans standards for the evaluation of historical resources for eligibility to the National Register and the California Register.

SR-94 Widening and HOV Lanes Project, San Diego, CA
Conducted fieldwork to record and evaluate urban built environment resources. Prepared the HRER and HPSR per Caltrans standards for the evaluation of historical resources for eligibility to the National Register and the California Register.

Potomac Annex Building 1 Project, Washington, DC
For GSA and the Department of State, performed a conditions assessment of Building 1 in the Potomac Annex Historic District to identify existing character-defining features and to assess their integrity. Prepared analysis of potential impacts in a Historic Preservation Report that will describe existing features and recommend appropriate treatments to maintain the property’s integrity as part of rehabilitation efforts.

National Park Service Jefferson National Expansion Memorial, St. Louis, MO
Performed research and prepared portions of the historical context the Native American occupation, the French colonial establishment, and the 19th century development of the built environment for the GMP/EIS as consultant to NPS.

Los Angeles Harbor Light Station Rehabilitation Project, San Pedro, CA
For U.S. Coast Guard, prepared Finding of No Adverse Effect for the NRHP-listed “Angel’s Gate” lighthouse. Conducted research to supplement the NRHP nomination’s significance evaluation, and prepared a property assessment to establish historically significant and character-defining features of the lighthouse. In conjunction with engineers, determined rehabilitation plan including sensitive

treatments adhering to the *Secretary of Interior’s Standards*.

San Francisco Veterans Affairs Medical Center Seismic Upgrade Project,
San Francisco, CA
On behalf of the VA, consulted with architects for the rehabilitation design and seismic retrofit of the 1930s-era Art Deco SFVAMC buildings within a NRHP-listed historic district. As part of Section 106 consultation, provided guidance based on *Secretary of Interior’s Standards for Rehabilitation*.

National Register Eligiblity Assessment for Grow the Force and Base Utility Infrastructure Projects,
Camp Pendleton, CA
Evaluated over 150 buildings located on Camp Pendleton for eligibility to the NRHP. Incorporated findings in an inventory to support the project EIS.

APPENDIX B

RESOURCES MAP

(*CONFIDENTIAL)*

APPENDIX C

NATIVE AMERICAN CONTACT PROGRAM

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

October 21, 2013

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, Room 364
Sacramento, California 95814
T 916.653.6251 F 916.657.5390
www.nahc.ca.gov
ds_nahc@pacbell.net

Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Singleton:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to request that the Native American Heritage Commission conduct a Sacred Lands File search for the Los Angeles Groundwater Replenishment Project. The proposed project is located within unsectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosure 1).

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

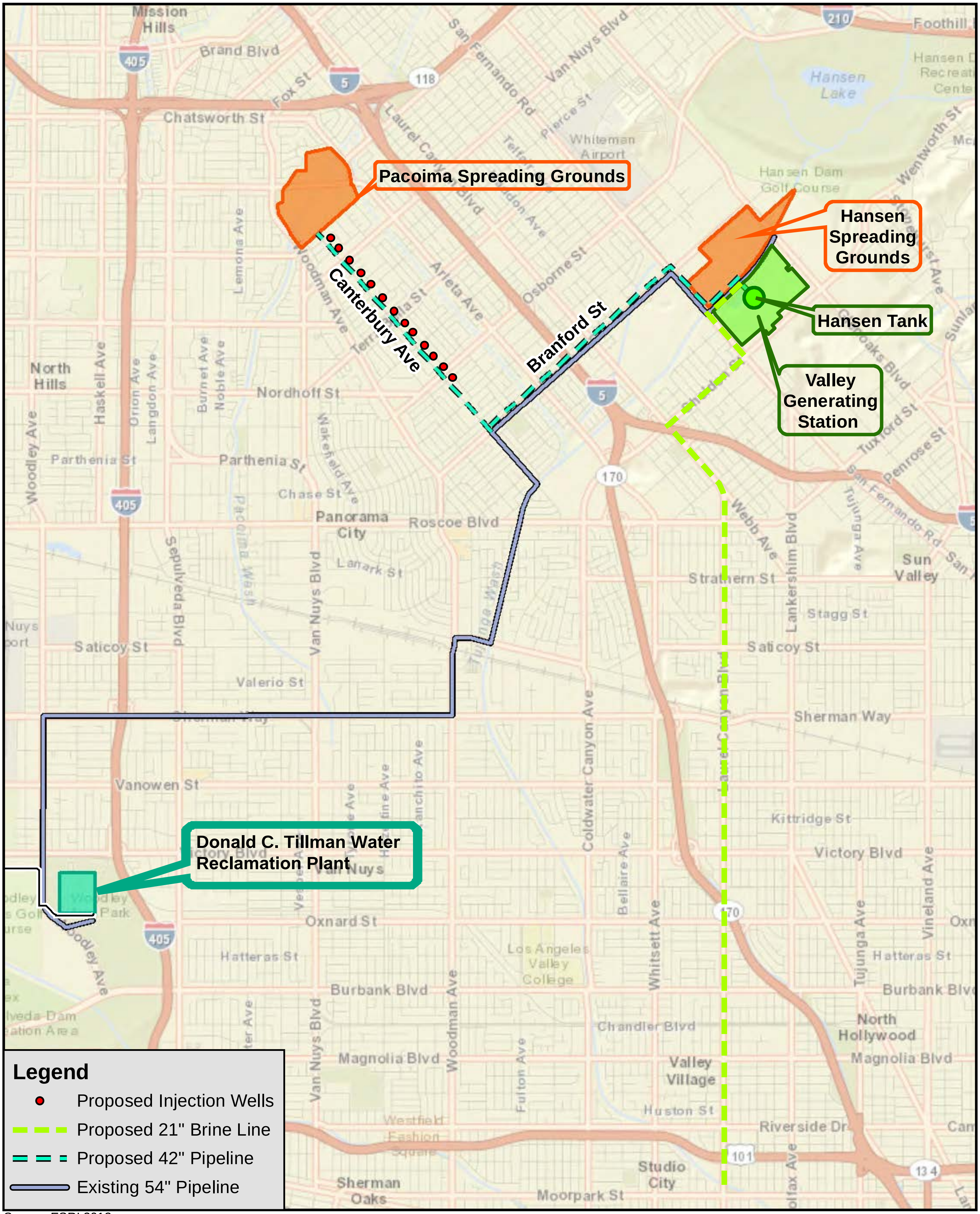
The goal of this letter, in addition to acquainting you with this project, is to request that you check the Sacred Lands File records to identify any previously recorded sites in the project area.

Thank you for your assistance. Please feel free to contact me if you have any questions about this project.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
D 213.593.8481 F 213.593.8623
marc.beherec@aecom.com

Enclosure: Project Area Maps (7 pages)



Source: ESRI 2013

0 0.75 1.5 Miles

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Boulevard, Suite 100
West Sacramento, CA 95691
(916) 373-3715
Fax (916) 373-5471
Web Site www.nahc.ca.gov
Ds_nahc@pacbell.net

November 5, 2013

Dr. Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

Sent by FAX to: 213-593-7715
No. of Pages: 3

RE: Request for Sacred Lands File Search and Native American Contacts list for the **"Los Angeles Groundwater Replenishment Project; "** located in the City of Los Angeles; Los Angeles, County, California

Dear Dr. Beherec:

A record search of the NAHC Sacred Lands File **failed to indicate** the presence of Native American traditional cultural places in the project site(s) submitted as defined by the USGS coordinates configuring the 'Area of Potential Effect' or APE. Also, please note that the absence of archaeological recorded items does not preclude their existence within the footprint of the proposed project. Other data sources for Native American sacred places/sites should also be contacted. A Native American tribe or individual may be the only sources of information about traditional cultural places or sites.

In the 1985 Appellate Court decision (170 Cal App 3rd 604), the Court held that the NAHC has jurisdiction and special expertise, as a state agency, over affected Native American resources impacted by proposed projects, including archaeological places of religious significance to Native Americans, and to Native American burial sites.

Attached is a list of Native American tribes, Native American individuals or organizations that may have knowledge of cultural resources in or near the project area (APE). As part of the consultation process the NAHC recommends that local government and project developers contact the tribal governments and individuals in order to determine the proposed action on any cultural places/sacred sites. If a response from those listed is not received in two weeks of notification, the NAHC requests that a follow-up telephone call be made to ensure the project information has been received

If you have any questions or need additional information, please contact me at (916) 373-3715.

Sincerely,

Dave Singleton
Program Analyst

Attachments

Native American Contacts
Los Angeles County
November 5, 2013

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362
folkes9@msn.com
805 492-7255
(805) 558-1154 - cell
folkes9@msn.com
Chumash
Tataviam
Ferrnandeño

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(661) 753-9833 Office
(760) 885-0955 Cell
(760) 949-1604 Fax
Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Fernandeno Tataviam Band of Mission Indians
Larry Ortega, Chairperson
1019 - 2nd Street, Suite #1
San Fernando CA 91340
(818) 837-0794 Office
(818) 837-0796 Fax
Fernandeno
Tataviam

Randy Guzman - Folkes
4676 Walnut Avenue
Simi Valley , CA 93063
ndnRandy@yahoo.com
(805) 905-1675 - cell
(805) 520-5915-FAX
Chumash
Fernandeño
Tataviam
Shoshone Paiute
Yaqui

LA City/County Native American Indian Comm
Ron Andrade, Director
3175 West 6th St, Rm. 403
Los Angeles , CA 90020
randrade@css.lacounty.gov
(213) 351-5324
(213) 386-3995 FAX

Gabrieleno Band of Mission Indians
Andrew Salas, Chairperson
P.O. Box 393
Covina , CA 91723
gabrielenoindians@yahoo.
(626) 926-4131
Gabrielino

Kitanemuk & Yowlumne Tejon Indians
Delia Dominguez, Chairperson
115 Radio Street
Bakersfield , CA 93305
deedominguez@juno.com
(626) 339-6785
Yowlumne
Kitanemuk

Gabrielino /Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908
Los Angeles , CA 90086
samdunlap@earthlink.net
909-262-9351
Gabrielino Tongva

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

his list s only applicable for contacting local Native Americans with regard to cultural resources for the proposed Los Angeles Groundwater Replenishment Project; (New Pipeline of 7,000 linear feet and related improvements; located in the San Fernando Valley; Los Angeles County, California for which a Sacred Lands File search and Native American Contacts list were requested.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

November 6, 2013

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, CA 91723

Subject: Los Angeles Groundwater Replenishment Project

Dear Chairperson Salas:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. In summary, the project involves ground-disturbing activities at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin or at the Valley Generating Station in Sun Valley, in the Hansen Spreading Grounds, and in the Pacoima Spreading Grounds. It also requires the installation of new pipelines and wells along Canterbury Avenue between Canterbury Avenue and Branford Street, along Branford Street between San Fernando Boulevard and Canterbury Avenue, along San Fernando Road or San Fernando Boulevard between Branford Street and Sheldon Street, along Sheldon Street between San Fernando Boulevard and Laurel Canyon Boulevard, and along Laurel Canyon Boulevard between Sheldon Street and Moorpark Street. Already existing pipelines would also be used in the project.

More specifically, the project requires the following: An Advanced Water Purification Facility would be constructed at the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds ï approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWPõs Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

The proposed project is located within unsectioned land of the former Ex-Mission San Fernando land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosures 1 and 2).

The response form (Enclosure 3) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than December 6, 2013.

Please contact me directly with any questions.

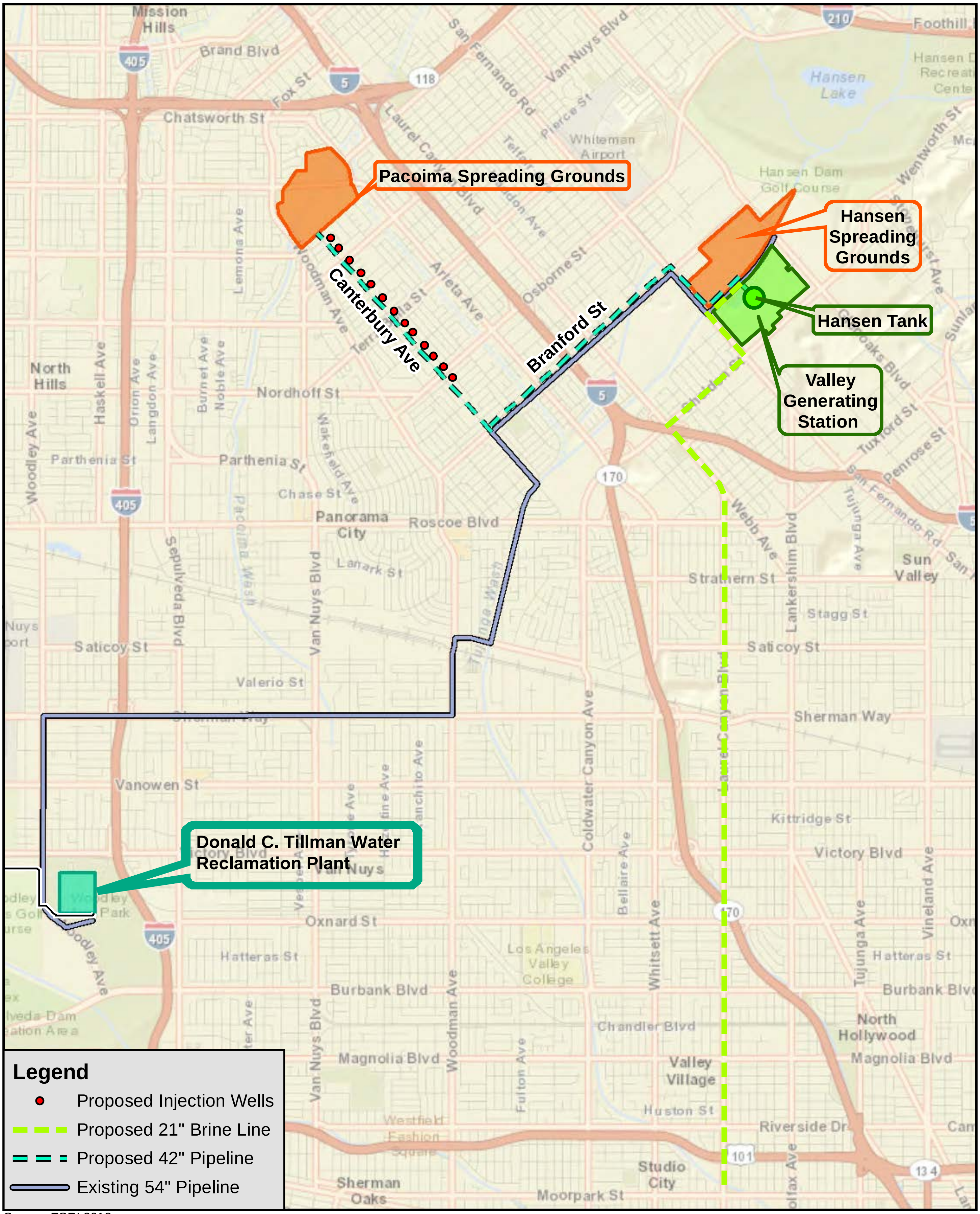
AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Project Map Book
3) Response Form
4) Self-Addressed Stamped Envelope



Source: ESRI 2013

0 0.75 1.5 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than October 25, 2013 to:

Linda Kry
AECOM
515 S Flower Street
8th Floor
Los Angeles, CA 90071

From: Andy Salas <andysalas07@yahoo.com>
Sent: Thursday, December 05, 2013 11:09 PM
To: Beherec, Marc
Cc: Christina Swildall; Matt Teutimez.Kizh Gabrieleno; Dave Singleton
Subject: Emailing Cover letter august 30 2013.pdf
Attachments: Cover letter august 30 2013.pdf; ATT00002.htm

Dear Marc

This email is in response to your letter dated November 6, 2013 in regards to the above subject project . The proposed project is within highly culturally sensitive areas. The village sites and hunting grounds of my great grandmother were with your project area " Tujubit" or known as Tujunga and are known sacred grounds, so in order to protect our resources we're requesting one of our experienced & certified Native American monitors to be on site during all ground disturbances.
In all cases, when the NAHC states there are ñno records of sacred sitesò in the subject area; they always refer the contractors back to the Native American Tribes whose tribal territory the project area is in. This is due to the fact, that the NAHC is only aware of general information on each California NA Tribe they are NOT the ñexpertsò on our Tribe. Our Elder Committee & Tribal Historians are the experts and is the reason why the NAHC will always refer contractors to the local tribes.
Please contact our office regarding this project to coordinate a NA monitor to be present. Thank You

Sincerely,
Andy Salas
Chairman Of Gabrieleno Band Of Mission Indians/Kizh Nation
Of the Los Angeles Basin, Orange county and the Channel islands.

www.gabrielenoindians.org

From the Office of Certified Genealogist & Researcher

Lorraine "Rain Cloud" Escobar, CG/NAL℠
Inam Mec Tanotc

August 30, 2013

Chairman, Andy Salas
Gabrieleño Band of Mission Indians/Kizh Nation
507 S. Cedar Drive
Covina, CA 91723

Dear Chairman Salas,

I am hereby submitting a revised version of your original lineage report due to the additional information found for your Gabrieleño Indian ancestors. Rather than list the additional ancestors here, I think it is clearer just to name all of them as follows:

1. Your great, great grandmother, Maria Angustias (nee: Gradias) Perez

2. Her father, Joaquin Joseph Gradias, from the village of Sibapet, and his parents, Nicolas Joseph, from the village of Sibapet, and Maria Candelaria, from the village of Tujubit.

3. Her mother, Saturnina (aka Serrano), from the village of Tameobit, and her parents, Palajai, also from Tameobit, and Maria Momicubibam, from the villages of Antongai and Tamet.

As you are aware, Nicolas Joseph is the same Gabrieleño Indian Steven W. Hackel wrote about in his paper, "Sources of Rebellion: *Indian Testimony and the Mission San Gabriel Uprising of 1785*." While reading that article, I noted Hackel omitted critical records indicating the child Nicolas had with Maria Candelaria before she died – of course, Joaquin Joseph, who was born the day before his mother died. The record certainly confirms that this child survived to adulthood, married three times, and eventually became known as Joaquin *Gradias*.

Sincerely,

Lorraine Escobar

Lorraine Escobar, CG/NAL

Enc: 1

1313 Celeste Dr., #67, Modesto, CA 95355
Hm: (209) 524-6348 Cell: (209) 985-9282
InamMec@aol.com

From: Beherec, Marc
Sent: Friday, December 06, 2013 11:10 AM
To: 'Andy Salas'
Cc: Christina Swildall; Matt Teutimez.Kizh Gabrieleno; Dave Singleton
Subject: RE: Emailing Cover letter august 30 2013.pdf

Dear Andy,

Thank you very much for your interest in the Los Angeles Groundwater Replenishment Project!

Thank you for your concerns and the information in your email and the attached letter from Lorraine Escobar. I will include your comments in the Native American contact section of our report, and your email will be provided to the client.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor, Los Angeles, CA 90071
Office: 213-593-8481
Cell: 951-296-7561

AECOM
515 S Flower Street, 8th Floor
Los Angeles, CA 90071
T 213.593.7700 F 213.593.8623
www.aecom.com
www.aecom.com/designplanning

From: Andy Salas [mailto:andysalas07@yahoo.com]
Sent: Thursday, December 05, 2013 11:09 PM
To: Beherec, Marc
Cc: Christina Swildall; Matt Teutimez.Kizh Gabrieleno; Dave Singleton
Subject: Emailing Cover letter august 30 2013.pdf

Dear Marc

This email is in response to your letter dated November 6, 2013 in regards to the above subject project . The proposed project is within highly culturally sensitive areas. The village sites and hunting grounds of my great grandmother were with your project area " Tujubit" or known as Tujunga and are known sacred grounds, so in order to protect our resources we're requesting one of our experienced & certified Native American monitors to be on site during all ground

disturbances.
In all cases, when the NAHC states there are ñno records of sacred sitesò in the subject area; they always refer the contractors back to the Native American Tribes whose tribal territory the project area is in. This is due to the fact, that the NAHC is only aware of general information on each California NA Tribe they are NOT the ñexpertsò on our Tribe. Our Elder Committee & Tribal Historians are the experts and is the reason why the NAHC will always refer contractors to the local tribes.
Please contact our office regarding this project to coordinate a NA monitor to
be present. Thank You

Sincerely,
Andy Salas
Chairman Of Gabrieleno Band Of Mission Indians/Kizh Nation
Of the Los Angeles Basin, Orange county and the Channel islands.

www.gabrielenoindians.org

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

November 6, 2013

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

Subject: Los Angeles Groundwater Replenishment Project

Dear Ms. Salazar Folkes:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. In summary, the project involves ground-disturbing activities at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin or at the Valley Generating Station in Sun Valley, in the Hansen Spreading Grounds, and in the Pacoima Spreading Grounds. It also requires the installation of new pipelines and wells along Canterbury Avenue between Canterbury Avenue and Branford Street, along Branford Street between San Fernando Boulevard and Canterbury Avenue, along San Fernando Road or San Fernando Boulevard between Branford Street and Sheldon Street, along Sheldon Street between San Fernando Boulevard and Laurel Canyon Boulevard, and along Laurel Canyon Boulevard between Sheldon Street and Moorpark Street. Already existing pipelines would also be used in the project.

More specifically, the project requires the following: An Advanced Water Purification Facility would be constructed at the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

The proposed project is located within unsectioned land of the former Ex-Mission San Fernando land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosures 1 and 2).

The response form (Enclosure 3) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than December 6, 2013.

Please contact me directly with any questions.

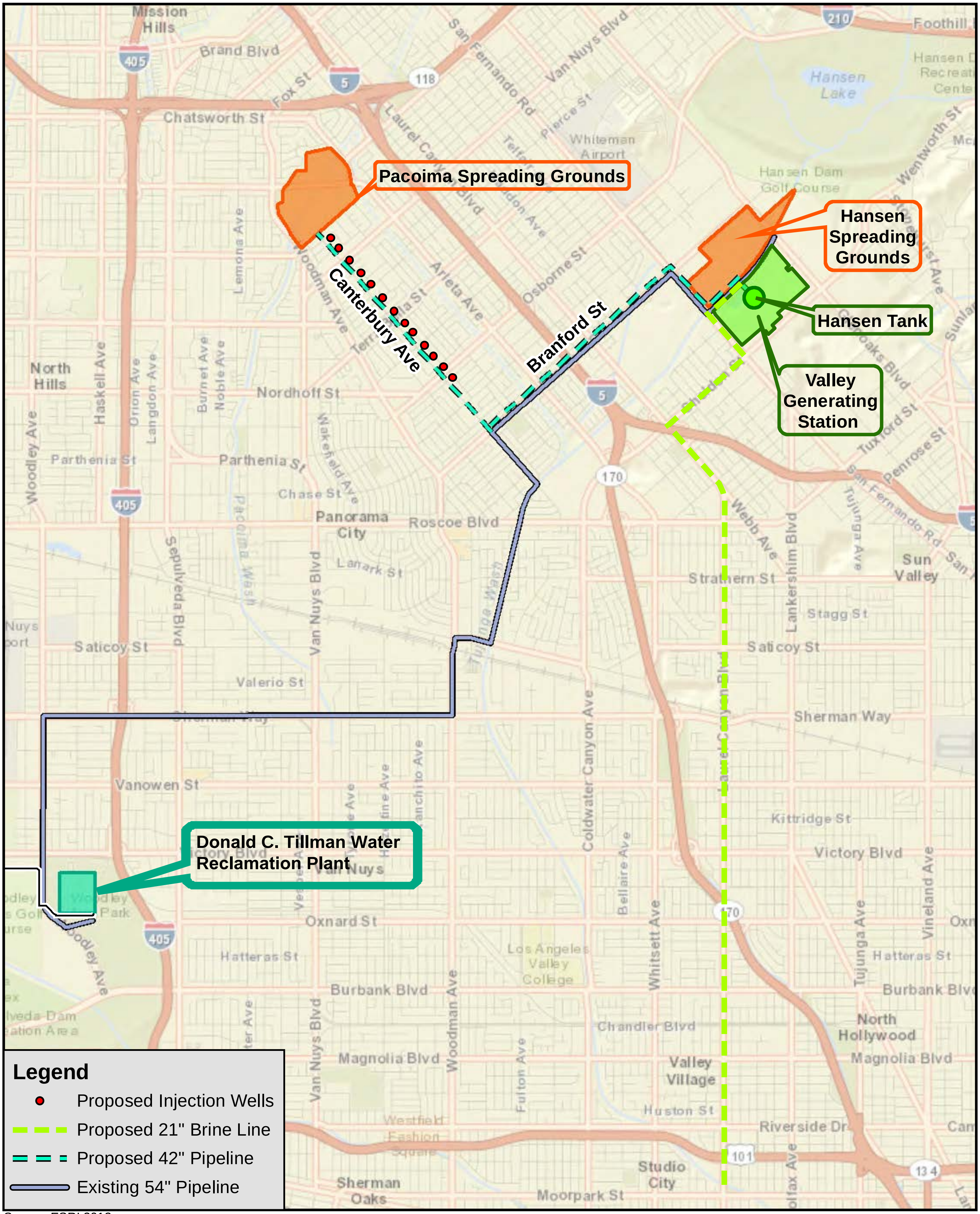
AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Project Map Book
3) Response Form
4) Self-Addressed Stamped Envelope



Source: ESRI 2013

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature   Date

Please return completed form no later than October 25, 2013 to:

Linda Kry
AECOM
515 S Flower Street
8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

November 6, 2013

Delia Dominguez, Chairperson
Kitanemuk & Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA 93305

Subject: Los Angeles Groundwater Replenishment Project

Dear Chairperson Dominguez:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. In summary, the project involves ground-disturbing activities at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin or at the Valley Generating Station in Sun Valley, in the Hansen Spreading Grounds, and in the Pacoima Spreading Grounds. It also requires the installation of new pipelines and wells along Canterbury Avenue between Canterbury Avenue and Branford Street, along Branford Street between San Fernando Boulevard and Canterbury Avenue, along San Fernando Road or San Fernando Boulevard between Branford Street and Sheldon Street, along Sheldon Street between San Fernando Boulevard and Laurel Canyon Boulevard, and along Laurel Canyon Boulevard between Sheldon Street and Moorpark Street. Already existing pipelines would also be used in the project.

More specifically, the project requires the following: An Advanced Water Purification Facility would be constructed at the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

The proposed project is located within unsectioned land of the former Ex-Mission San Fernando land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosures 1 and 2).

The response form (Enclosure 3) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than December 6, 2013.

Please contact me directly with any questions.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Project Map Book
3) Response Form
4) Self-Addressed Stamped Envelope

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

November 6, 2013

John Valenzuela, Chairperson
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA 91322

Subject: Los Angeles Groundwater Replenishment Project

Dear Chairperson Valenzuela:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. In summary, the project involves ground-disturbing activities at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin or at the Valley Generating Station in Sun Valley, in the Hansen Spreading Grounds, and in the Pacoima Spreading Grounds. It also requires the installation of new pipelines and wells along Canterbury Avenue between Canterbury Avenue and Branford Street, along Branford Street between San Fernando Boulevard and Canterbury Avenue, along San Fernando Road or San Fernando Boulevard between Branford Street and Sheldon Street, along Sheldon Street between San Fernando Boulevard and Laurel Canyon Boulevard, and along Laurel Canyon Boulevard between Sheldon Street and Moorpark Street. Already existing pipelines would also be used in the project.

More specifically, the project requires the following: An Advanced Water Purification Facility would be constructed at the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

The proposed project is located within unsectioned land of the former Ex-Mission San Fernando land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosures 1 and 2).

The response form (Enclosure 3) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than December 6, 2013.

Please contact me directly with any questions.

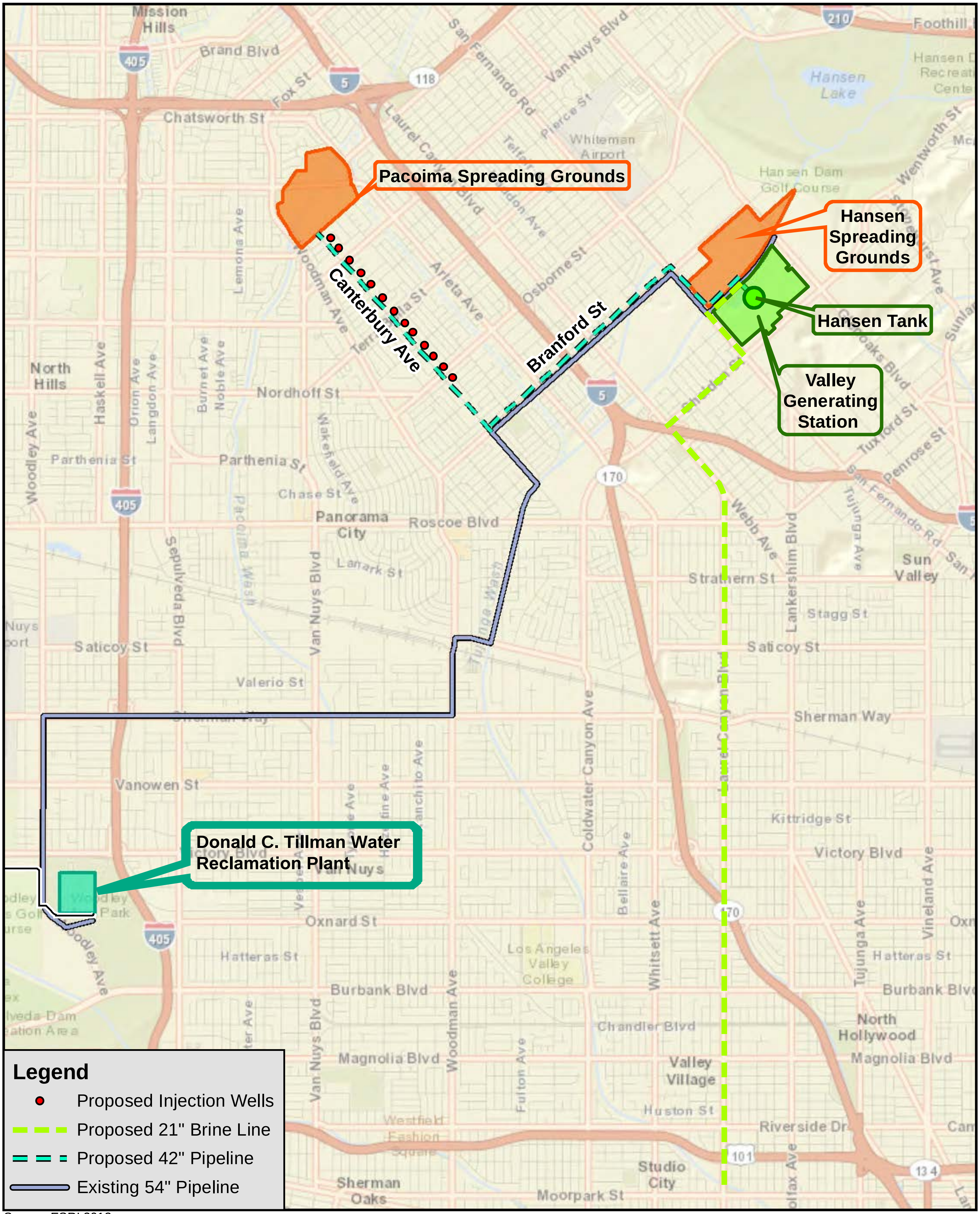
AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Project Map Book
3) Response Form
4) Self-Addressed Stamped Envelope



Source: ESRI 2013

0 0.75 1.5 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____
____
____
____
____
____
____
____
____
____
____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____
____
____
____
____

_____________________________   ______________
Signature   Date

Please return completed form no later than October 25, 2013 to:

Linda Kry
AECOM
515 S Flower Street
8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

November 6, 2013

Larry Ortega, Chairperson
Fernandeno Tatavium Band of Mission Indians
1019 2nd Street, Suite #1
San Fernando, CA 91340

Subject: Los Angeles Groundwater Replenishment Project

Dear Chairperson Ortega:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. In summary, the project involves ground-disturbing activities at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin or at the Valley Generating Station in Sun Valley, in the Hansen Spreading Grounds, and in the Pacoima Spreading Grounds. It also requires the installation of new pipelines and wells along Canterbury Avenue between Canterbury Avenue and Branford Street, along Branford Street between San Fernando Boulevard and Canterbury Avenue, along San Fernando Road or San Fernando Boulevard between Branford Street and Sheldon Street, along Sheldon Street between San Fernando Boulevard and Laurel Canyon Boulevard, and along Laurel Canyon Boulevard between Sheldon Street and Moorpark Street. Already existing pipelines would also be used in the project.

More specifically, the project requires the following: An Advanced Water Purification Facility would be constructed at the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

The proposed project is located within unsectioned land of the former Ex-Mission San Fernando land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosures 1 and 2).

The response form (Enclosure 3) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than December 6, 2013.

Please contact me directly with any questions.

AECOM

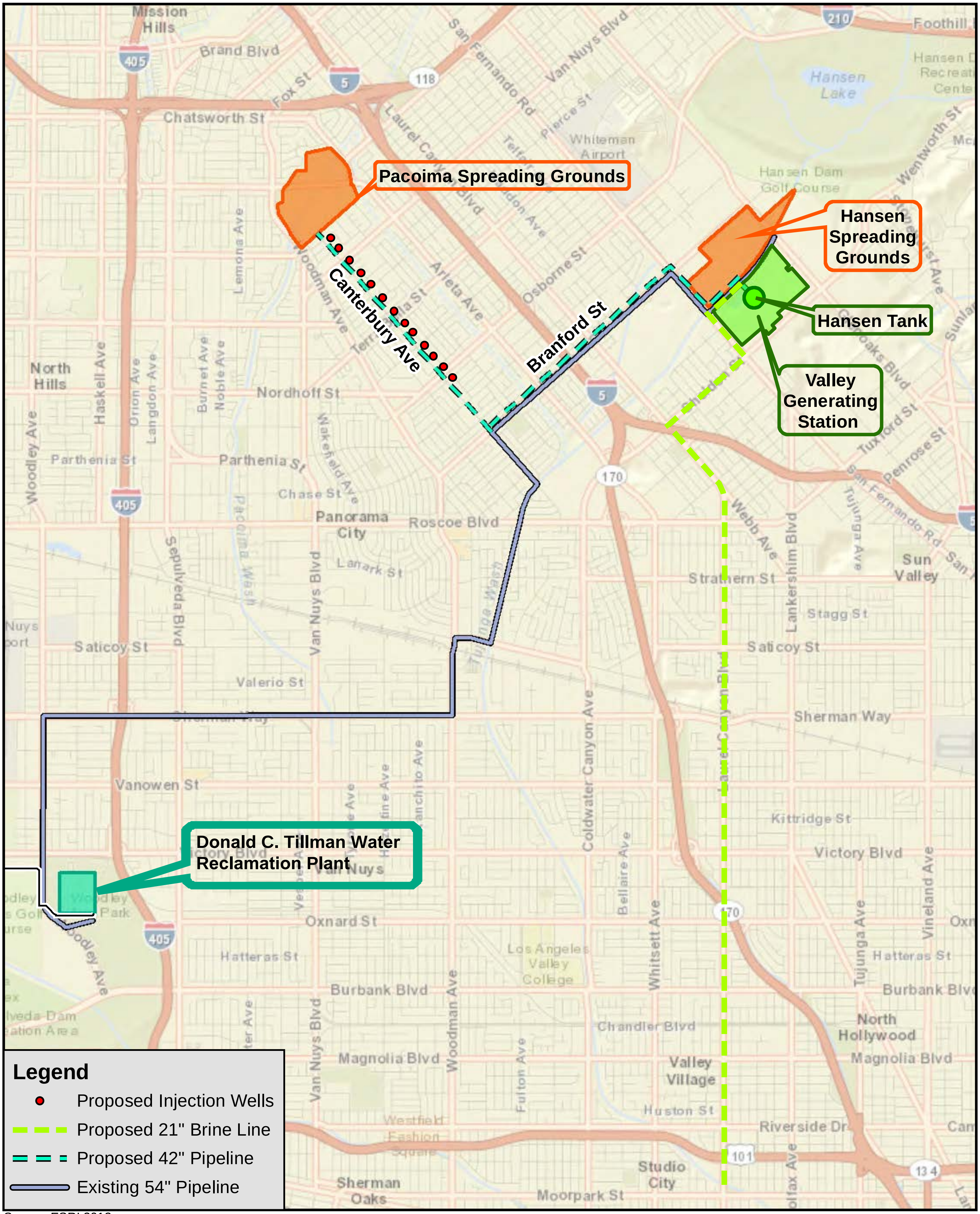
AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Project Map Book
3) Response Form
4) Self-Addressed Stamped Envelope



Source: ESRI 2013

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____
____
____
____
____
____
____
____
____
____
____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____
____
____
____
____

______________________________ ______________
Signature Date

Please return completed form no later than October 25, 2013 to:

Linda Kry
AECOM
515 S Flower Street
8th Floor
Los Angeles, CA 90071

Larry J. Ortega Sr.
Tribal President

Tribal Historic & Cultural Preservation Committee
Steve Ortega
Chairman
Berta Pleitez

Fernandeño Tataviam Band of Mission Indians

Tribal Historic & Cultural Preservation

March 6, 2014

Marc A. Beherec
Archaeologist
AECOM
515 S. Flover St.
Los Angeles, Ca 90071

Re: Los Angeles Ground Water Replenishment Project

Dear Marc Beherec,

The Fernandeño Tataviam Band of Mission Indians thanks you for the request of consultation for your proposed project. Your project has been identified as breaking ground in traditional Tataviam tribal lands and may disturb culturally sensitive deposits.

In accordance with the National Historic Preservation Act of 1966, consultation with the tribe is legally mandated. Failure to comply with the minimum consultation requirement will result in the notification of such to applicable lead agencies. Moreover, it is required that federal agencies consult with tribal authorities before permitting archaeological excavations on tribal lands (16 U.S.C. §§ 470aa–470mm). Additionally, it is necessary to protect and preserve the access to all, if any, sites the tribe believes sacred (42 U.S.C. § 1996). As expressed in 14. Cal.Code Regs §15064.5, if significant Native American artifacts that meet the definition of a "historical resource" are found, work shall not resume until the archaeologist has recovered them for the tribal monitor.

Please contact our offices so we can begin consultation. The Tataviam charge standard fees to fund the necessary and extensive research required to fulfill your needs. Attached is information regarding our consultation rates.

Regular updates in regards to your project would be greatly appreciated. We are looking forward to working with you on this matter to the satisfaction of all those involved

Sincerely,

Caitlin Gulley
Tribal Historic and Cultural Preservation
cgulley@tataviam-nsn.us

TRIBAL CULTURAL RESOURCES SERVICES

The Fernandeño Tataviam Band of Mission Indians (Tribe) has the necessary qualifications, experience and abilities to provide Native Monitoring for scared lands and burial sites to the Client. Also the Tribe is prepared to work with the Client to provide any and all documentation needed to facilitate permit process. The Tribe is agreeable to provide Native Monitoring and Consulting on the terms and conditions as set out in this Agreement.

SUMMARY OF GENERAL TERMS & CONDITIONS

1. Native Monitoring and Consulting
The Tribe would provide the services consisting of Tribal Consulting and Monitoring (the "Services"), and the Tribe would also provide the services if agree upon duration the solid disturbance of the project.

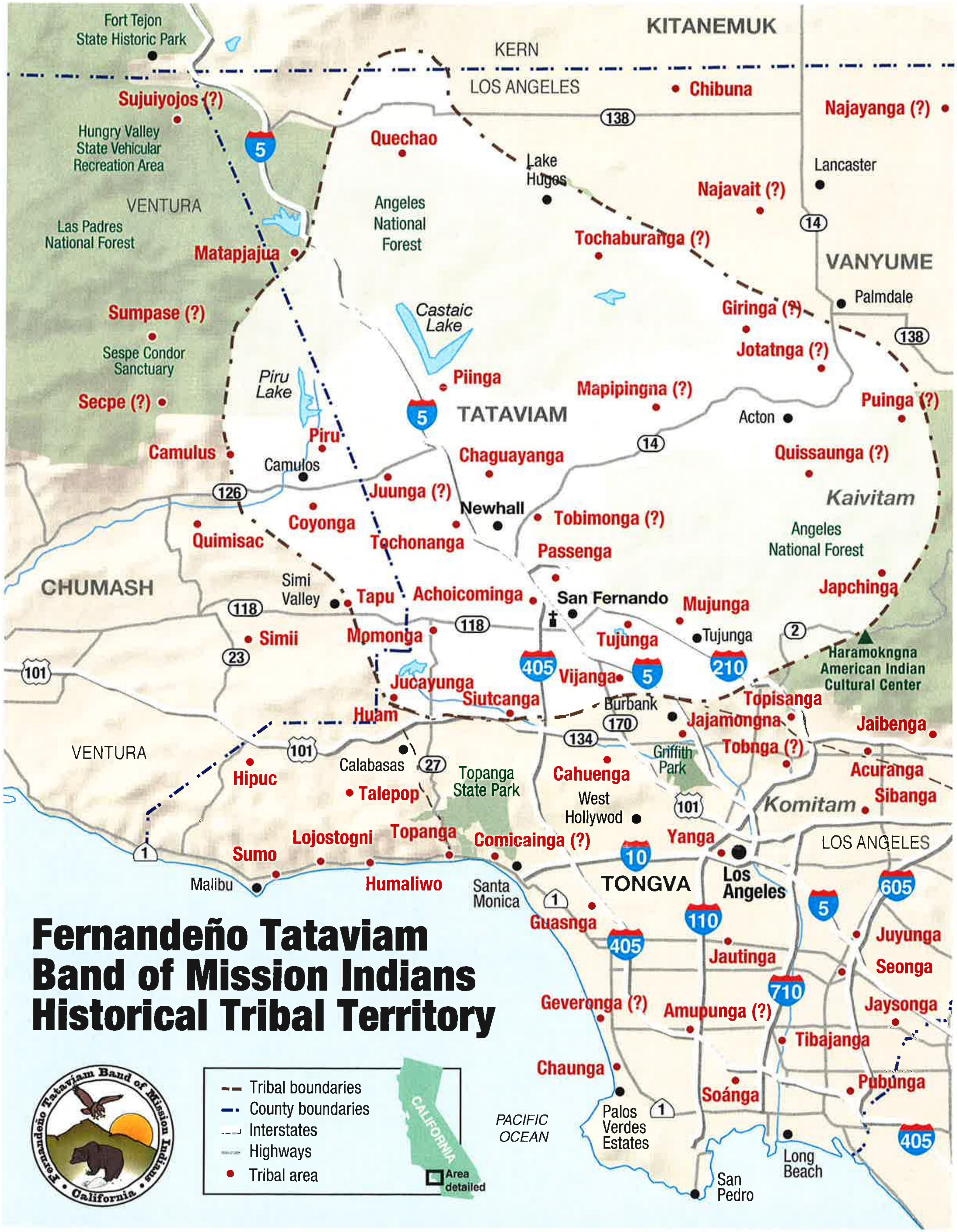
2. Compensation
For the Services provided by the Tribe will pay to the Tribe in accordance to the Fee Structure. Compensation will be set upon terms agree by both interested parties as the Services are render.

3. Fee Structure
Time spent on the project by professional, monitor, and clerical personnel will be billed hourly. The following ranges of hourly rates for various categories of personnel are currently in effect:

Hourly Rate	Category
$75	Consultation
$55	Monitoring
$35	Clerical

Hourly rates will be adjusted semi-annually to reflect changes in the cost-of-living index as published. If overtime for nonprofessional personnel is required, the premium differential figured at time and one-half of their regular hourly rates are charged at direct cost to the project. Unless otherwise stated, any cost estimate presented in a proposal is for budgetary purposes only, and is not a fixed price.

4. Capacity/Independent Contractor
It is expressly agreed that the Tribe would be acting as an independent contractor and not as an employee in providing the Services hereunder.


Fernandeño Tataviam
Band of Mission Indians
Historical Tribal Territory
Tribal boundaries
County boundaries
Interstates
Highways
Tribal area
CALIFORNIA
Area detailed
Fernandeño Tataviam Band of Mission Indians
California
KITANEMUK
KERN
LOS ANGELES
VENTURA
CHUMASH
TATAVIAM
VANYUME
TONGVA
Kaivitam
Komitam
Fort Tejon State Historic Park
Hungry Valley State Vehicular Recreation Area
Las Padres National Forest
Sespe Condor Sanctuary
Angeles National Forest
Castaic Lake
Piru Lake
Topanga State Park
Griffith Park
Haramokngna American Indian Cultural Center
PACIFIC OCEAN
Sujuiyojos (?)
Chibuna
Najayanga (?)
Quechao
Najavait (?)
Tochaburanga (?)
Matapjajua
Sumpase (?)
Giringa (?)
Jotatnga (?)
Piinga
Mapipingna (?)
Puinga (?)
Secpe (?)
Piru
Camulus
Chaguayanga
Quissaunga (?)
Juunga (?)
Coyonga
Tobimonga (?)
Quimisac
Tochonanga
Passenga
Japchinga
Tapu
Achoicominga
Mujunga
Simii
Momonga
Tujunga
Jucayunga
Vijanga
Siutcanga
Topisanga
Huam
Jajamongna
Jaibenga
Tobnga (?)
Acuranga
Hipuc
Talepop
Cahuenga
Sibanga
Lojostogni
Topanga
Comicainga (?)
Yanga
Sumo
Humaliwo
Guasnga
Juyunga
Jautinga
Seonga
Geveronga (?)
Amupunga (?)
Jaysonga
Tibajanga
Chaunga
Soánga
Pubunga
Lake Hughes
Lancaster
Palmdale
Acton
Camulos
Newhall
Simi Valley
San Fernando
Tujunga
Burbank
Calabasas
West Hollywod
Los Angeles
LOS ANGELES
Malibu
Santa Monica
Palos Verdes Estates
San Pedro
Long Beach
5
138
14
126
118
23
101
405
210
2
170
134
27
1
10
110
605
710

From: Beherec, Marc
Sent: Friday, December 06, 2013 1:00 PM
To: 'mpvillasenor@tataviam-nsn.us'
Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Villasenor:

Thank you very much for your help.

I called this morning expecting to speak with Chairperson Larry Ortega. We sent a letter to Mr. Ortega dated November 6, 2013. The Native American Heritage Commission identified Mr. Ortega as representative of the Fernandeno Tataviam as an individual who may have comments or concerns regarding the Los Angeles Department of Water and Power's Los Angeles Groundwater Replenishment Project. That Project is a planned water treatment plant and associated pipelines and improvements to the Pacoima and Hansen Spreading Grounds.

If Mr. Ortega or another representative of your organization wishes to comment on the proposed project, please feel free to email me or call me on my cell at 951-296-7561.

Thank you!

Marc

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor, Los Angeles, CA 90071
Office: 213-593-8481
Cell: 951-296-7561

AECOM
515 S Flower Street, 8th Floor
Los Angeles, CA 90071
T 213.593.7700 F 213.593.8623
www.aecom.com
www.aecom.com/designplanning

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

November 6, 2013

Ron Andrade, Director
Los Angeles City/County Native American Indian Commission
3175 West 6th Street, Rm. 403
Los Angeles, CA 90020

Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Andrade:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. In summary, the project involves ground-disturbing activities at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin or at the Valley Generating Station in Sun Valley, in the Hansen Spreading Grounds, and in the Pacoima Spreading Grounds. It also requires the installation of new pipelines and wells along Canterbury Avenue between Canterbury Avenue and Branford Street, along Branford Street between San Fernando Boulevard and Canterbury Avenue, along San Fernando Road or San Fernando Boulevard between Branford Street and Sheldon Street, along Sheldon Street between San Fernando Boulevard and Laurel Canyon Boulevard, and along Laurel Canyon Boulevard between Sheldon Street and Moorpark Street. Already existing pipelines would also be used in the project.

More specifically, the project requires the following: An Advanced Water Purification Facility would be constructed at the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

The proposed project is located within unsectioned land of the former Ex-Mission San Fernando land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosures 1 and 2).

The response form (Enclosure 3) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than December 6, 2013.

Please contact me directly with any questions.

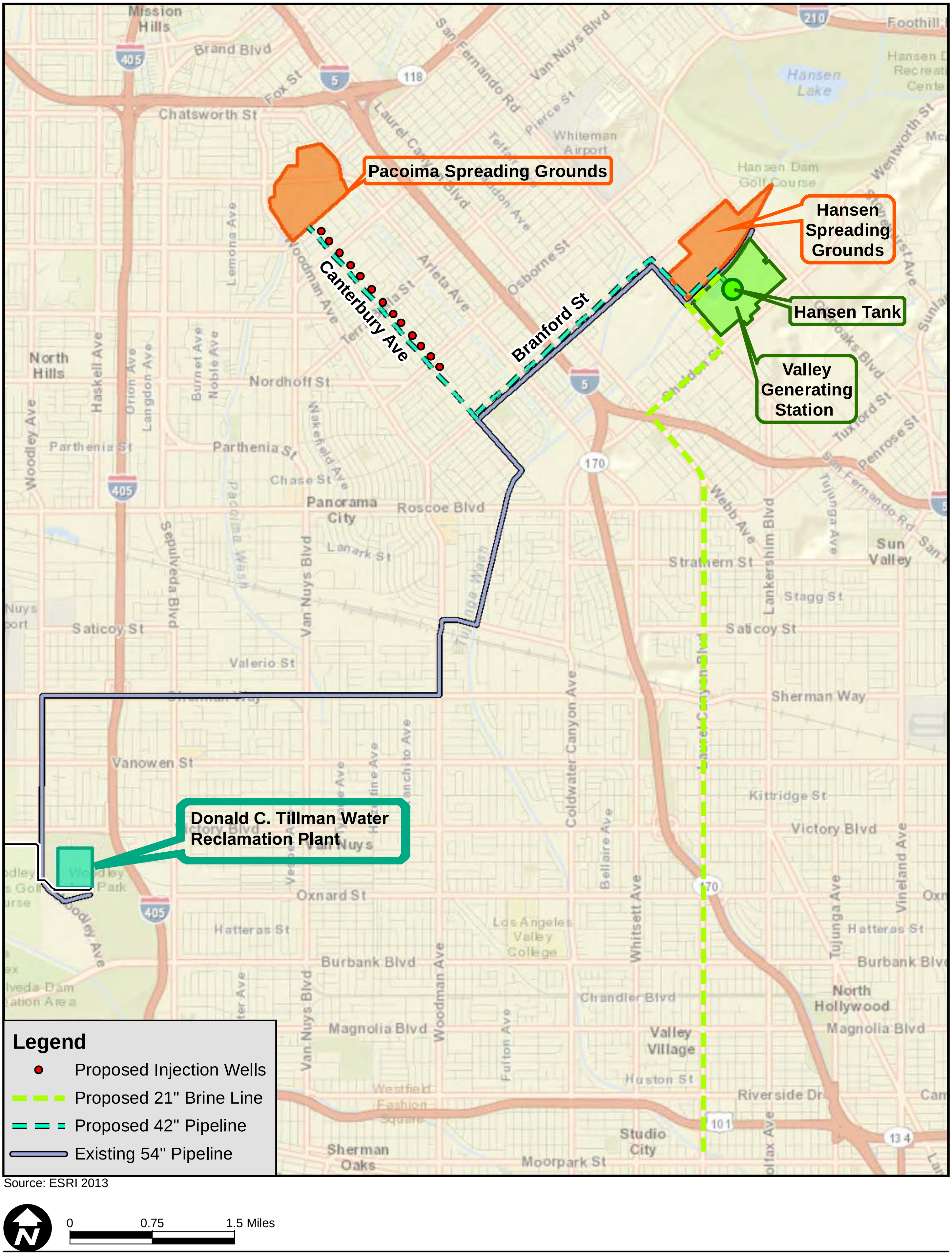
AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Project Map Book
3) Response Form
4) Self-Addressed Stamped Envelope



Source: ESRI 2013

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____
____
____
____
____
____
____
____
____
____
____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____
____
____
____
____

______________________________ ______________
Signature Date

Please return completed form no later than October 25, 2013 to:

Linda Kry
AECOM
515 S Flower Street
8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

November 6, 2013

Randy Guzman-Folkes
4676 Walnut Avenue
Simi Valley, CA 93063

Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Guzman-Folkes:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. In summary, the project involves ground-disturbing activities at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin or at the Valley Generating Station in Sun Valley, in the Hansen Spreading Grounds, and in the Pacoima Spreading Grounds. It also requires the installation of new pipelines and wells along Canterbury Avenue between Canterbury Avenue and Branford Street, along Branford Street between San Fernando Boulevard and Canterbury Avenue, along San Fernando Road or San Fernando Boulevard between Branford Street and Sheldon Street, along Sheldon Street between San Fernando Boulevard and Laurel Canyon Boulevard, and along Laurel Canyon Boulevard between Sheldon Street and Moorpark Street. Already existing pipelines would also be used in the project.

More specifically, the project requires the following: An Advanced Water Purification Facility would be constructed at the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

The proposed project is located within unsectioned land of the former Ex-Mission San Fernando land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosures 1 and 2).

The response form (Enclosure 3) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than December 6, 2013.

Please contact me directly with any questions.

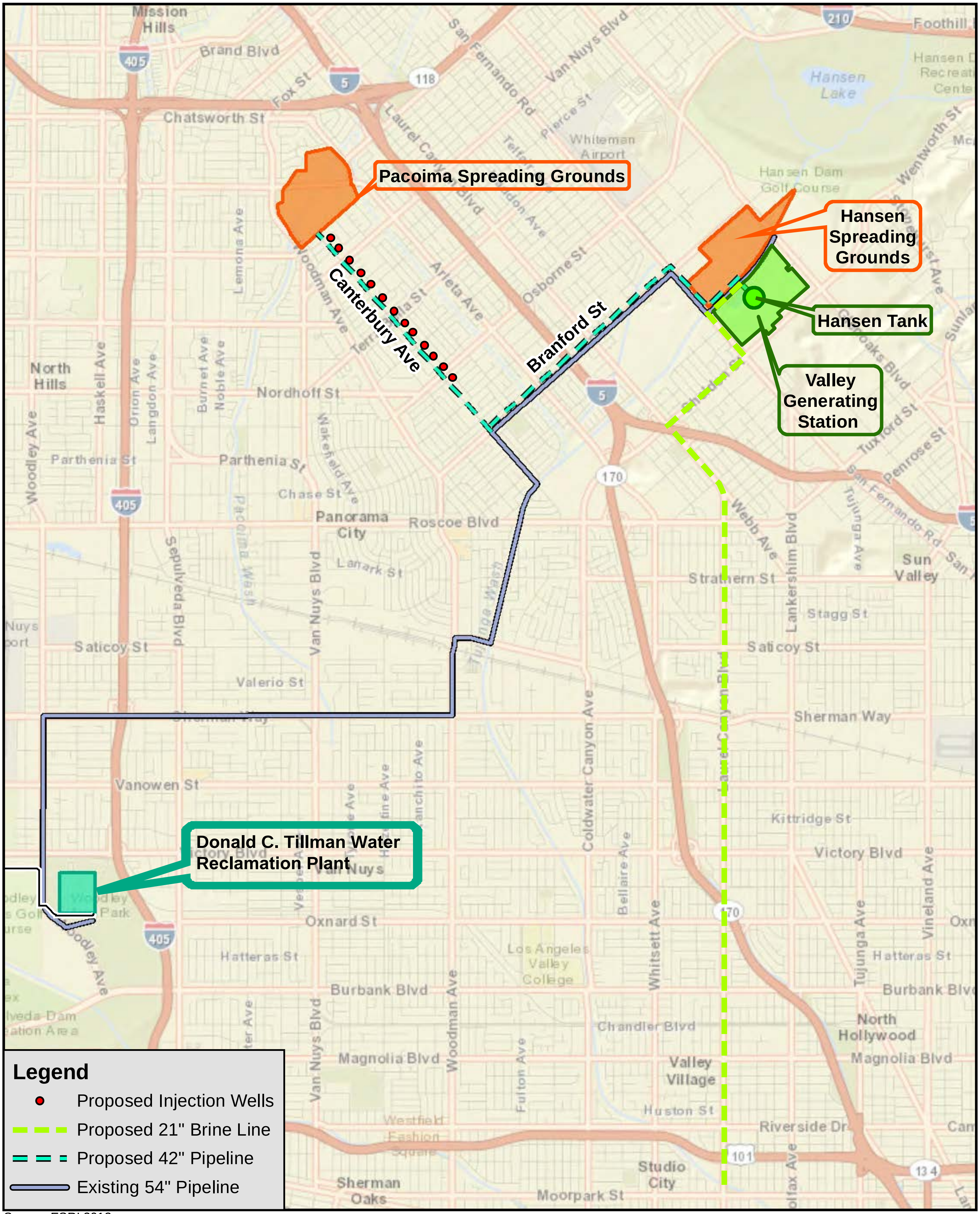
AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Project Map Book
3) Response Form
4) Self-Addressed Stamped Envelope



Source: ESRI 2013

0 0.75 1.5 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than October 25, 2013 to:

Linda Kry
AECOM
515 S Flower Street
8th Floor
Los Angeles, CA 90071

AECOM

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

November 6, 2013

Sam Dunlap, Cultural Resources Director
Gabrielino/Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Dunlap:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. In summary, the project involves ground-disturbing activities at the Donald C. Tillman Water Reclamation Plant in the Sepulveda Basin or at the Valley Generating Station in Sun Valley, in the Hansen Spreading Grounds, and in the Pacoima Spreading Grounds. It also requires the installation of new pipelines and wells along Canterbury Avenue between Canterbury Avenue and Branford Street, along Branford Street between San Fernando Boulevard and Canterbury Avenue, along San Fernando Road or San Fernando Boulevard between Branford Street and Sheldon Street, along Sheldon Street between San Fernando Boulevard and Laurel Canyon Boulevard, and along Laurel Canyon Boulevard between Sheldon Street and Moorpark Street. Already existing pipelines would also be used in the project.

More specifically, the project requires the following: An Advanced Water Purification Facility would be constructed at the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

The proposed project is located within unsectioned land of the former Ex-Mission San Fernando land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosures 1 and 2).

The response form (Enclosure 3) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than December 6, 2013.

Please contact me directly with any questions.

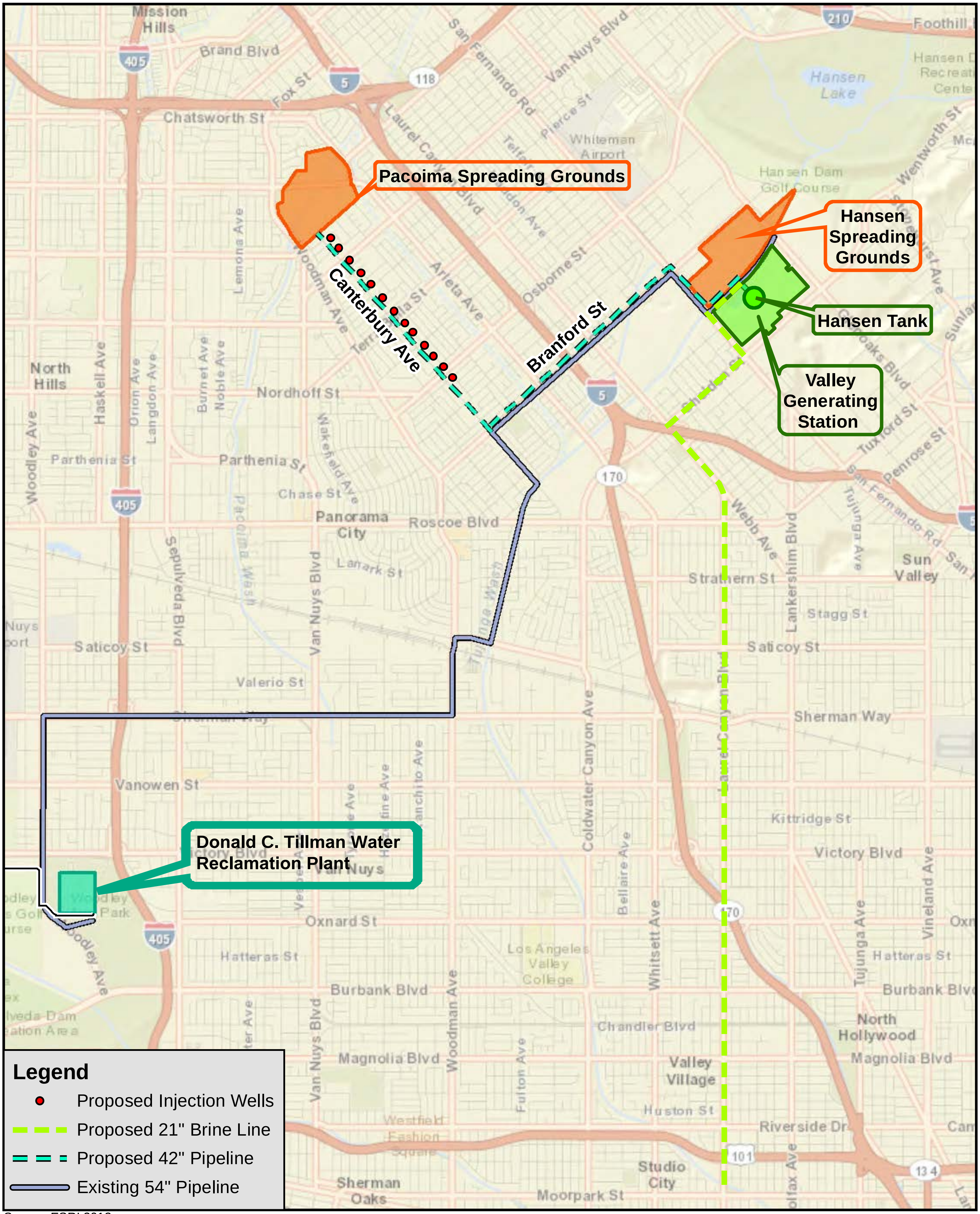
AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Project Map Book
3) Response Form
4) Self-Addressed Stamped Envelope



Source: ESRI 2013

0 0.75 1.5 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than October 25, 2013 to:

Linda Kry
AECOM
515 S Flower Street
8th Floor
Los Angeles, CA 90071

Follow-up calls

December 6, 2013

I am calling to follow-up on a letter sent to you on November 6, 2013 regarding the Los Angeles Groundwater Replenishment Project. This project includes construction of a water treatment plant and associated pipelines and spreading ground improvements in the San Fernando Valley. The Native American Heritage Commission listed you as a Native American representative who may have knowledge of the area, or concerns about the project, and we would like to hear of any concerns.

Beverley Salazar Folkes. Called cell, 805-558-1154 about 12:44 pm. Left message on voicemail identified as that of Beverley Folkes briefly describing the project, referencing the letter of November 6, and asking for comment.

Larry Ortega. Called office 818-837-0794 about 12:46 pm. Spoke to Mr. Mike Villasenor who answered. Told him about the project, referencing the letter of November 6, and asked for comment. He asked me tosend an email to mpvillasenor@tataviam-nsn.us to be forwarded to Mr. Ortega, which I did. Also put me through to a voicemail identified as that of Rudy Ortega, on which I left the same message.

Ron Andrade: Called 213-351-5324 about 1:04. Phone rang 4 times then went to busy signal. Called again about 1:37 and left a message describing the project, referencing the letter of November 6, and asking for comment.

Delia Dominguez: Called 626-339-6785 about 1:07 pm. Left message on answering machine describing the project, referencing the letter of November 6, and asking for comment.

John Valenzuela: Called office, 661-753-9833. Number not in service. Called cell, 760-885-0955 about 1:10 pm and spoke with Mr. Valenzuela. Mr. Valenzuela says he has no comment other than to please contact the Tataviam or the Tongva. Says he usually restricts his activities to the Barstow area and surrounding desert region.

Randy Guzman-Folkes: Called cell, 805-905-1675, about 1:15 pm. Left message on voicemail identified as that of Randy Guzman Folkes describing the project, referencing the letter of November 6, and asking for comment.

Andy Salas: Called 12:42 pm. Let phone ring 11 times. Called again about 1:40 and spoke with Mr. Salas. Told him we got his email and will include his recommendations and asked if he had additional input. Mr. Salas stated that he grew up around the Hansen Dam, which was the area of his Great-Great Grandmother's people. He stated that he knew the area and the cultural aspect well, and wanted someone from his Tribe present for all ground disturbance in order to rebury artifacts or human remains found. I stated that we would include those recommendations in the report.

Sam Dunlap: Called about 1:20 pm and spoke to Mr. Dunlap about this and an unrelated project. Mr. Dunlap said that he is in the field and behind in his correspondence, but will get back with me regarding this. I told him I would send him an email today regarding the project, and will look forward to hearing from him.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.8623 www.AECOM.com

July 20, 2015

Ms Katy Sanchez
Native American Heritage Commission
1550 Harbor Boulevard
Suite 100
West Sacramento, CA 95691

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Ms. Sanchez:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to request that the Native American Heritage Commission conduct a Sacred Lands File search for the Los Angeles Groundwater Replenishment Project. The proposed project is located within **unsectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map (Enclosure).

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM first contacted the Native American Heritage Commission about this project in a letter dated October 21, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map.

The goal of this letter, in addition to acquainting you with this project, is to request that you check the Sacred Lands File records to identify any previously recorded sites in the project area.

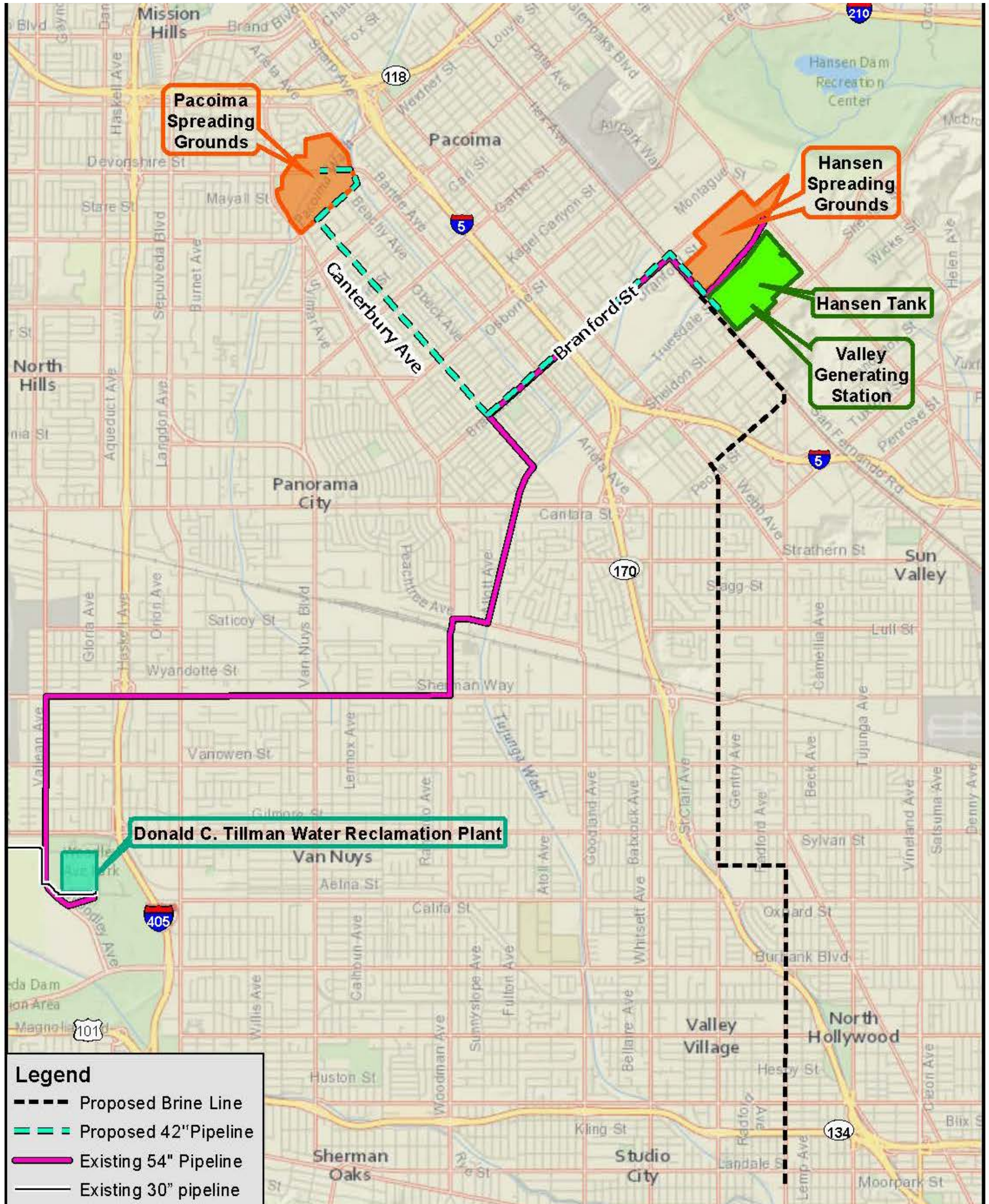
Thank you for your assistance. Please feel free to contact me if you have any questions about this project.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.8623 www.AECOM.com

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
D 213.593.8481 F 213.593.8623
marc.beherec@aecom.com

Enclosure: Project Area Map



Source: ESRI 2014

STATE OF CALIFORNIA Edmund G. Brown, Jr., Governor

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., ROOM 100
West SACRAMENTO, CA 95691
(916) 373-3710
Fax (916) 373-5471

August 6, 2015

Marc A. Beherec
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

Email to: marc.beherec@aecom.com

Re: Los Angeles Groundwater Replenishment Project (As Revised), Los Angeles County.

Dear Mr. Beherec,

A record search of the sacred land file has failed to indicate the presence of Native American cultural resources in the immediate project area. The absence of specific site information in the sacred lands file does not indicate the absence of cultural resources in any project area. Other sources of cultural resources should also be contacted for information regarding known and recorded sites.

Enclosed is a list of Native Americans individuals/organizations who may have knowledge of cultural resources in the project area. The Commission makes no recommendation or preference of a single individual, or group over another. This list should provide a starting place in locating areas of potential adverse impact within the proposed project area. I suggest you contact all of those indicated, if they cannot supply information, they might recommend others with specific knowledge. By contacting all those listed, your organization will be better able to respond to claims of failure to consult with the appropriate tribe or group. If a response has not been received within two weeks of notification, the Commission requests that you follow-up with a telephone call to ensure that the project information has been received.

If you receive notification of change of addresses and phone numbers from any of these individuals or groups, please notify me. With your assistance we are able to assure that our lists contain current information. If you have any questions or need additional information, please contact me at (916) 373-3712.

Sincerely,

Katy Sanchez

Katy Sanchez
Associate Government Program Analyst

Native American Contact List
Los Angeles County
August 6, 2015

Tongva Ancestral Territorial Tribal Nation
John Tommy Rosas, Tribal Admin.
, Gabrielino Tongva
tattnlaw@gmail.com
(310) 570-6567

Gabrielino-Tongva Tribe
Bernie Acuna, Co-Chairperson
1999 Avenue of the Stars, Suite 1100 Gabrielino
Los Angeles , CA 90067
(310) 428-5690 Cell

Gabrieleno/Tongva San Gabriel Band of Mission Indian
Anthony Morales, Chairperson
P.O. Box 693 Gabrielino Tongva
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 483-3564 Cell
(626) 286-1262 Fax

Gabrielino-Tongva Tribe
Linda Candelaria, Co-Chairperson
1999 Avenue of the Stars, Suite 1100 Gabrielino
Los Angeles , CA 90067
(626) 676-1184 Cell

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge Jo†hn Aiso Gabrielino Tongva
Los Angeles , CA 90012
sgoad@gabrielino-tongva.com
(951) 807-0479

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393 Gabrielino
Covina , CA 91723
gabrielenoindians@yahoo.
(626) 926-4131

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490 Gabrielino Tongva
Bellflower , CA 90707
gtongva@verizon.net
(562) 761-6417 Voice/Fax

Gabrielino-Tongva Tribe
Conrad Acuna
1999 Avenue of the Stars, Suite 1100 Gabrielino
Los Angeles , CA 90067

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Los Angeles Groundwater Replenishment Project (As Revised), Los Angeles County.

Native American Contact List
Los Angeles County
August 6, 2015

Gabrielino /Tongva Nation
Sam Dunlap, Cultural Resources Director
P.O. Box 86908 Gabrielino Tongva
Los Angeles , CA 90086
samdunlap@earthlink.net
(909) 262-9351

This list is current only as of the date of this document.

Distribution of this list does not relieve any person of the statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list is only applicable for contacting local Native Americans with regard to cultural resources for the proposed Los Angeles Groundwater Replenishment Project (As Revised), Los Angeles County.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Subject: Los Angeles Groundwater Replenishment Project

Dear Chairperson Morales:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City.

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

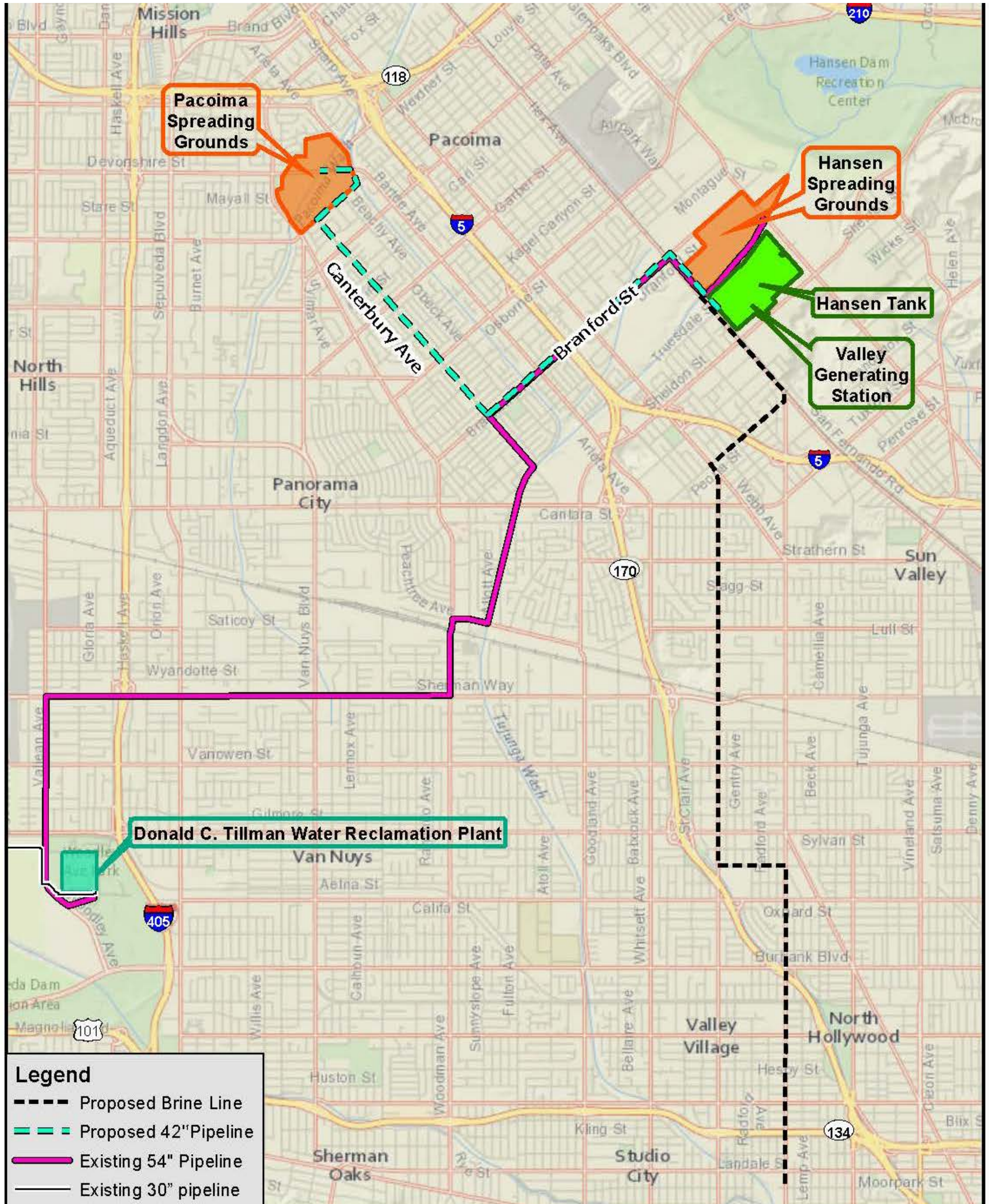
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____
____
____
____
____
____
____
____
____
____
____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____
____
____
____
____

________________________________ _______________
Signature Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, CA 91723

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Salas:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM initially informed you about this project in a letter dated November 6, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map (Enclosure 1).

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map.

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

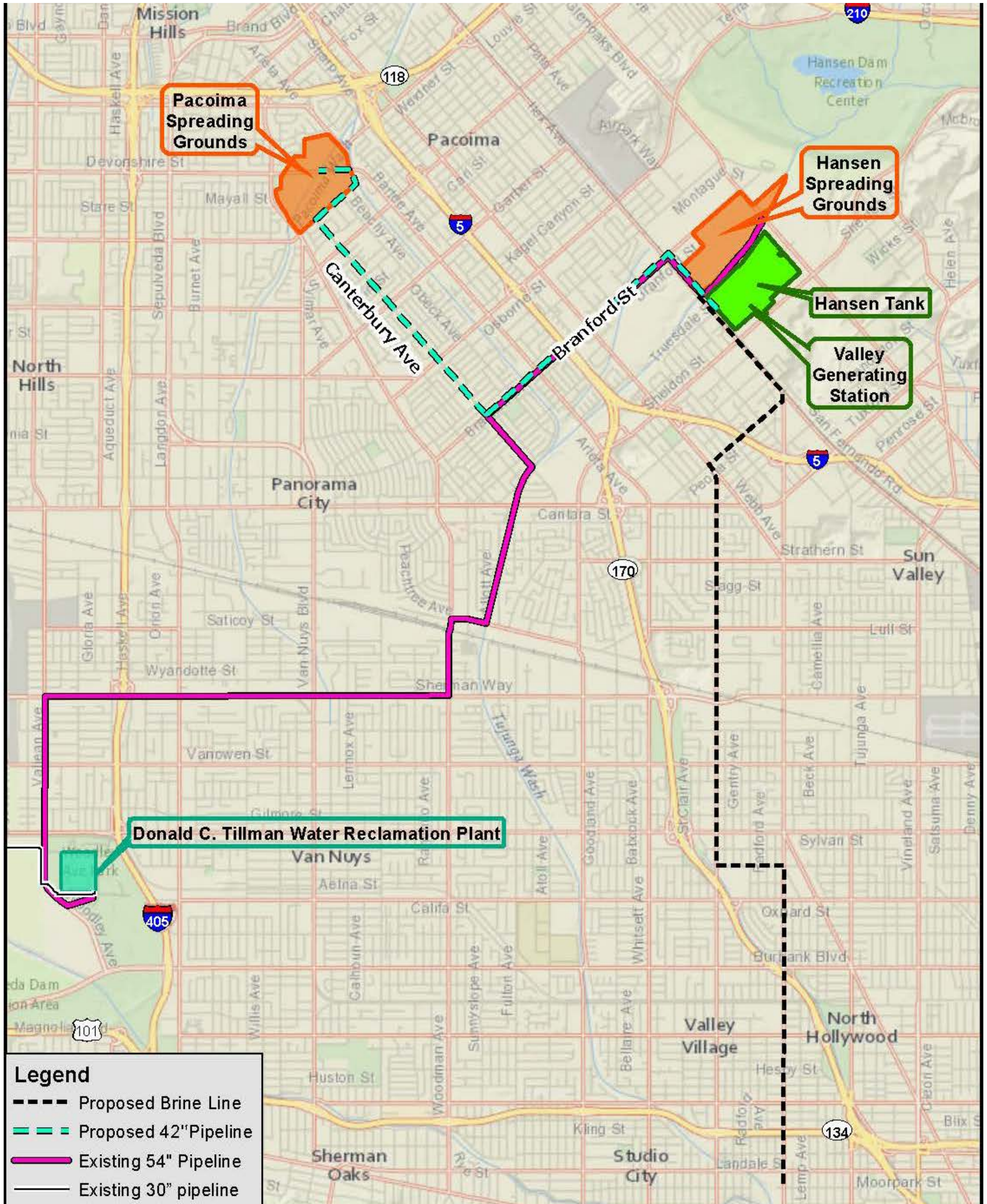
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature   Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 08/26/2015

Project # 60334580 LAGWR

Individual Contacted: Andrew Salas

Phone # (626) 926-4131

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(11:38 am)
Mr. Salas returned my phone call from yesterday. I explained briefly my reason for contacting him. He informed me he is very familiar with the area of the proposed project. His grandmother was from Tujunga and he has other relatives, who was from that around that area. As a child he used to go swimming at the Hansen Dam. He said he has knowledge of several Native American village sites scattered around in and around the project locations. Therefore, he recommends archaeological and Native American monitoring during all ground disturbance.

He asked to have the letter, including a map over the proposed project, sent to him via email. He believes he has a map showing relevant Native American sites he can provide to AECOM, to compare information of the Native American sites in the area.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Bernie Acuna, Co-Chairperson
Gabrieleno-Tongva Tribe
1999 Avenue of the Stars
Suite 1100
Los Angeles, CA 90067

Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Acuna:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City.

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

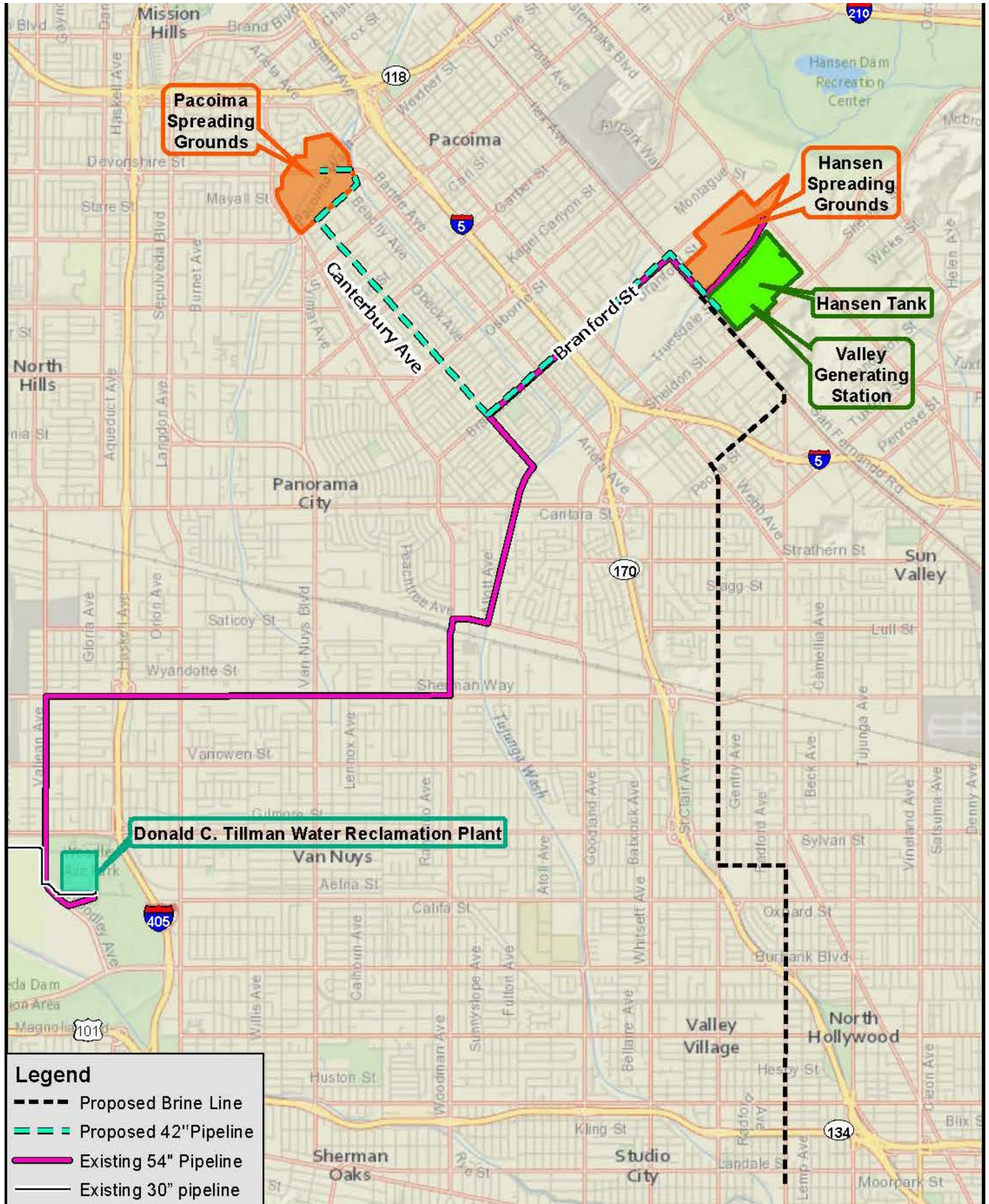
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____
____
____
____
____
____
____
____
____
____
____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____
____
____
____
____

______________________________ ______________
Signature Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Ms. Salazar Folkes:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM initially informed you about this project in a letter dated November 6, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map (Enclosure 1).

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map.

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

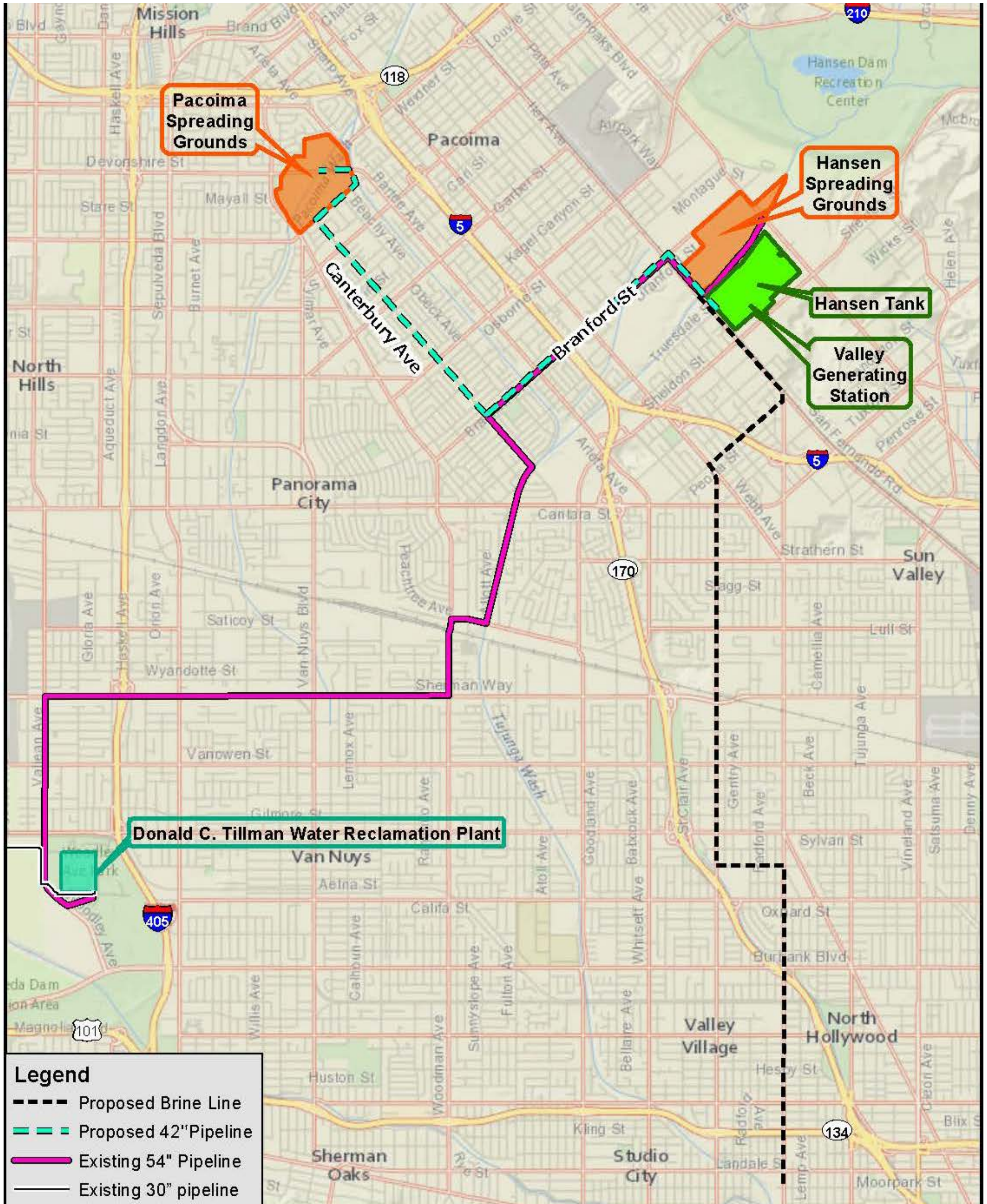
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

________________________________ _______________
Signature Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Conrad Acuna
Gabrieleno-Tongva Tribe
1999 Avenue of the Stars
Suite 1100
Los Angeles, CA 90067

Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Acuna:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City.

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

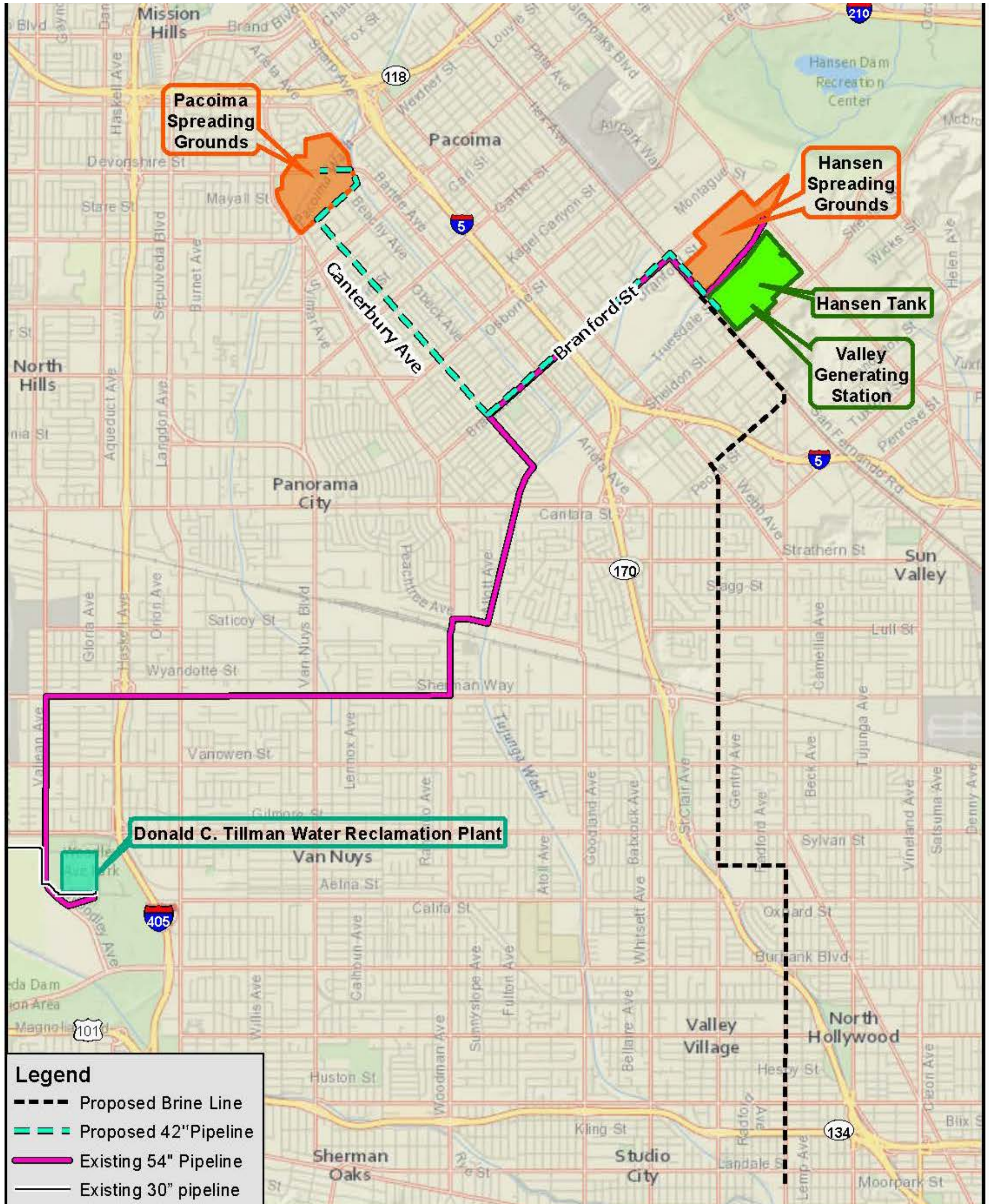
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature   Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Delia Dominguez, Chairperson
Kitanemuk & Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA 93305

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Dominguez:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM initially informed you about this project in a letter dated November 6, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map (Enclosure 1).

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map.

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

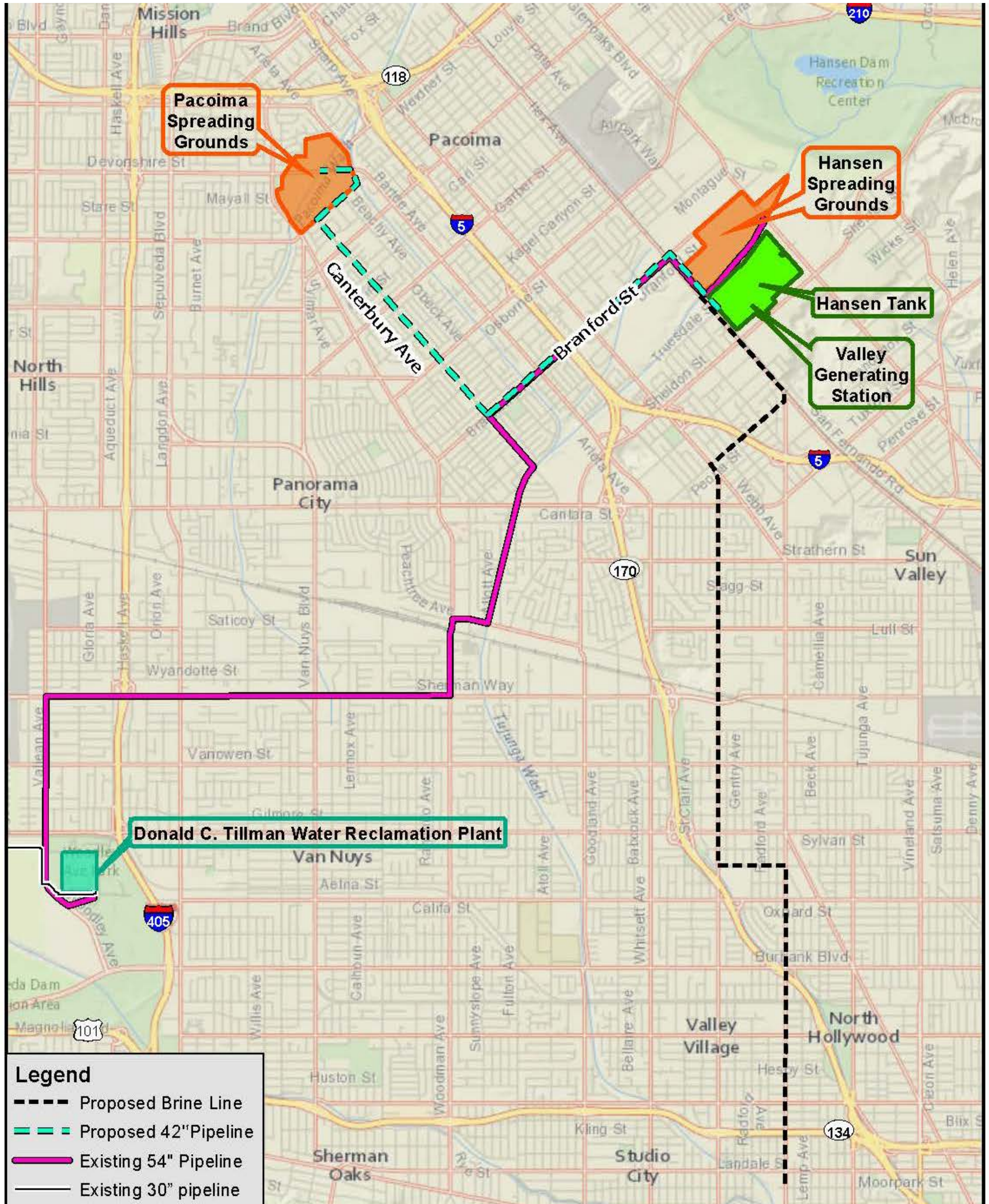
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature   Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

John Valenzuela, Chairperson
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA 91322

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Valenzuela:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM initially informed you about this project in a letter dated November 6, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map (Enclosure 1).

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map.

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

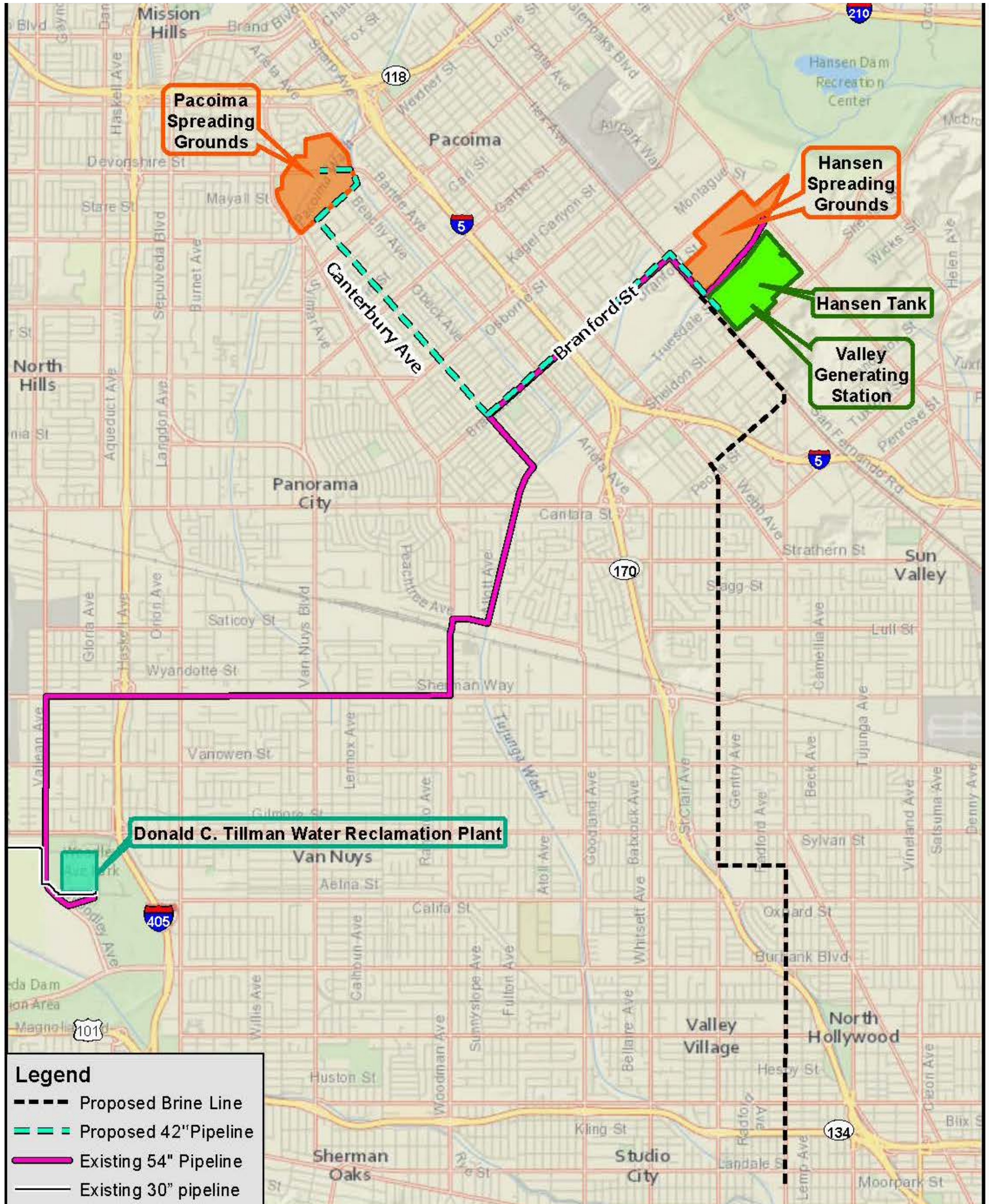
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____
____
____
____
____
____
____
____
____
____
____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____
____
____
____
____

______________________ ______________
Signature Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

Kry, Linda

From: Kry, Linda
Sent: Monday, August 10, 2015 1:27 PM
To: 'tattnlaw@gmail.com'
Cc: Beherec, Marc
Subject: Los Angeles Groundwater Replenishment Project
Attachments: Los Angeles Groundwater Replenishment Project.pdf

Dear Mr. Rosas,

You have been identified by the Native American Heritage Commission as a Native American Contact for the Los Angeles Groundwater Replenishment Project. Attached is a letter that includes a description of the proposed project, a map of the project area, and a response form.

If you have any questions, please contact Marc Beherec at:
213.593.8481
marc.beherec@aecom.com

Sincerely,

Linda Kry, B.A.
Archaeologist
Design + Planning
M 213.435.5846 or 562.787.0701
linda.kry@aecom.com

AECOM
515 S Flower Street, 8th Floor, Los Angeles, CA 90071 USA
T 213.593.7700 F 213.593.8623
www.aecom.com
www.aecom.com/designplanning

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

John Tommy Rosas, Tribal Admin.
Tongva Ancestral Territorial Tribal Nation
tattnlaw@gmail.com

Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Rosas:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds ï approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWPøs Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City.

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

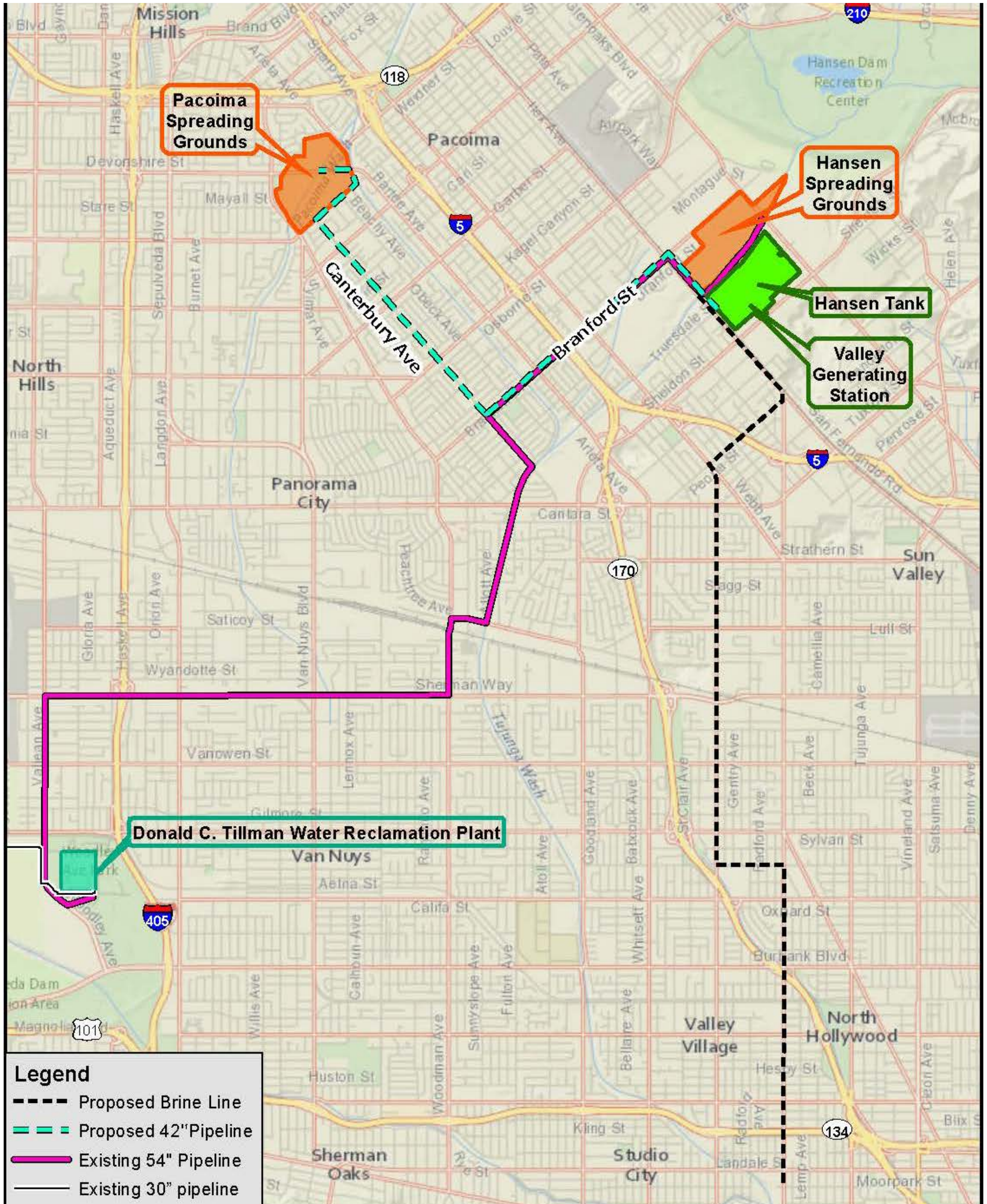
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature   Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

Kry, Linda

From: Johntommy Rosas <tattnlaw@gmail.com>
Sent: Monday, August 10, 2015 3:07 PM
To: Kry, Linda
Cc: Beherec, Marc
Subject: Re: Los Angeles Groundwater Replenishment Project
Attachments: TATTN BIZ CARD (1) (1) (1).png

thanks [expand email and show all text /attachments]
your letter doesnt express or contain any required sec 106 nhpa/ab52 /ajr 42 -undrip tribal consultation compliance language-please amend /correct -
we have significant land and water rights, preemptive/preexisting claims on that project ape and beyond including sacred sites that are documented-
your letter also excludes the total amounts of estimated excavations [in cubic yards is fine]
from the various pipelines -
so please send the construction/excavation plans to us by email to me -
we also request that you please send us a exec summary of how this is all going to function -as a system -
please provide ladwp contact or project manager so we can ask some direct questions that are confidential-
your letter doesnt disclose fed permits either or state permits-ie sec 404/408 and any rwqcb water board permits etc -
and if its a mitigation/remediation /or by order so please explain the projects permits or send them to us -and please send this email to ladwp directly and complete -
we have some older arch/reports of that area that we can let you folks use from our database under strict conditional use /license-
we charge $50- per hour for those services your requesting -tribal records search
consultation will be same price ytbd -
estimated time is 4 hours =$200-invoice total- tribal records search
confirm approval or refusal to compensate in violation of ACHP guidance documents.
jt

On Mon, Aug 10, 2015 at 1:27 PM, Kry, Linda <Linda.Kry@aecom.com> wrote:

> Dear Mr. Rosas,
>
> You have been identified by the Native American Heritage Commission as a Native American Contact for the Los Angeles Groundwater Replenishment Project. Attached is a letter that includes a description of the proposed project, a map of the project area, and a response form.
>
> If you have any questions, please contact Marc Beherec at:
>
> 213.593.8481
>
> marc.beherec@aecom.com

Sincerely,

Linda Kry, B.A.
Archaeologist

Design + Planning

M 213.435.5846 or 562.787.0701

linda.kry@aecom.com

AECOM

515 S Flower Street, 8th Floor, Los Angeles, CA 90071 USA
T 213.593.7700 F 213.593.8623

www.aecom.com

www.aecom.com/designplanning

Learn more about our environmental + ecological planning practice: aecom.com/environmentalplanning

Follow us: twitter.com/DesignPlanAECOM

--

JOHN TOMMY ROSAS
TRIBAL ADMINISTRATOR
TRIBAL LITIGATOR
TONGVA ANCESTRAL TERRITORIAL TRIBAL NATION
A TRIBAL SOVEREIGN NATION UNDER UNDRIP
AND AS A CALIFORNIA NATIVE AMERICAN TRIBE / SB18-AJ52-AJR 42
25 U.S. Code § 1679 - Public Law 85-671
August 18, 1958 | [H. R. 2824] 72 Stat. 619
Tribal sovereignty in the United States is the inherent authority of indigenous tribes to govern themselves within and outside the borders and waters of the United States of America .

and UNDRIP - attorney-client privileged Any review, use, disclosure, or distribution by unintended recipients is prohibited. If you are not the intended recipient, please contact the sender by reply e-mail and destroy all copies of the original message.

TRUTH IS OUR VICTORY AND HONOR IS OUR PRIZE >TATTN ©

tongvanation.org

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Linda Candelaria, Co-Chairperson
Gabrieleno-Tongva Tribe
1999 Avenue of the Stars
Suite 1100
Los Angeles, CA 90067

Subject: Los Angeles Groundwater Replenishment Project

Dear Ms. Candelaria:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City.

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715   www.AECOM.com

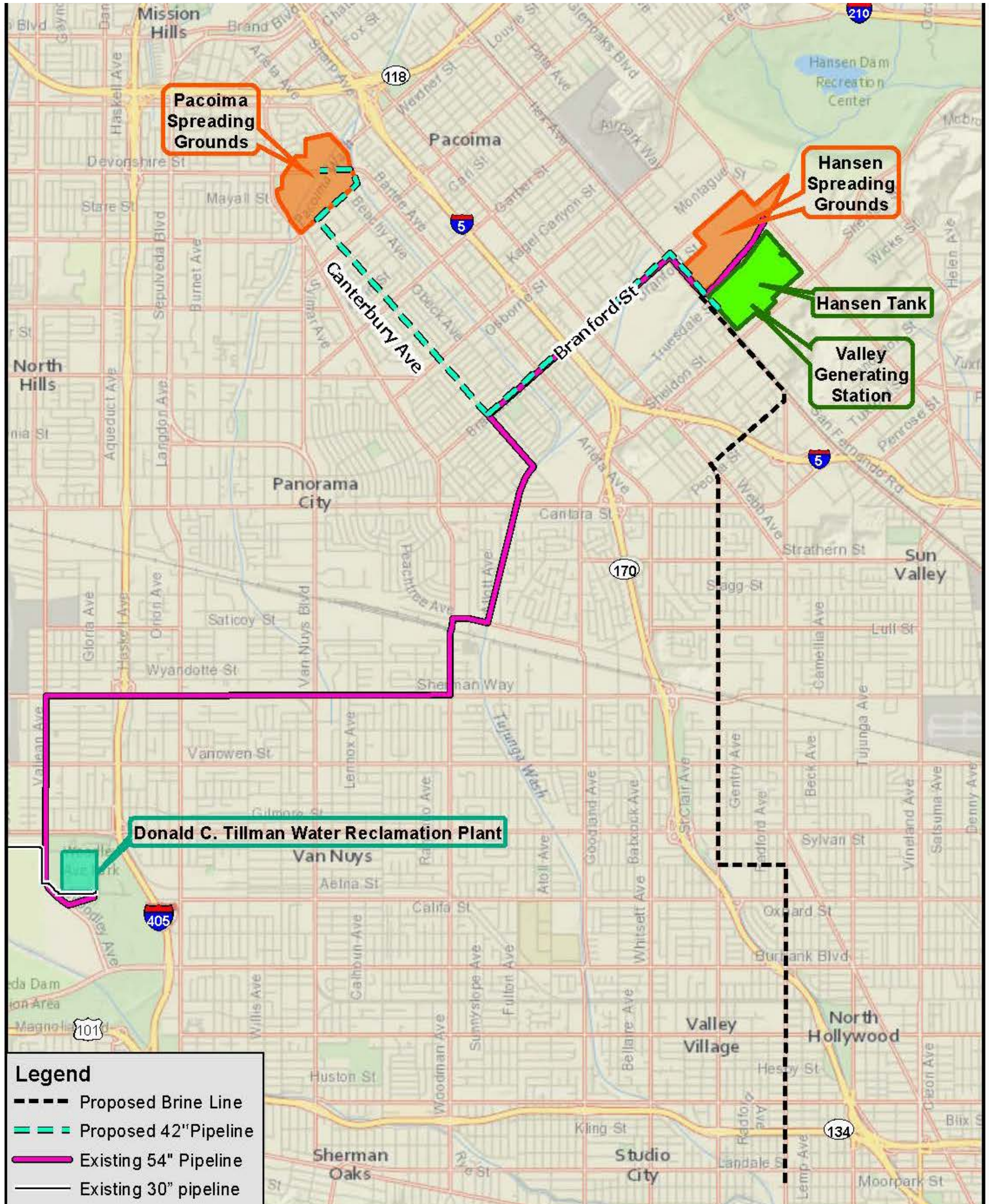
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature ____________________ Date ____________

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Larry Ortega, Chairperson
Fernandeno Tatavium Band of Mission Indians
1019 2nd Street, Suite #1
San Fernando, CA 91340

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Ortega:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM initially informed you about this project in a letter dated November 6, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map (Enclosure 1).

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map.

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715   www.AECOM.com

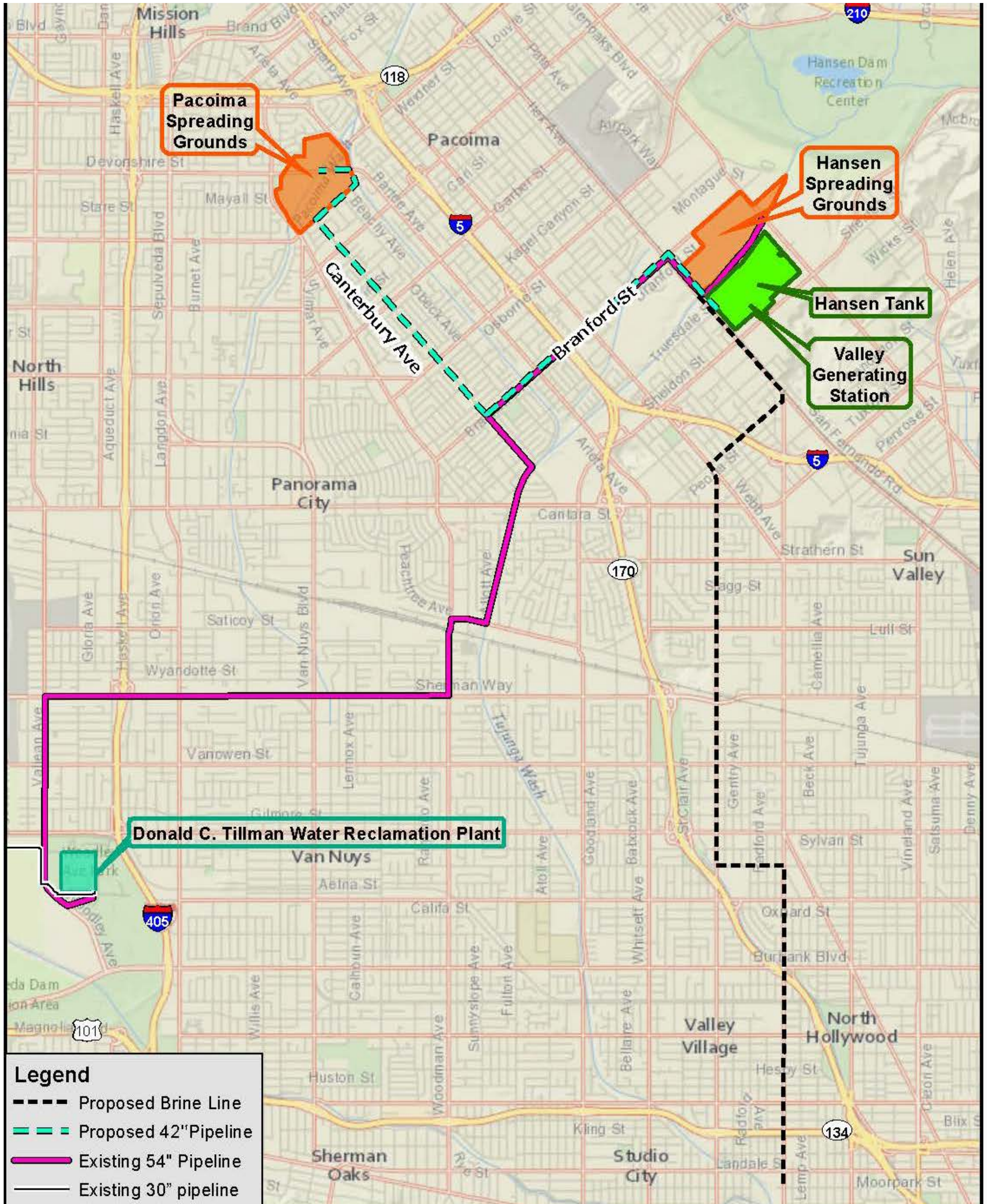
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM

Distribution

Contact Report Form

AECOM Contact: Marc Beherec

Date: September 15, 2015

Project # 60334580

Individual Contacted: Caitlin Gulley

Phone # 661-433-0599

Contact Information

Subject of Contact: LA Groundwater Native American Contact

Items Discussed

Tribal Historic and Preservation Officer Caitlin Gulley of the Fernandeno Tatavium Band of Mission Indians called and left a voicemail at 12:12 pm asking for the name of the City planner involved with this project. I returned her call at about 4:50 pm. Ms. Gulley thanked me for returning her call and stated that she has been trying to contact the City regarding the project but has received no response, and stated that she should be receiving government to government consultation with the City. She stated that I informed her that I did not at this time have a City contact, but that AECOM was contracted to initiate Native American contact. I told her appropriate government to government consultation would be initiated during the appropriate phase, later in the CEQA process, but also informed her that I would note her desire for official consultation in our report.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Ron Andrade, Director
Los Angeles City/County Native American Indian Commission
3175 West 6th Street, Rm. 403
Los Angeles, CA 90020

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Mr. Andrade:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM initially informed you about this project in a letter dated November 6, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map (Enclosure 1).

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map.

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

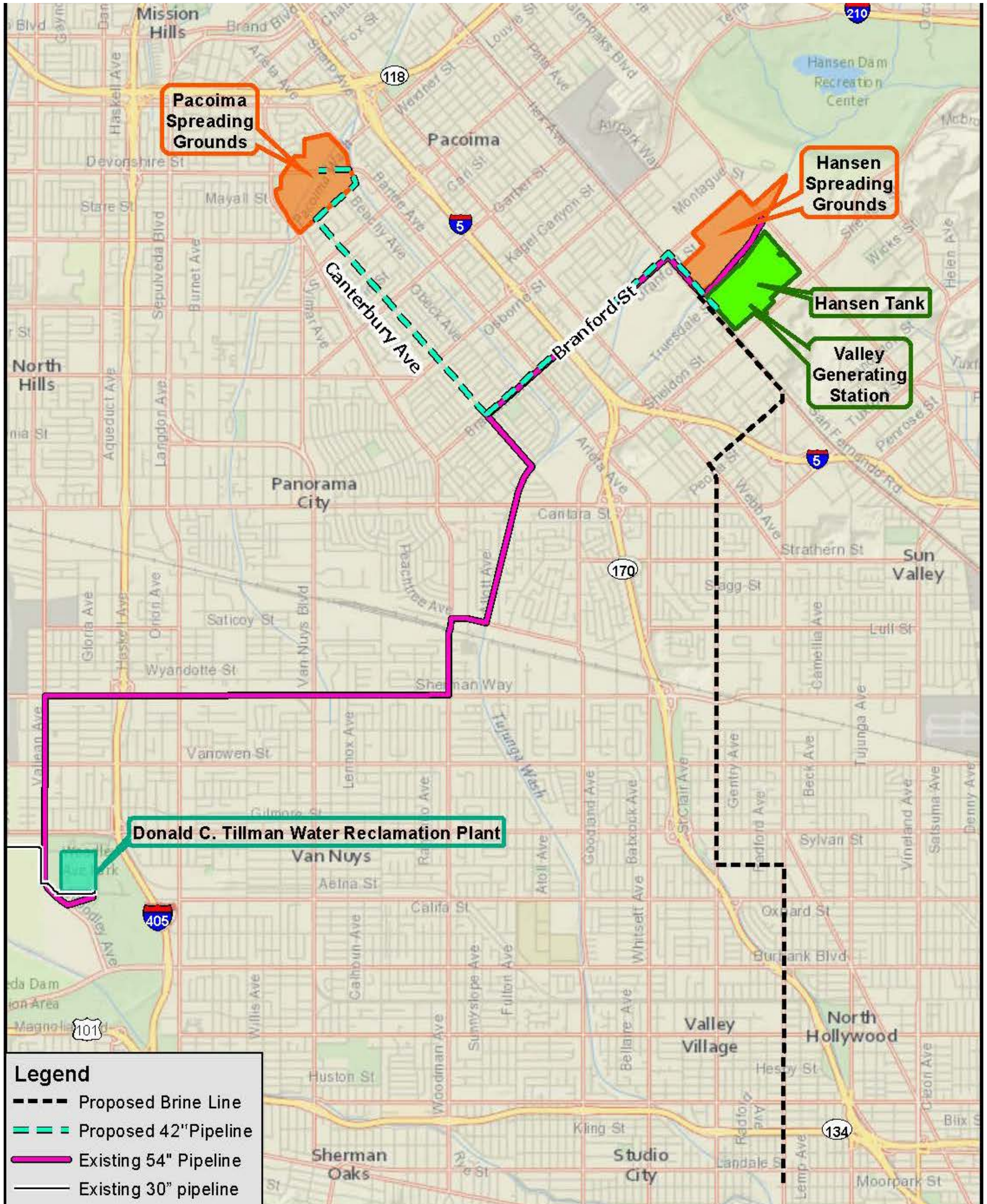
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____
____
____
____
____
____
____
____
____
____
____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____
____
____
____
____

______________________ ______________
Signature Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Robert F. Dorame, Tribal Chair/Cultural Resources
Gabrieleno Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Subject: Los Angeles Groundwater Replenishment Project

Dear Mr. Dorame:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City.

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

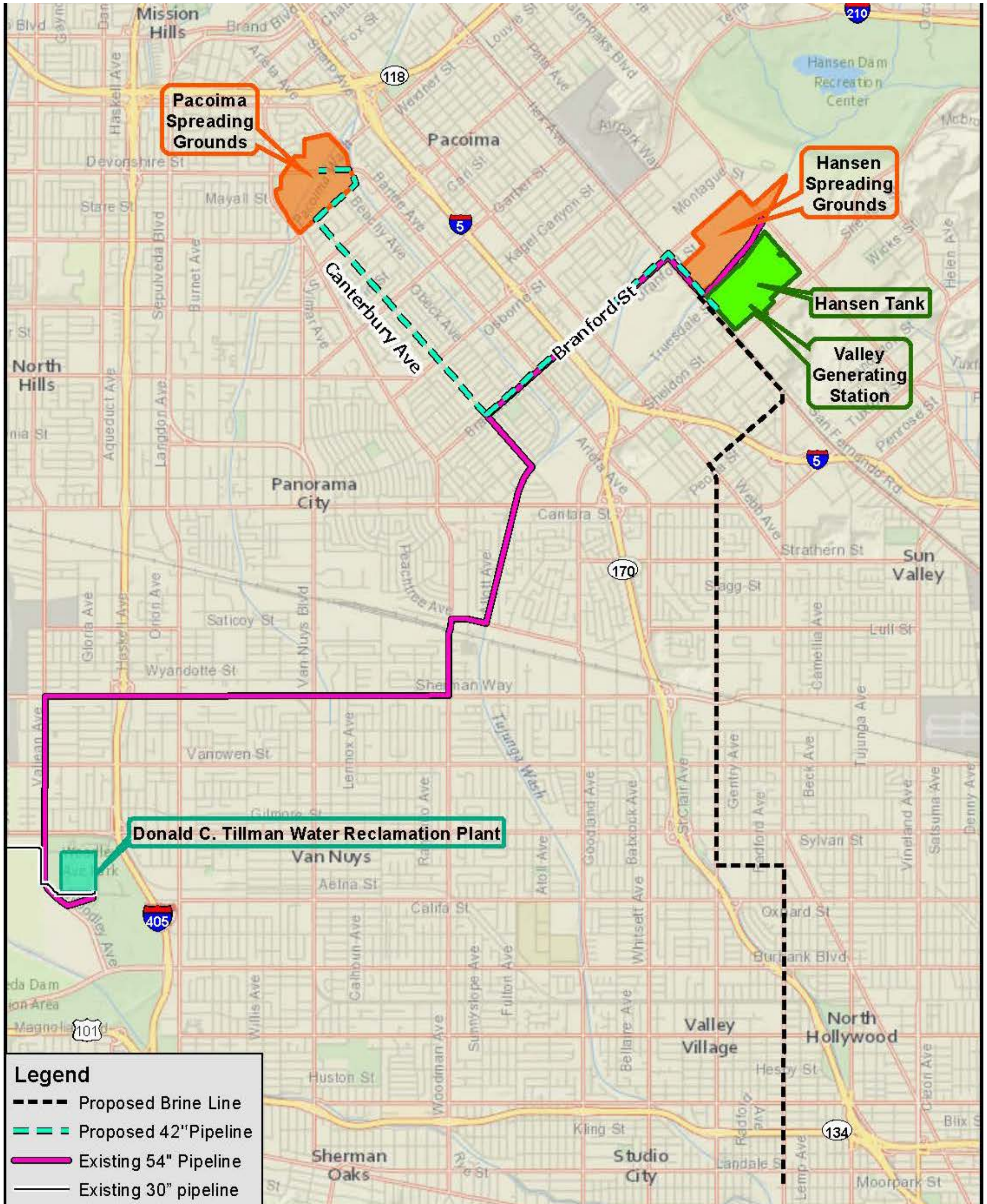
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature   Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Randy Guzman-Folkes
4676 Walnut Avenue
Simi Valley, CA 93063

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Mr. Guzman-Folkes:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM initially informed you about this project in a letter dated November 6, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map (Enclosure 1).

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map.

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

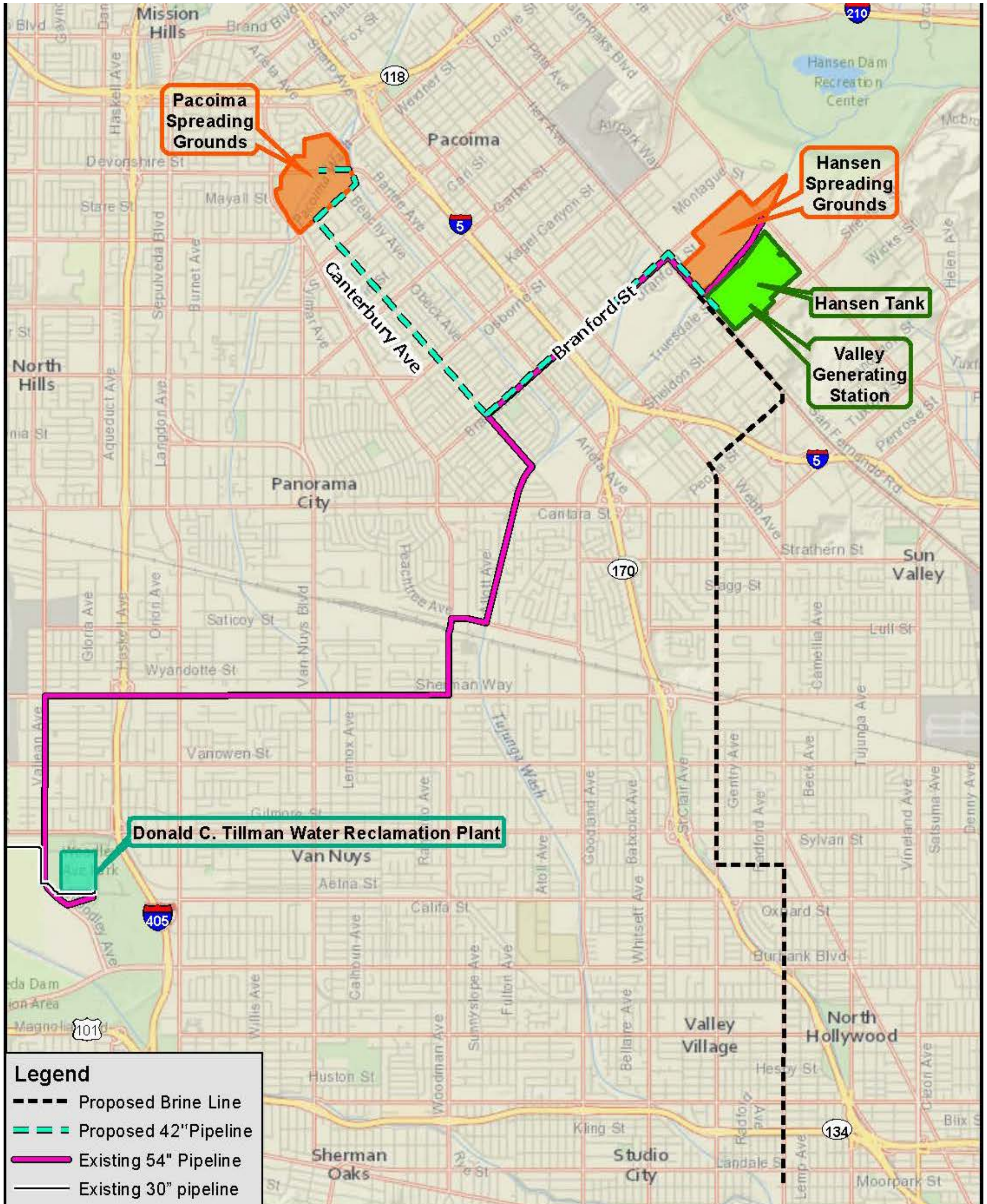
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

____

____

____

____

____

____

____

____

____

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

____

____

____

____

______________________________	______________
Signature	Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Sam Dunlap, Cultural Resources Director
Gabrielino/Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Mr. Dunlap:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

AECOM initially informed you about this project in a letter dated November 6, 2013. The project footprint has undergone a substantial modification since that date. Injection wells, formerly planned along the transmission line right-of-way parallel to Canterbury Avenue, are no longer part of the project. In addition, the proposed route of the brine discharge pipeline through the eastern portion of the San Fernando Valley has changed. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City. The brine discharge line route is shown as a black dotted line in the enclosed map (Enclosure 1).

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map.

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

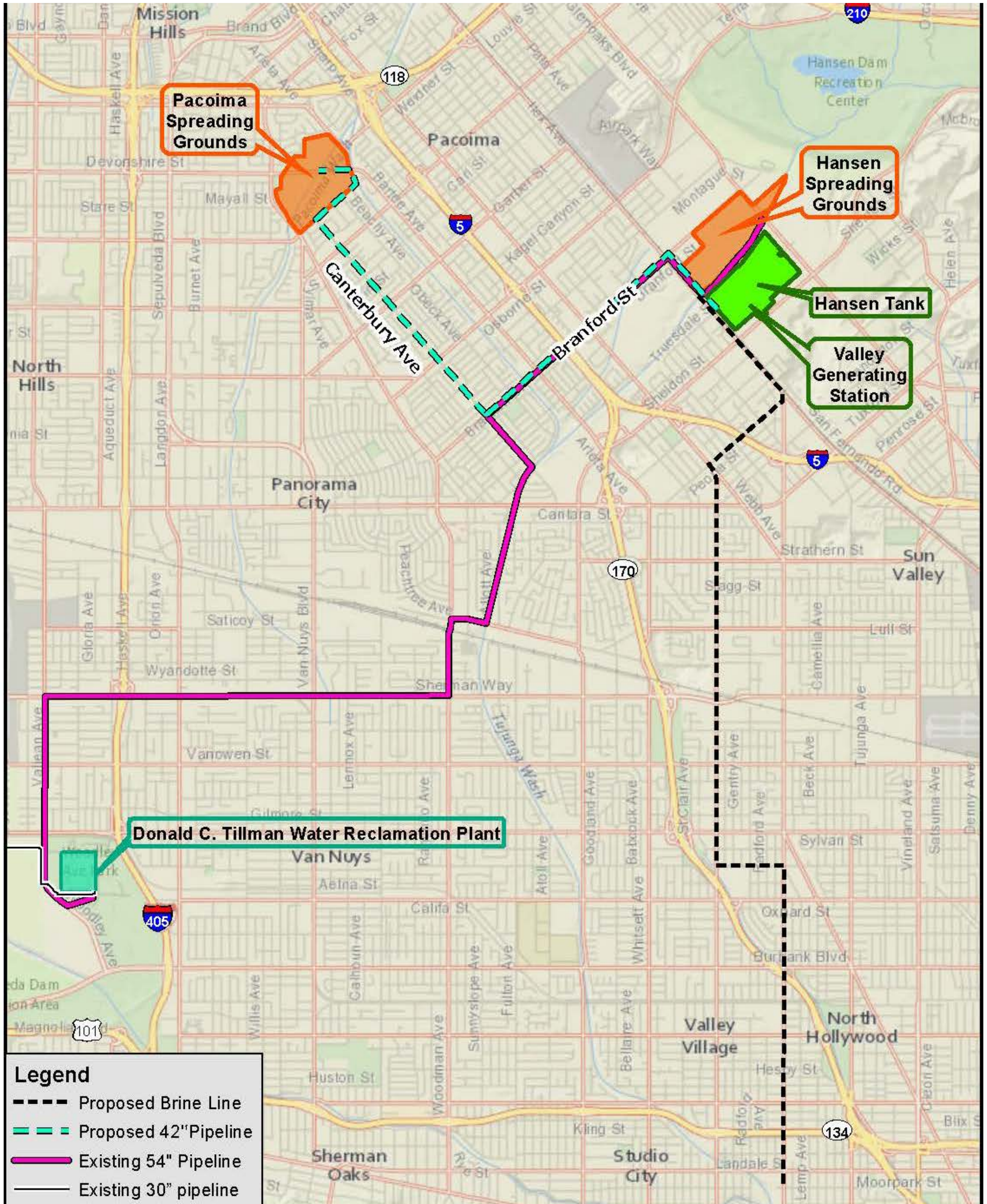
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature   Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

August 10, 2015

Sandonne Goad, Chairperson
Gabrieleno/Tongva Nation
106 ½ Judge John Aiso
Los Angeles, CA 90012

Subject: Los Angeles Groundwater Replenishment Project

Dear Chairperson Goad:

AECOM, Inc. has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project.

The proposed work is a multi-stage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Modifications, including turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An off-site alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline. The brine line will follow San Fernando Road southeast to Peoria Street. It will then turn southwest and follow Peoria Street to Laurel Canyon Boulevard. The brine discharge line will then turn south and follow Laurel Canyon Boulevard to Erwin Street. The pipeline will then turn east and follow Erwin Street to Colfax Avenue. Finally, the line will turn south again and follow Colfax Avenue to its termination in Studio City.

The proposed project is located within **un-sectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West** of the **San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps**, and is indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project nor does it limit your opportunity to comment at a later time. For the purposes of our report, please return the response form to the address shown below no later than September 10, 2015.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715   www.AECOM.com

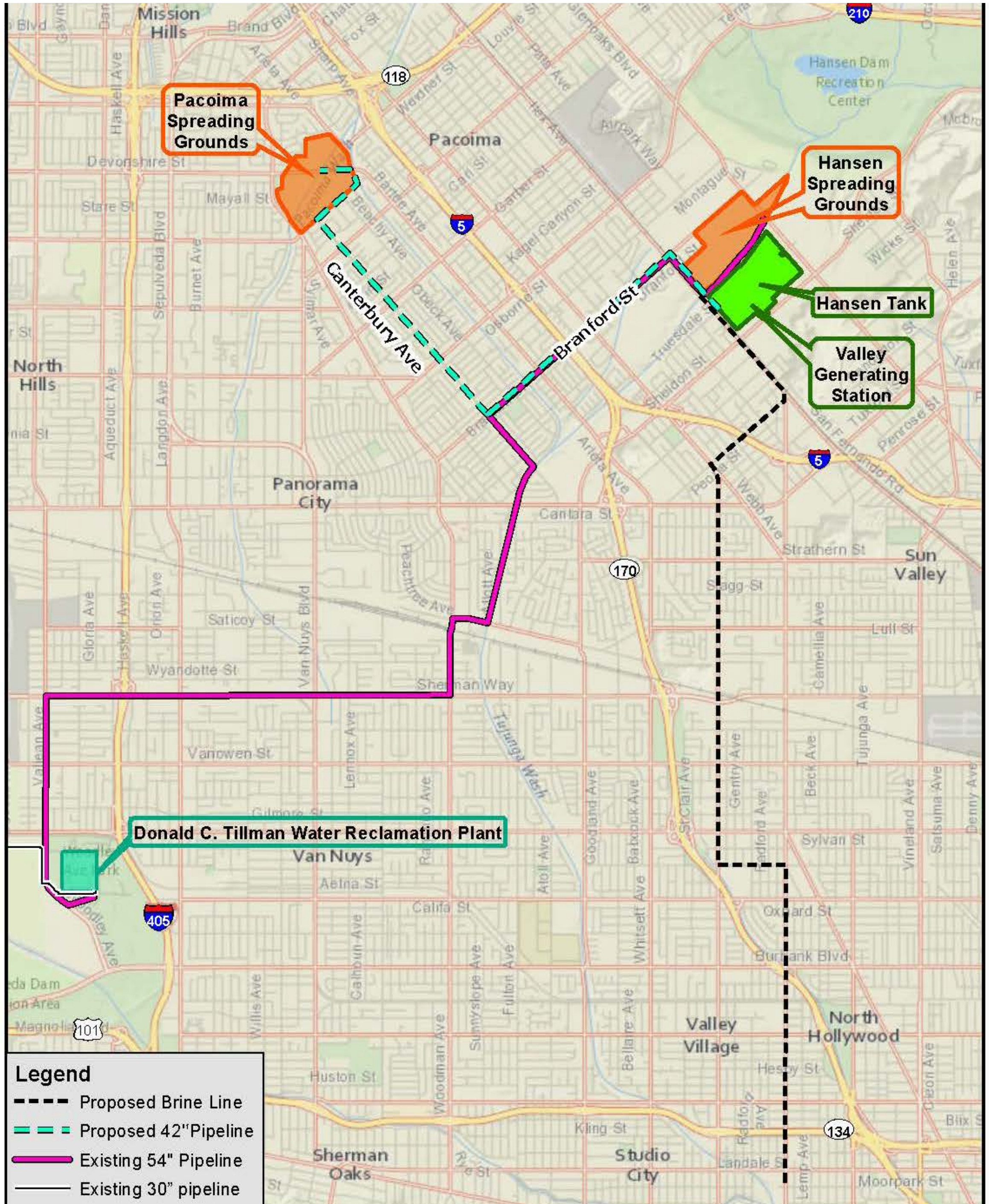
Please contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2014

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. They are outlined below:

____
____
____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____
____

____________________________ ______________
Signature Date

Please return completed form no later than September 10, 2015 to:

Marc A. Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

AECOM

Distribution

Contact Report Form

AECOM Contact: Marc Beherec

Date: 8/25/2015

Project # 60334580 - LAGWR

Individual Contacted: Sandonne Goad

Phone # 951-807-0479

Contact Information

Subject of Contact: LA Groundwater

Items Discussed

Ms. Goad called at about 3:00 pm in response to a message left for her by Maria Wiseman. She said that she wanted us to contact Sam Dunlap, her Tribe's monitor, regarding the project. She said he could speak for her Tribe. She said if we were unable to contact him she would like us to contact her again.

Follow Up

Mr. Dunlap is on the NAHC list and will be contacted.

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/15 Project # 60334580

Individual Contacted: Anthony Morales Phone # (626) 483-3564

Contact Information

Subject of Contact: "Los Angeles Groundwater Replenishment Project"

Items Discussed

I introduced myself and briefly explained the purpose of my phone call. I told him it was regarding the letter that had recently been sent out and then told him about the proposed project. Mr. Morales said that this is Gabrieleno territory and an archaeologically sensitive area. Therefore, he recommends the proposed work to be monitored by Native American monitors (preferably the group he represents) and archaeological monitors. I ended the conversation by letting him know he can contact Marc Beherec if he has any questions.
(2:27 - 2:35 pm)

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/2015

Project # 60334580

Individual Contacted: Saudonne Goad

Phone # (951) 807-0479

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

Called at 2:45 pm. Left a message.
Asked them to call Marc Beherec at phone number (213) 593-8481.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/2015

Project # 60334580

Individual Contacted: Bernie Acuna

Phone # (310) 428-5690

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

Called at 2:49 pm. No answer. Left a message.
Asked Mr Acuna to contact Marc Beherec at (213)593-8481.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/2015

Project # 60334580

Individual Contacted: Linda Candelaria

Phone # (626) 676-1184

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

Called 2:52 pm. No answer. Left a message with Marc Beherec's contact information.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/2015

Project # 60334580

Individual Contacted: Robert Dorame

Phone # (562) 761-6417

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

I introduced myself and my purpose of calling. Mr. Dorame asked me to send the letter explaining the proposed project to his email (gtongva@verizon.net). Then he will look it over and we can follow up. I explained that if he has any questions to address those to Marc Beherec.

(2:50-2:56 pm)

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/2015 Project # 60334580

Individual Contacted: Beverly Salazar Folkes Phone # (805) 492-7255

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(3:10 pm)

No answer. Left a message with Marc Beherec's phone number (213-593-8481).

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/2015

Project # 60334580

Individual Contacted: Larry Ortega

Phone # (818) 837-0794

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(3:18 pm) "Michael" answered.

Mr Ortega was not at the office. I introduced myself and told him my purpose of calling. Left him Marc Beherec's # 213-593-8481.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/15

Project # 60334580

Individual Contacted: Ron Andrade

Phone # (213) 351-5324

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(3:21 pm) No answer.

Phone number has been disconnected.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/15 Project # 60334580

Individual Contacted: Delia Dominguez Phone # (626) 339-6785

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(3:23 pm)

No answer. Left a message with Marc Beherec's contact information.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/15 Project # 60334580

Individual Contacted: Sam Dunlap Phone # (909) 262-9351

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(3:29 pm)
No answer. Left a message with Marc Beherec's contact information.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/15

Project # 60334580

Individual Contacted: Andrew Salas

Phone # (626)926-4131

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(3:32 pm)
No answer. Left a message with Marc Beherec's contact information.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/2015 Project # 60334580

Individual Contacted: John Valenzuela Phone # (760) 885-0955

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(3:43 pm)

No answer. Left a message with Marc Beherec's contact information.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Maria Wiseman

Date: 8/25/2015 Project # 60334580

Individual Contacted: Randy Guzman Phone # (805) 905-1675

Contact Information

Subject of Contact: Los Angeles Groundwater Replenishment Project

Items Discussed

(3:37 pm)
I introduced myself and briefly the proposed project. Mr. Guzman asked to have the letter emailed to him in pdf-format so he can review it.

Follow Up

AECOM

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700   www.AECOM.com

March 30, 2016

NATIVE AMERICAN HERITAGE COMMISSION
915 Capitol Mall, Room 364
Sacramento, California 95814

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Commissioners:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to prepare a Phase I Cultural Resources Assessment for the Los Angeles Groundwater Replenishment Project. As part of this project, we request that the Native American Heritage Commission conduct a Sacred Lands File search of the project area. The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

We have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds ï approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The goal of this letter, in addition to acquainting you with this project, is to request that you check the Sacred Lands File records to identify any previously recorded sites in the project area. In addition, please provide a list of Native American groups or individuals who may have interest in and knowledge of the area.

Thank you for your assistance. Please feel free to contact me if you have any questions about this project.

Sincerely,

Marc a Beherec

Marc A. Beherec, Ph.D., RPA
Archaeologist
D 213.593.8481 F 213.593.8623
marc.beherec@aecom.com

Enclosure: Project Area Maps

NATIVE AMERICAN HERITAGE COMMISSION
1550 Harbor Blvd., Suite 100
West Sacramento, CA 95691
(916) 373-3710
(916) 373-5471 FAX

April 5, 2016

Marc A. Beherec, PhD., RPA
AECOM, Inc.

Sent via e-mail: marc.beherec@aecom.com
Number of Pages: 3

RE: The Proposed Los Angeles Groundwater Replenishment Project, San Fernando Valley, San Fernando and Van Nuys USGS Quadrangles, Los Angeles County, California

Dear Dr. Beherec:

Attached is a consultation list of tribes with traditional lands or cultural places located within the boundaries of the above referenced counties. Please note that the intent above reference codes is to mitigate impacts to tribal cultural resources, as defined, for California Environmental Quality Act (CEQA) projects.

As of July 1, 2015, Public Resources Code Sections 21080.3.1 and 21080.3.2 require public agencies to consult with California Native American tribes identified by the Native American Heritage Commission (NAHC) for the purpose mitigating impacts to tribal cultural resources:

> Within 14 days of determining that an application for a project is complete or a decision by a public agency to undertake a project, the lead agency shall provide formal notification to the designated contact of, or a tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, which shall be accomplished by means of at least one written notification that includes a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation pursuant to this section. (Public Resources Code Section 21080.3.1(d))

The law does not preclude agencies from initiating consultation with the tribes that are culturally and traditionally affiliated with their jurisdictions. The NAHC believes that in fact that this is the best practice to ensure that tribes are consulted commensurate with the intent of the law.

In accordance with Public Resources Code Section 21080.3.1(d), formal notification must include a brief description of the proposed project and its location, the lead agency contact information, and a notification that the California Native American tribe has 30 days to request consultation. The NAHC believes that agencies should also include with their notification letters information regarding any cultural resources assessment that has been completed on the APE, such as:

1. The results of any record search that may have been conducted at an Information Center of the California Historical Resources Information System (CHRIS), including, but not limited to:

   - A listing of any and all known cultural resources have already been recorded on or adjacent to the APE;
   - Copies of any and all cultural resource records and study reports that may have been provided by the Information Center as part of the records search response;
   - If the probability is low, moderate, or high that cultural resources are located in the APE.
   - Whether the records search indicates a low, moderate or high probability that unrecorded cultural resources are located in the potential APE; and

- If a survey is recommended by the Information Center to determine whether previously unrecorded cultural resources are present.

2. The results of any archaeological inventory survey that was conducted, including:

   - Any report that may contain site forms, site significance, and suggested mitigation measurers.

   All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum, and not be made available for pubic disclosure in accordance with Government Code Section 6254.10.

3. The results of any Sacred Lands File (SFL) check conducted through Native American Heritage Commission. A search of the SFL was completed for the USGS quadrangle information provided with negative results.

4. Any ethnographic studies conducted for any area including all or part of the potential APE; and

5. Any geotechnical reports regarding all or part of the potential APE.

Lead agencies should be aware that records maintained by the NAHC and CHRIS is not exhaustive, and a negative response to these searches does not preclude the existence of a cultural place. A tribe may be the only source of information regarding the existence of a tribal cultural resource.

This information will aid tribes in determining whether to request formal consultation. In the case that they do, having the information beforehand well help to facilitate the consultation process.

If you receive notification of change of addresses and phone numbers from tribes, please notify me. With your assistance we are able to assure that our consultation list contains current information.

If you have any questions, please contact me at my email address: gayle.totton@nahc.ca.gov.

Sincerely,

Gayle Totton

Gayle Totton, M.A., PhD.
Associate Governmental Program Analyst

Native American Heritage Commission
Tribal Consultation List
Los Angeles County
April 5, 2016

Fernandeno Tataviam Band of Mission Indians
Rudy Ortega Jr., President
1019 2nd Street
San Fernando , CA 91340
(818) 837-0794 Office
Fernandeno
Tataviam

Gabrielino-Tongva Tribe
Linda Candelaria, Co-Chairperson
1999 Avenue of the Stars, Suite 1100
Los Angeles , CA 90067
(626) 676-1184 Cell
Gabrielino

San Fernando Band of Mission Indians
John Valenzuela, Chairperson
P.O. Box 221838
Newhall , CA 91322
tsen2u@hotmail.com
(760) 885-0955 Cell
Fernandeño
Tataviam
Serrano
Vanyume
Kitanemuk

Soboba Band of Luiseno Indians
Joseph Ontiveros, Cultural Resource Department
P.O. BOX 487
San Jacinto , CA 92581
jontiveros@soboba-nsn.gov
(951) 663-5279
(951) 654-5544, ext 4137
Luiseno
Cahuilla

Gabrieleno/Tongva San Gabriel Band of Mission Indians
Anthony Morales, Chairperson
P.O. Box 693
San Gabriel , CA 91778
GTTribalcouncil@aol.com
(626) 483-3564 Cell
Gabrielino Tongva

Gabrieleno Band of Mission Indians - Kizh Nation
Andrew Salas, Chairperson
P.O. Box 393
Covina , CA 91723
gabrielenoindians@yahoo.com
(626) 926-4131
Gabrielino

Gabrielino /Tongva Nation
Sandonne Goad, Chairperson
106 1/2 Judge John Aiso St., #231
Los Angeles , CA 90012
sgoad@gabrielino-tongva.com
(951) 807-0479
Gabrielino Tongva

Gabrielino Tongva Indians of California Tribal Council
Robert F. Dorame, Tribal Chair/Cultural Resources
P.O. Box 490
Bellflower , CA 90707
gtongva@verizon.net
(562) 761-6417 Voice/Fax
Gabrielino Tongva

This list is current only as of the date of this document and is based on the information available to the Commission on the date it was produced. Distribution of this list does not relieve any person of statutory responsibility as defined in Section 7050.5 of the Health and Safety Code, Section 5097.94 of the Public Resources Code and Section 5097.98 of the Public Resources Code.

This list applicable only for consultation with Native American tribes under Public Resources Code Sections 21080.3.1 for the proposed Los Angeles Groundwater Replenishment Project, San Fernando Valley area, San Fernando and Van Nuys USGS Quadrangles, Los Angeles County, California.

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Anthony Morales, Chairperson
Gabrieleno/Tongva San Gabriel Band of Mission Indians
P.O. Box 693
San Gabriel, CA 91778

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Morales:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta and in the Pacoima Spreading Grounds. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

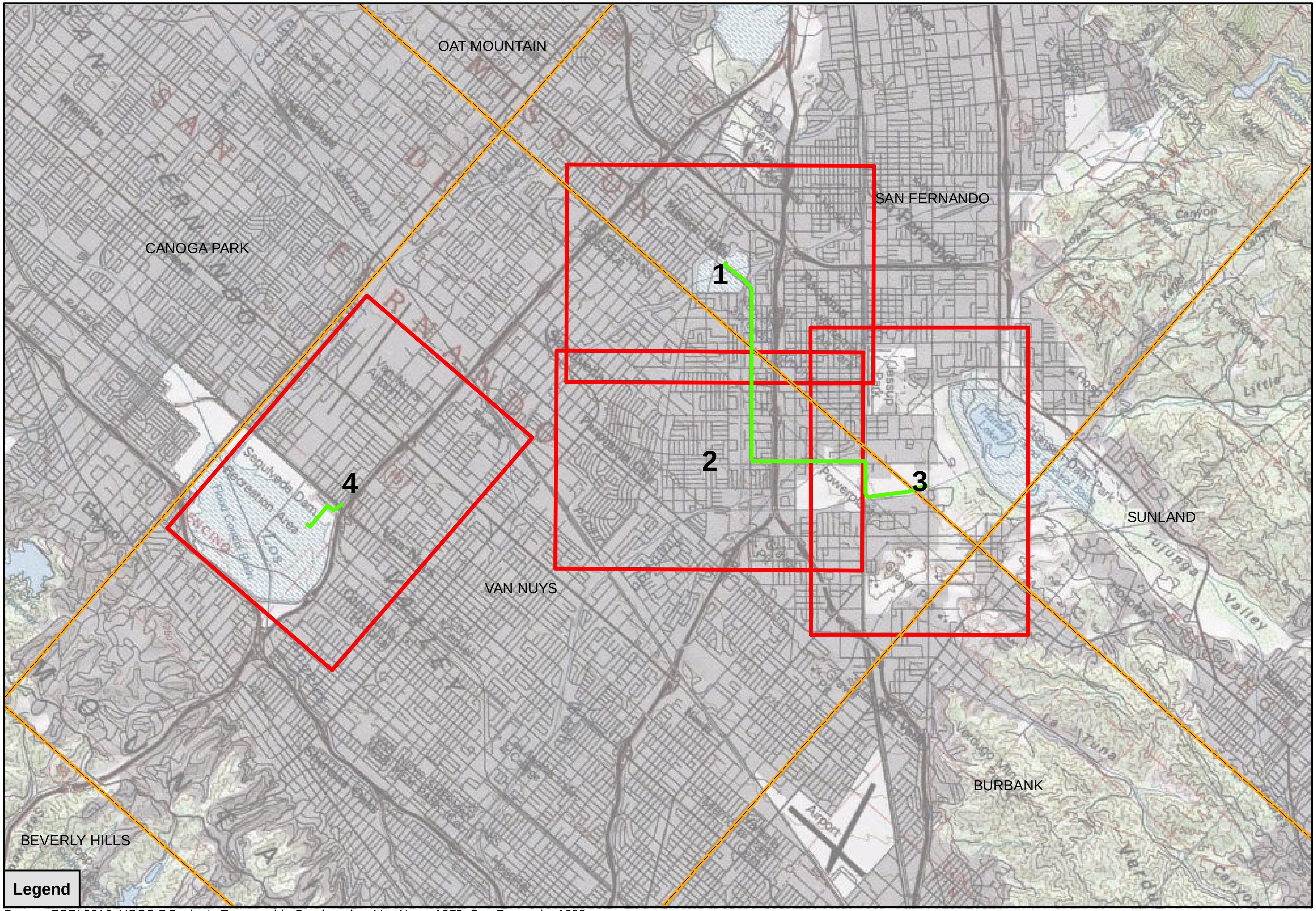
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700   www.AECOM.com
marc.beherec@aecom.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

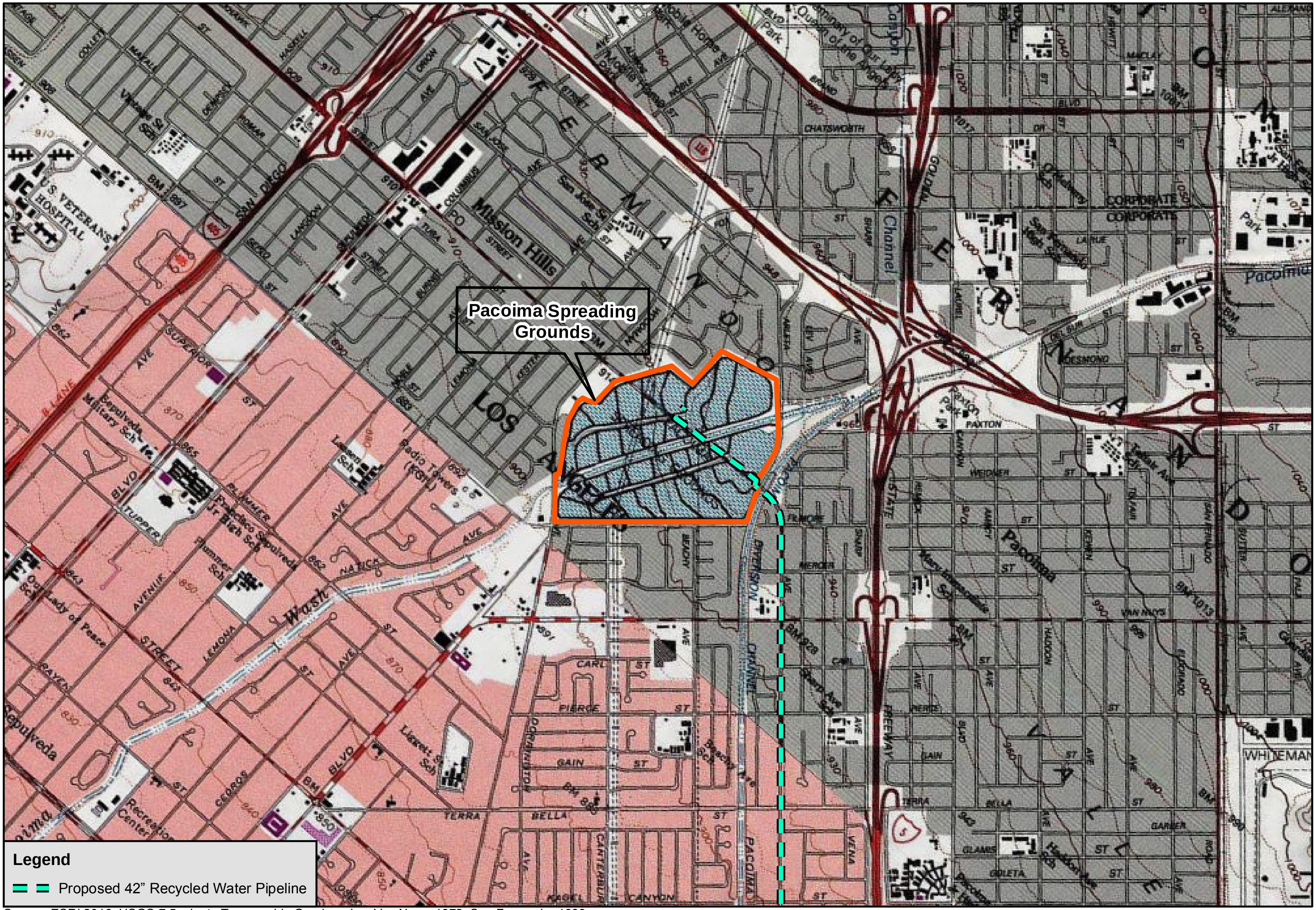


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

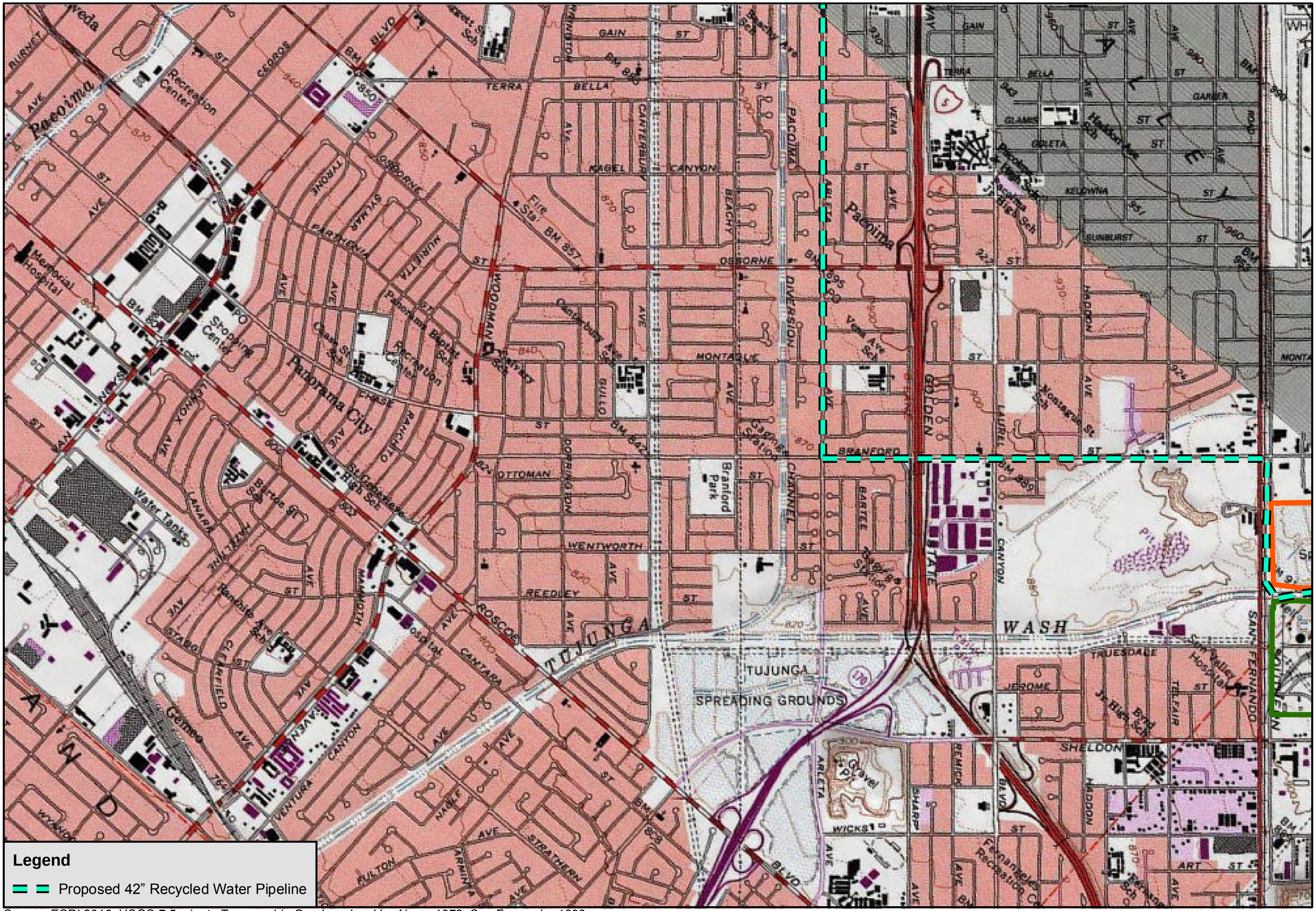
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

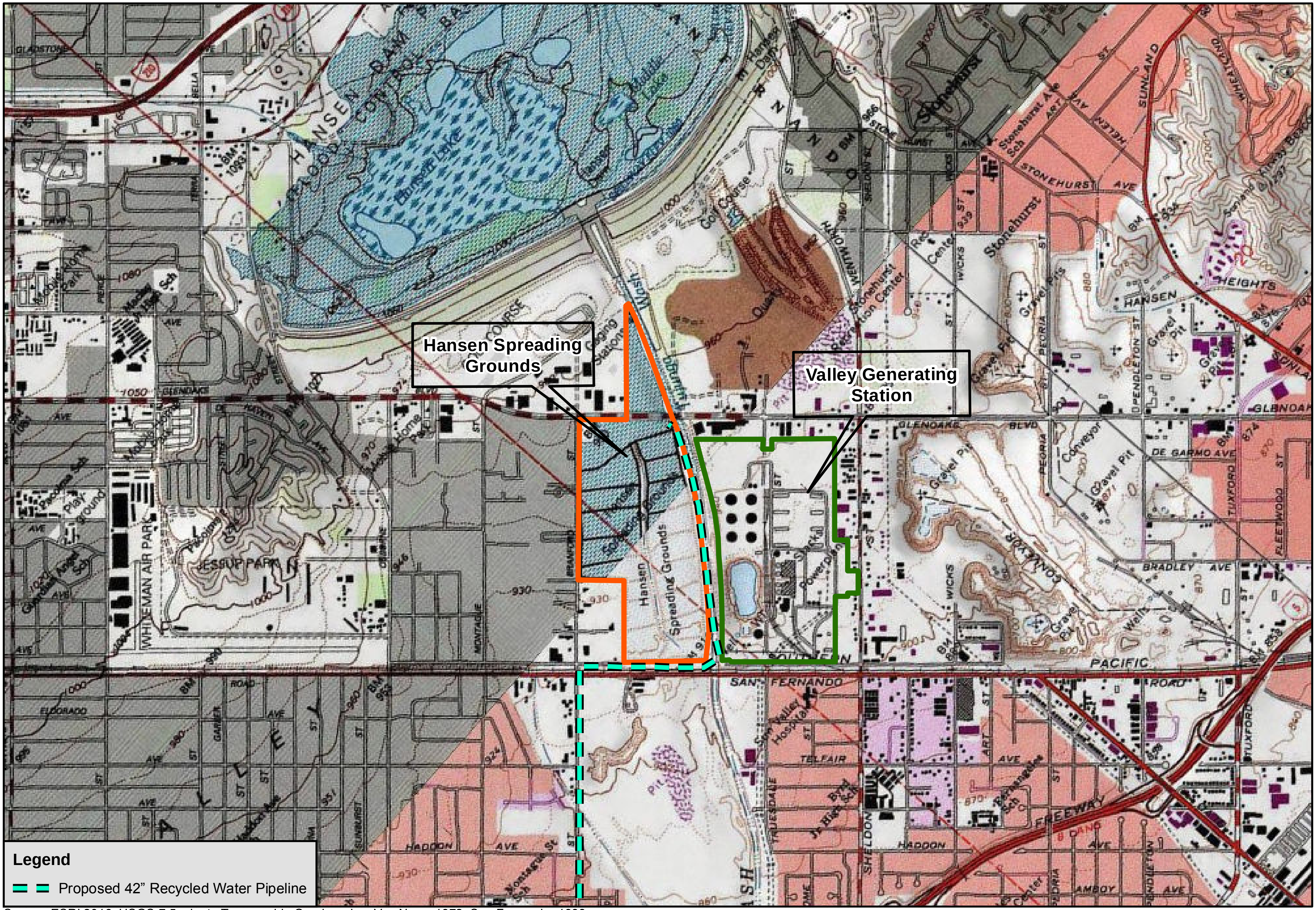
0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



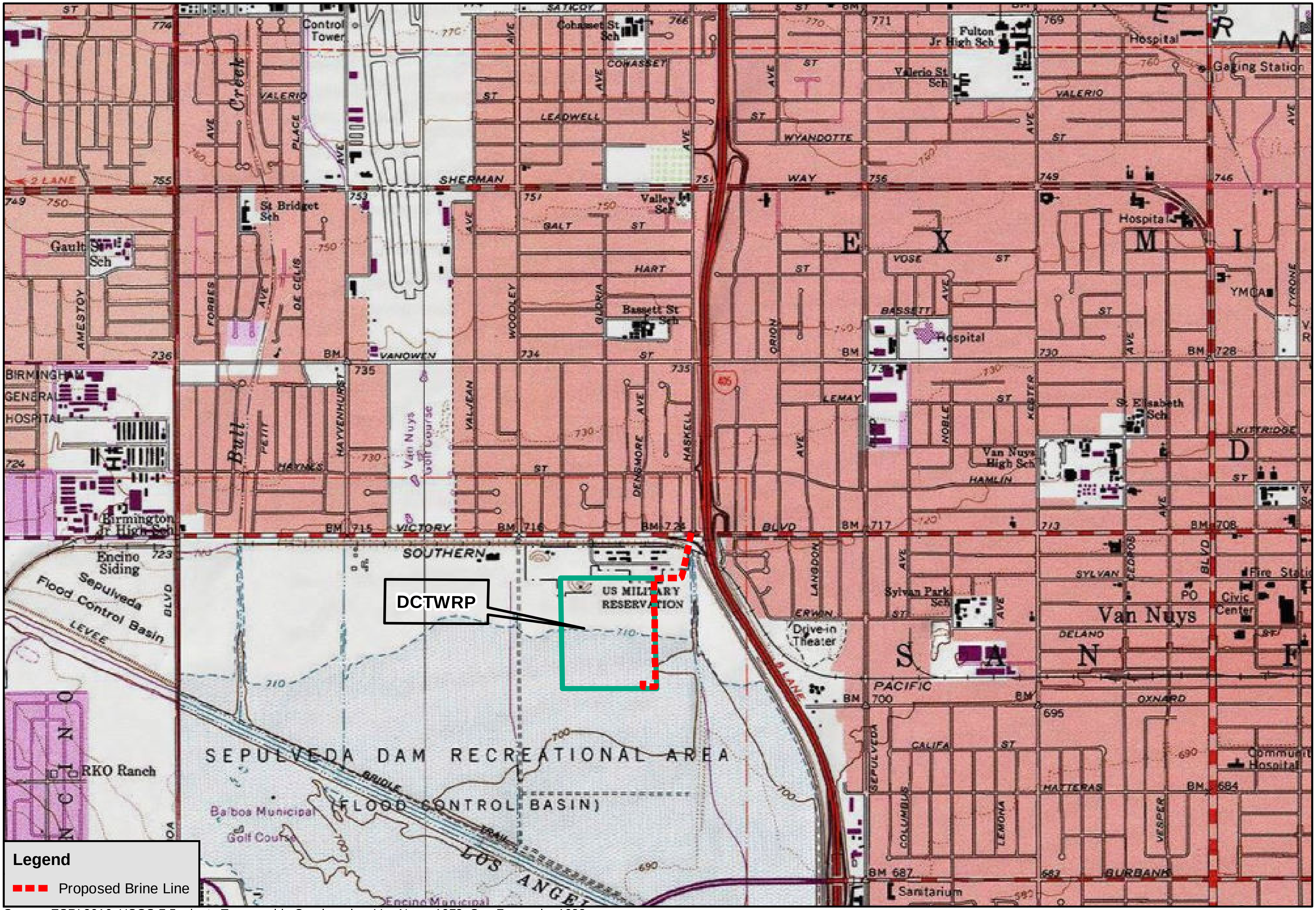
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Anthony Morales

Phone # 626-483-3564

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Anthony Morales, Chairperson of the Gabrieleno/Tongva San Gabriel Band of Mission Indians was contacted at 3:24 pm and did respond. I discussed with the individual that I (Alec Stevenson) represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and asked if there are any concerns or questions about the project. The individual stated that he has concerns about the sensitivity of the surrounding area and recommends monitoring by a representative of the Gabrielino/Tongva. Additionally, he asked about the depth and size of the excavation as well as the pipe placement. This information was provided in a follow-up phone call.

Follow Up

AECOM

Distribution

Contact Report Form

AECOM Contact: Marc Beherec

Date: April 14, 2016

Project # 60334580

Individual Contacted: Anthony Morales

Phone # 626-483-3564

Contact Information

Subject of Contact: Los Angeles Groundwater follow-up

Items Discussed

Mr. Morales had questions Alec Stevenson was not prepared to answer during his call on 4/13, so I called to give him that information. Mr. Morales wanted to know about the results of the CHRIS records search and background research. I informed him that the records search found no sites recorded within the project footprint, but that there were sites within 0.5 mile of the project. I also informed him that background research indicated village sites had been nearby in the San Fernando Valley. Mr. Morales also wanted to know the maximum depth and extent of excavations, which I gave him from the project description. Finally, Mr. Morales asked what our recommendations would be. I informed him that we recommended worker training, as well as archaeological monitoring of undisturbed soil, arbitrarily set at 10 feet, and recommended Native Americans be brought in if Native American artifacts are found. Mr. Morales expressed skepticism about the value of worker training, since the construction workers have their own job to do and are not focused on archaeology. He also requested that a Native American monitor, preferably someone from his group (Gabrieleno/Tongva San Gabriel Band of Mission Indians) be present during ground-disturbing activities.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Andrew Salas, Chairperson
Gabrieleno Band of Mission Indians
P.O. Box 393
Covina, CA 91723

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Salas:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

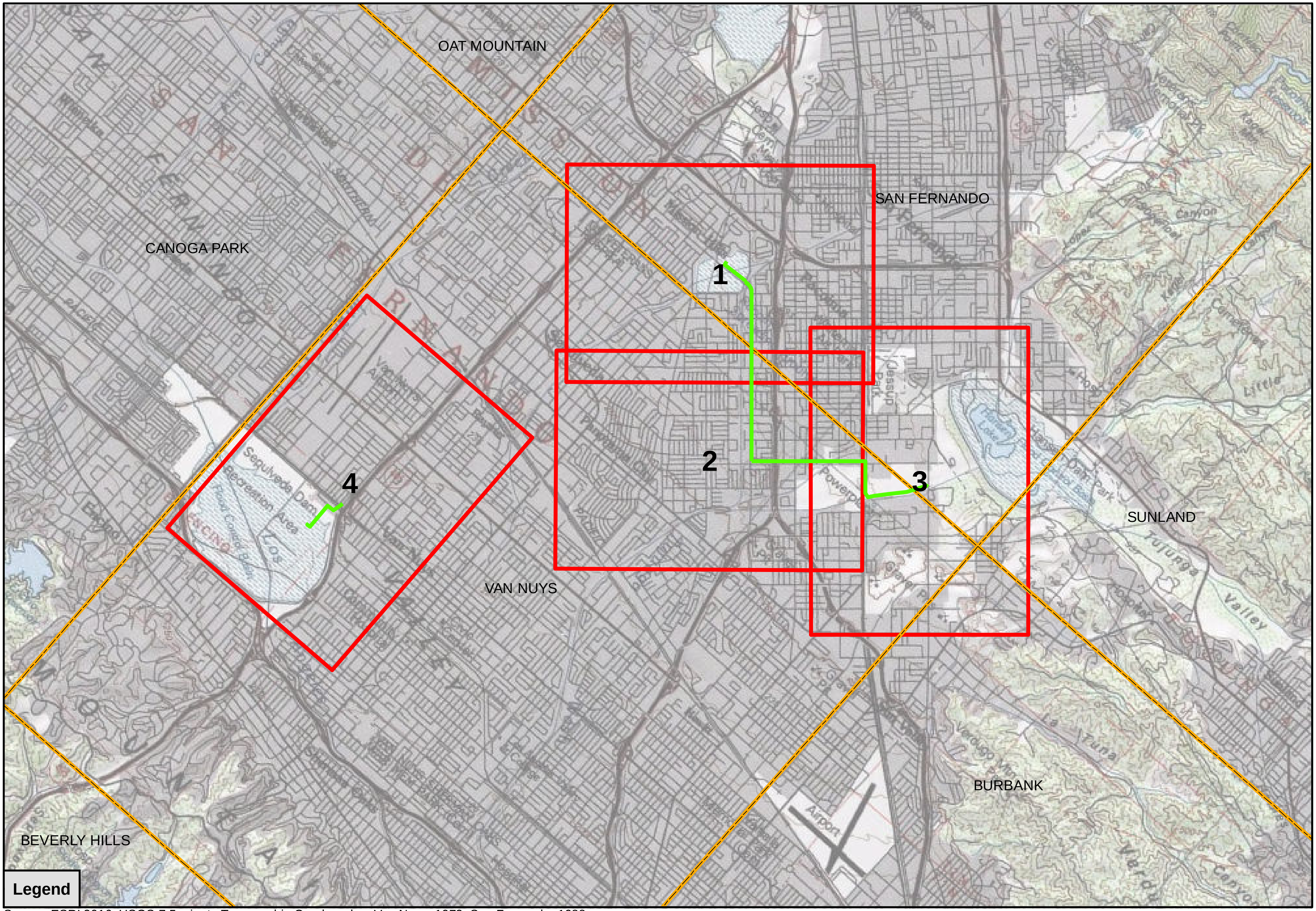
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

Enclosure:

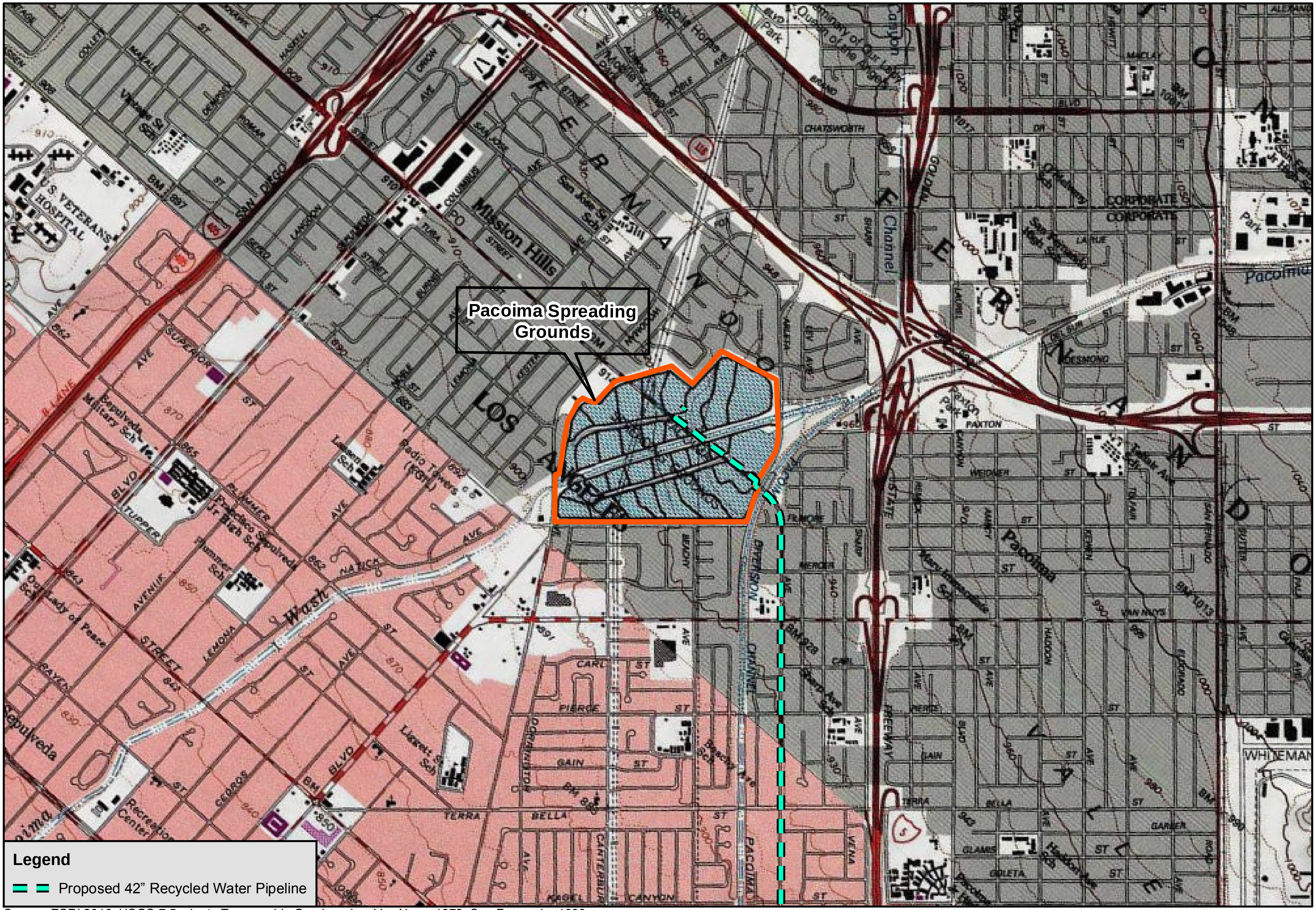
1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

Mapbook Index

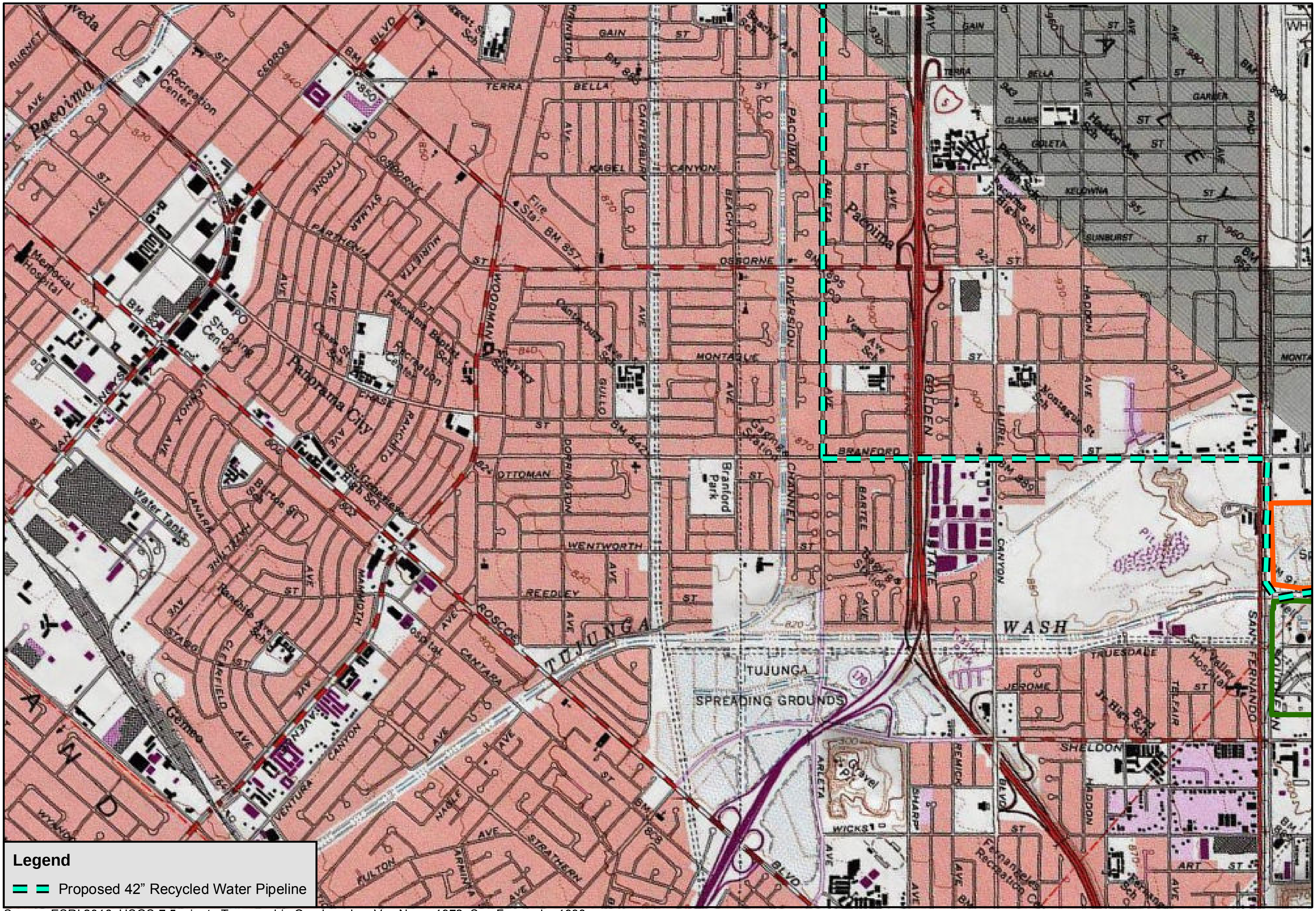
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

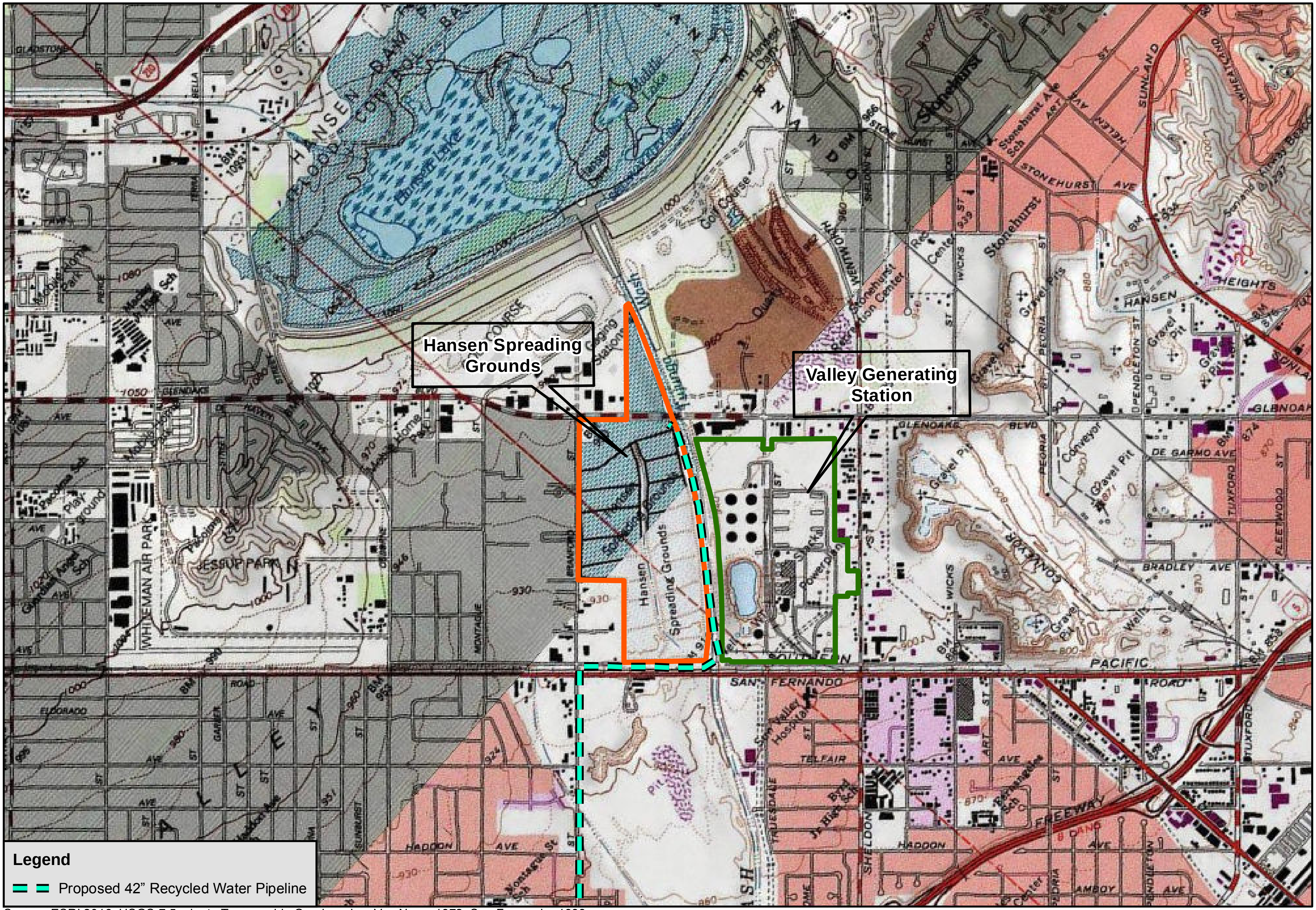
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1
Miles

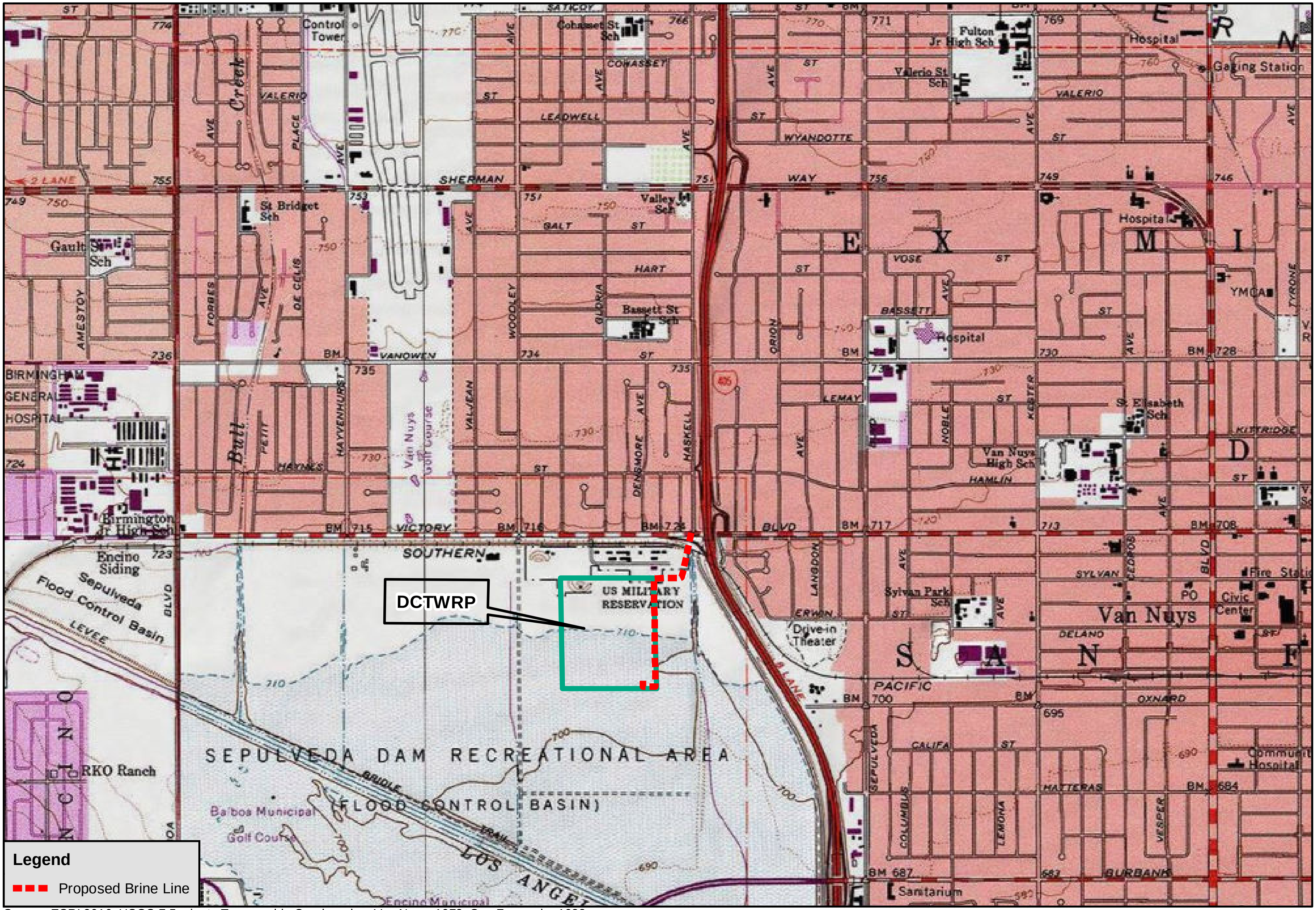
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

______________________________ ______________
Signature Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

Beherec, Marc

From: Gabrieleno Band of Mission Indians <gabrielenoindians@yahoo.com>
Sent: Tuesday, April 05, 2016 11:15 PM
To: Beherec, Marc
Cc: Christina Swindall Martinez. Kizh Gabrieleno
Subject: Los Angeles Groundwater Replenishment project (As Revised)
Attachments: los angeles ground water Replenishment project.docx; IMG_4611.JPG; IMG_4612.JPG; IMG_4613.JPG

Dear Marc
Please see attachments

Sincerely,

Andrew Salas, Chairman
Gabrieleno Band of Mission Indians - Kizh Nation
PO Box 393
Covina, CA 91723
cell: (626)926-4131
email: gabrielenoindians@yahoo.com
website: www.gabrielenoindians.org

GABRIELENO BAND OF MISSION INDIANS - KIZH NATION
Historically known as The San Gabriel Band of Mission Indians
Recognized by the State of California as the aboriginal tribe of the Los Angeles basin

Dear Marc.A Beherec, Ph.D.,RPA

"The project locale within the Arieta, Pacoima, Sun Valley, and Van Nuys lies in an area where the Ancestral & traditional territories of the Kizh(Kitc) Gabrieleño villages , adjoined and overlapped with each other, at least during the Late Prehistoric and Protohistoric Periods. The homeland of the Kizh (Kitc) Gabrieleños , probably the most influential Native American group in aboriginal southern California (Bean and Smith 1978a:538), was centered in the Los Angeles Basin, and reached as far east as the San Bernardino-Riverside area. The homeland of the Serranos was primarily the San Bernardino Mountains, including the slopes and lowlands on the north and south flanks.Whatever the linguistic affiliation, Native Americans in and around the project area echibited similar orgainization and resource procurement strategies. Villages were based on clan or lineage groups. Their home/ base sites are marked by midden deposits, often with bedrock mortars. During their seasonal rounds to exploit plant resources, small groups would migrate within their traditional territory in search of specific plants and animals. Their gathering strategies often left behind signs of special use sites, usually grinding slicks on bedrock boulders, at the locations of the resources. Therefore in order to protect our resources we're requesting one of our experienced certified ***Native American monitor as well as a Archeo- Monitor*** *to be on site during any & all ground disturbances (this includes but is not limited to pavement removal, pot-holing or auguring, boring, grading, excavation and trenching). Please see Map of Villages*

In all cases, when the NAHC states there are "No" records of sacred sites" in the subject area; they always refer the contractors back to the Native American Tribes whose tribal territory the project area is in. This is due to the fact, that the NAHC is only aware of general information on each California NA Tribe they are "NOT " the "experts" on our Tribe. Our Elder Committee & Tribal Historians are the experts and is the reason why the NAHC will always refer contractors to the local tribes.

In addition, we are also often told that an area has been previously developed or disturbed and thus there are no concerns for cultural resources and thus minimal impacts would be expected. I have two major recent examples of how similar statements on other projects were proven very inadequate. An archaeological study claimed there would be no impacts to an area adjacent to the Plaza Church at Olvera Street, the original Spanish settlement of Los Angeles, now in downtown Los Angeles. In fact, this site was the Gabrieleno village of Yangna long before it became what it is now today. The new development wrongfully began their construction and they, in the process, dug up and desecrated 118 burials. The area that was dismissed as culturally sensitive was in fact the First Cemetery of Los Angeles where it had been well documented at the Huntington Library that 400 of our Tribe's ancestors were buried there along with the founding families of Los Angeles (Picos, Sepulvedas, and Alvardos to name a few). In addition, there was another inappropriate study for the development of a new sports complex at Fedde Middle School in the City of Hawaiian Gardens could commence. Again, a village and burial site were desecrated despite their mitigation measures. Thankfully, we were able to work alongside the school district to quickly and respectfully mitigate a mutually beneficial resolution.

Given all the above, the proper thing to do for your project would be for our Tribe to monitor ground disturbing construction work. Native American monitors and/or consultant can see that cultural resources are treated appropriately from the Native American point of view. **.** *Because we are the lineal descendants of the vast area of Los Angeles and Orange Counties, we hold sacred the ability to protect what little of our culture remains. We thank you for taking seriously your role and responsibility in assisting us in preserving our culture.*

With respect,

Please contact our office regarding this project to coordinate a Native American Monitor to be present. Thank You

Andrew Salas, Chairman
Cell (626) 926-4131

Addendum: clarification regarding some confusions regarding consultation under AB52:

Andrew Salas, Chairman | Nadine Salas, Vice-Chairman | Christina Swindall Martinez, secretary
Albert Perez, treasurer I | Martha Gonzalez Lemos, treasurer II | Richard Gradias, Chairman of the council of Elders

PO Box 393 Covina, CA 91723 www.gabrielenoindians@yahoo.com gabrielenoindians@yahoo.com

AB52 clearly states that consultation must occur with tribes that claim traditional and cultural affiliation with a project site. Unfortunately, this statement has been left open to interpretation so much that neighboring tribes are claiming affiliation with projects well outside their traditional tribal territory. The territories of our surrounding Native American tribes such as the Luiseno, Chumash, and Cahuilla tribal entities. Each of our tribal territories has been well defined by historians, ethnographers, archaeologists, and ethnographers – a list of resources we can provide upon request. Often, each Tribe as well educates the public on their very own website as to the definition of their tribal boundaries. You may have received a consultation request from another Tribe. However we are responding because your project site lies within our Ancestral tribal territory, which, again, has been well documented. What does Ancestrally or Ancestral mean? The people who were in your family in past times, Of, belonging to, inherited from, or denoting an ancestor or ancestors http://www.thefreedictionary.com/ancestral. . If you have questions regarding the validity of the "traditional and cultural affiliation" of another Tribe, we urge you to contact the Native American Heritage Commission directly. Section 5 section 21080.3.1 (c) states "…the Native American Heritage Commission shall assist the lead agency in identifying the California Native American tribes that are traditionally and culturally affiliated with the project area." *In addition,* ***please see the map below.***

APPENDIX 1: Map 1-2; Bean and Smith 1978 map.

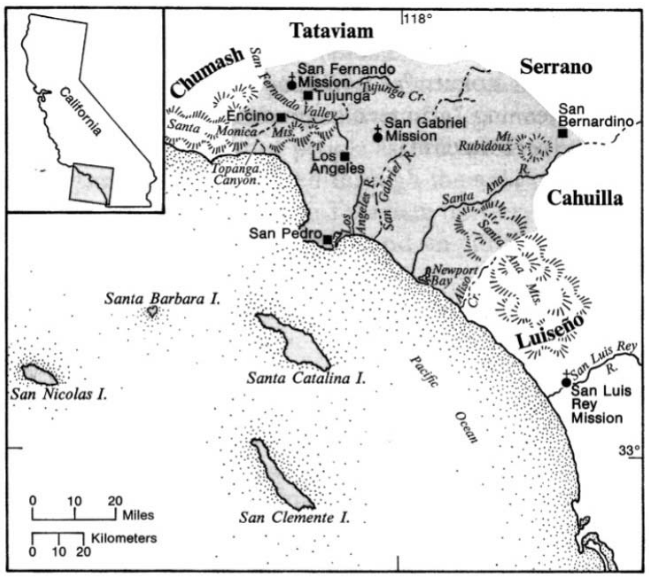


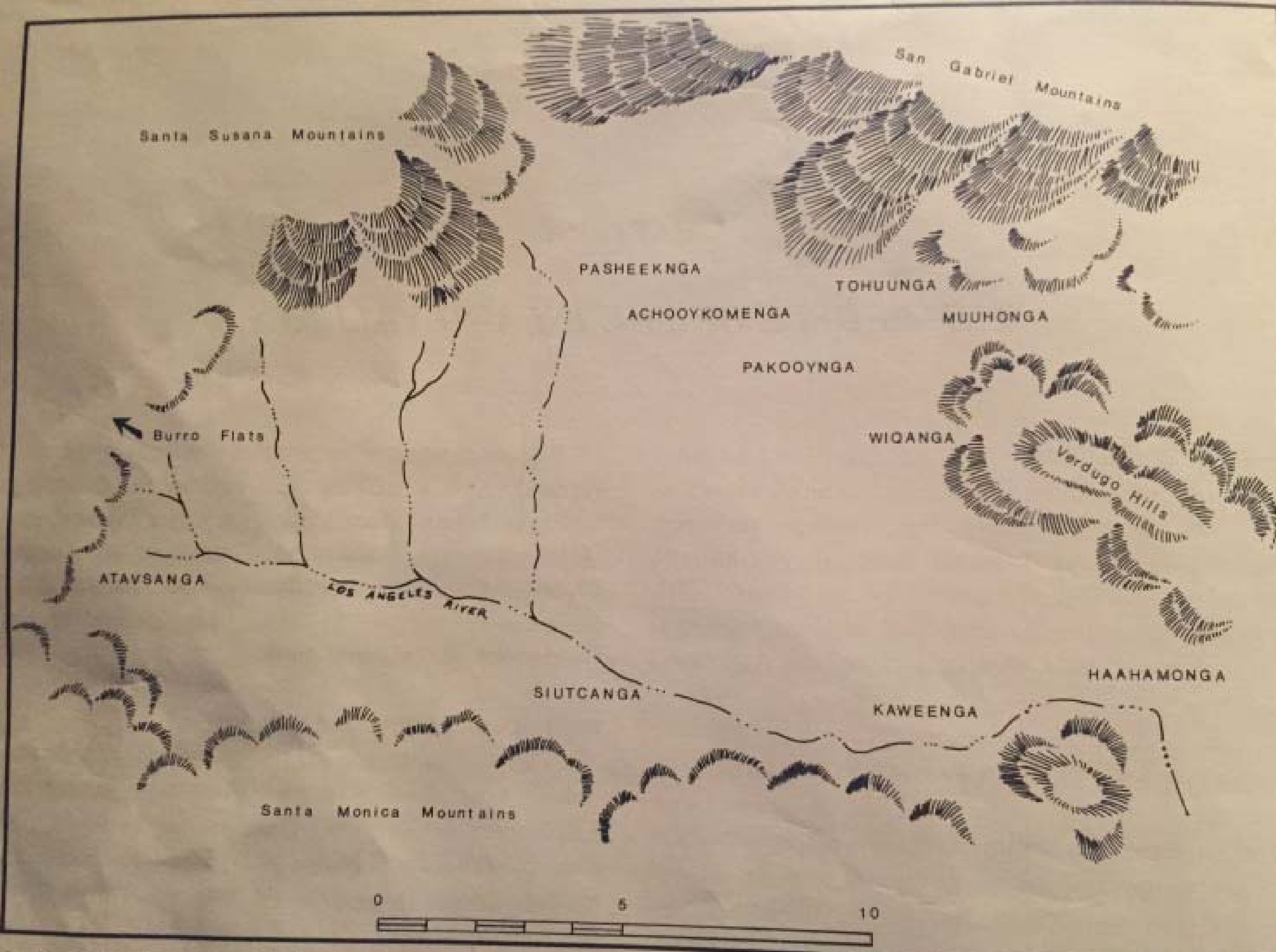
Fig. 1. Tribal territory.

The United States National Museum's Map of Gabrielino Territory:

Bean, Lowell John and Charles R. Smith
1978 Gabrielino IN *Handbook of North American Indians, California,* Vol. 8, edited by R.F. Heizer, Smithsonian Institution Press, Washington, D.C., pp. 538-549

Andrew Salas, Chairman | Nadine Salas, Vice-Chairman | Christina Swindall Martinez, secretary
Albert Perez, treasurer I | Martha Gonzalez Lemos, treasurer II | Richard Gradias, Chairman of the council of Elders

PO Box 393 Covina, CA 91723 | www.gabrielenoindians@yahoo.com | gabrielenoindians@yahoo.com



Map 5. Gabrielino communities located within the San Fernando Valley. The scale on this and the following maps is in statute miles.

Sétimo López reported that the Fernandeño called the

lay down on top of the Escurpion Peak above the

ENCINO

According to Sétimo López, the Gabrielino community of *Siutcanga* was located at El Encino (Harrington 1986:R106 F31, 96, 98). El Encino refers to Rancho El Encino, a 4,461 acre tract granted to three ex-mission Indians named Ramón, Francisco, and Roque (Robinson 1952:33-34; Cowan 1956:34; Beck and Haase 1974).

In August, 1769, the members of the Portolá Expedition crossed the San Fernando Valley. On August 5th, the explorers halted close to a very large pool of water; nearby was "a populous Indian village" whose inhabitants were "very good-natured and peaceful. They offered us their seeds in trays or baskets of rushes." The Gabrielino visited the explorers "in such numbers that . . . we counted as many as two hundred and five, including men, women, and children" (Teggart 1911:23-25). The historian Herbert Eugene Bolton identified the camping place as "near Encino," and it is possible that the settlement that the Spaniards observed was *Siutcanga* (Bolton 1927:151; see also Brown 1967:8).

In 1984 and 1985, archaeological excavations near the intersection of Ventura and Balboa boulevards in the city of Encino revealed evidence of a Gabrielino community that may have been *Siutcanga*. The community lay on the bank of an ancient stream bed and included a cemetery in which both human and animal burials were interred. Radiocarbon dating established that this site was occupied by a succession of Indian peoples beginning as early as 5000 B.C. Tragically, much of this invaluable site was destroyed by redevelopment; only a fraction remains preserved under a protective layer of landfill (R. Mason 1986; Whitney-DeSautels 1986).

who provided food, shelter, and all the necessities of life. The Gabrielino held their homeland in reverence, and it is fitting that the protection and preservation of surviving natural areas within Los Angeles remains an important concern of their descendants. A number of local placenames such as Cahuenga, Cucamonga, Pacoima, Topanga, and Azusa are derived from Gabrielino names and serve as reminders of the Indian people who once inhabited this region.

Indeed, despite smog, congested freeways, and urban sprawl, the Gabrielino homeland still inspires feelings of awe and wonder in those sensitive enough to appreciate its natural splendor. Sometimes these feelings emerge in moments of delicate beauty: the sight of a hawk soaring gracefully over an open field; the sound of a meadowlark singing on a warm spring

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Andrew Salas

Phone # 626-926-4131

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Andrew Salas, Chairperson of the Gabrieleno Band of Mission Indians - Kizh Nation was contacted at 3:30 pm and did respond. I discussed with the individual that I (Alec Stevenson) represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and asked if there are any concerns or questions about the project. The individual stated that the pipeline extends through a very important village. He recommended monitoring by a representative of his tribe as well as an archaeologist.

Follow Up

AECOM

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Bernie Acuna, Co-Chairperson
Gabrieleno-Tongva Tribe
1999 Avenue of the Stars
Suite 1100
Los Angeles, CA 90067

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Acuna:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

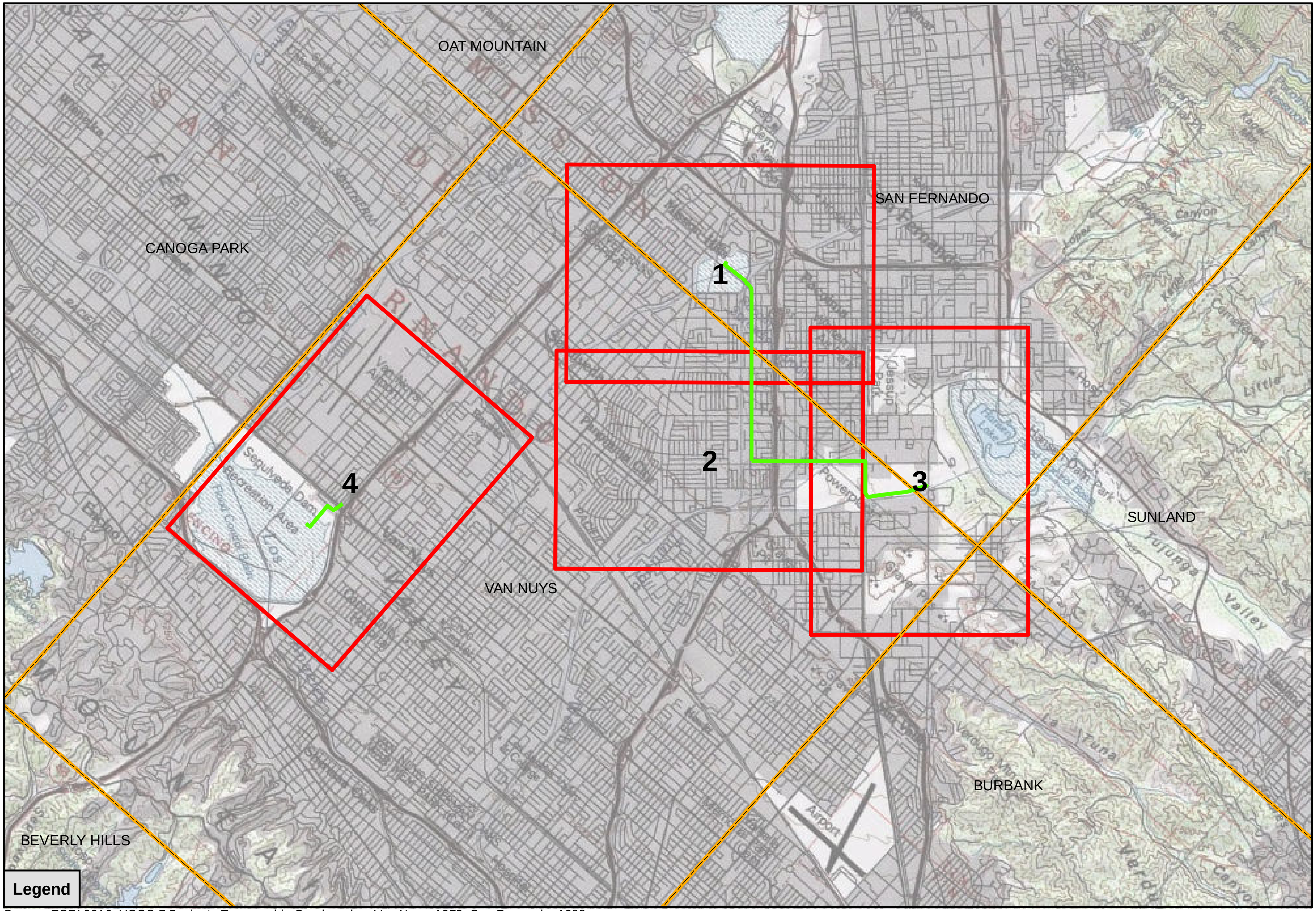
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
213.593.8481
marc.beherec@aecom.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

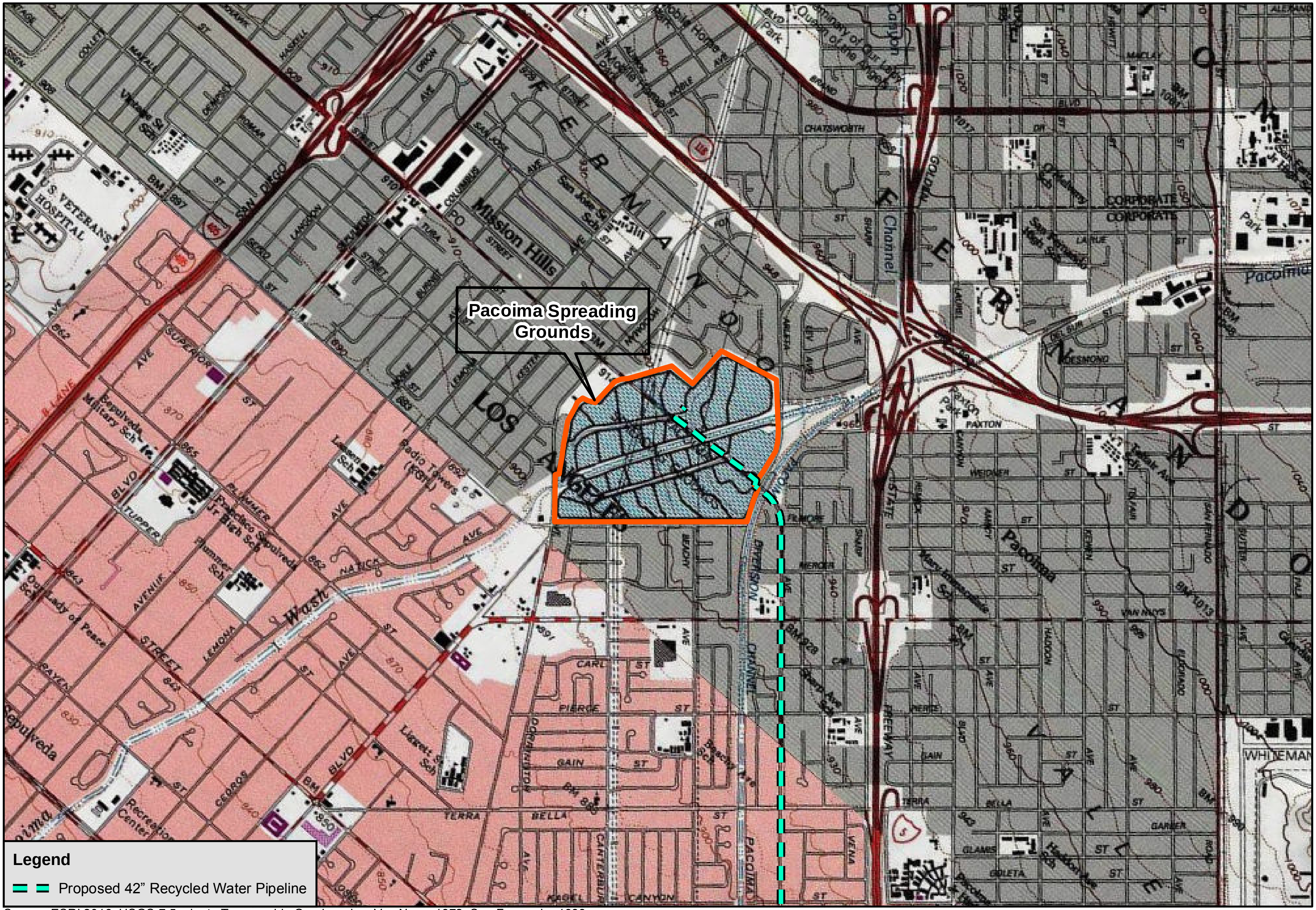


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

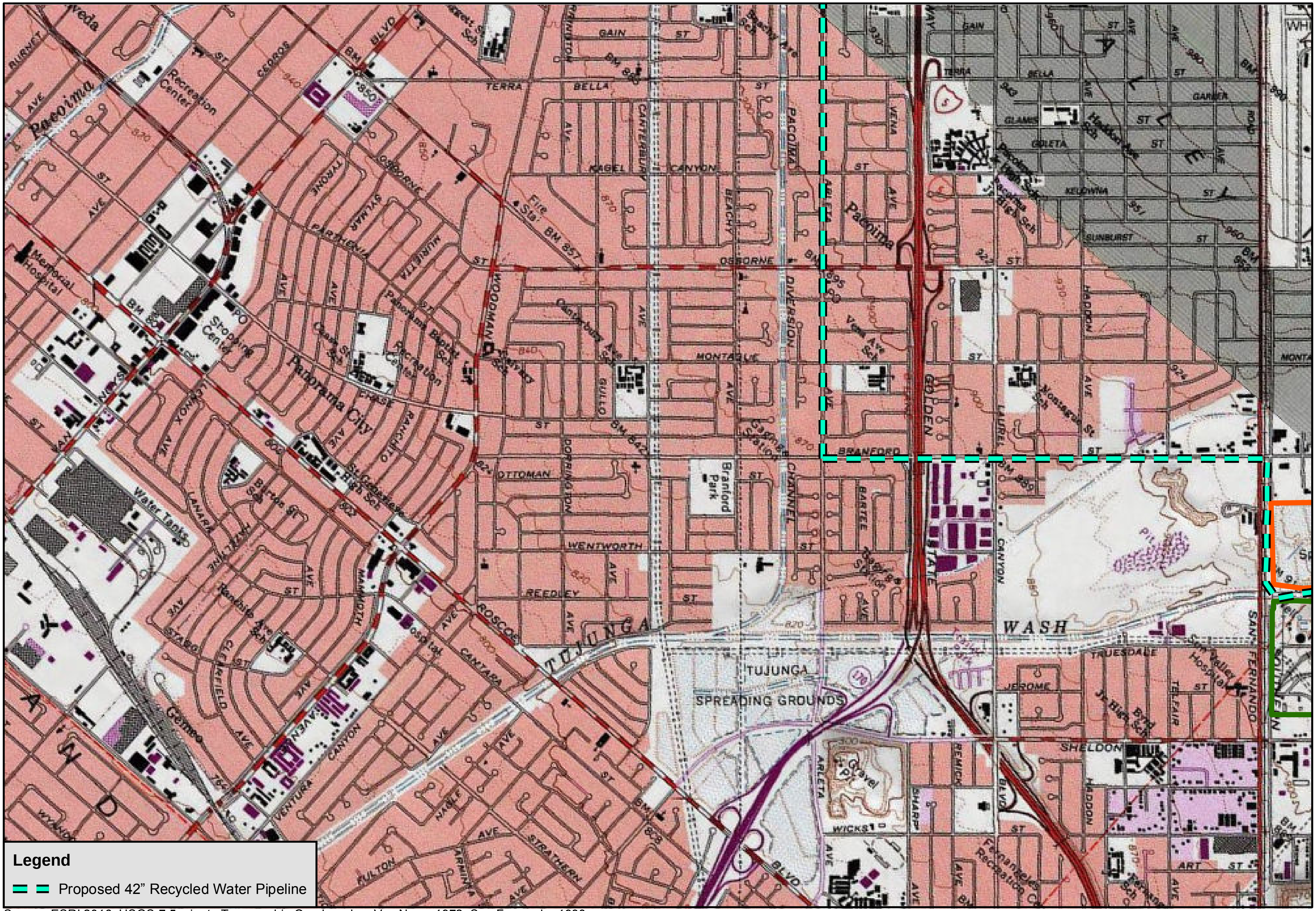
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

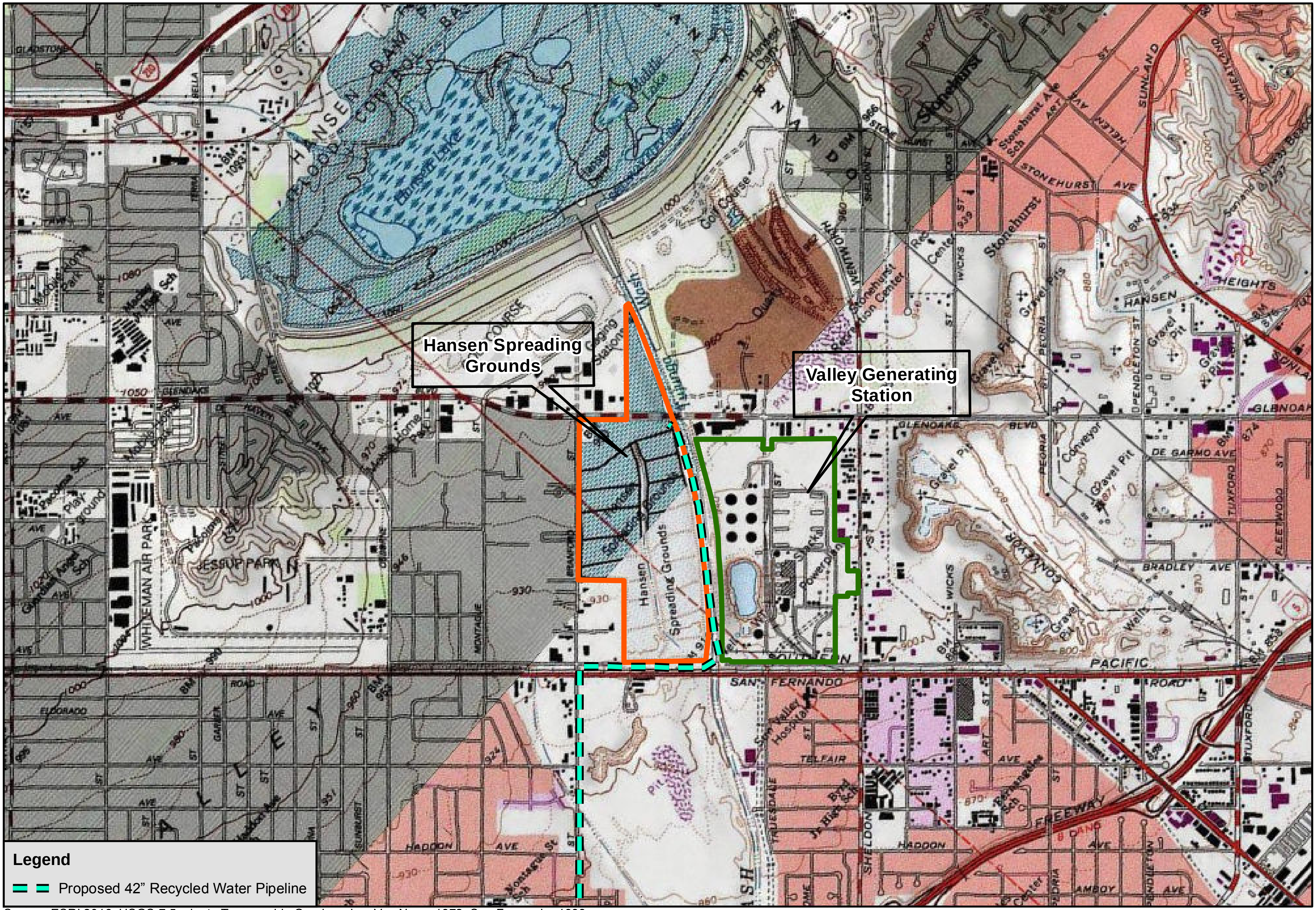
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

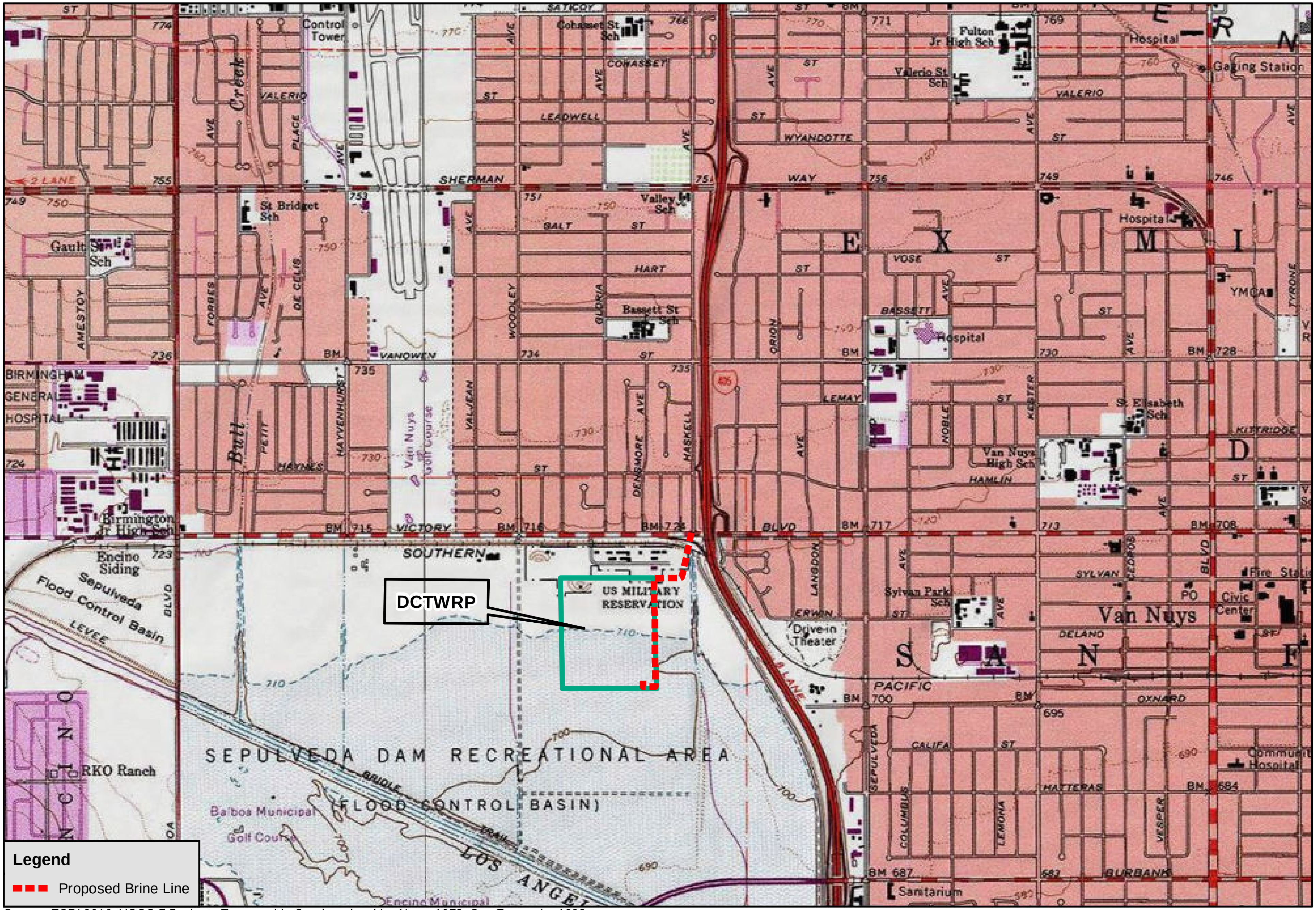
0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Bernie Acuna

Phone # 310-428-5690

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Bernie Acuna, Co-Chairperson of the Gabrielino Tongva Tribe was contacted at 3:42 pm. There was no answer. I left a message identifying myself (Alec Stevenson) and that I represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and that if the individual has any concerns or questions to please call the cultural resources lead , Marc Beherec. I then provided Marc's office number and ended the call.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Beverly Salazar Folkes
1931 Shadybrook Drive
Thousand Oaks, CA 91362

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Ms. Salazar Folkes:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

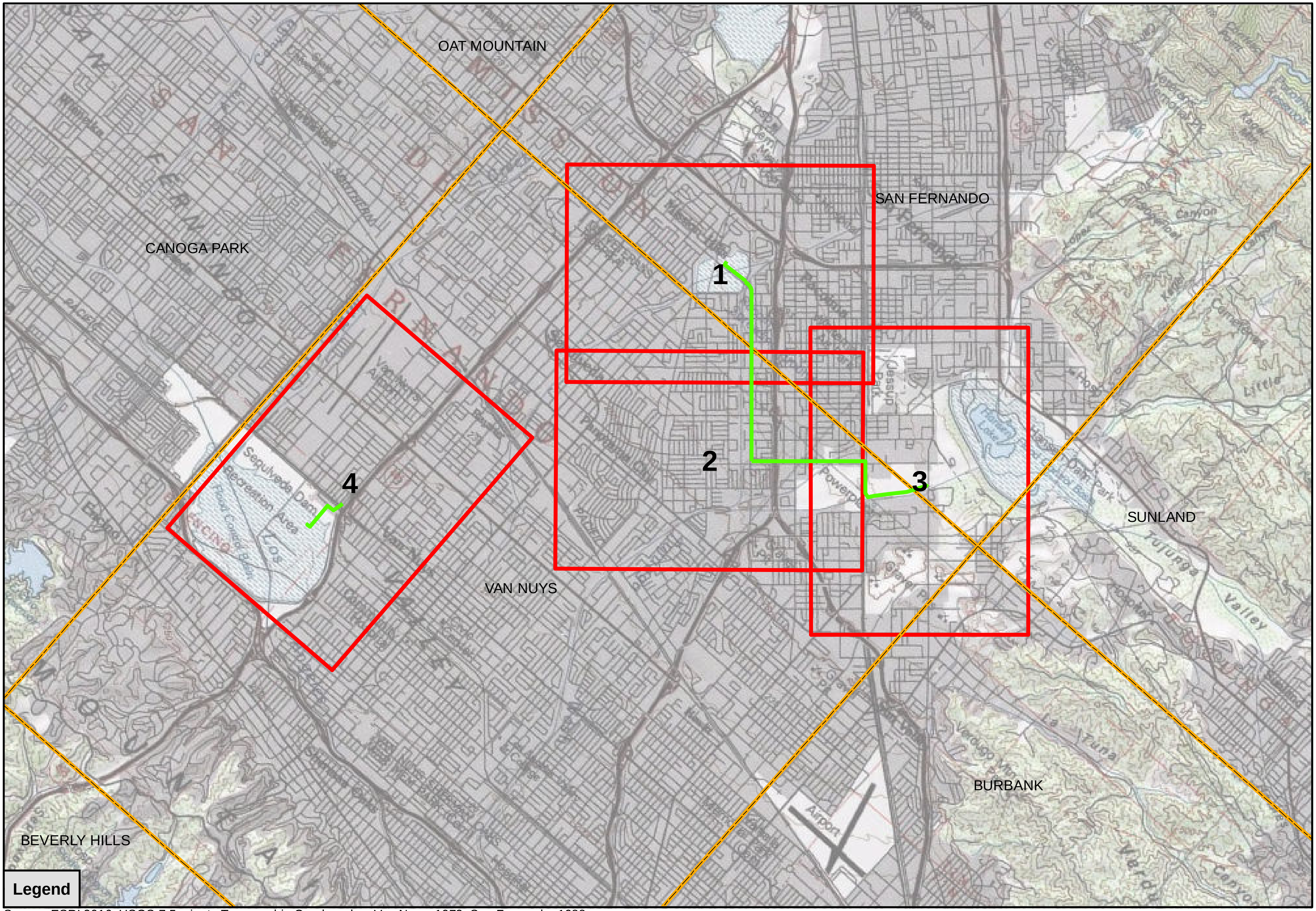
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

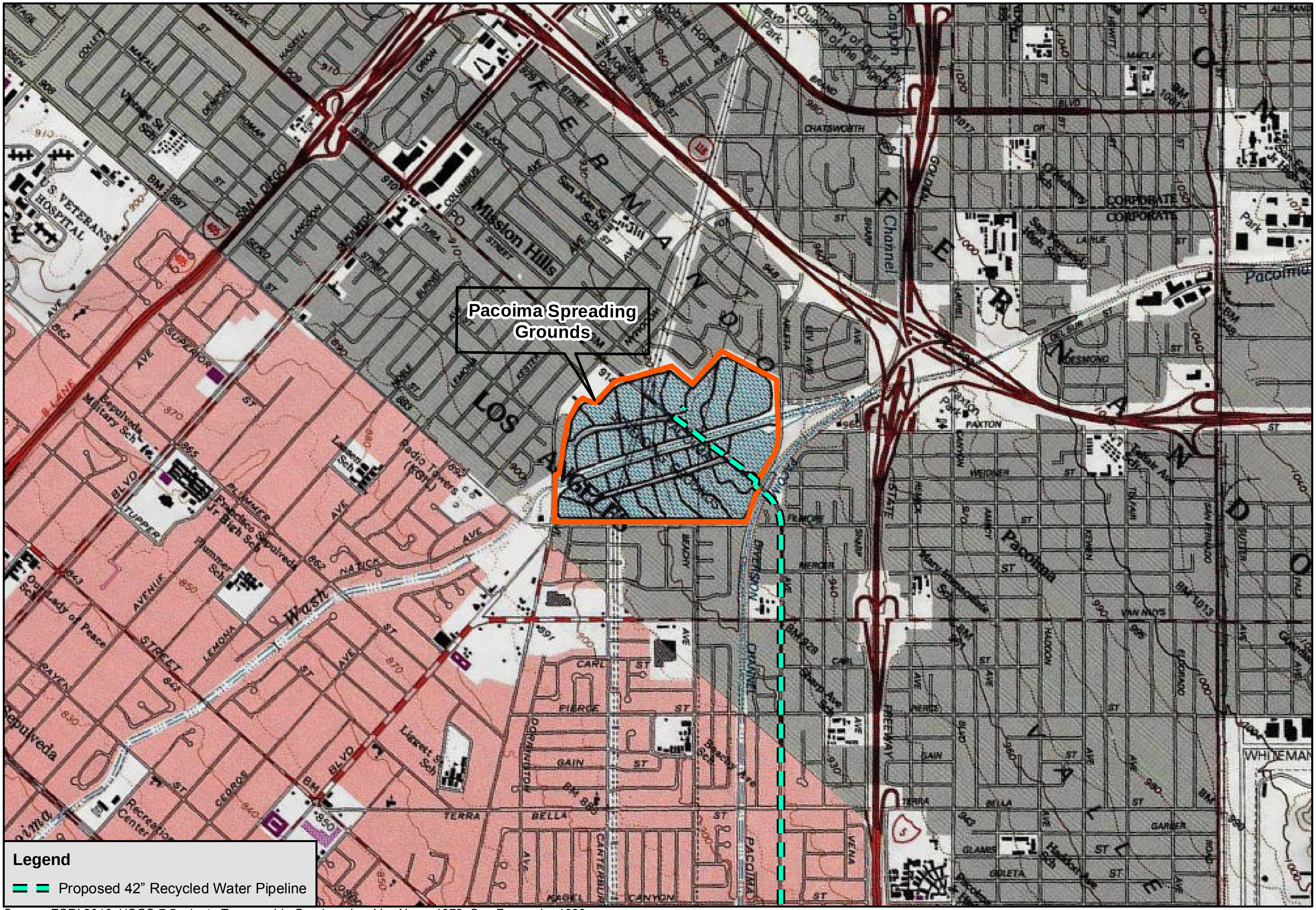


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

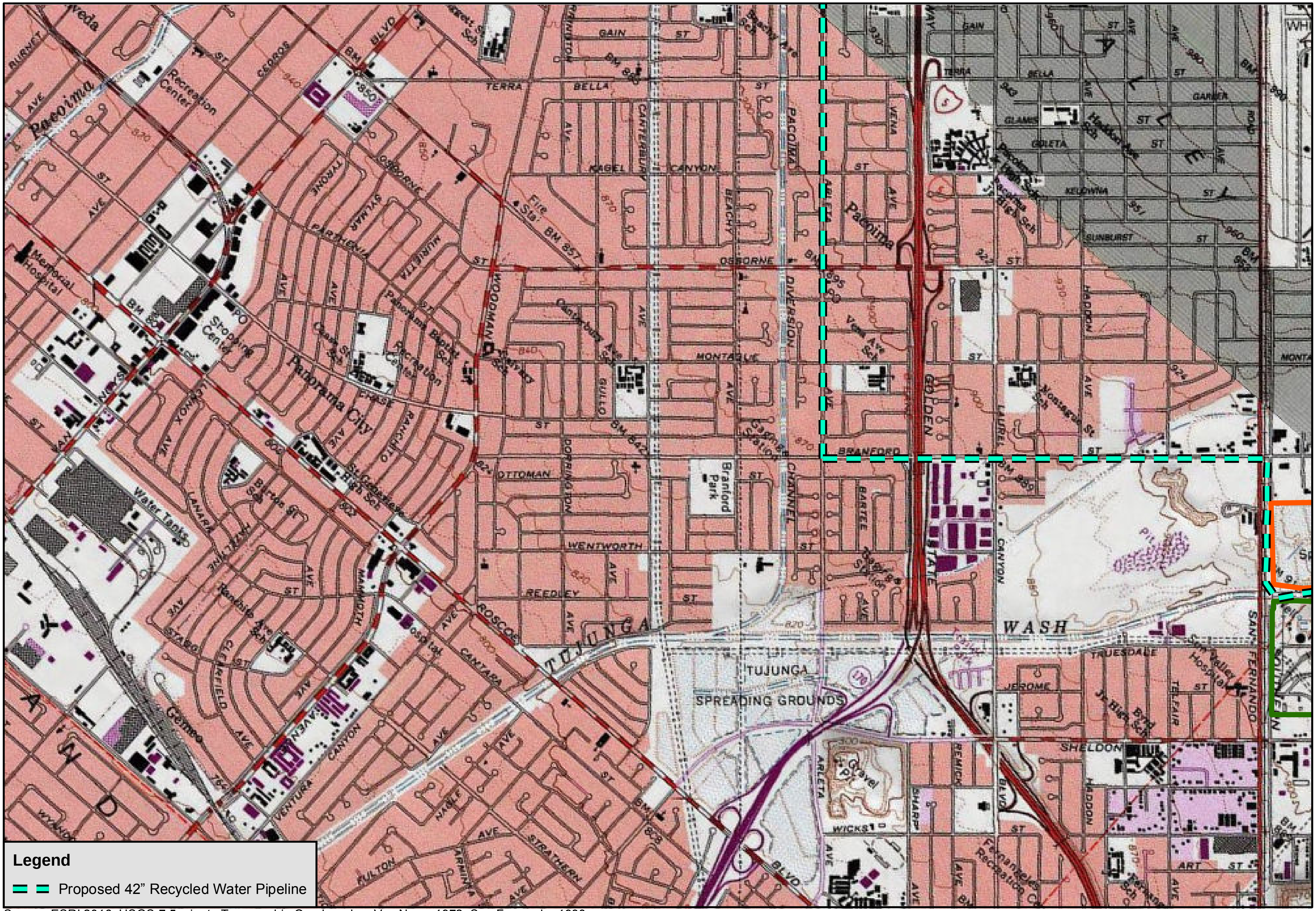
Mapbook Index

Los Angeles Groundwater Replenishment Project



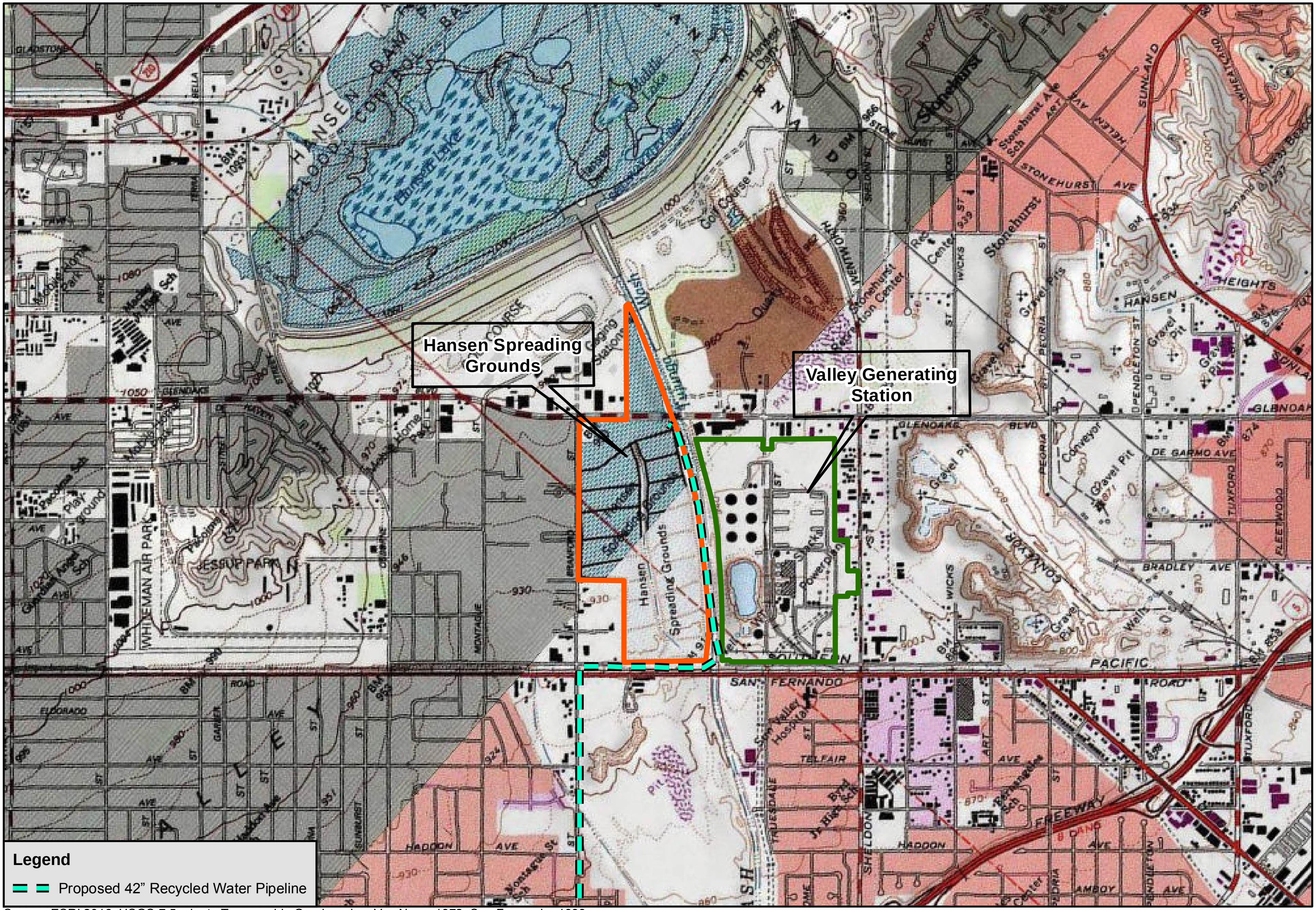
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

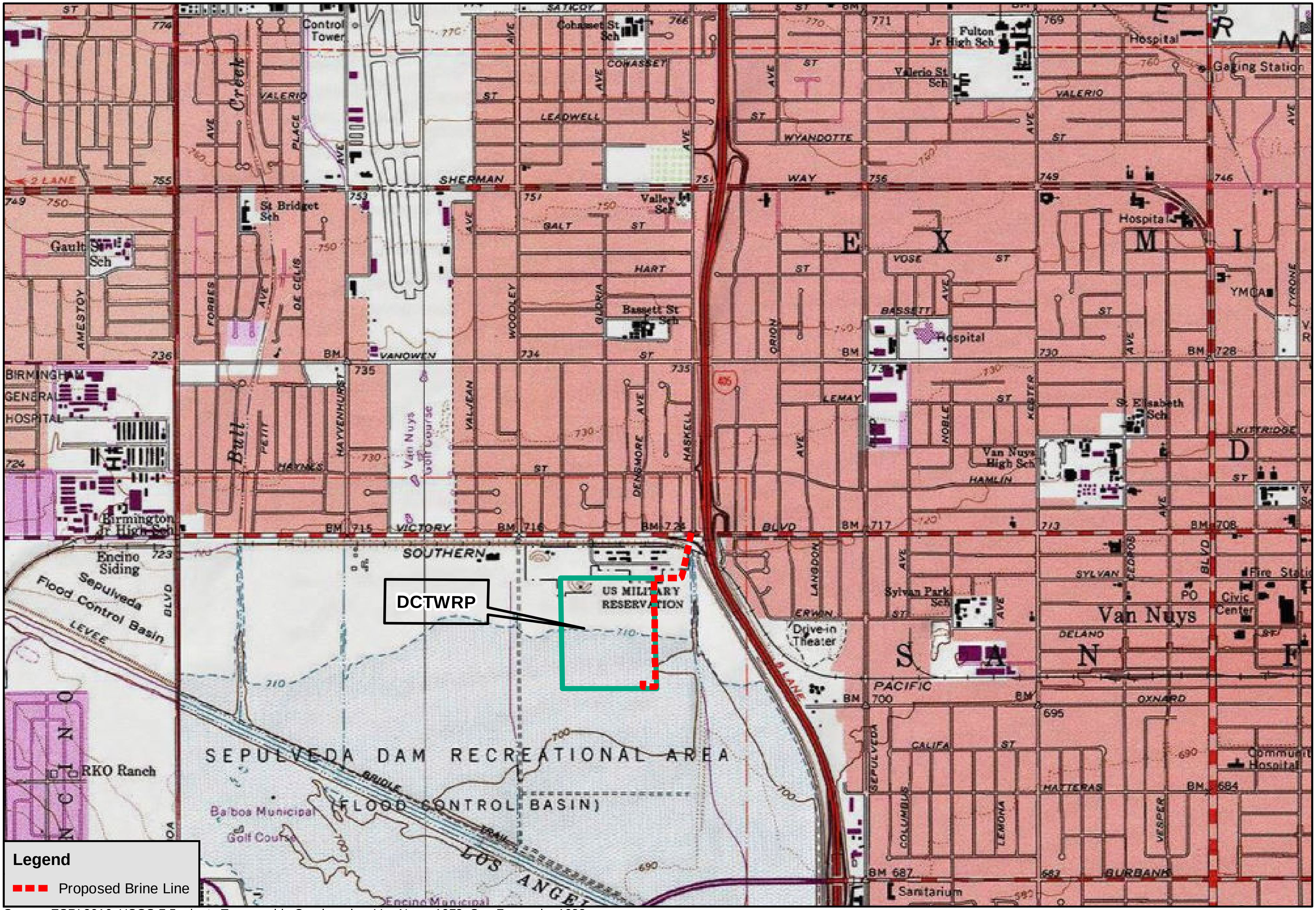
0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

This was a dwelling area for the local native people

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Beverly Folkes
FERNANDENO TATAVIAM RN 566
BAND OF MISSION INDIANS

Beverly Folkes
Signature

4/3/16
Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

Beverly D. Folkes
Owner

NATIVE AMERICAN MONITORING GROUP
"Descendants who care"

1931 Shady Brook Dr., Thousand Oaks, CA 91362
Tel: 805-492-7255/Email: folkes9@msn.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Beverly Salazar

Phone # 805-492-7255

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Beverly Salazar was contacted at 3:54 pm and did respond. I discussed with the individual that I (Alec Stevenson) represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and asked if there are any concerns or questions about the project. The individual stated that she had concerns of the location of the pipeline in sensitive areas. Specifically, she asked how close it was to the Hansen Dam and was concerned about surrounding areas. She requested that monitoring be conducted by a proper representative.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
March 30, 2016

Conrad Acuna
Gabrieleno-Tongva Tribe
1999 Avenue of the Stars
Suite 1100
Los Angeles, CA 90067

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Mr. Acuna:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

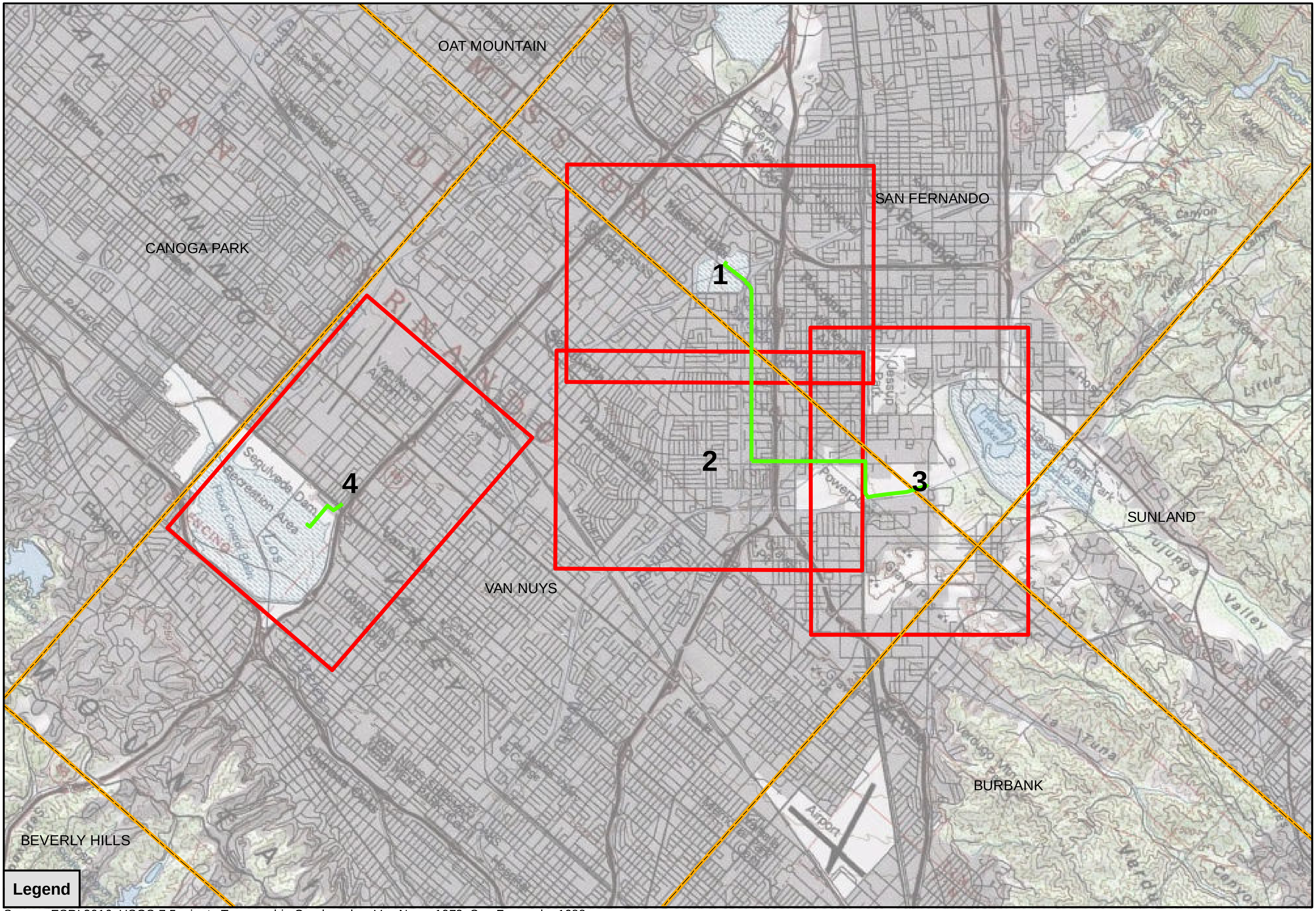
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

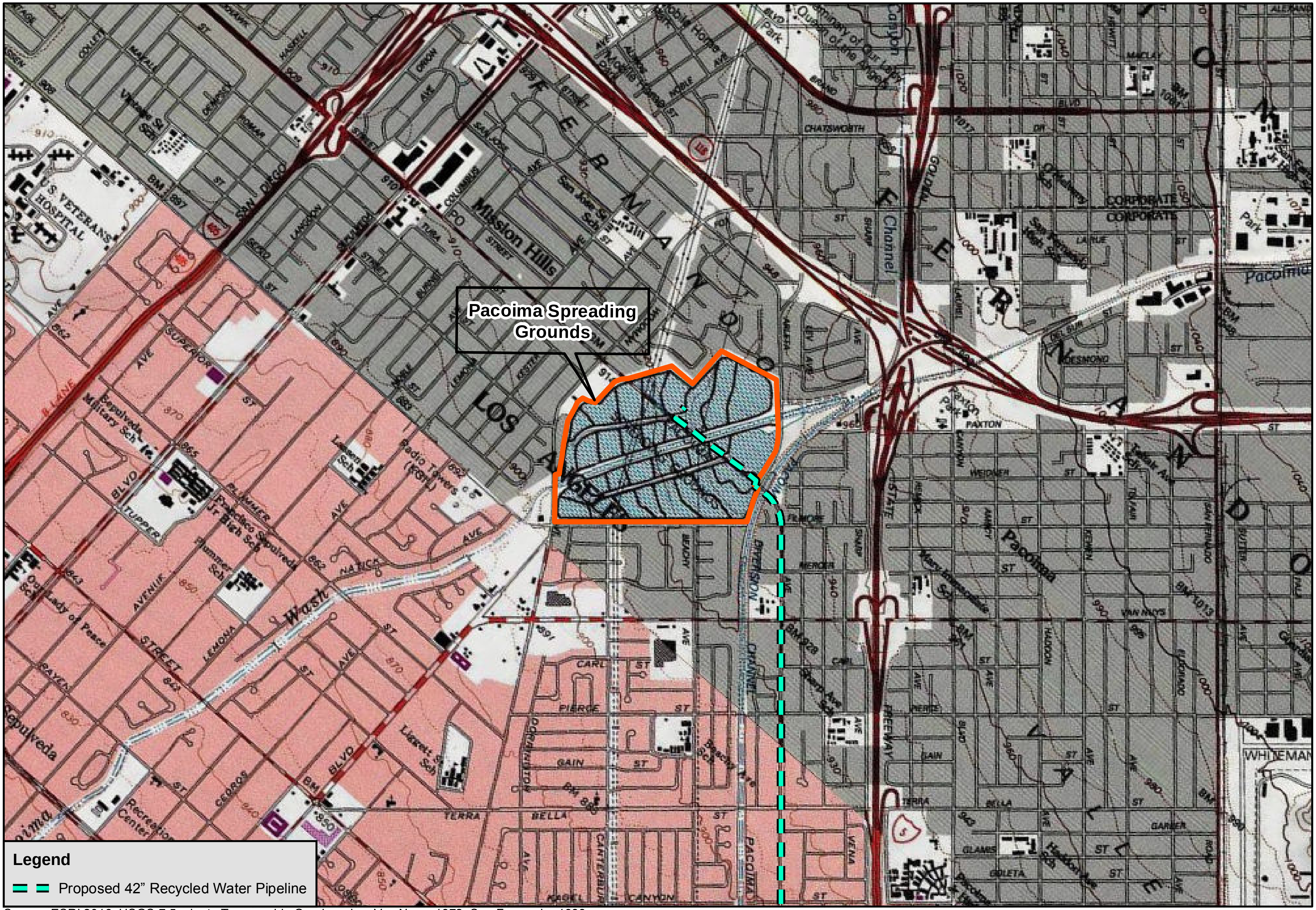


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

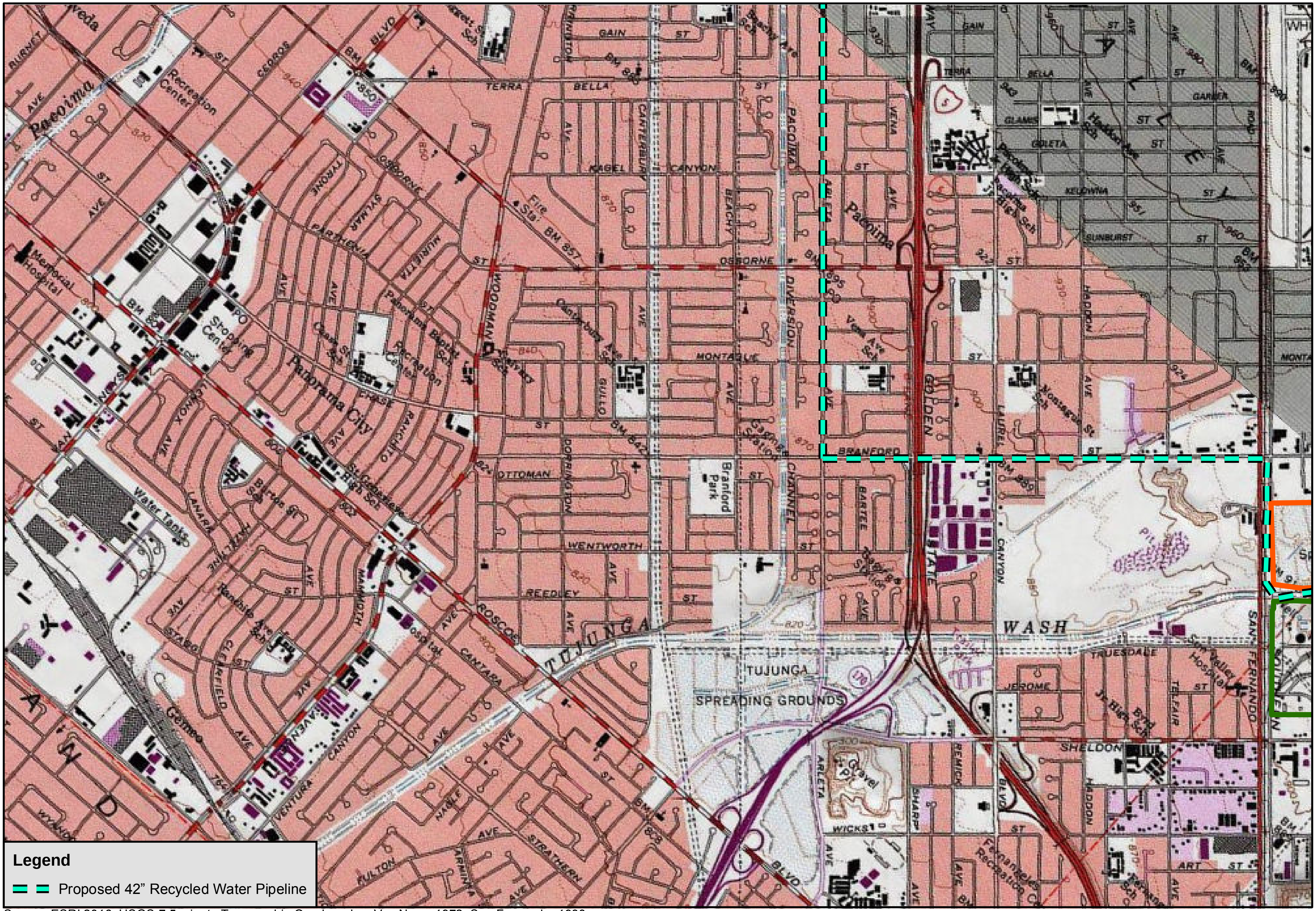
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

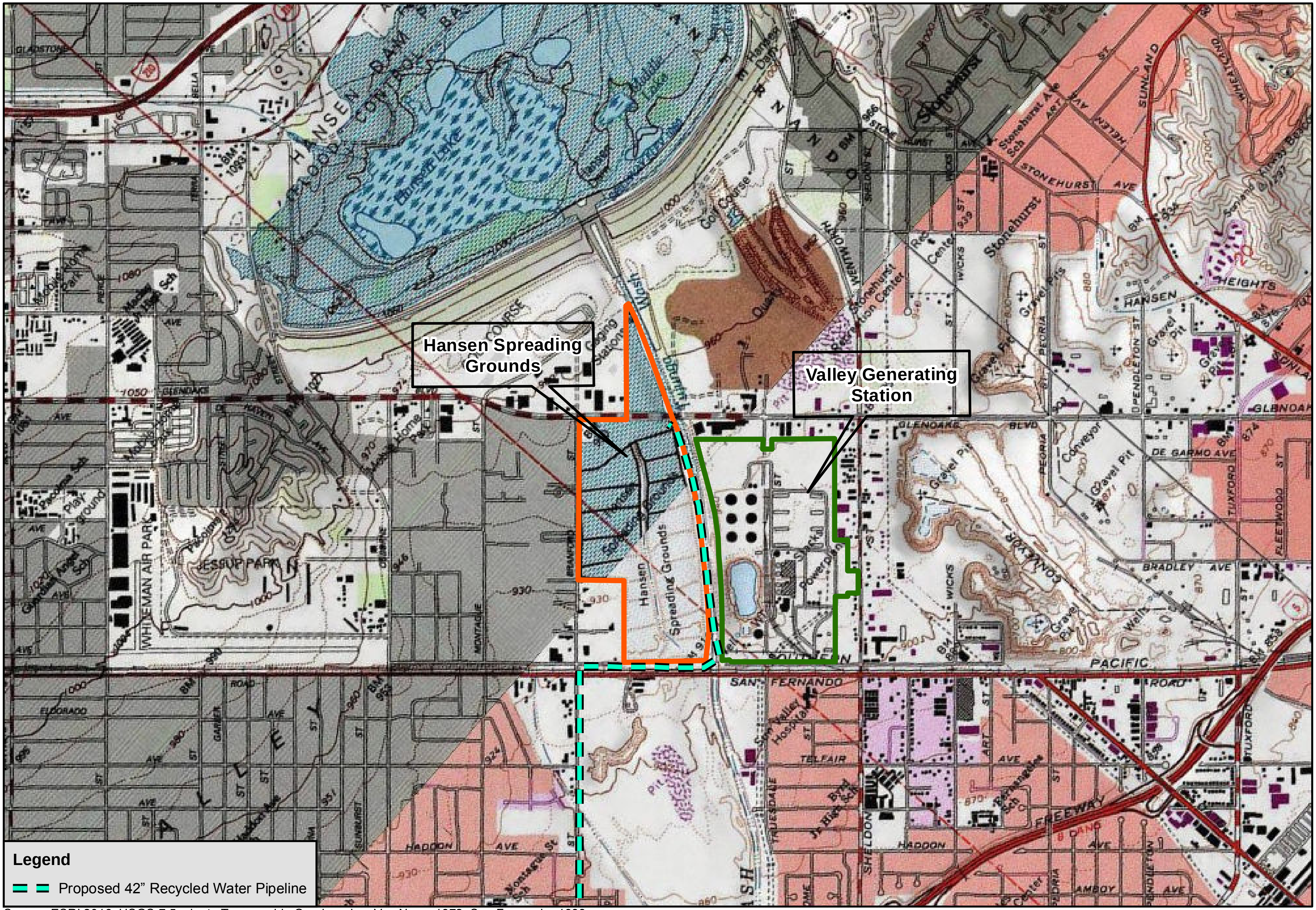
0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

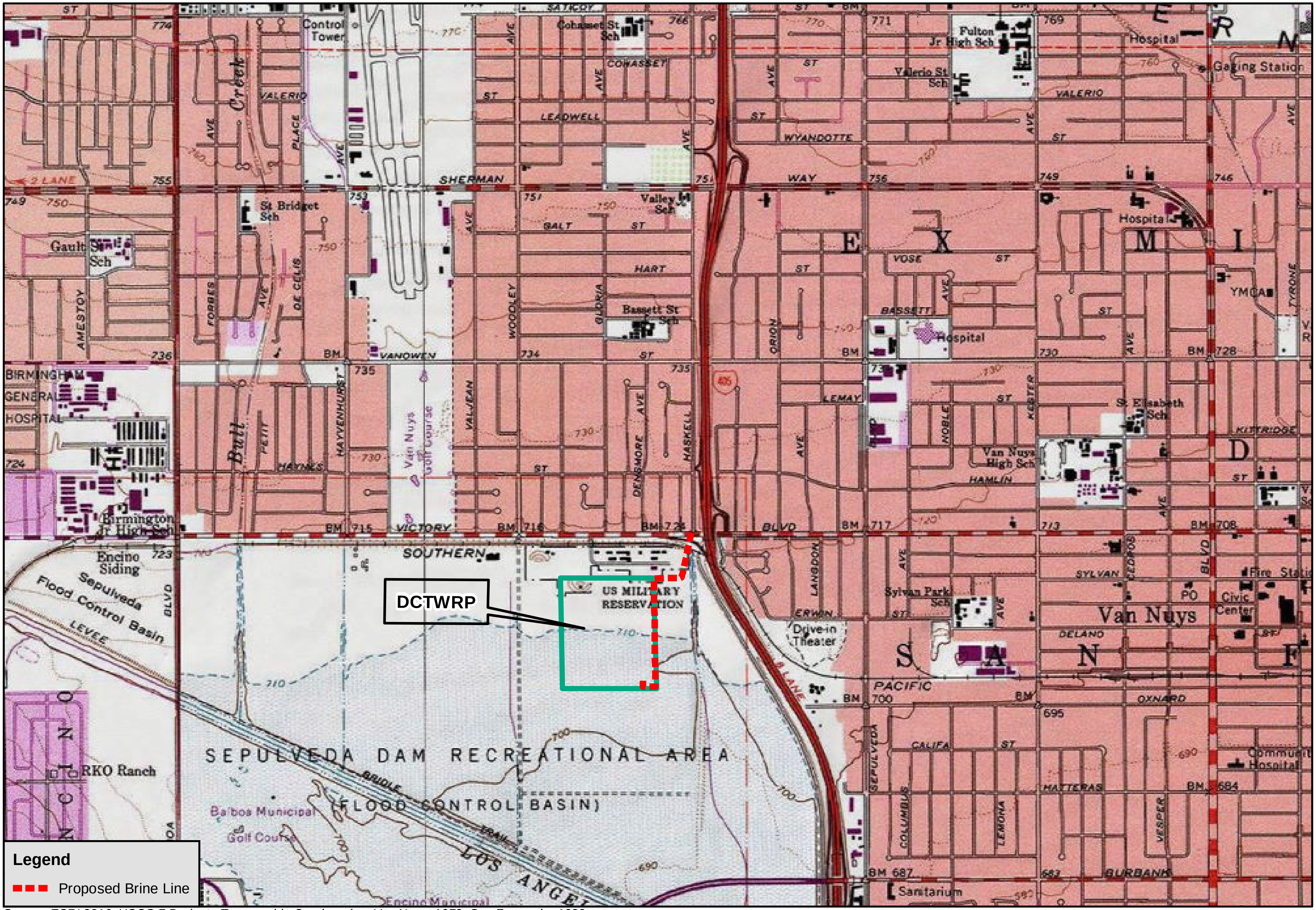
0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

____

____

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

____________________________________ __________________

Signature Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Conrad Acuna

Phone #

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Conrad Acuna from the Gabrielino-Tongva Tribe was not contacted. No phone number or email address is available.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
March 30, 2016

Delia Dominguez, Chairperson
Kitanemuk & Yowlumne Tejon Indians
115 Radio Street
Bakersfield, CA 93305

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Dominguez:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

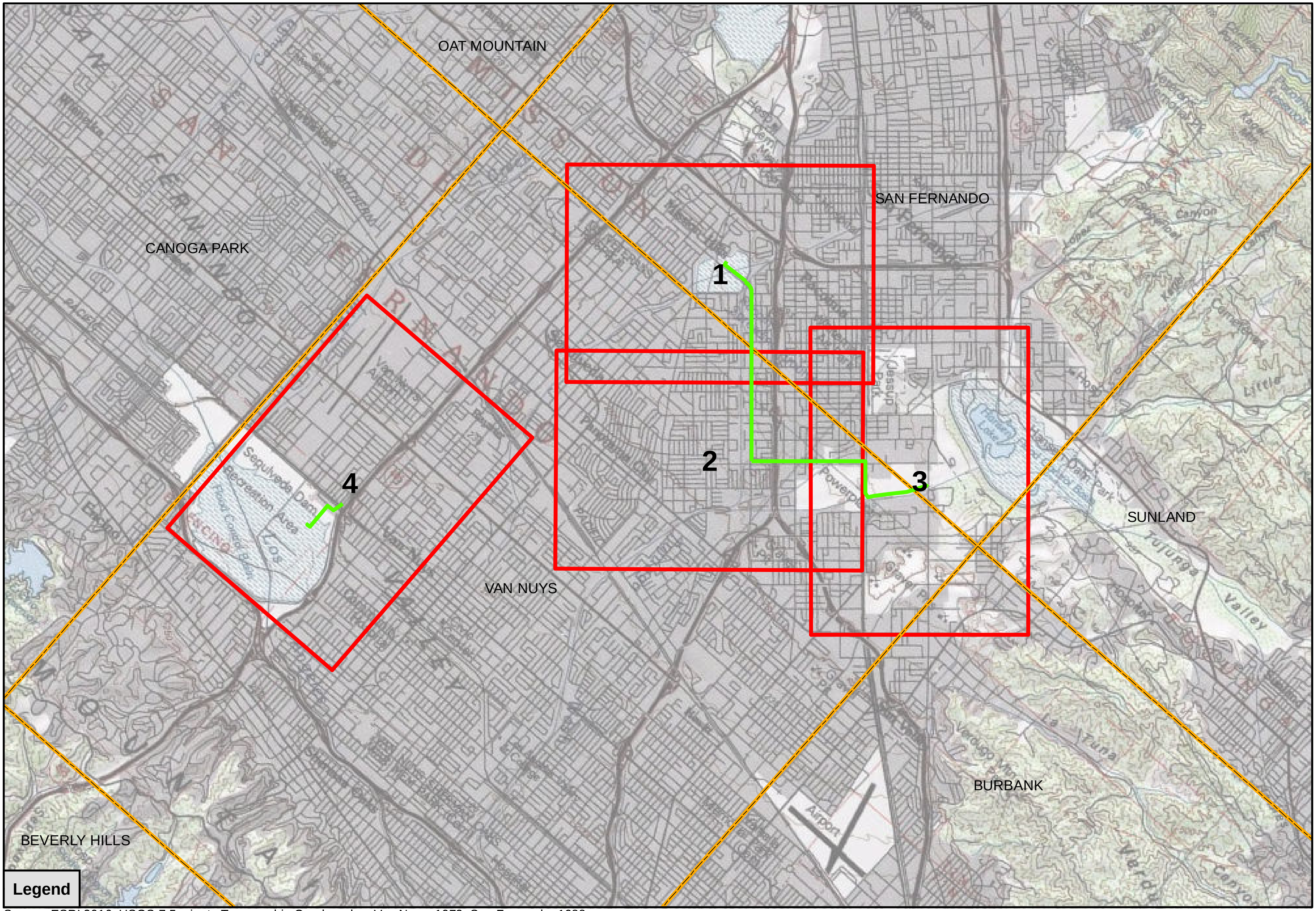
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
marc.beherec@aecom.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

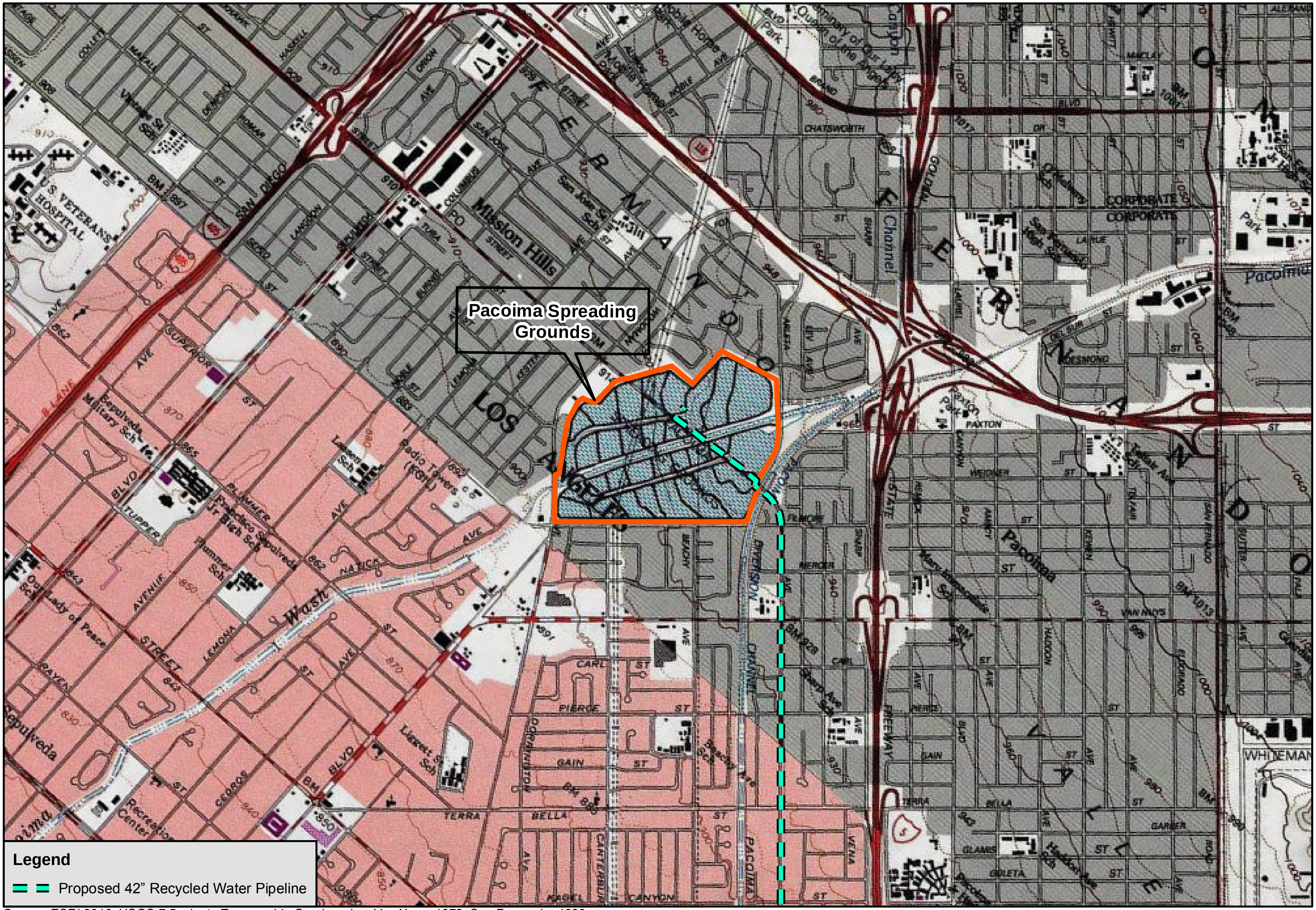


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

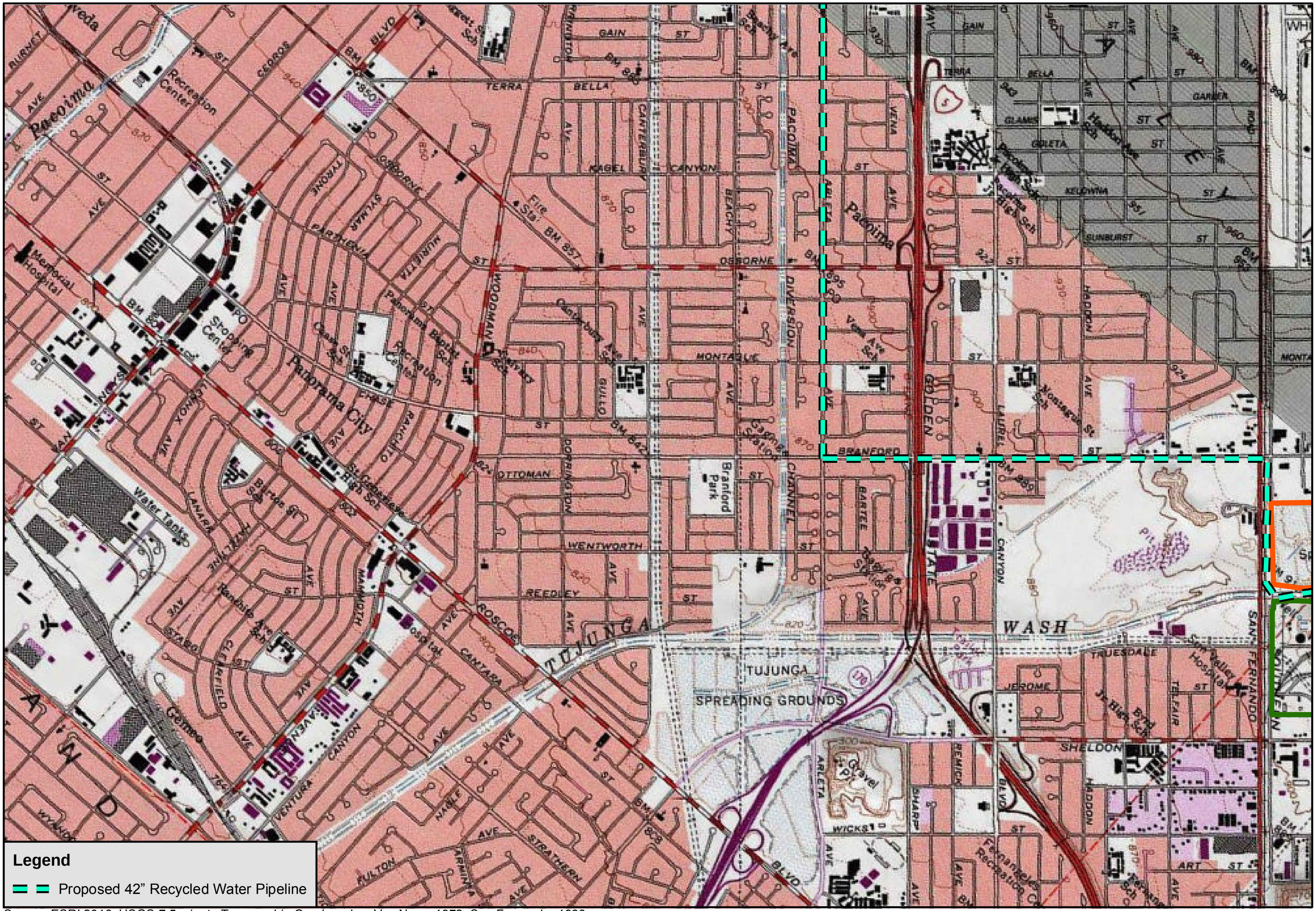
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

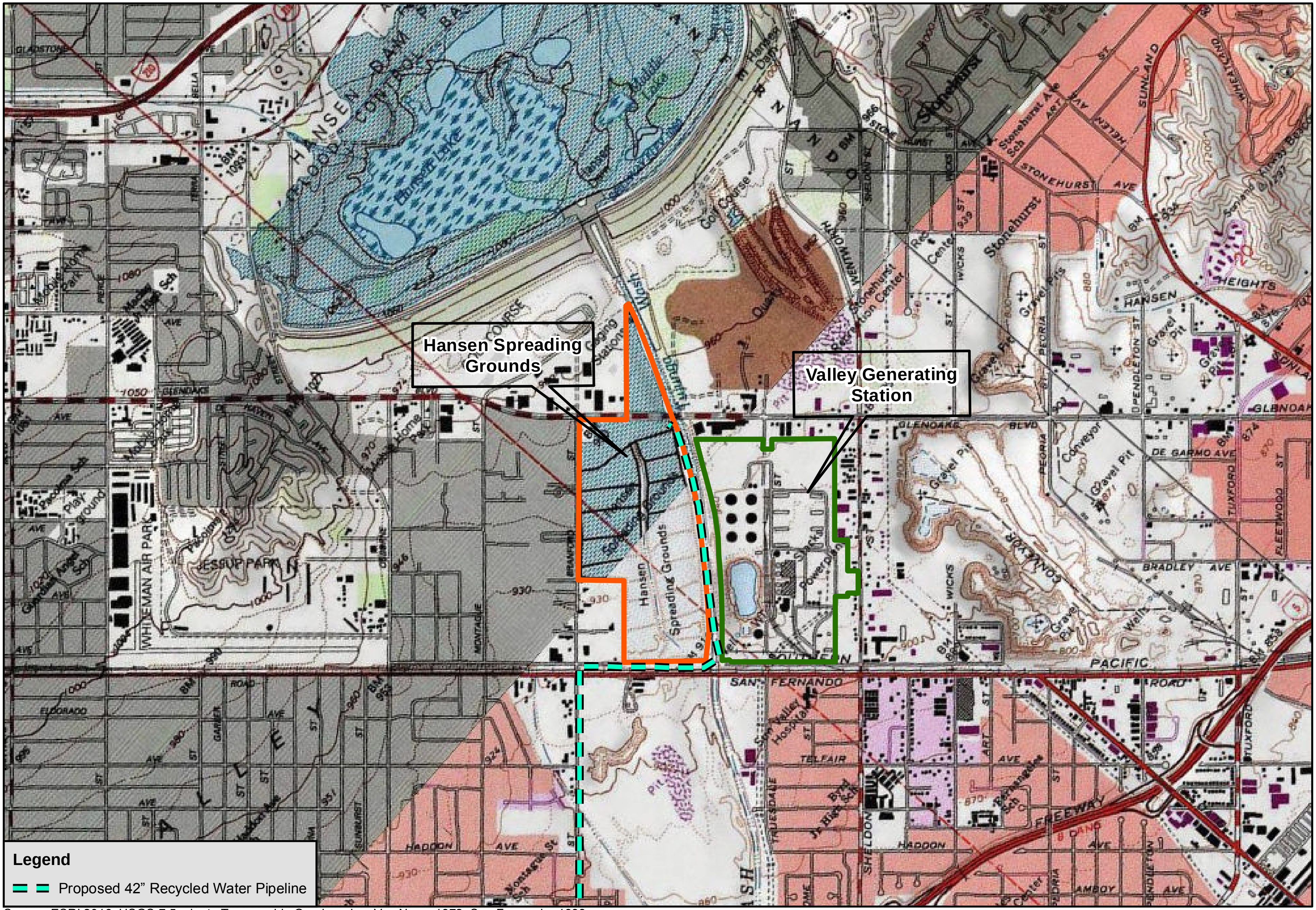
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1
Miles

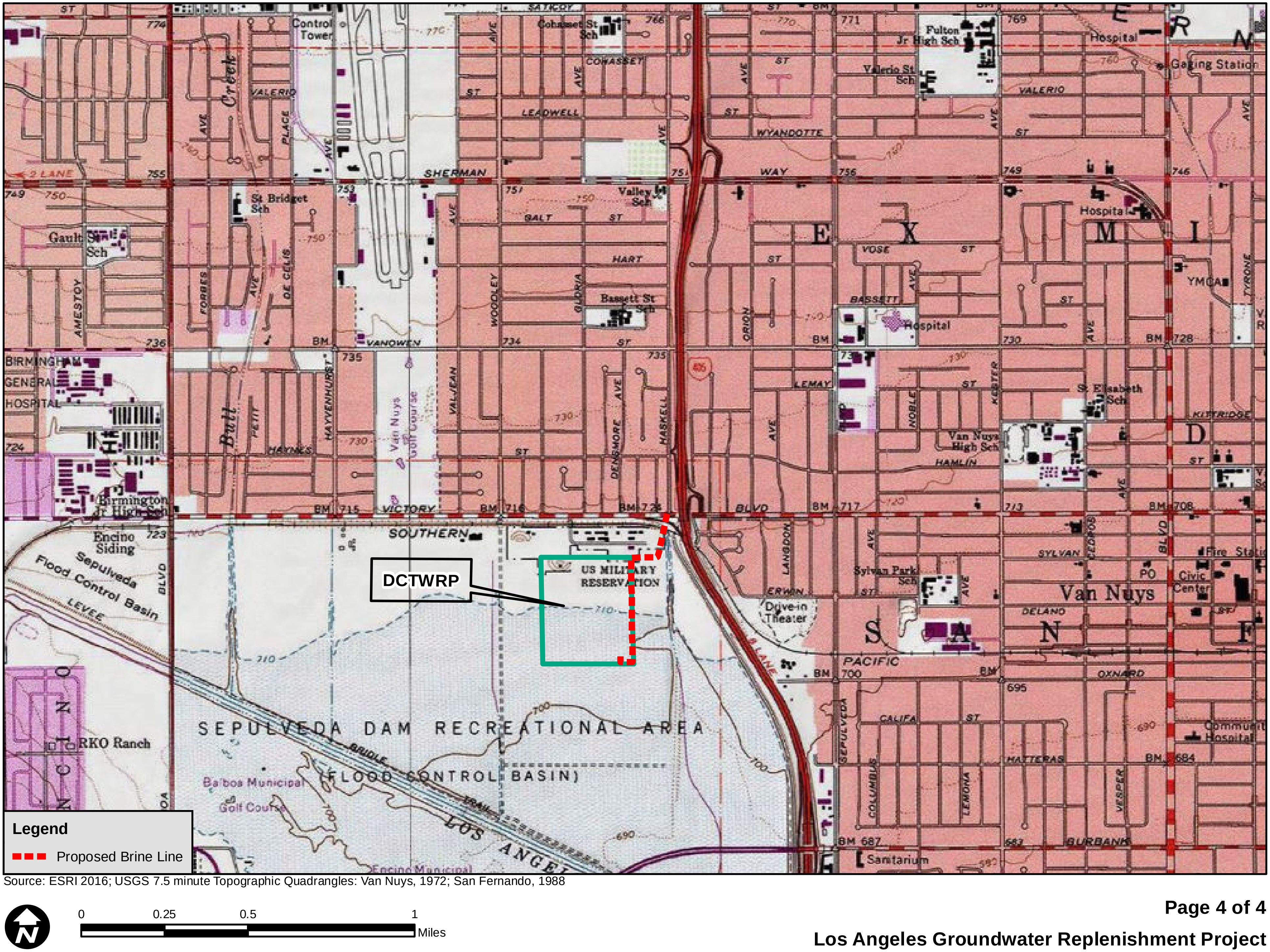
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Delia Dominguez

Phone # 626-339-6785

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Delia Dominguez, Chairperson of the Kitanemuk & Yowlumne Tejon Indians was contacted at 3:59 pm. There was no answer. I left a message identifying myself (Alec Stevenson) and that I represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and that if the individual has any concerns or questions to please call the cultural resources lead , Marc Beherec. I then provided Marc's office number and ended the call.

Follow Up

AECOM

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Joseph Ontiveros
Soboba Band of Luiseno Indians
P.O. Box 487
San Jacinto, CA 92581

Subject: Lower Franklin Reservoir No. 2 Floating Cover Replacement Project

Dear Mr. Ontiveros:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

Sincerely,

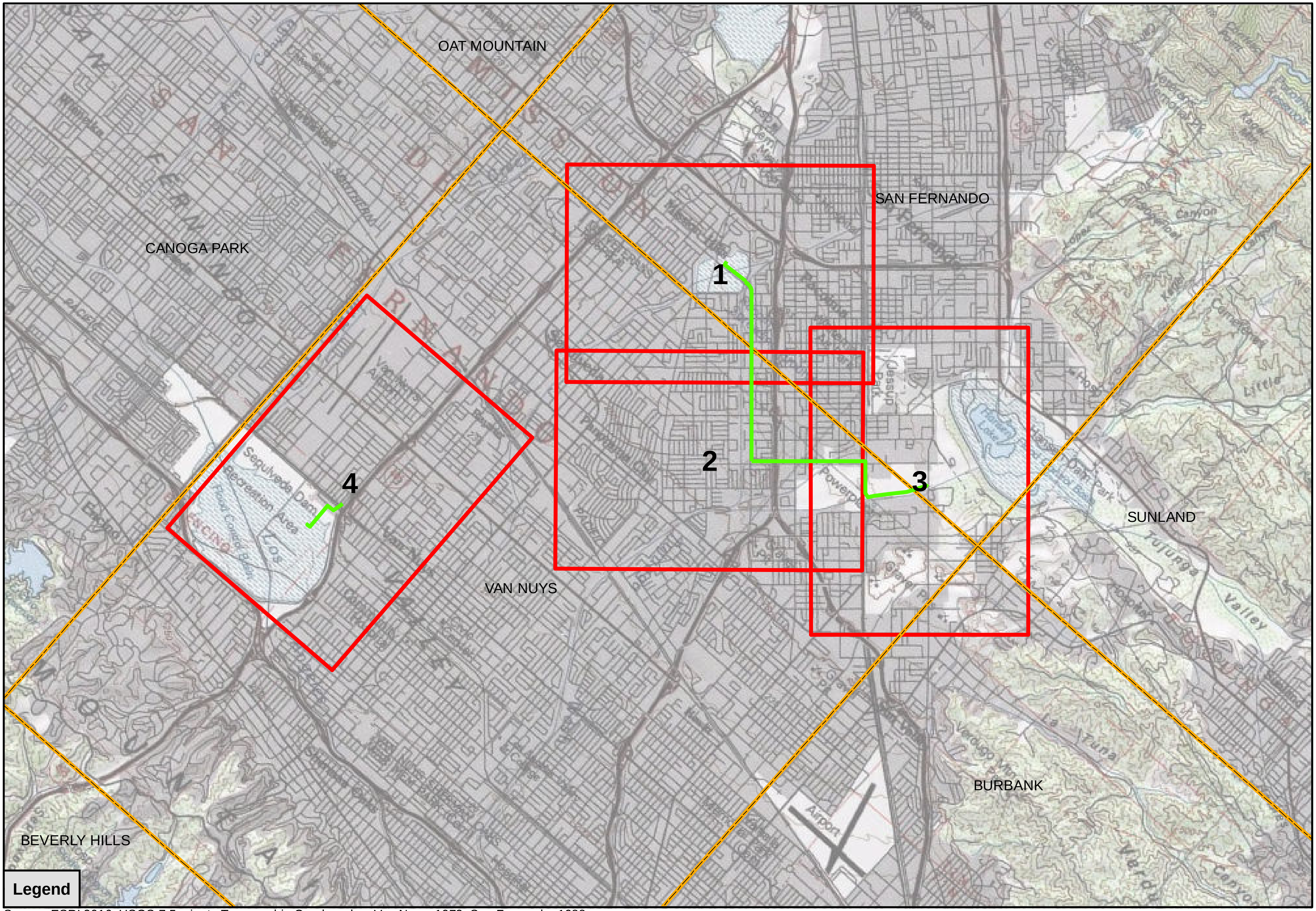
Marc A. Beherec

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
marc.beherec@aecom.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

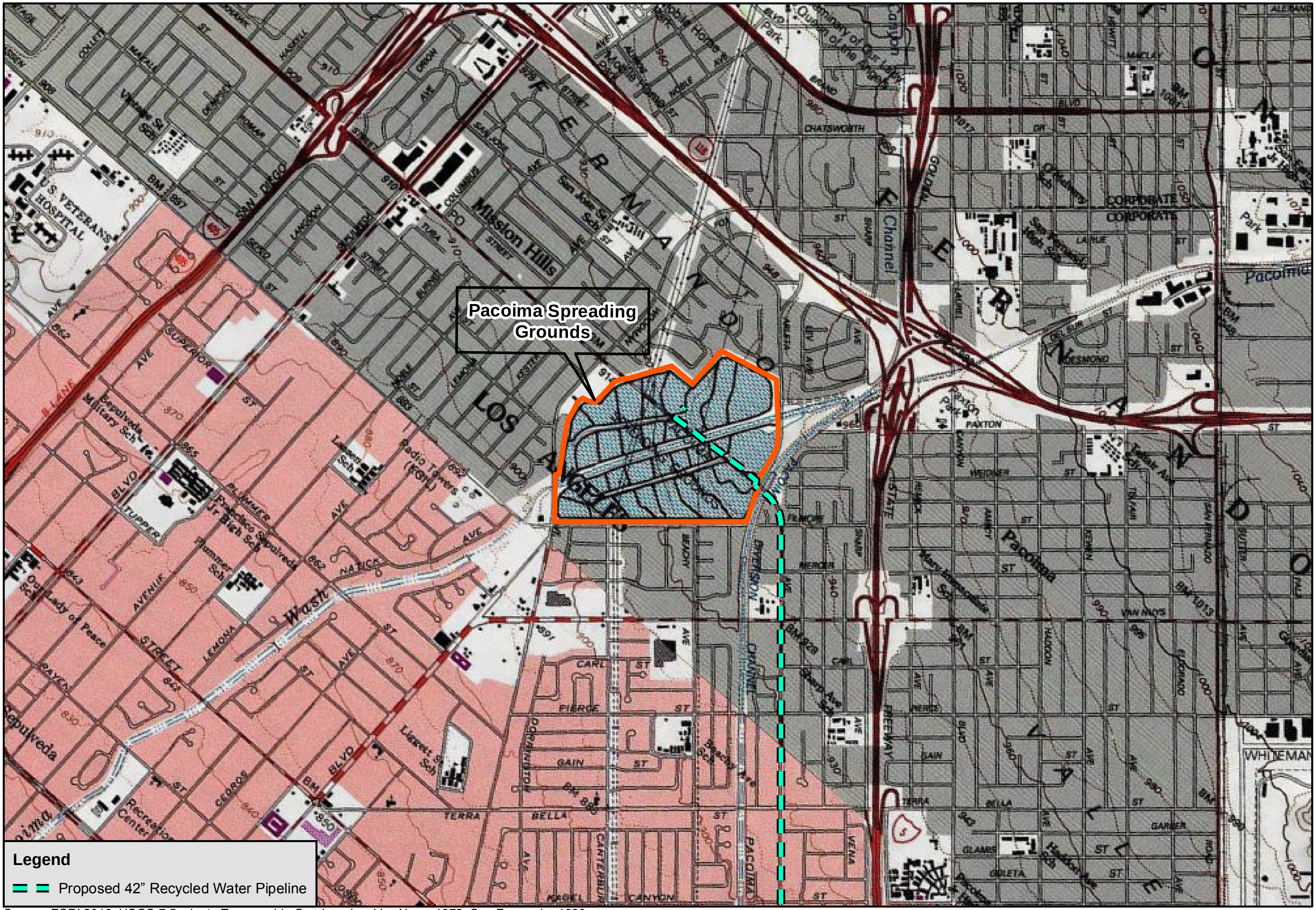


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

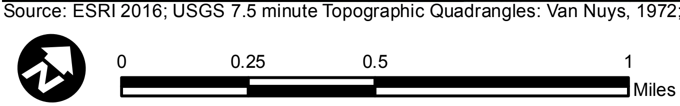
0 0.5 1 2 Miles

Mapbook Index

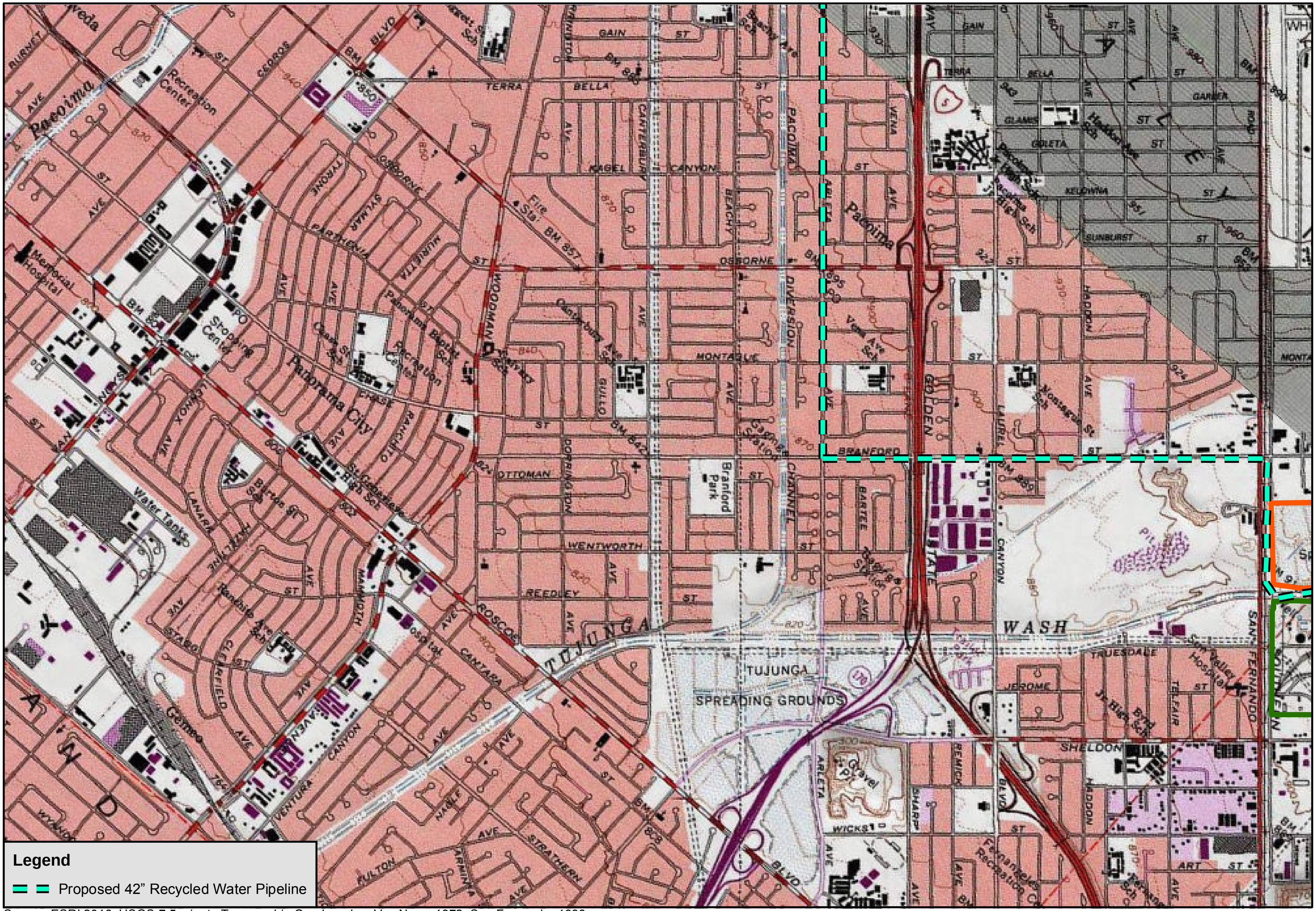
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

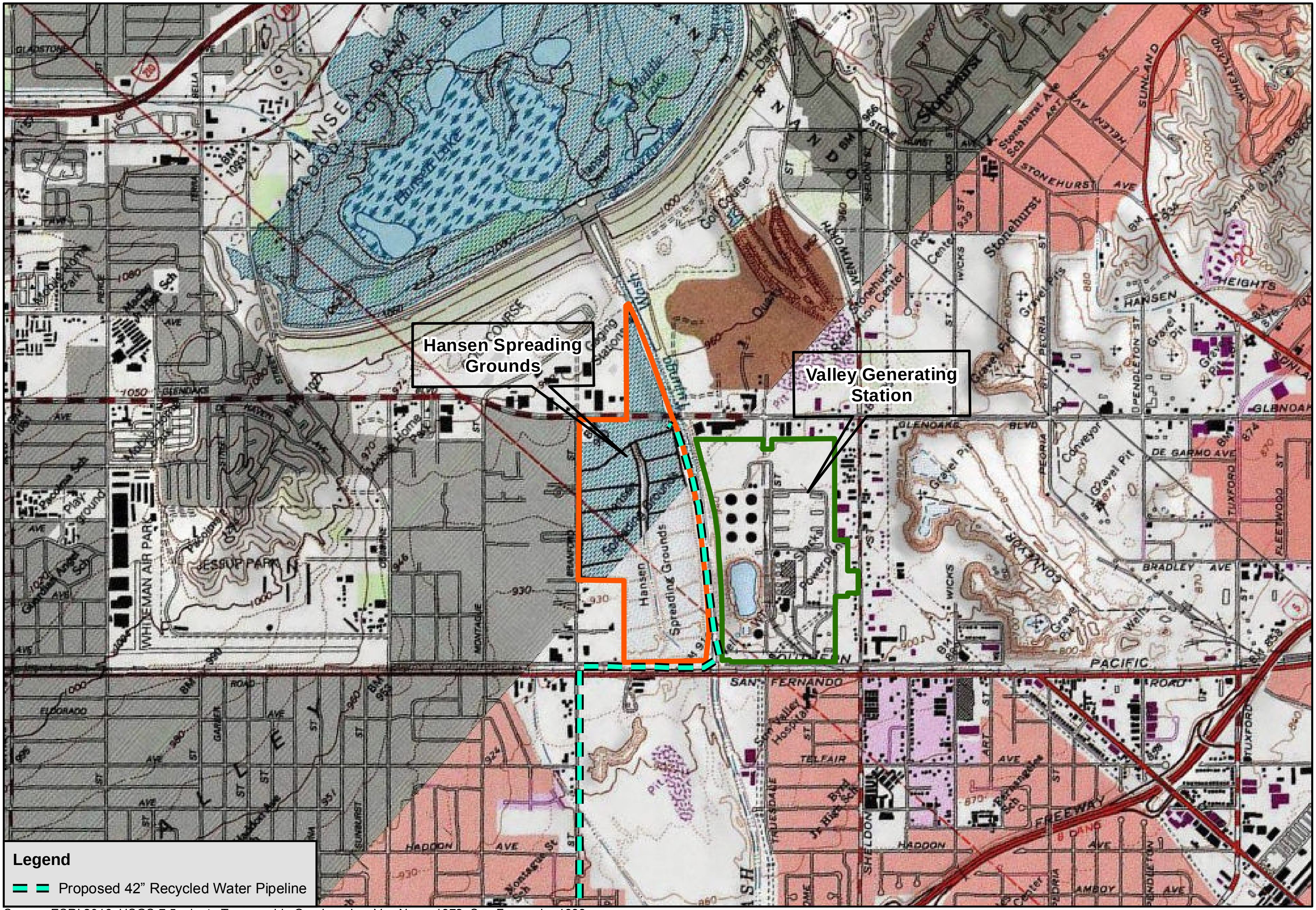


Los Angeles Groundwater Replenishment Project



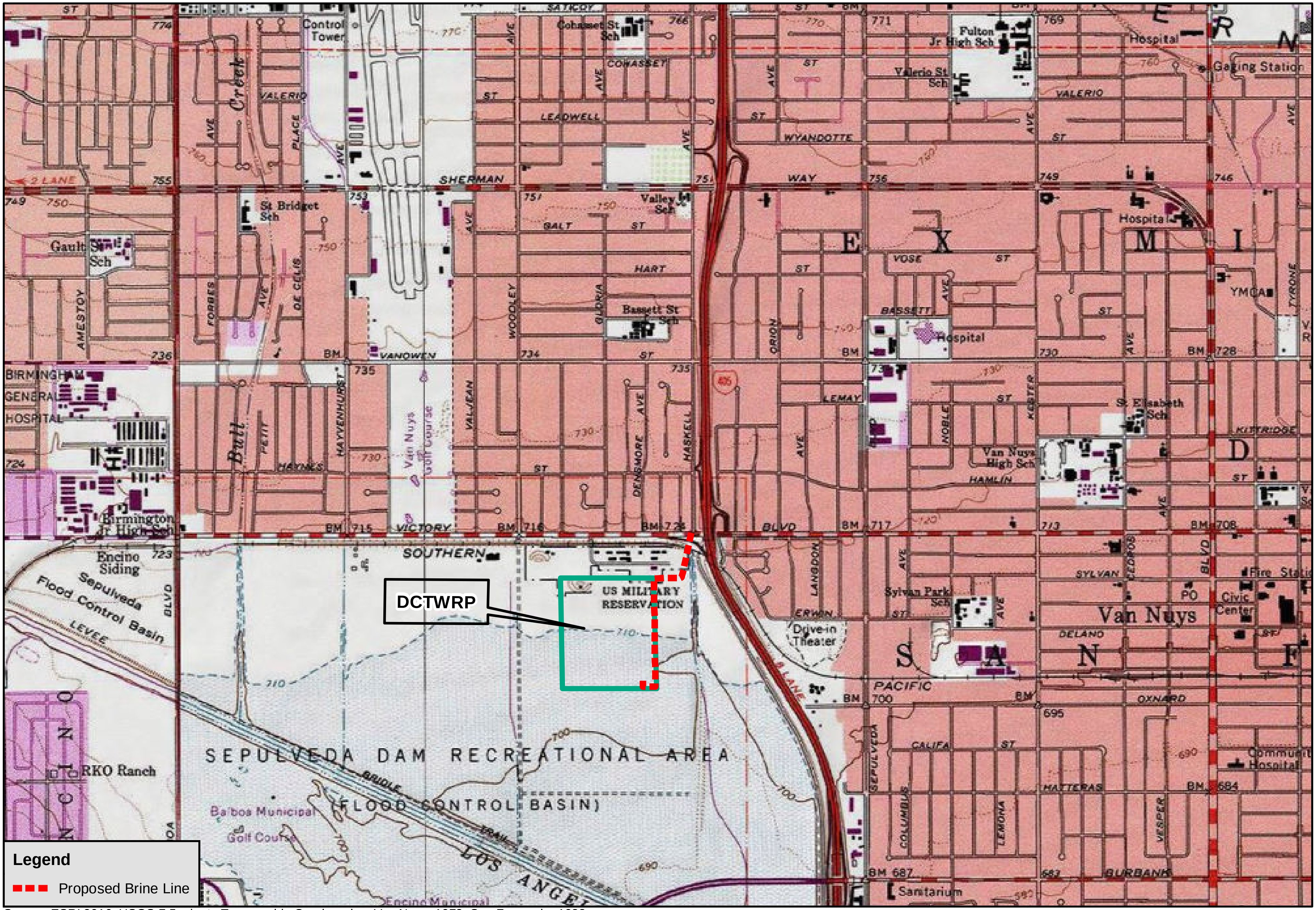
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1
Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Joseph Ontiveros

Phone # 951-663-5279

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Joseph Ontiveros, Cultural Resources Department of the Soboba band of Luiseno Indians was contacted at 2:26 pm and did respond. I discussed with the individual that I (Alec Stevenson) represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and asked if there are any concerns or questions about the project. The individual stated that he did not feel he represented the location of the project and differed me to Anthony Morales for the Gabrieleno/Tongva San Gabriel band of Mission Indians.

Follow Up

SOBOBA BAND OF LUISEÑO INDIANS
EST. JUNE 19, 1883

April 27, 2016

Attn: Marc Beherec, Ph.D., RPA
AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

RE: Los Angeles Groundwater Replenishment Project

The Soboba Band of Luiseño Indians appreciates your observance of Tribal Cultural Resources and their preservation in your project. The information provided to us on said project(s) has been assessed through our Cultural Resource Department, where it was concluded that although it is outside the existing reservation, the project area does fall within the bounds of our Tribal Traditional Use Areas. At this time the Soboba Band does not have any specific concerns regarding known cultural resources in the specified areas that the project encompasses, but does request that the appropriate consultation continue to take place between the tribes, project proponents, and government agencies.

Also, working in and around traditional use areas intensifies the possibility of encountering cultural resources during any future construction/excavation phases that may take place. For this reason the Soboba Band of Luiseño Indians requests that approved Native American Monitor(s) be present during any future ground disturbing proceedings, including surveys and archaeological testing, associated with this project. The Soboba Band wishes to defer to Gabrieleño Tribal Consultants, who are in closer proximity to the project. Please feel free to contact me with any additional questions or concerns.

Sincerely,

Joseph Ontiveros
Cultural Resource Director
Soboba Band of Luiseño Indians
P.O. Box 487
San Jacinto, CA 92581
Phone (951) 654-5544 ext. 4137
Cell (951) 663-5279
jontiveros@soboba-nsn.gov

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
March 30, 2016

John Valenzuela, Chairperson
San Fernando Band of Mission Indians
P.O. Box 221838
Newhall, CA 91322

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Valenzuela:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

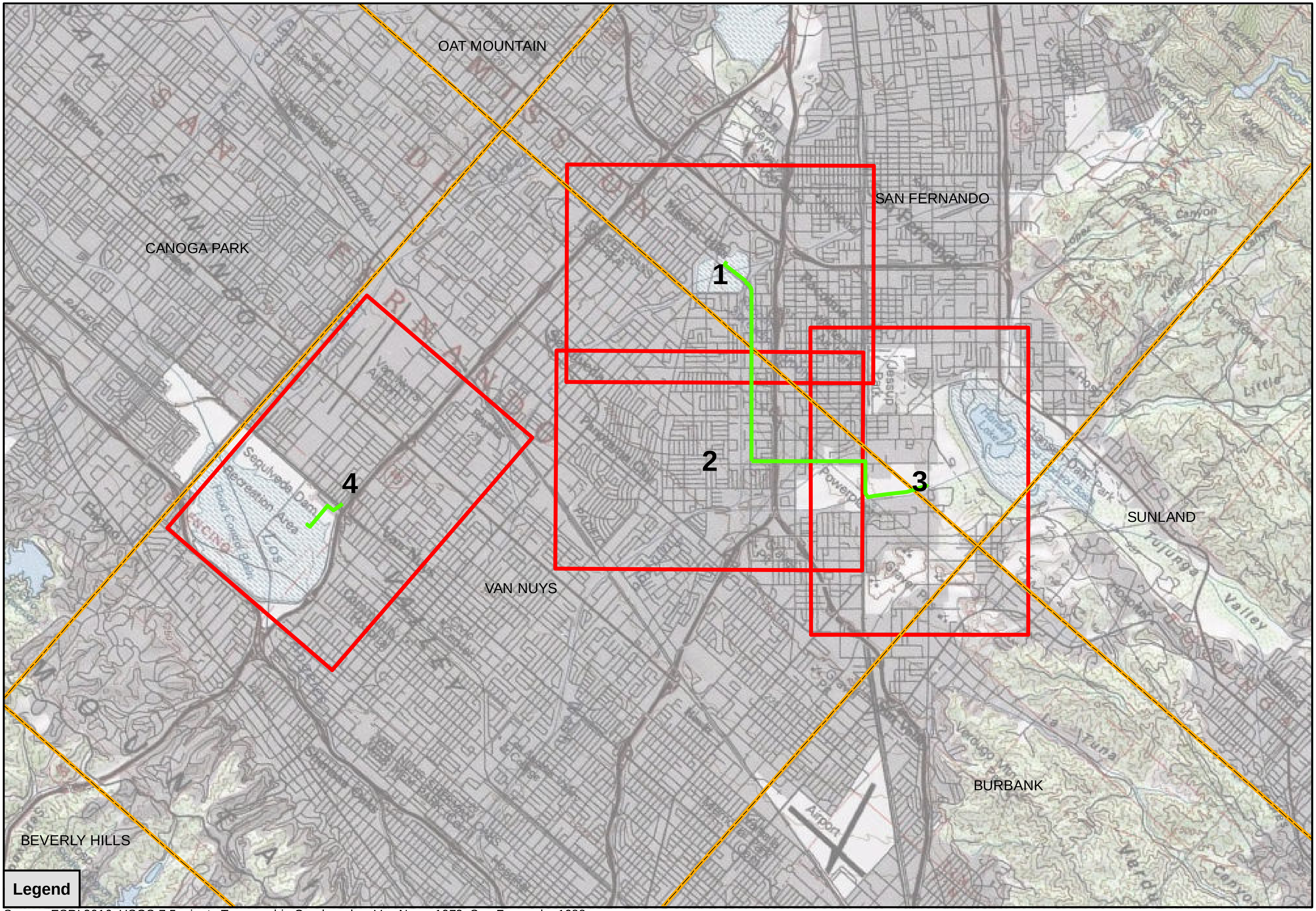
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
marc.beherec@aecom.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

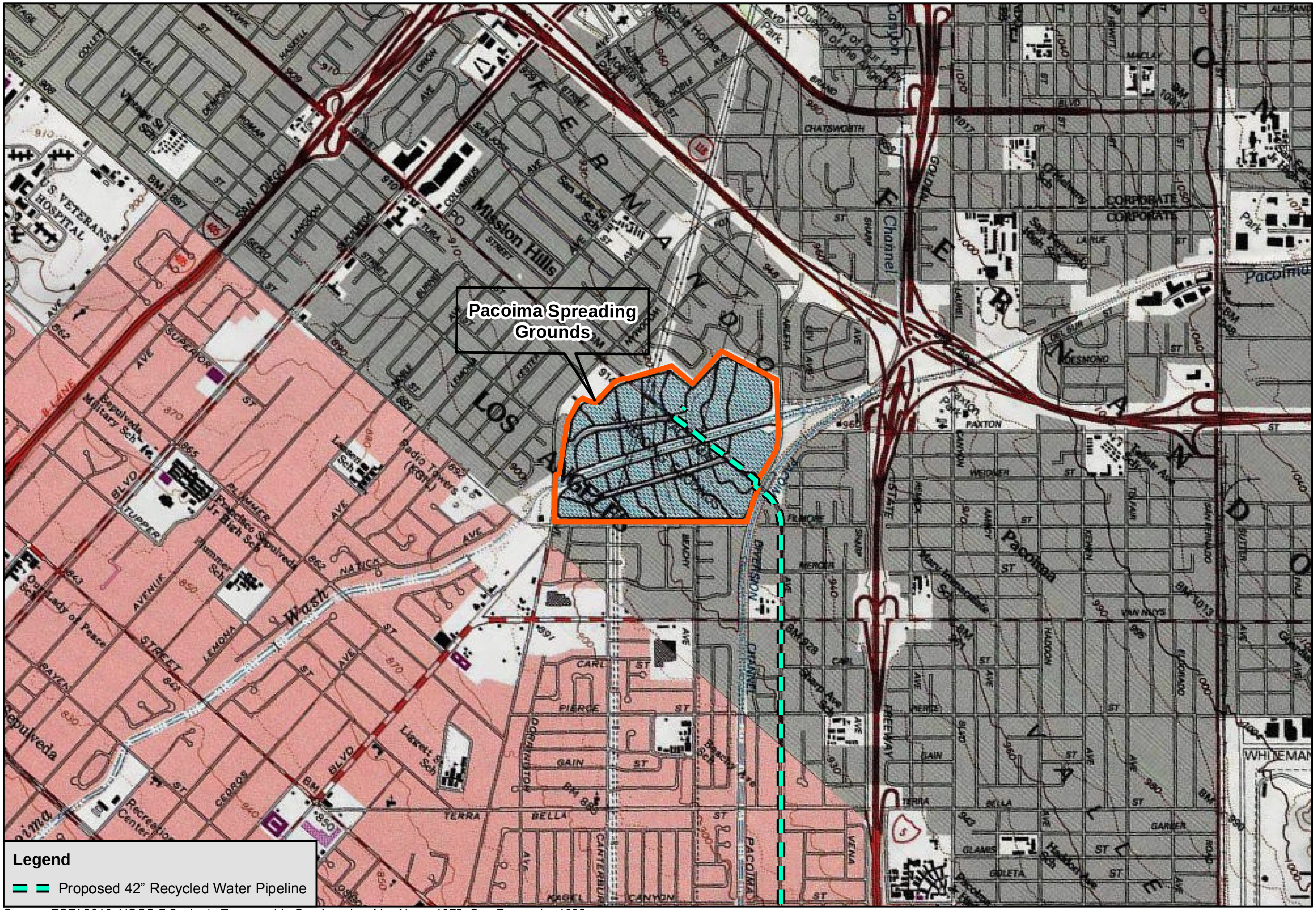


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

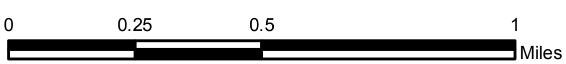
0 0.5 1 2 Miles

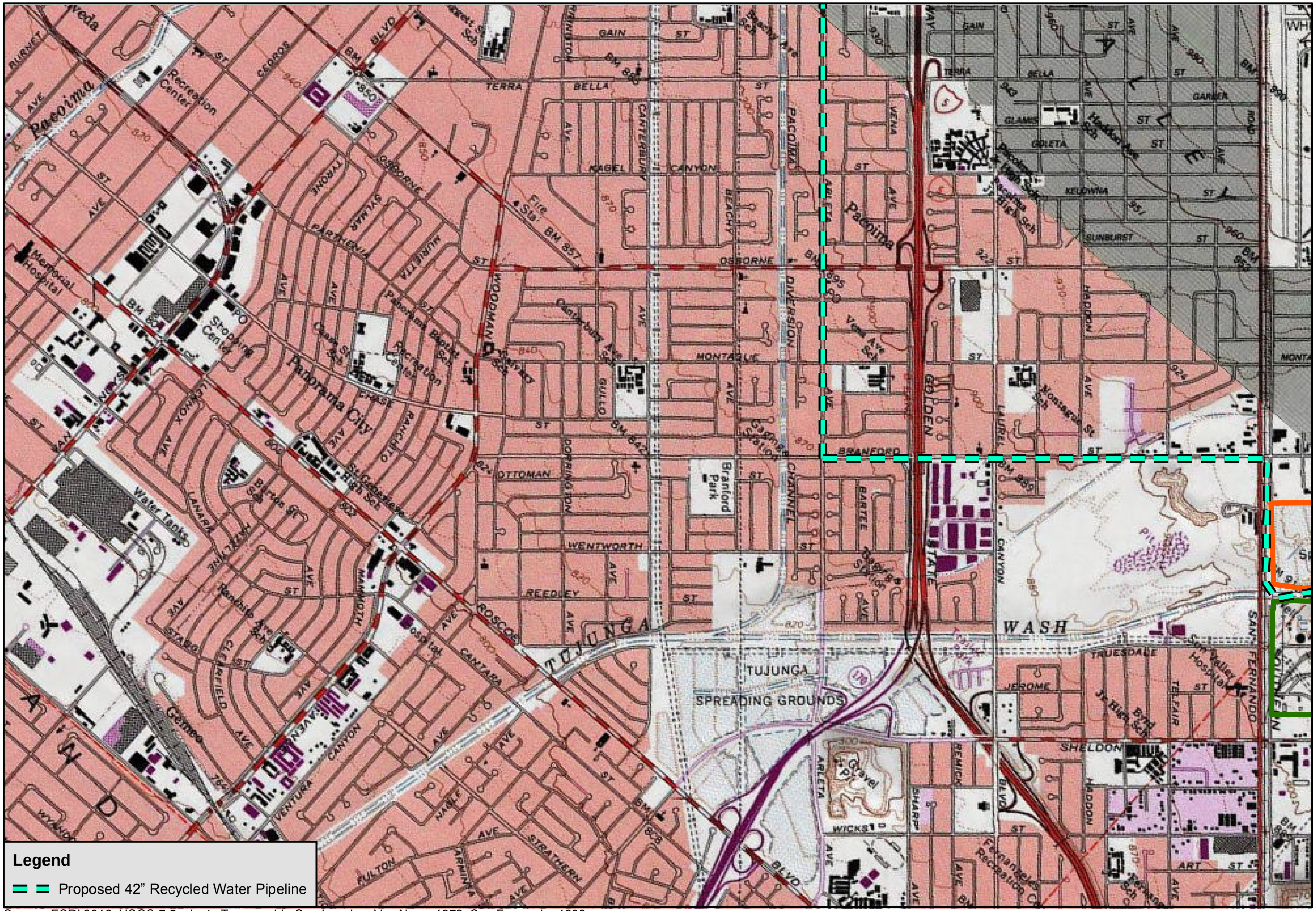
Mapbook Index

Los Angeles Groundwater Replenishment Project



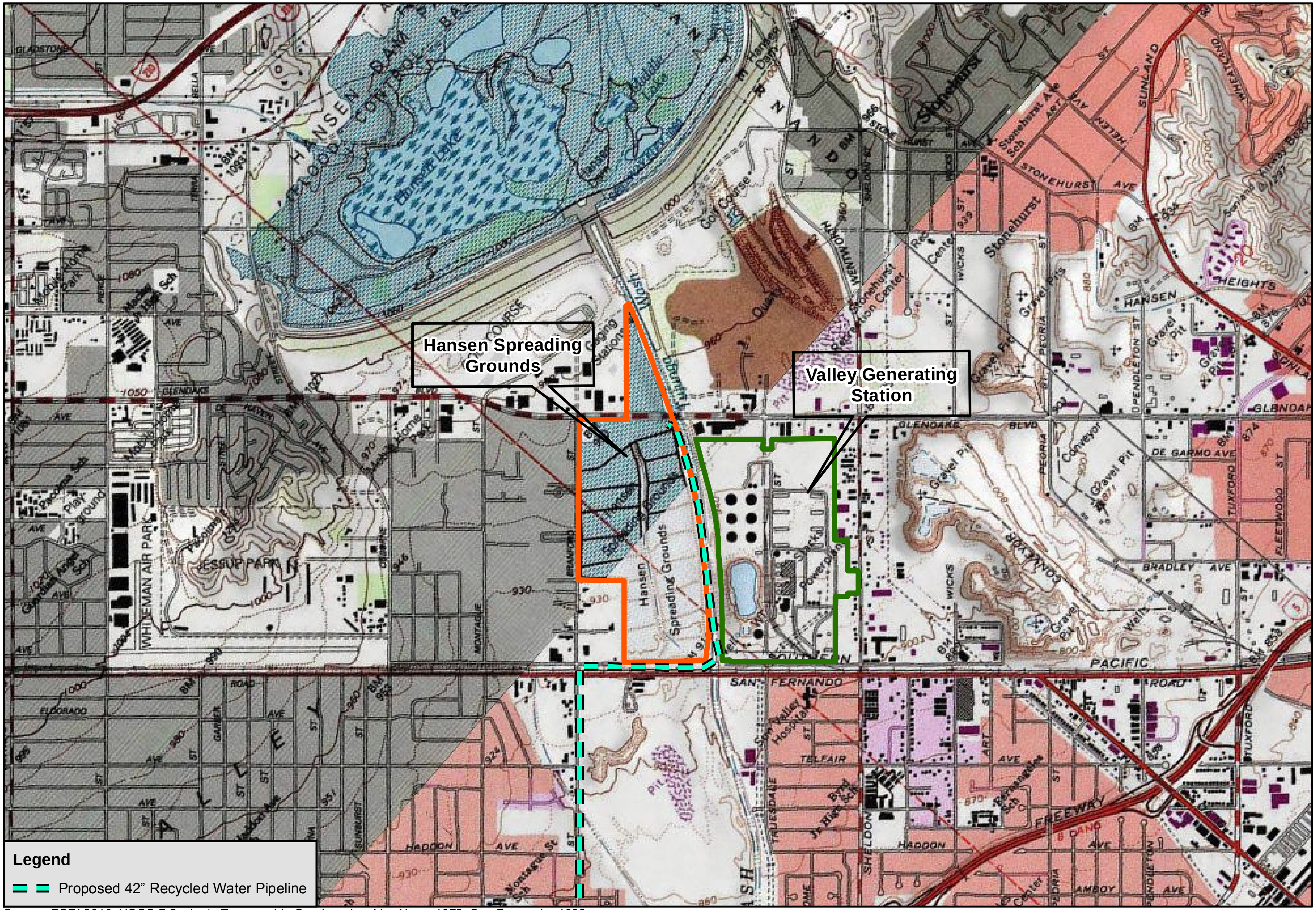
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988





Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

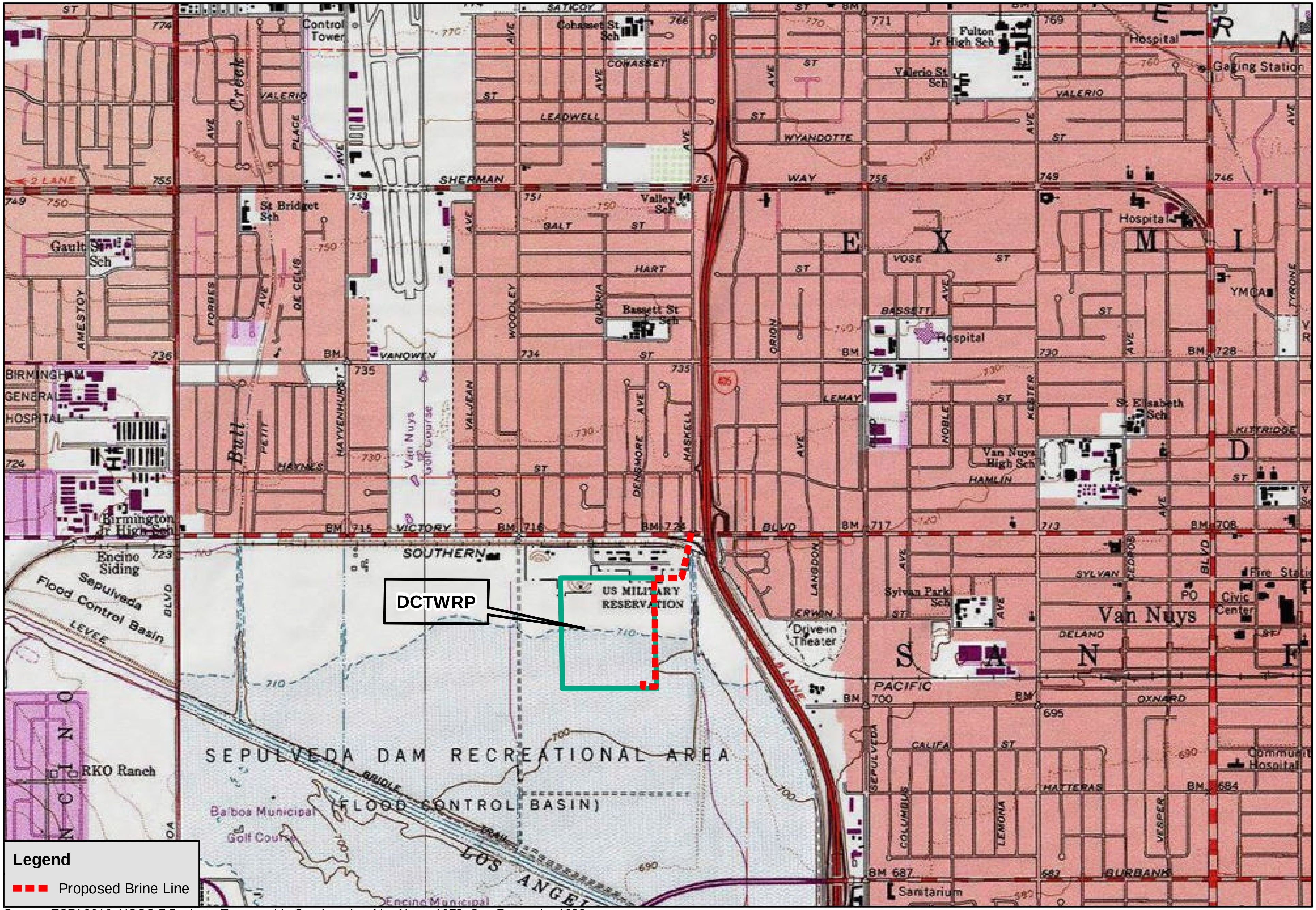
0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: John Valenzuela

Phone # 760-885-0955

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

John Valenzuela, Chairperson of the San Fernando Band of Mission Indians was contacted at 2:23 pm and did respond. I discussed with the individual that I (Alec Stevenson) represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and asked if there are any concerns or questions about the project. The individual stated that he is not concerned about that location and does not have time to look into it.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
March 30, 2016

John Tommy Rosas, Tribal Administrator
Tongva Ancestral Territorial Tribal Nation
tattnlaw@gmail.com

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Tribal Administrator Rosas:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds ï approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and 2 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Attachment 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

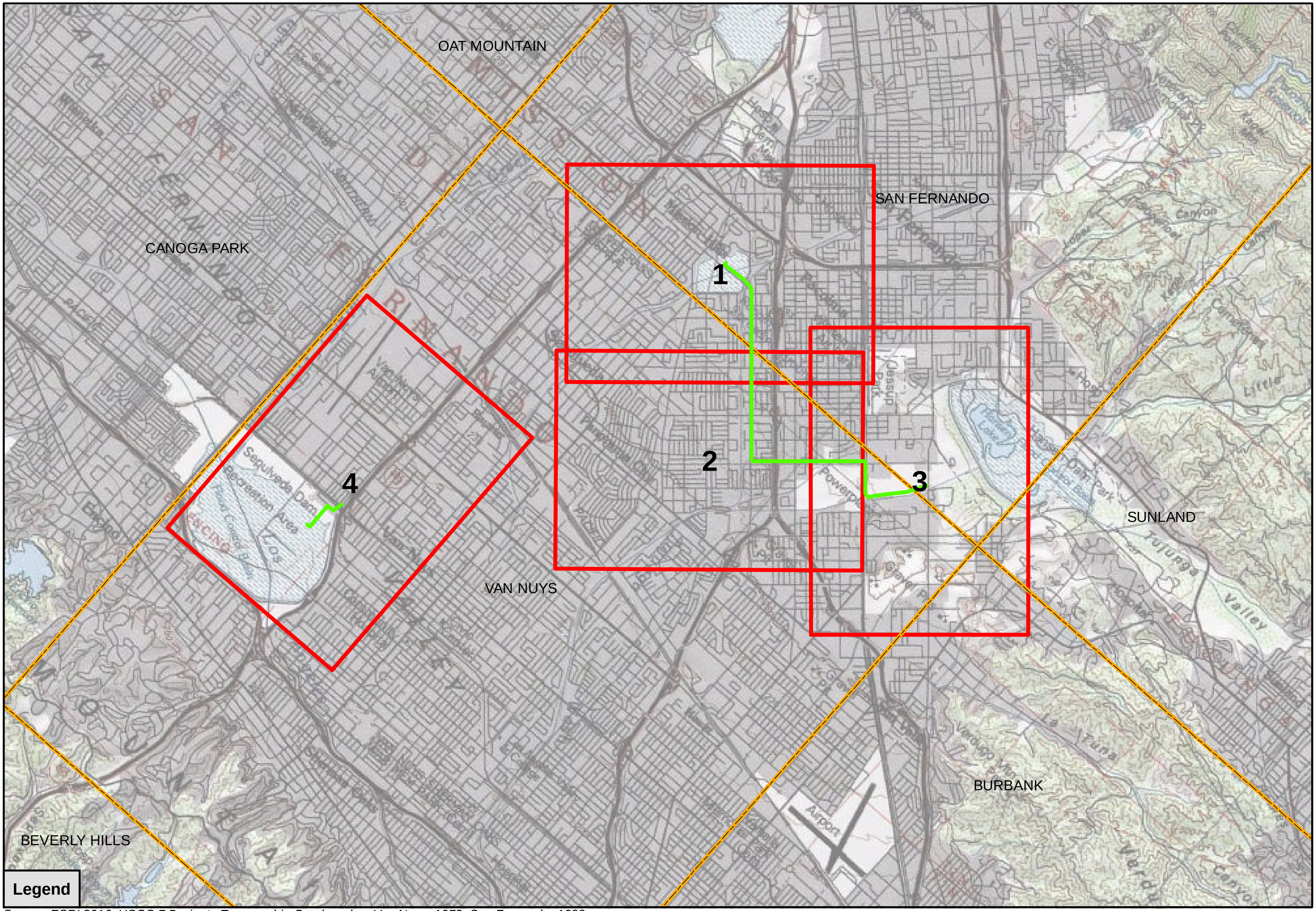
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

Attachments:

1) Project Area Overview Map
2) Response Form

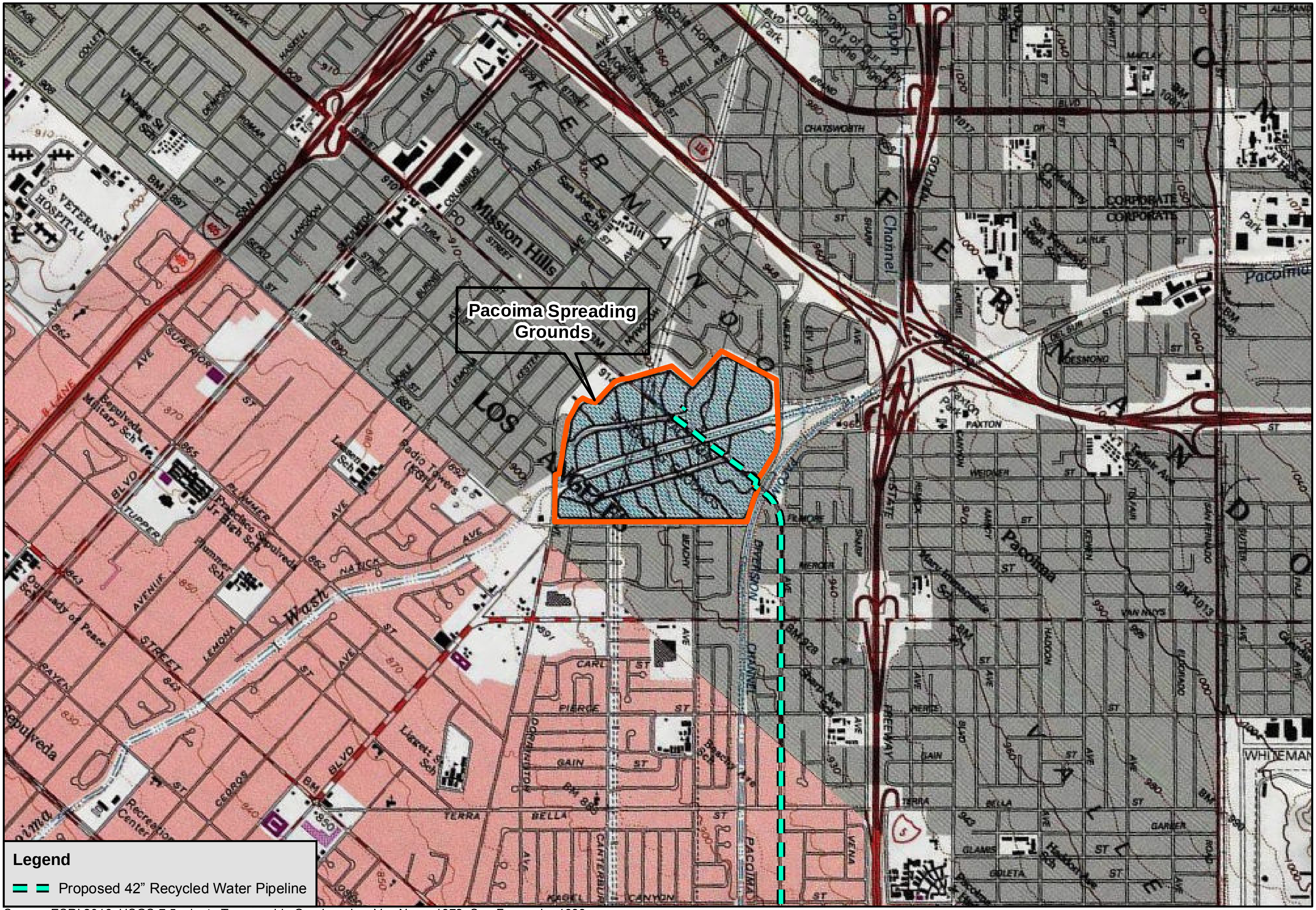


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

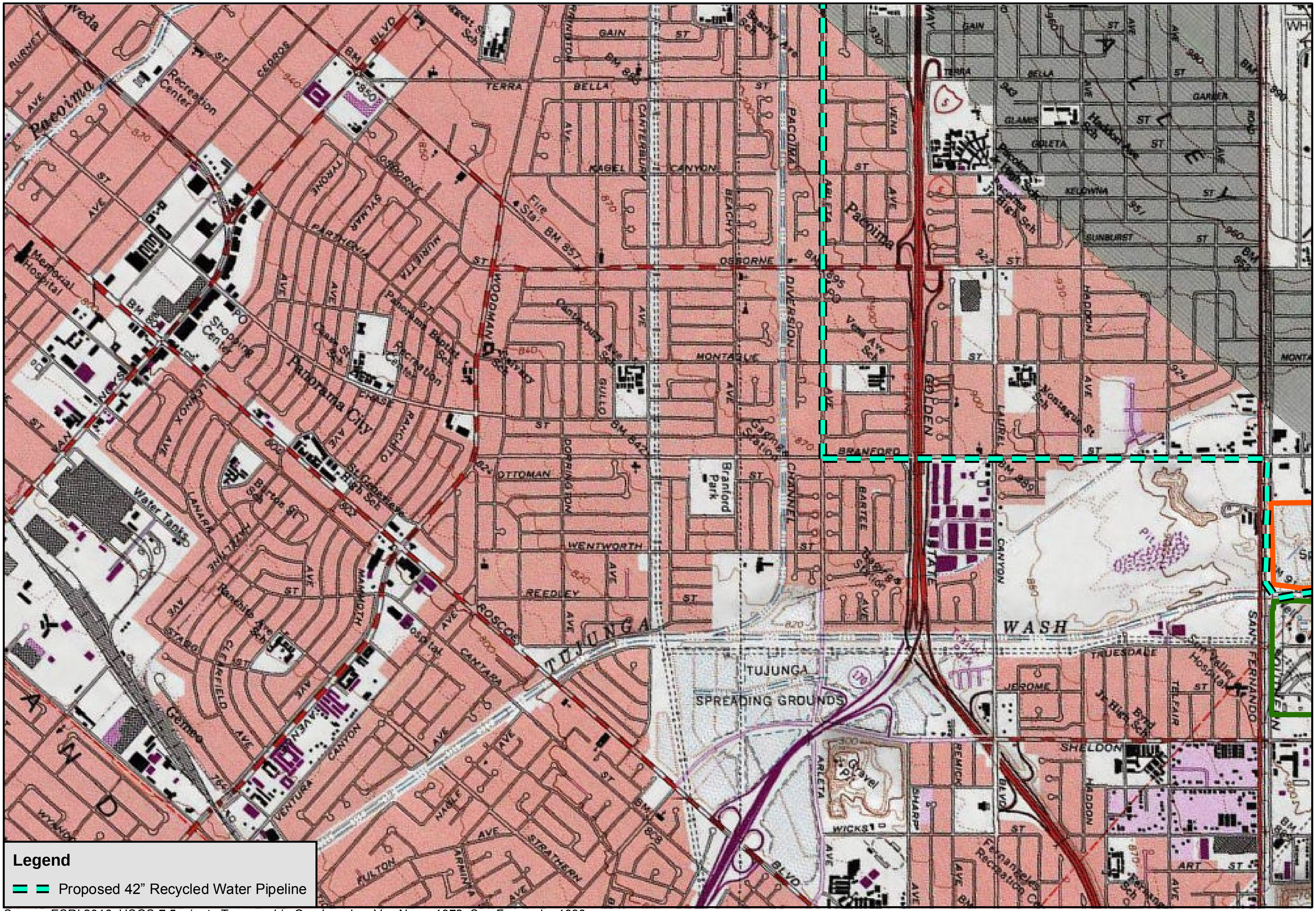
Mapbook Index

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

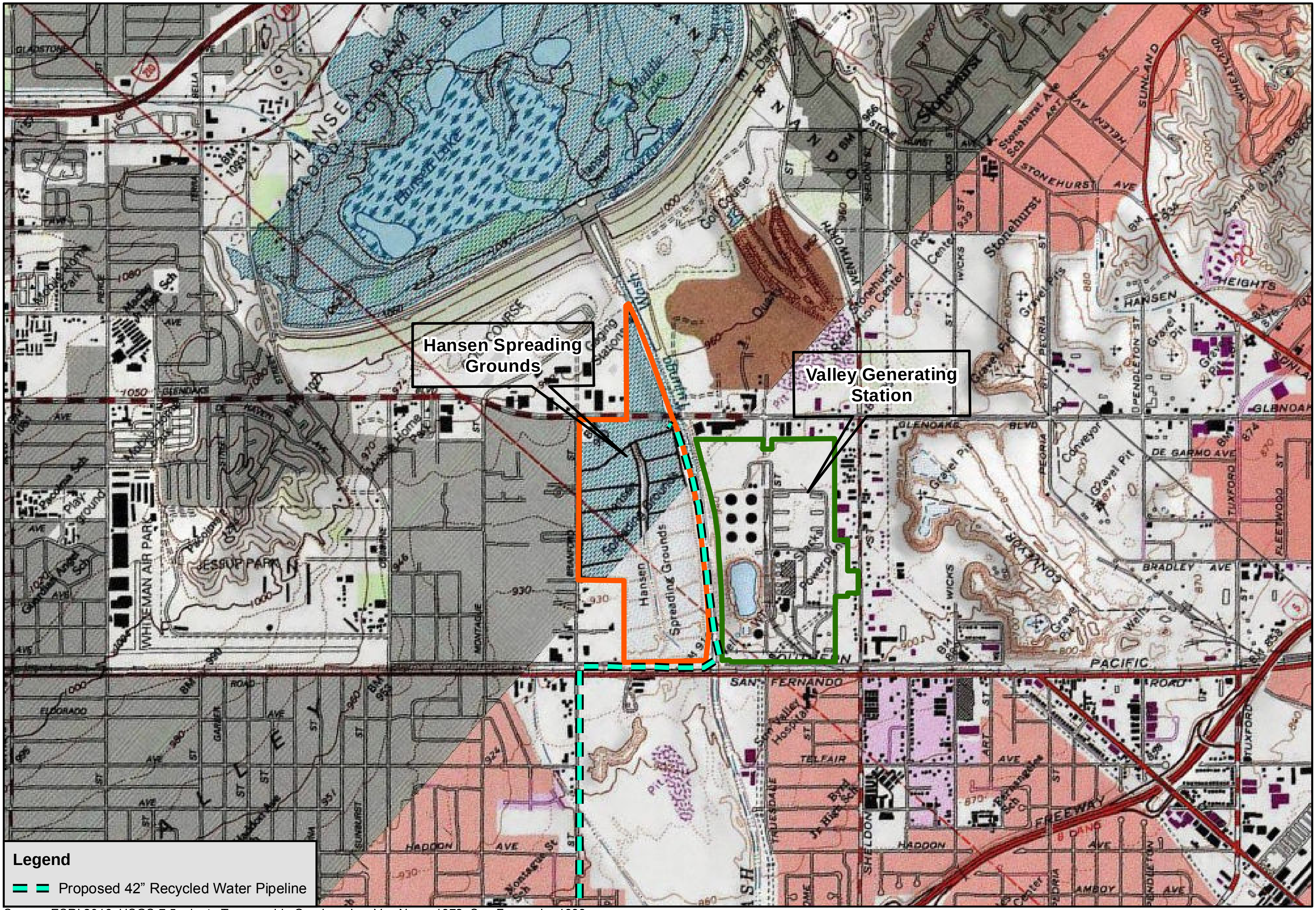
0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

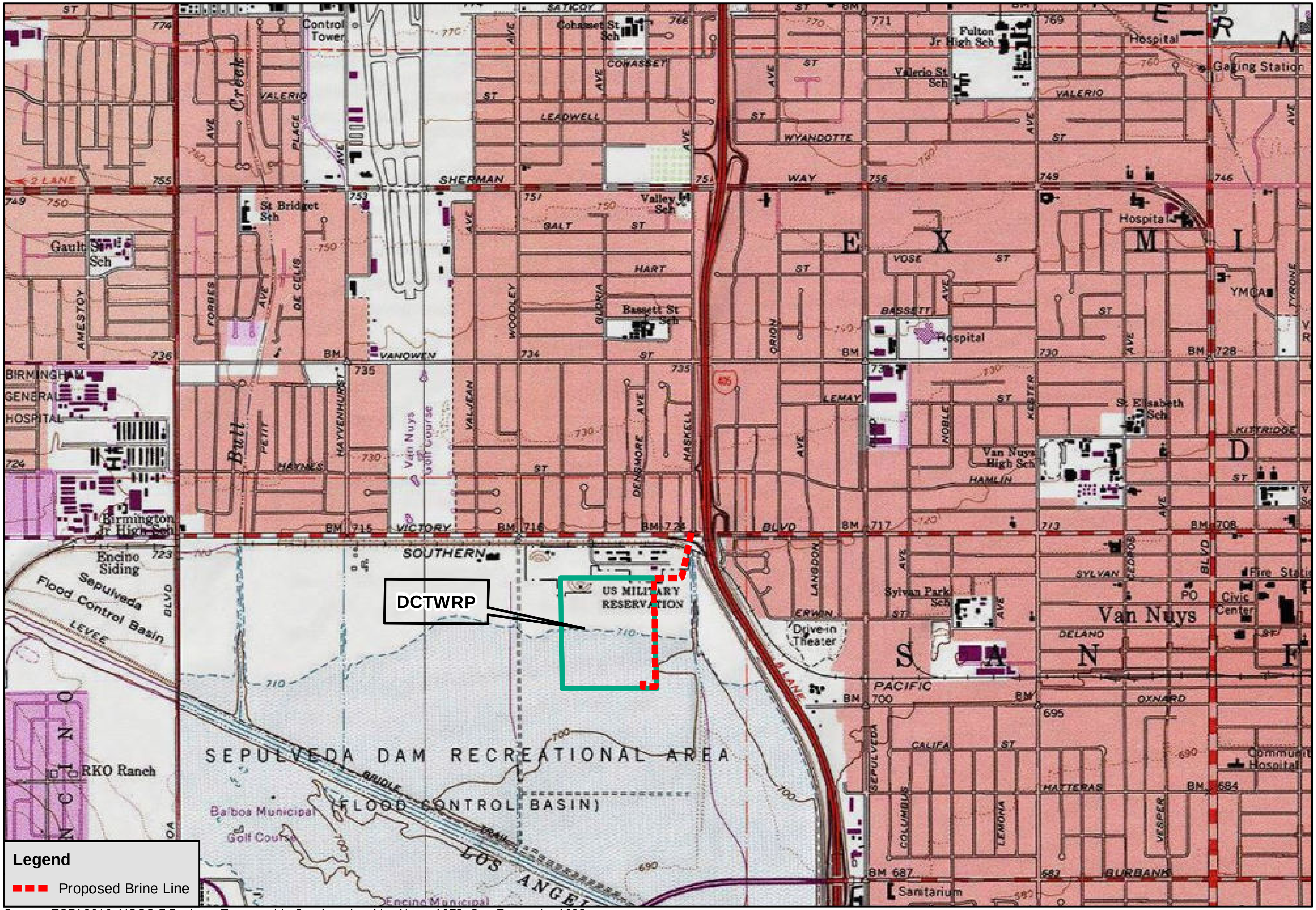
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

Beherec, Marc

From: Johntommy Rosas <tattnlaw@gmail.com>
Sent: Wednesday, March 30, 2016 6:11 PM
To: Beherec, Marc
Subject: Re: Los Angeles Groundwater Replenishment Project (As Revised)

thanks ,jt

On Wed, Mar 30, 2016 at 3:39 PM, Beherec, Marc <Marc.Beherec@aecom.com> wrote:

Dear Tribal Administrator Rosas:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The attached project description and enclosed maps supersede all previous project descriptions.**

Attached, please find our contact letter for the revised project, as well as a map and contact form. Please feel free to contact me directly with any questions.

Thank you!

Sincerely,

Marc

Marc A. Beherec, Ph.D., RPA

Archaeologist

AECOM

515 S. Flower St., 8th Floor, Los Angeles, CA 90071

Office: 213-593-8481

Cell: 951-296-7561

AECOM

515 S Flower Street, 8th Floor

Los Angeles, CA 90071

T 213.593.7700 F 213.593.8623

www.aecom.com

www.aecom.com/designplanning

--

JOHN TOMMY ROSAS
TRIBAL ADMINISTRATOR
TRIBAL LITIGATOR
TONGVA ANCESTRAL TERRITORIAL TRIBAL NATION
A TRIBAL SOVEREIGN NATION UNDER UNDRIP
AND AS A CALIFORNIA NATIVE AMERICAN TRIBE / SB18-AJ52-AJR 42
25 U.S. Code § 1679 - Public Law 85-671
August 18, 1958 | [H. R. 2824] 72 Stat. 619
Tribal sovereignty in the United States is the inherent authority of indigenous tribes to govern themselves within and outside the borders and waters of the United States of America .

TRUTH IS OUR VICTORY AND HONOR IS OUR PRIZE >TATTN ©

tongvanation.org

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: John Tommy Rosas

Phone # 310-570-6567

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

John Tommy Rosas, Tribal Admin of the Tongva Ancestral Territorial Tribal Nation was contacted at 3:39 pm and did respond. I discussed with the individual that I (Alec Stevenson) represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and asked if there are any concerns or questions about the project. The individual stated that he wishes to respond and will do so with a letter in the next few weeks.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Linda Candelaria, Co-Chairperson
Gabrieleno-Tongva Tribe
1999 Avenue of the Stars
Suite 1100
Los Angeles, CA 90067

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Candelaria:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

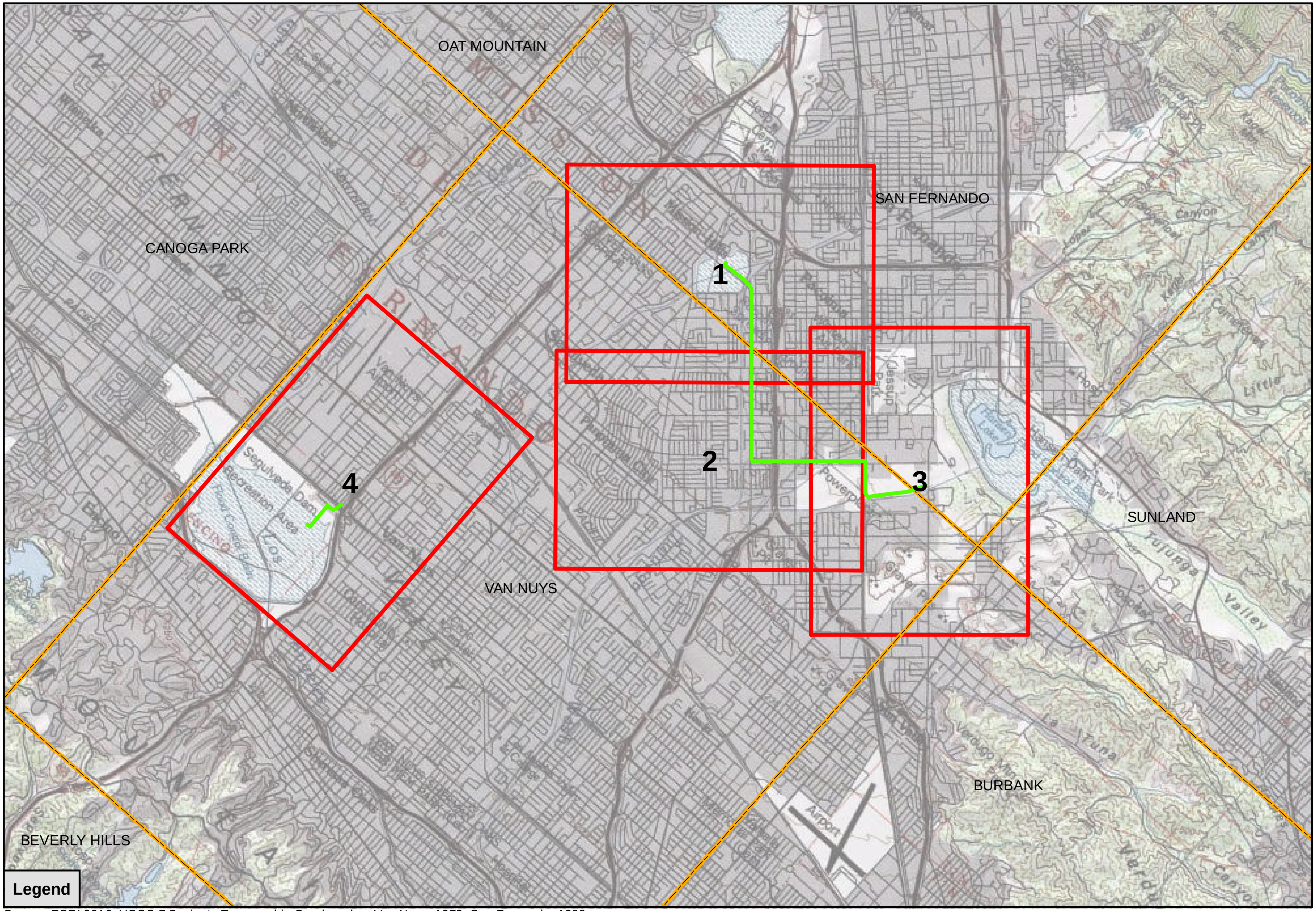
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
213.593.8481
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

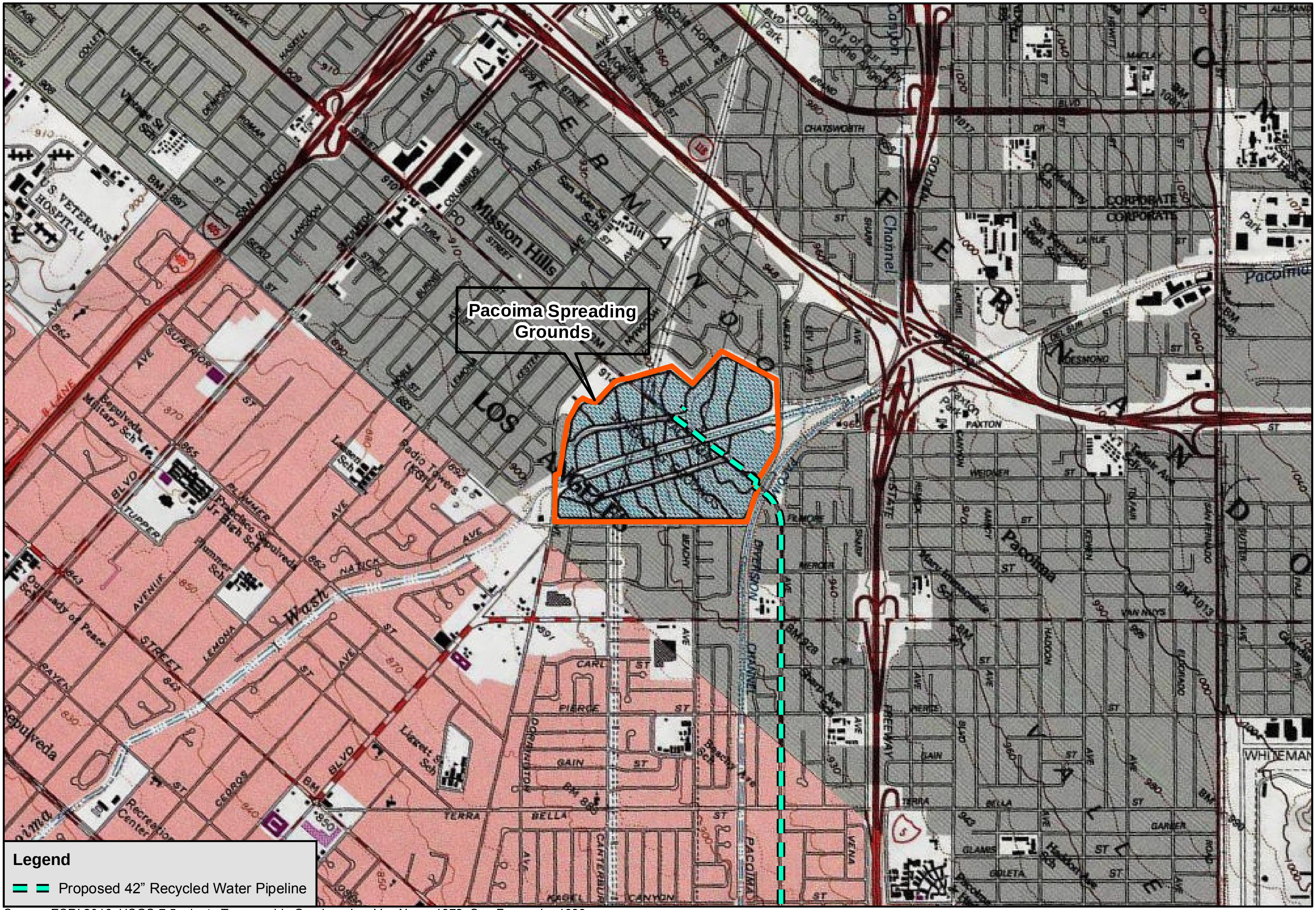


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

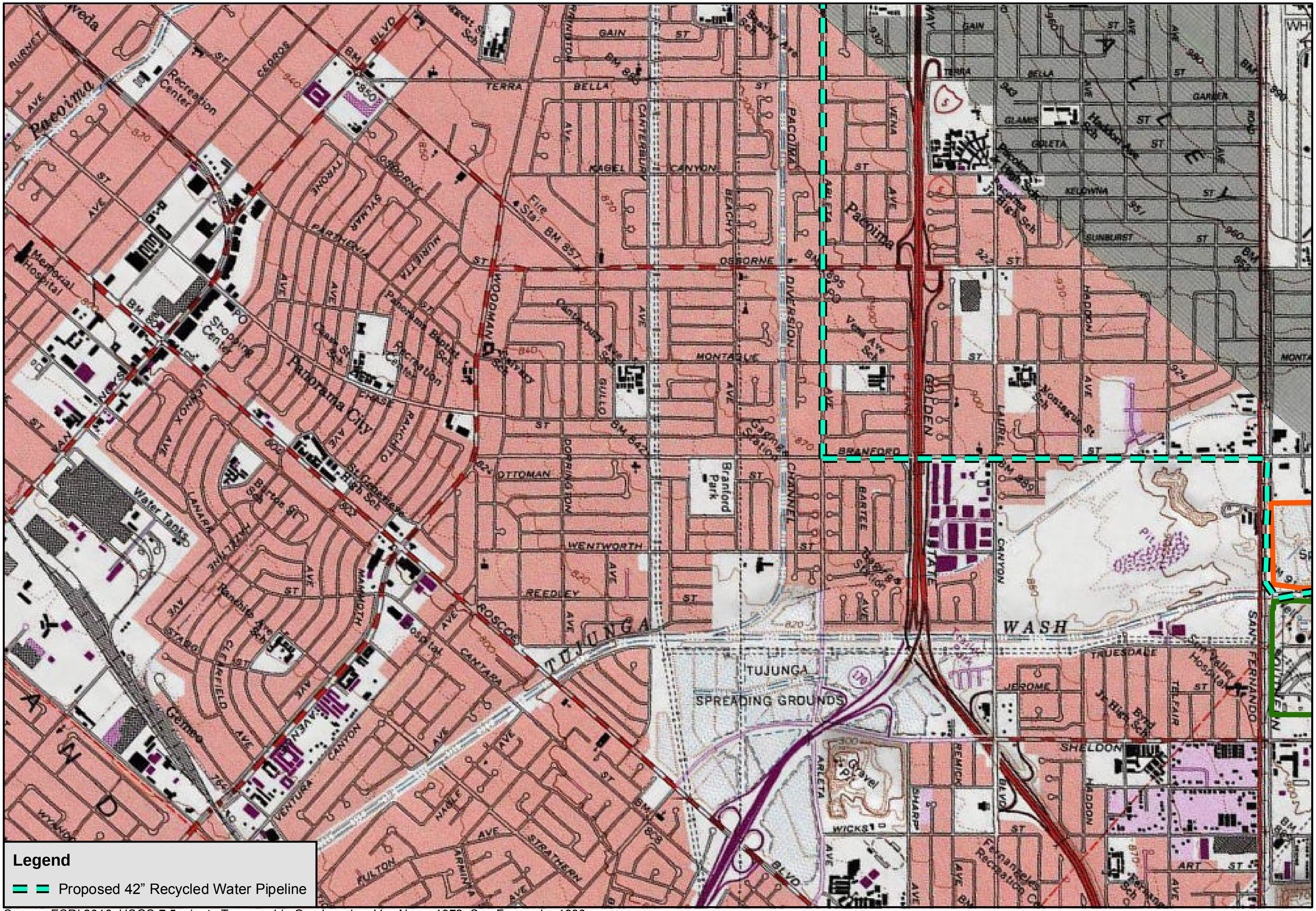
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

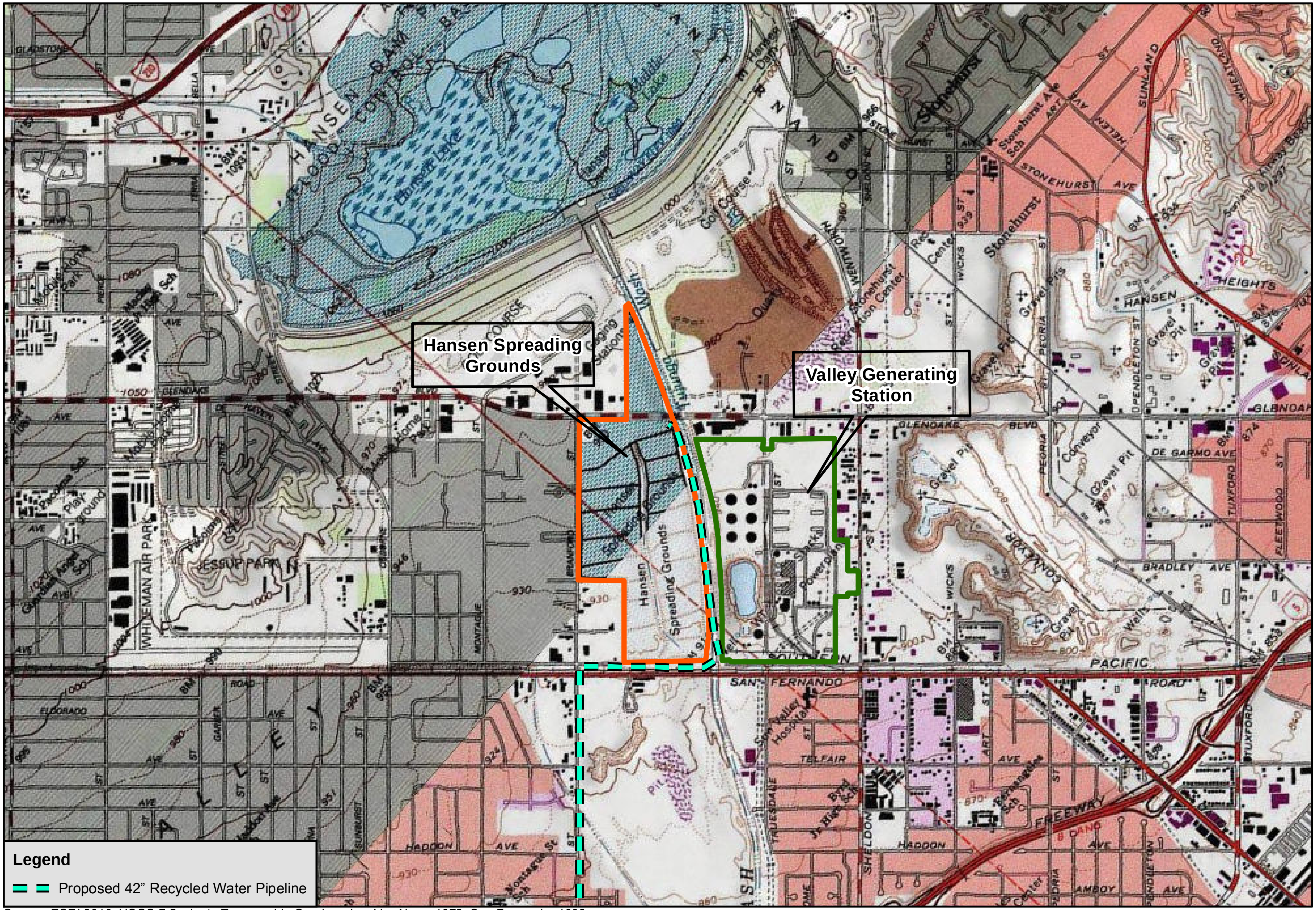
0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

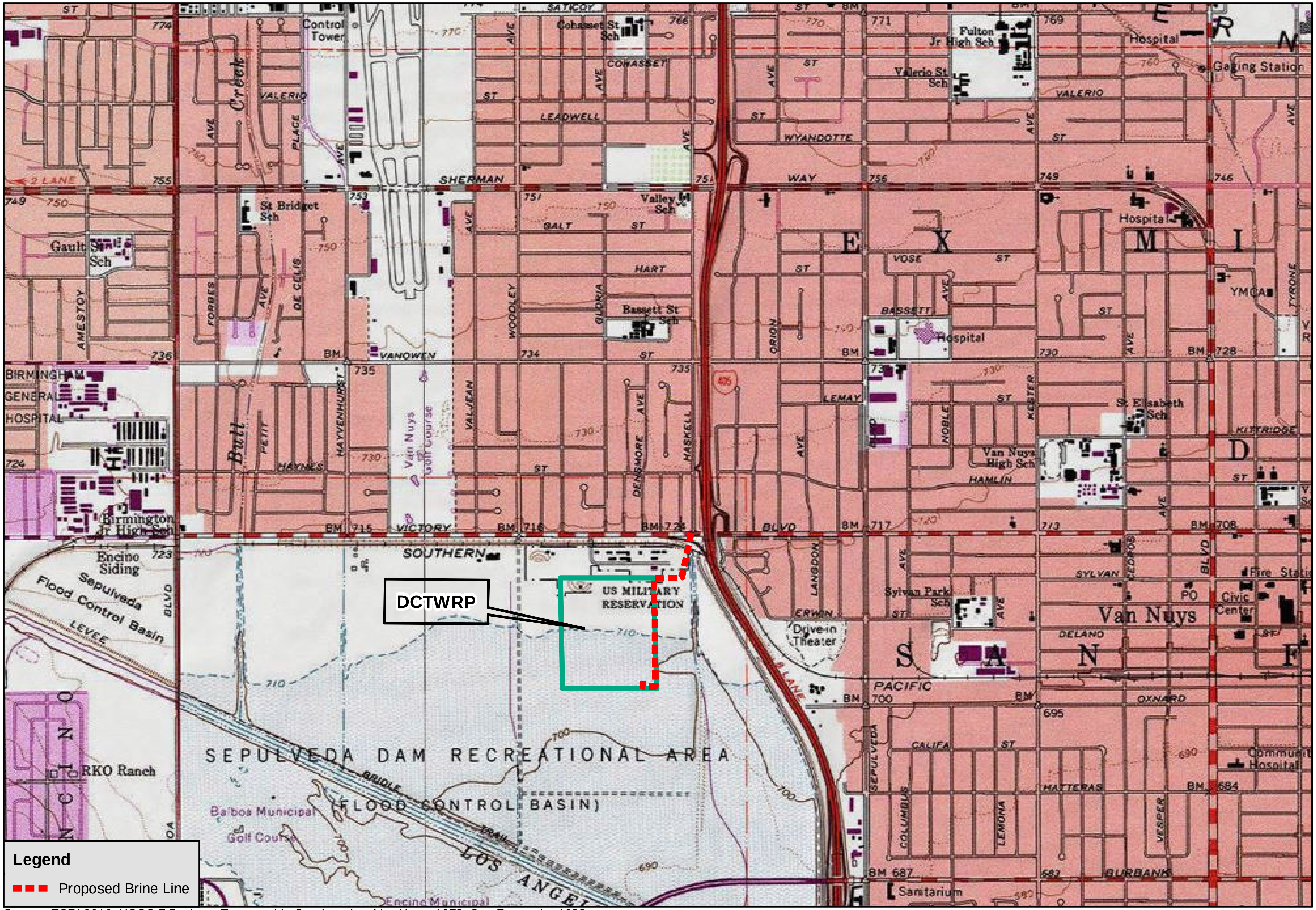
0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Linda Candelaria

Phone # 626-676-1184

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Linda Candelaria, Co-Chairperson of the Gabrielino-Tongva Tribe was contacted at 2:12 pm. There was no answer. I left a message identifying myself (Alec Stevenson) and that I represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and that if the individual has any concerns or questions to please call the cultural resources lead , Marc Beherec. I then provided Marc's office number and ended the call.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Larry Ortega, Chairperson
Fernandeno Tatavium Band of Mission Indians
1019 2nd Street, Suite #1
San Fernando, CA 91340

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Ortega:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

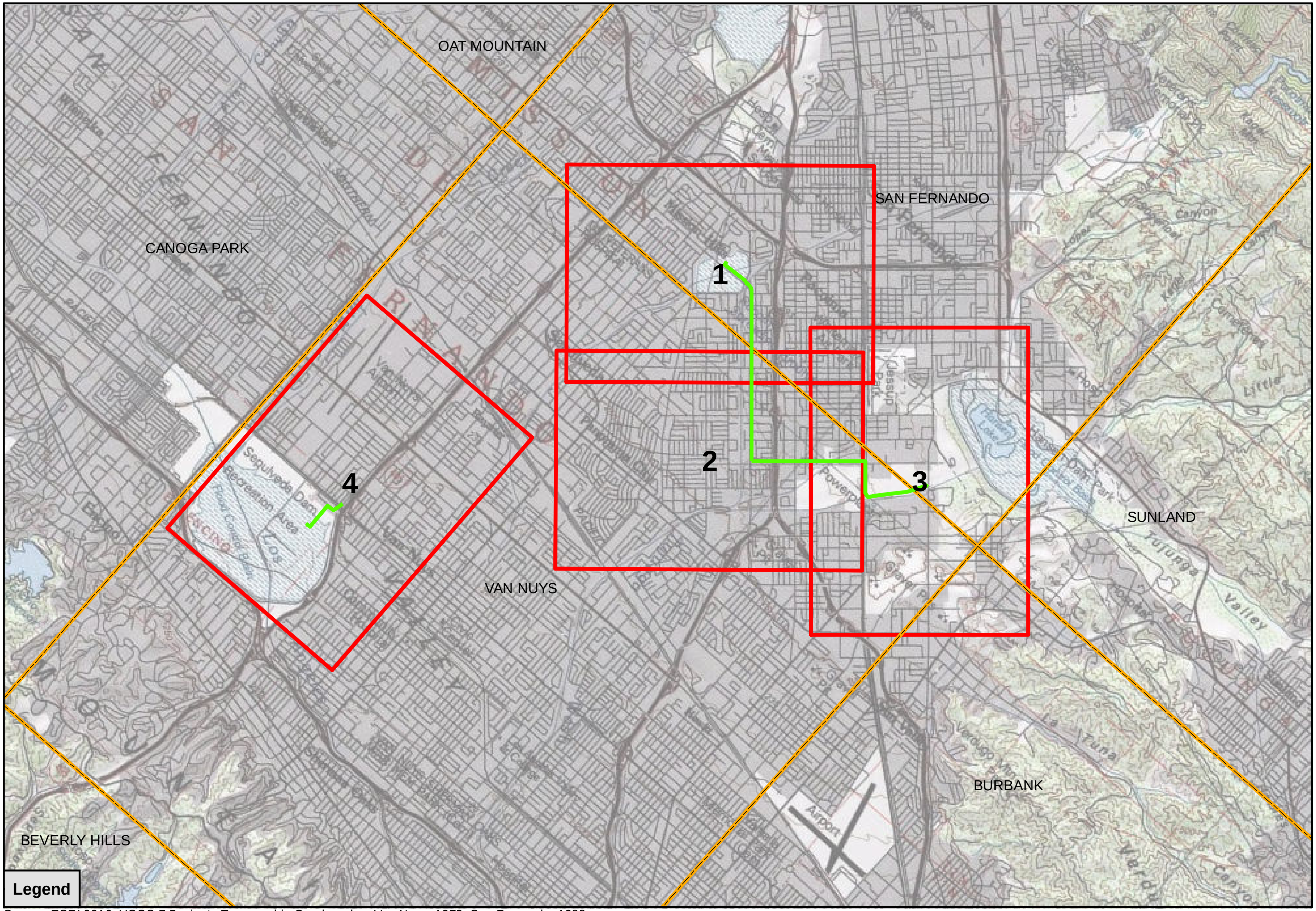
Please feel free to contact me directly with any questions.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
marc.beherec@aecom.com

Enclosures:
1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

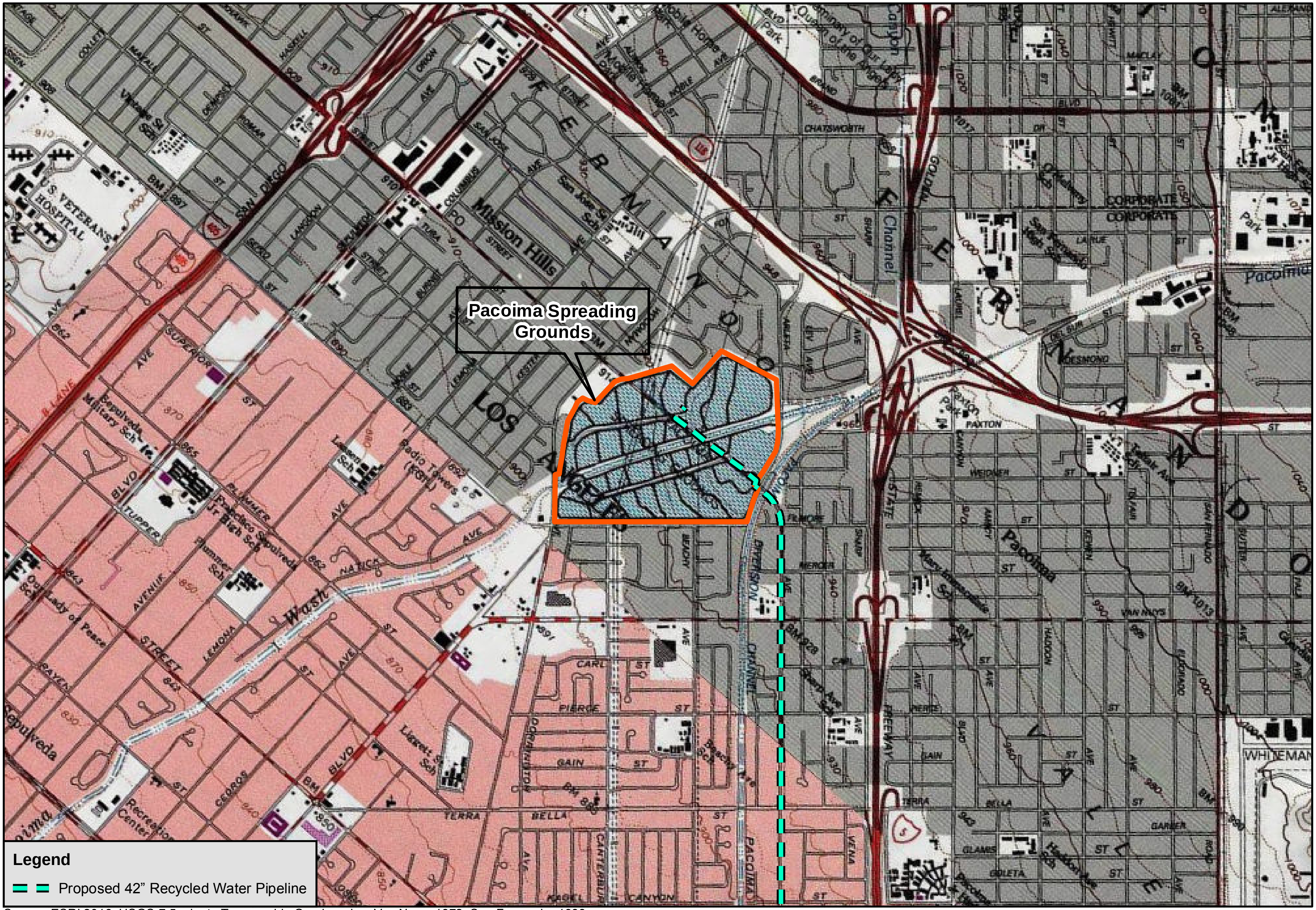


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

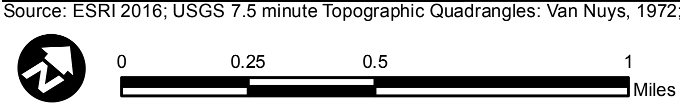
0 0.5 1 2 Miles

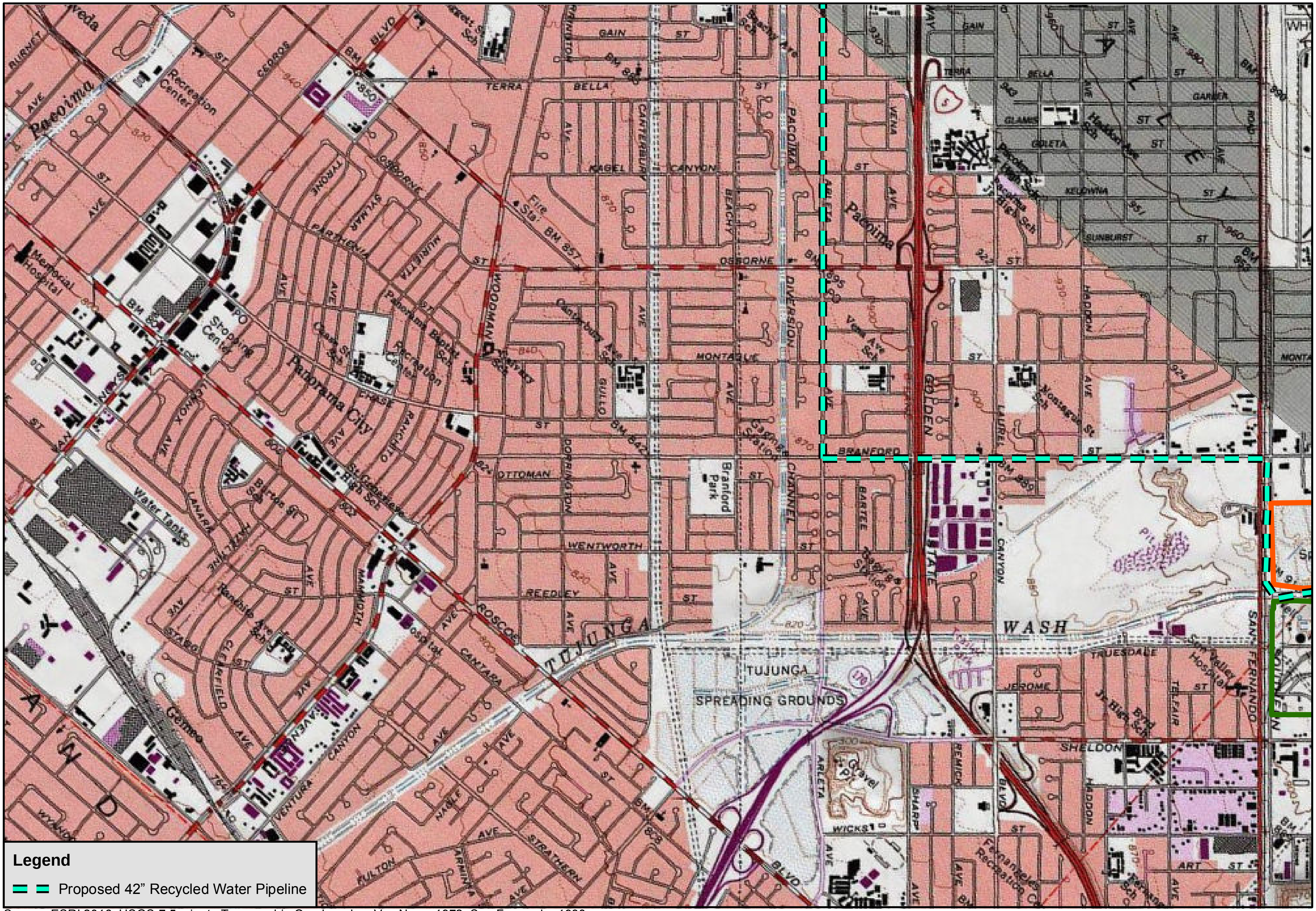
Mapbook Index

Los Angeles Groundwater Replenishment Project



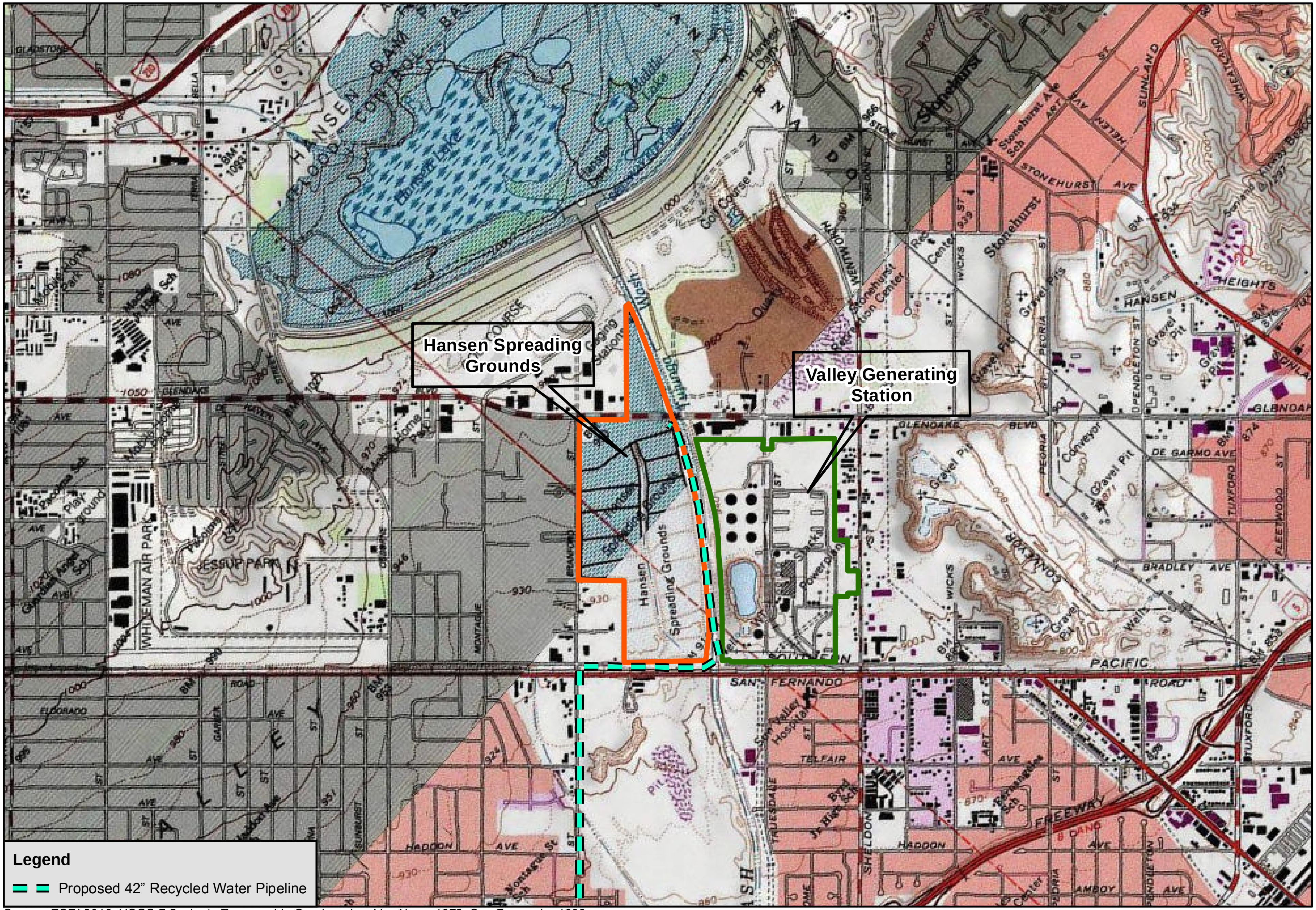
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988





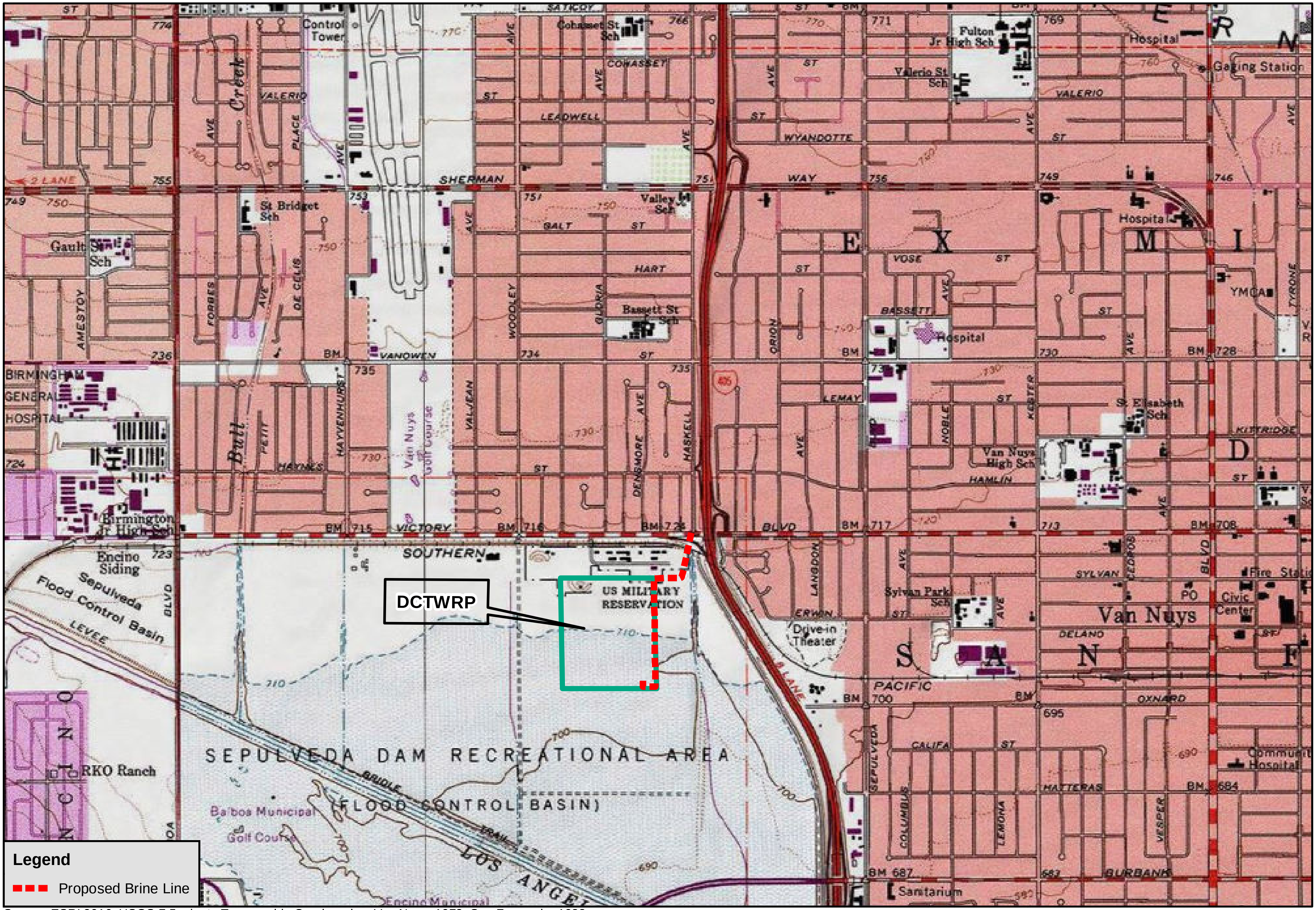
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature   Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Larry Ortega

Phone # 818-837-0794

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Larry Ortega, Chairperson at the Fernandeno Tataviam Band of Mission Indians was not contacted. This is the same phone number as Rudy Ortega in which a contact attempt was already made.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Ron Andrade, Director
Los Angeles City/County Native American Indian Commission
3175 West 6th Street, Rm. 403
Los Angeles, CA 90020

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Director Andrade:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

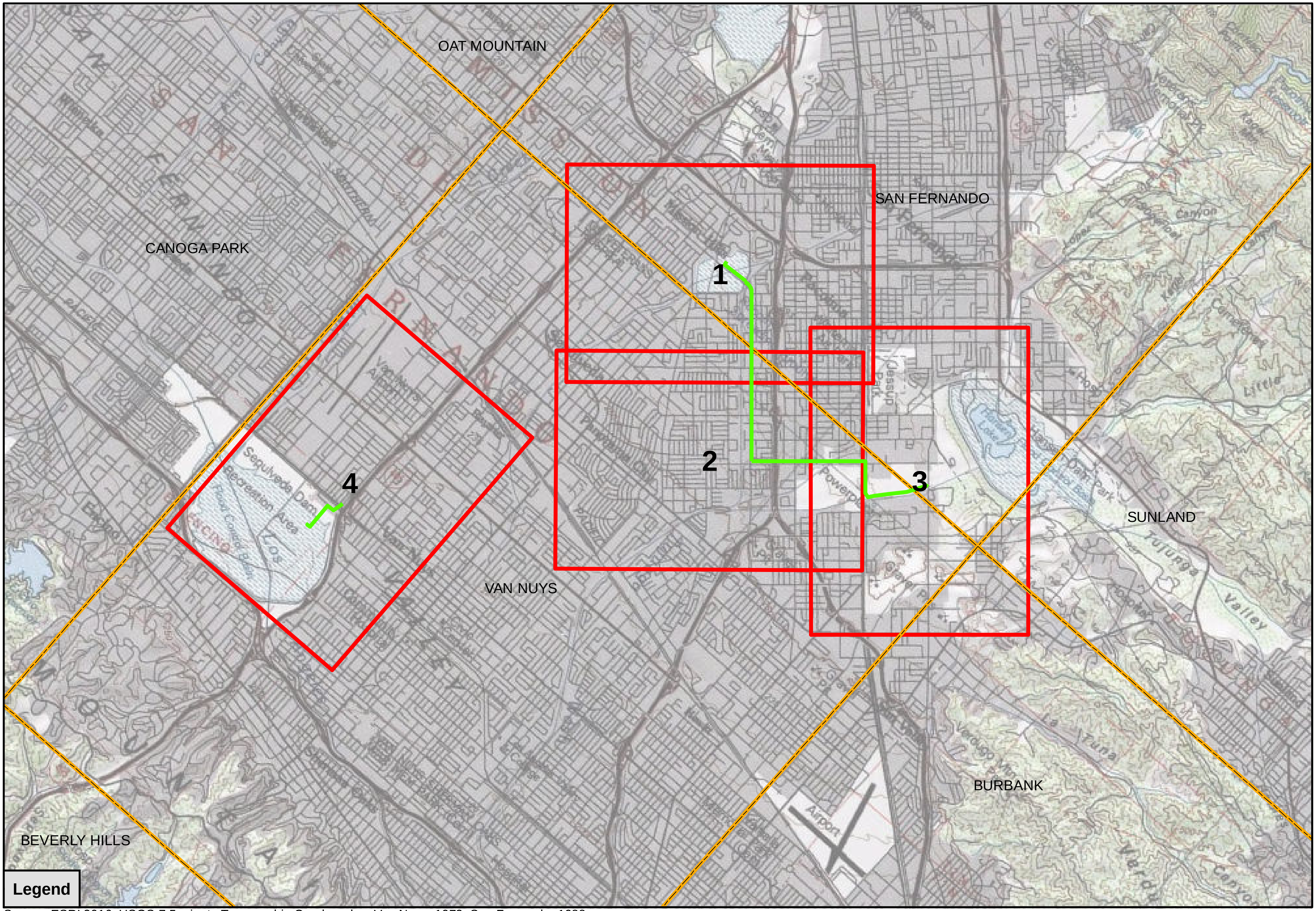
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
marc.beherec@aecom.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

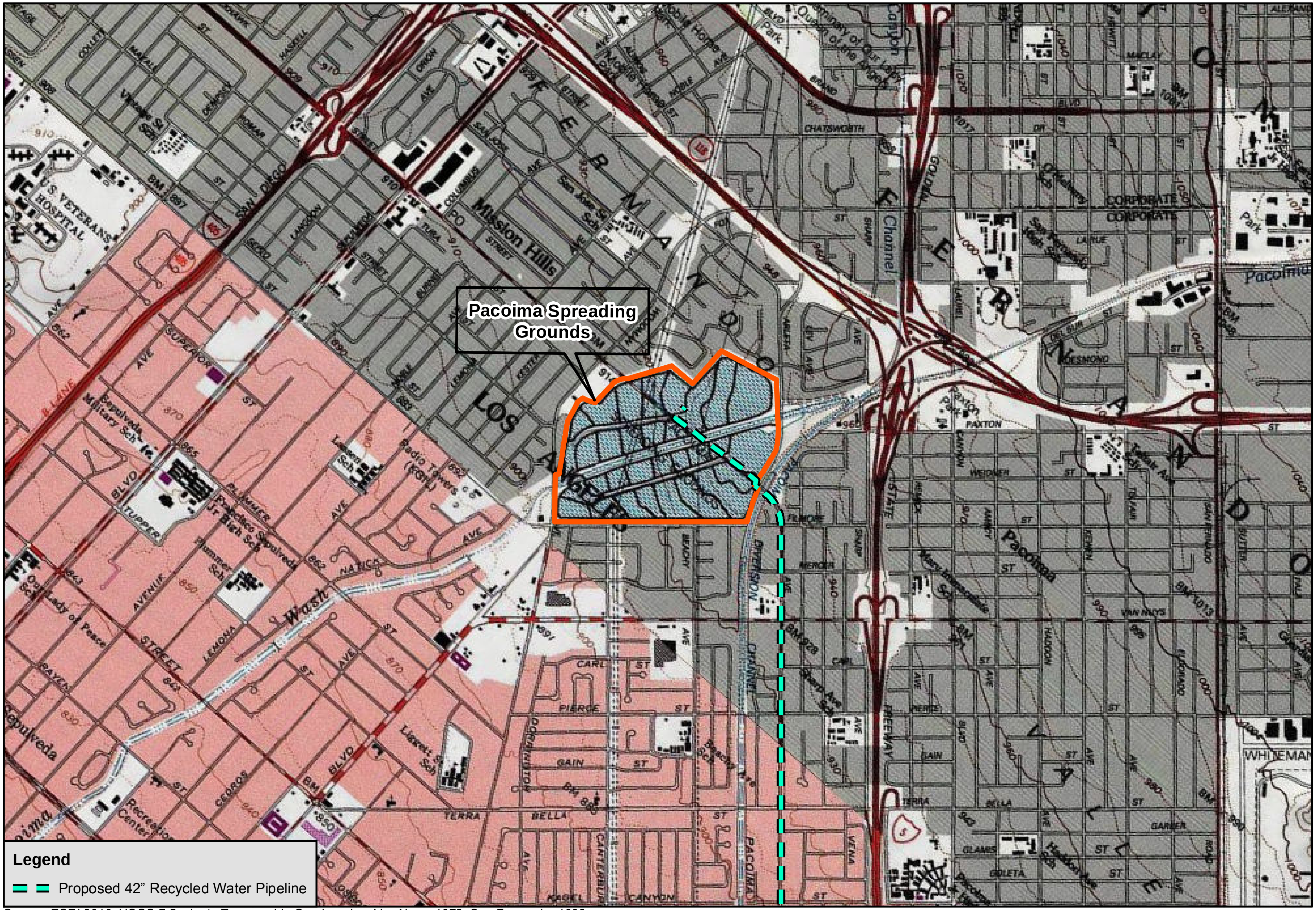


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

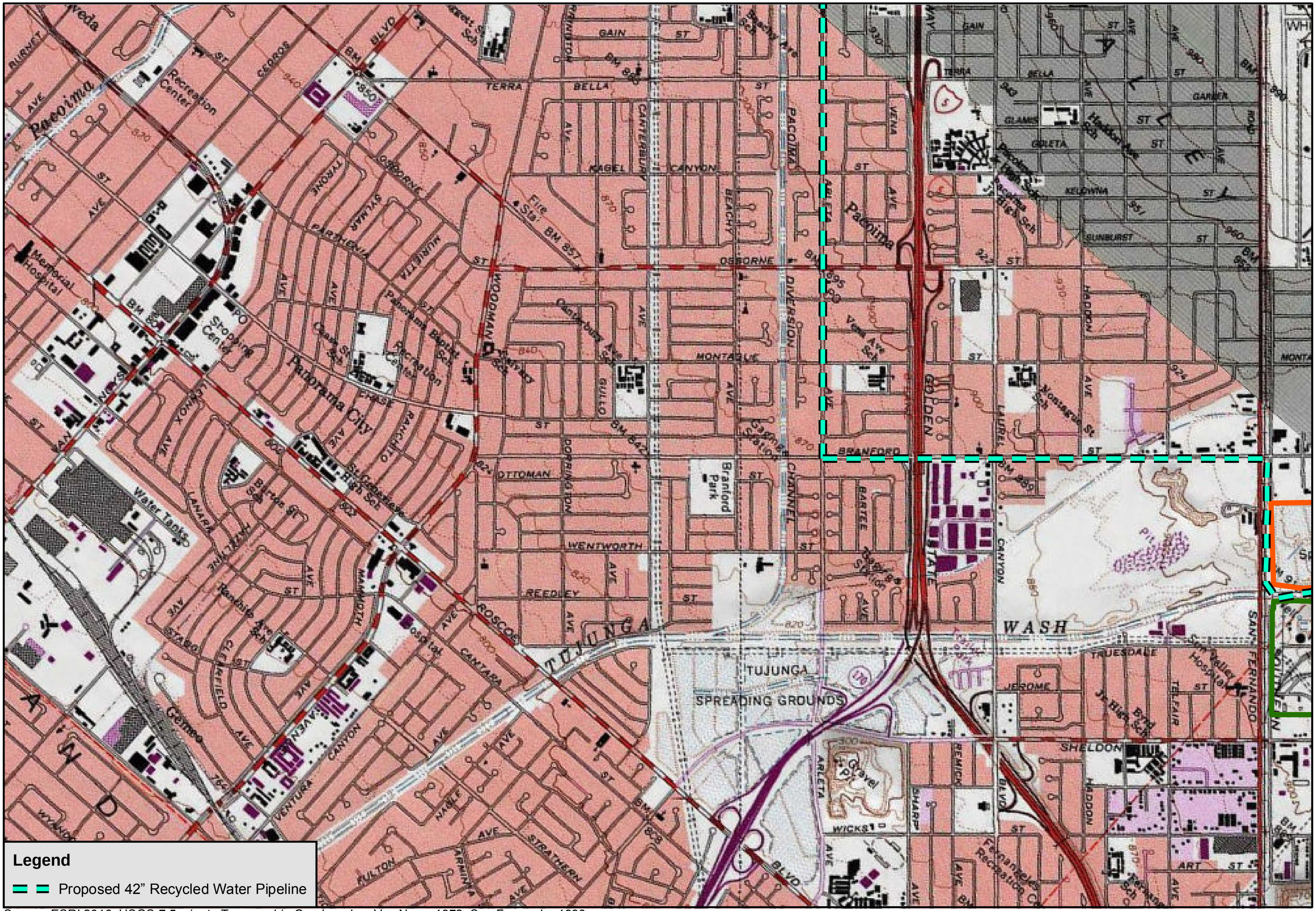
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

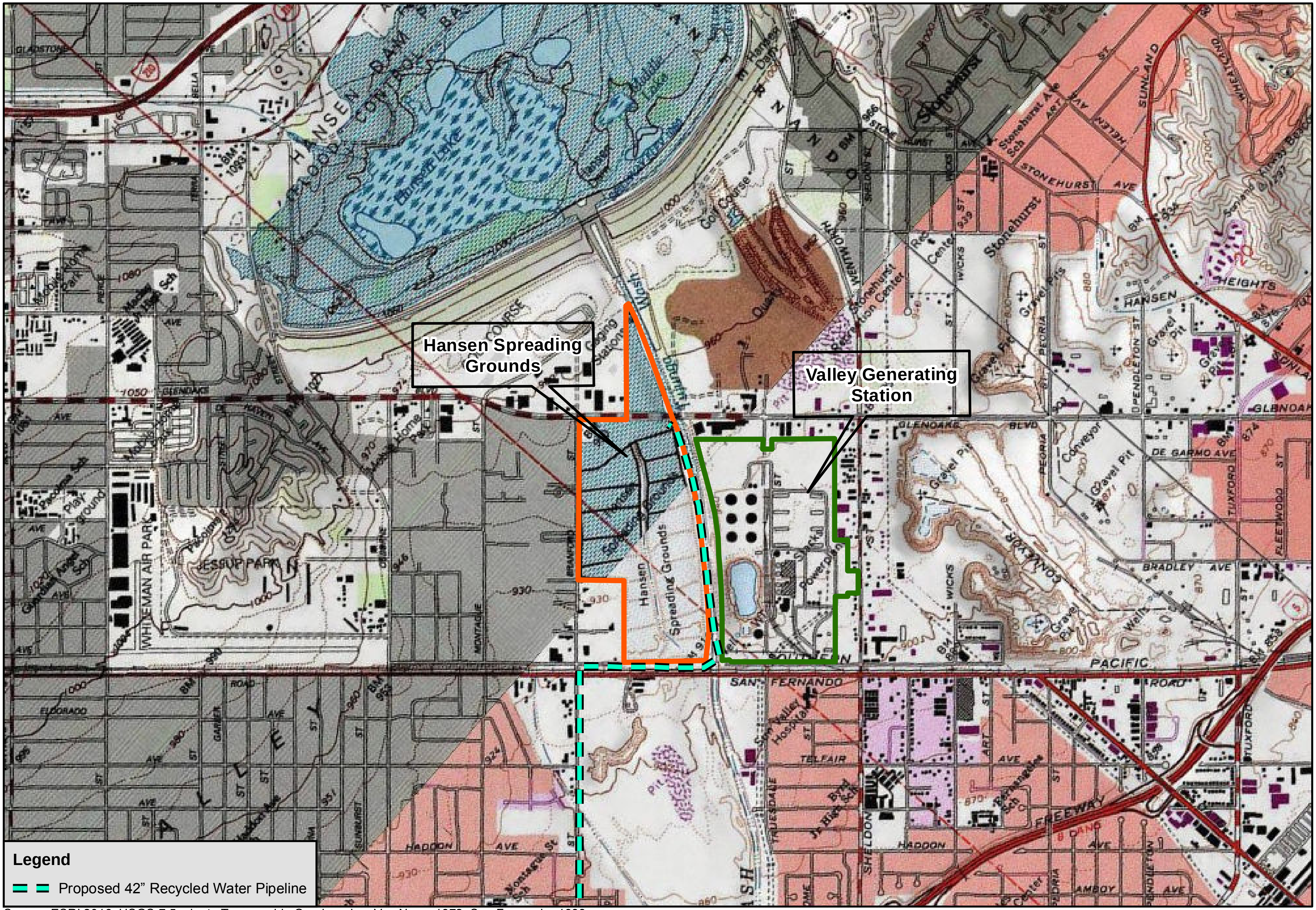
0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



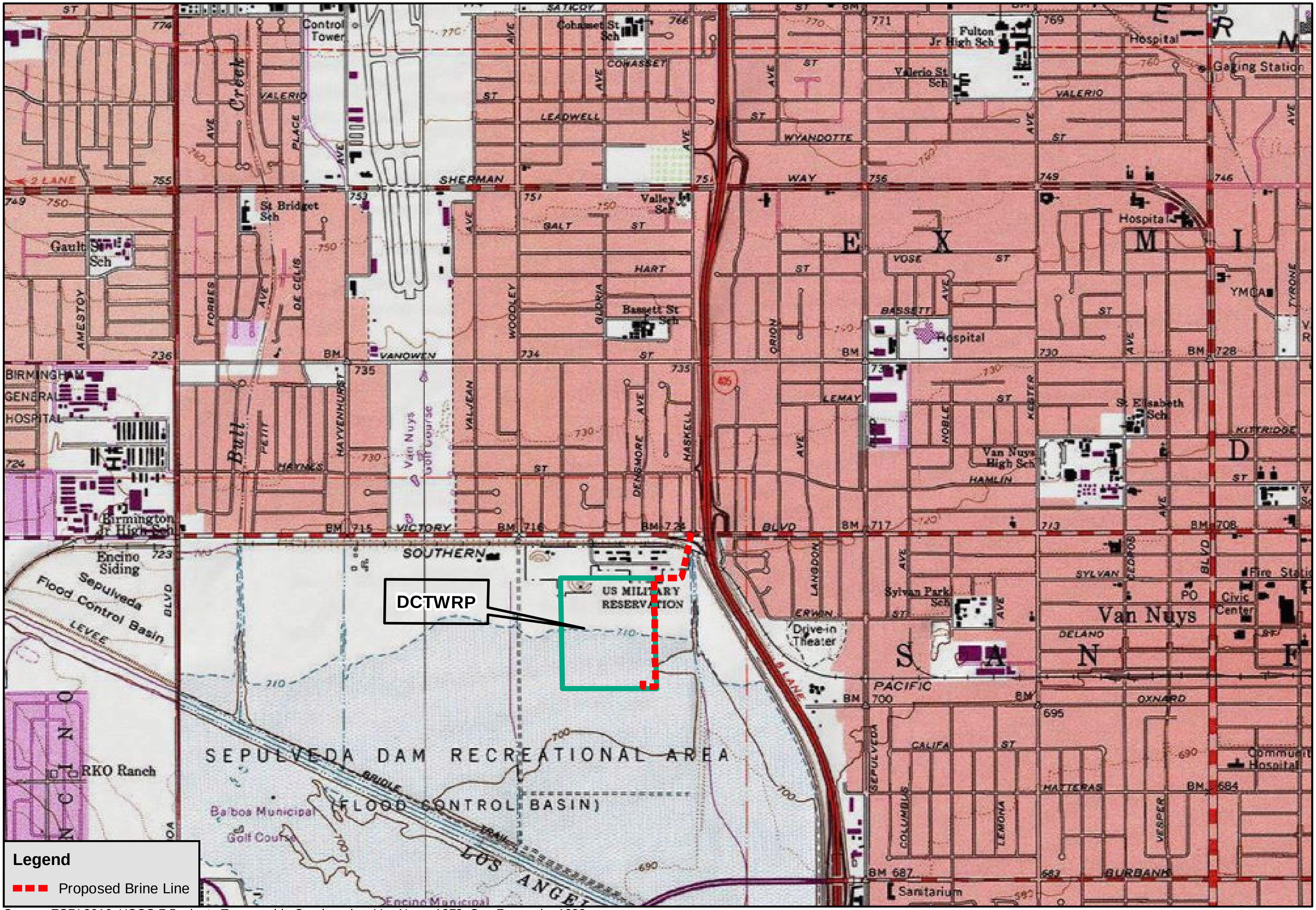
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Ron Andrade

Phone # 818-837-0794

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Ron Andrade, Director at the LA City/County Native American Indian Comm was not contacted. The listed number is no longer in service. Called at 3:57 pm.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
March 30, 2016

Robert F. Dorame, Tribal Chair/Cultural Resources
Gabrieleno Tongva Indians of California Tribal Council
P.O. Box 490
Bellflower, CA 90707

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Mr. Dorame:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

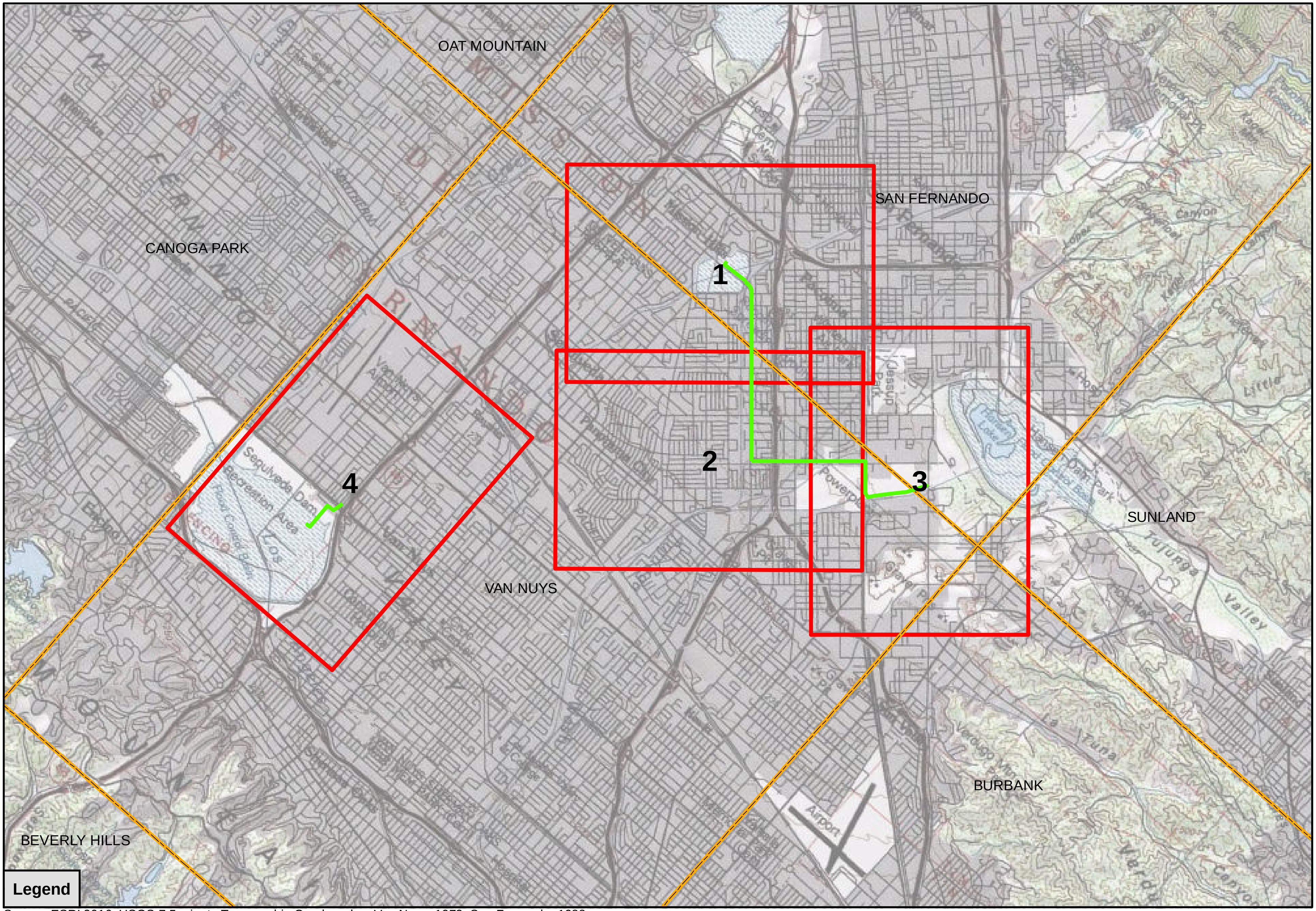
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
marc.beherec@aecom.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

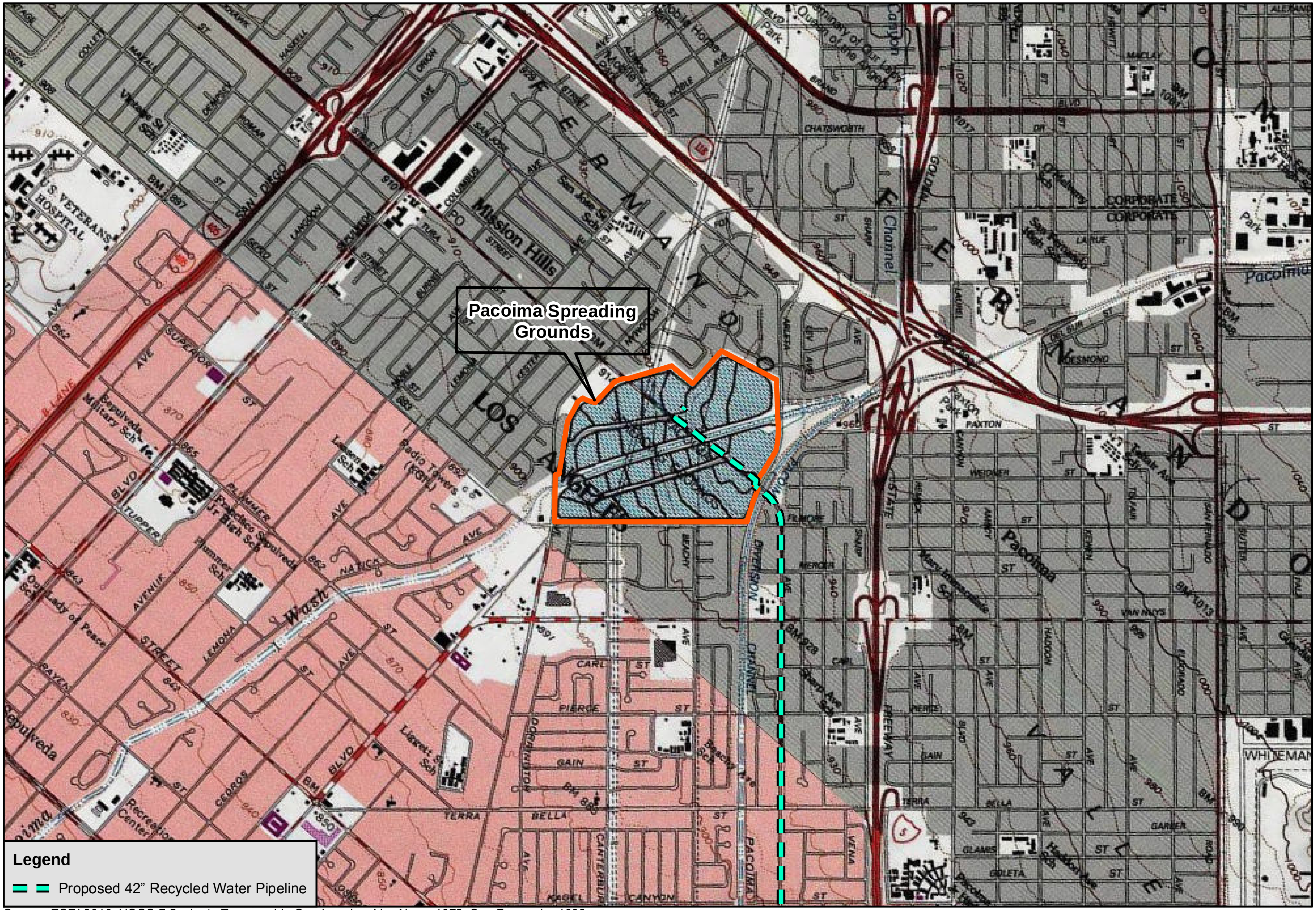


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

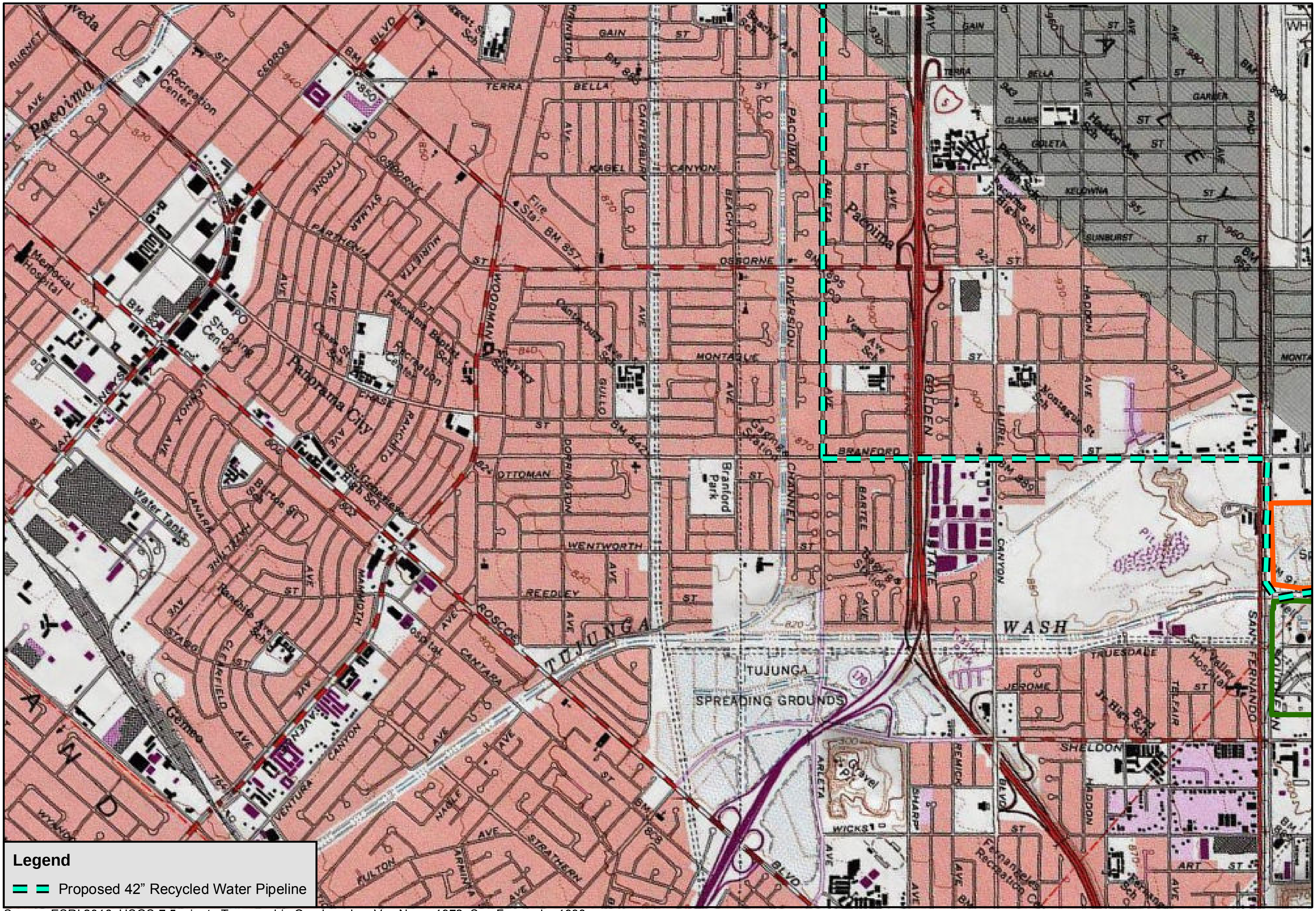
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

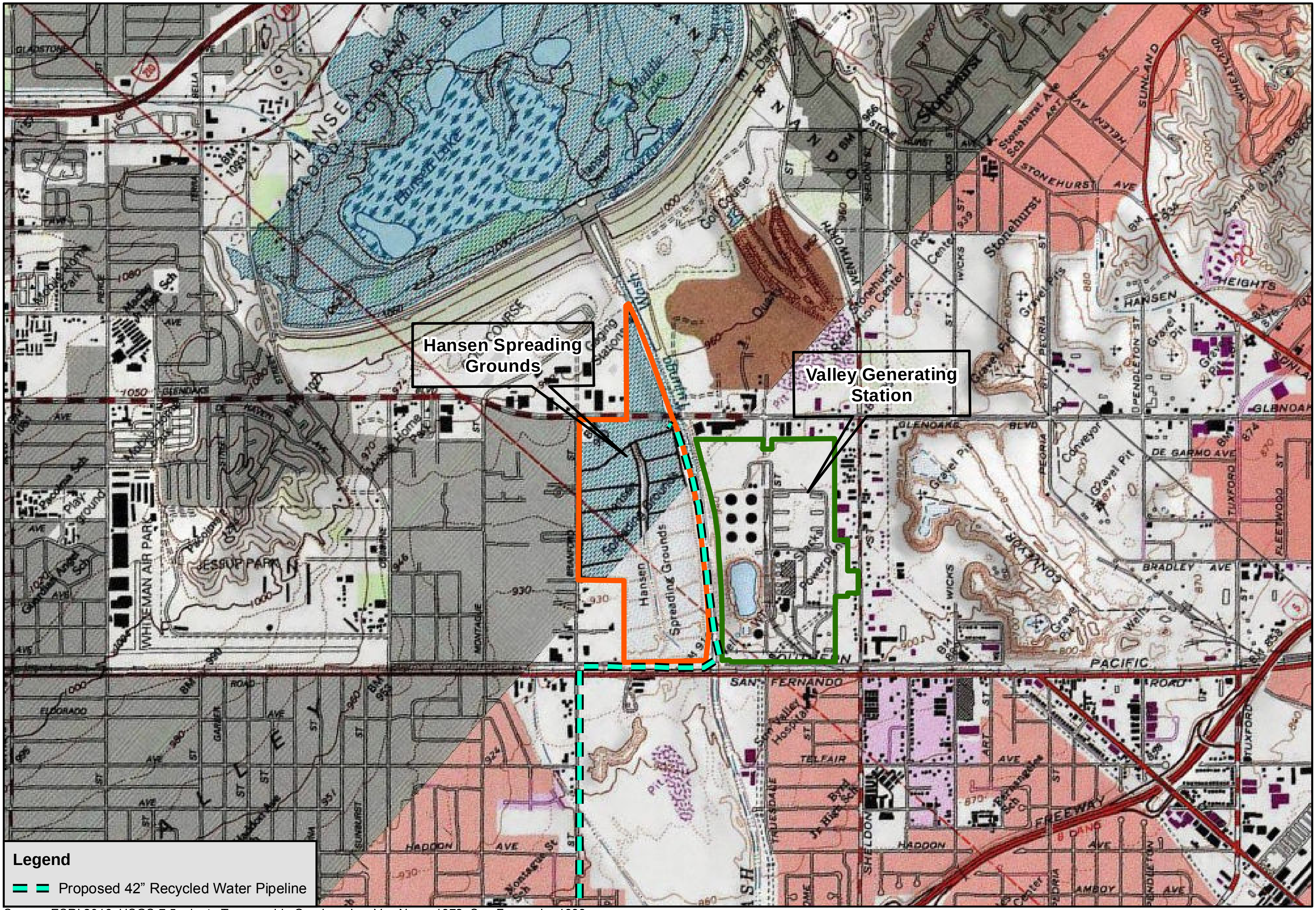
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1
Miles

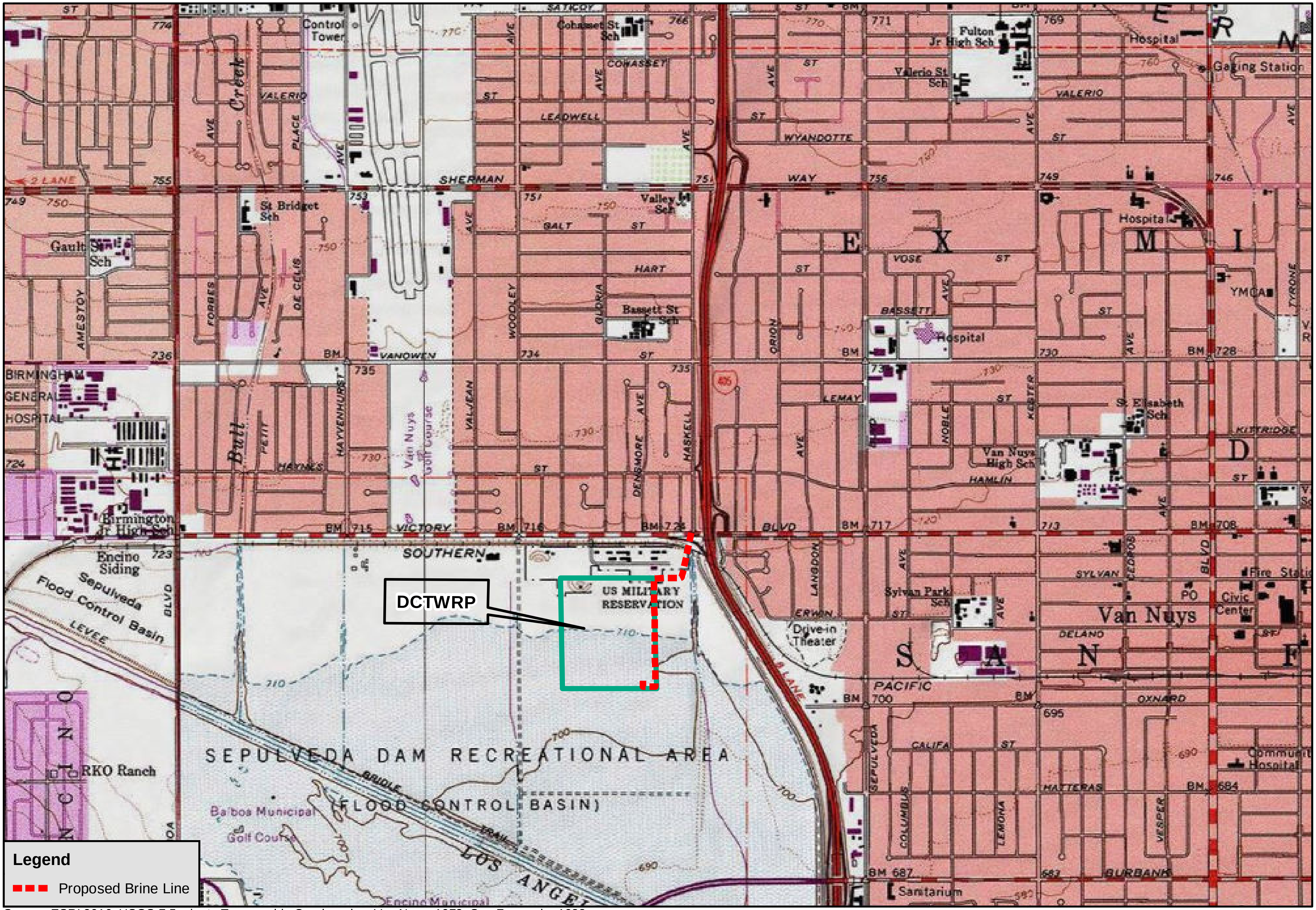
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Robert Dorame

Phone # 562-761-6417

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Robert Dorame, Tribal Chair of the Gabrielino Tongva Indians of California Tribal Council was contacted at 3:36 pm. There was no answer. I left a message identifying myself (Alec Stevenson) and that I represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and that if the individual has any concerns or questions to please call the cultural resources lead , Marc Beherec. I then provided Marc's office number and ended the call.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Randy Guzman-Folkes
4676 Walnut Avenue
Simi Valley, CA 93063

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Mr. Guzman-Folkes:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

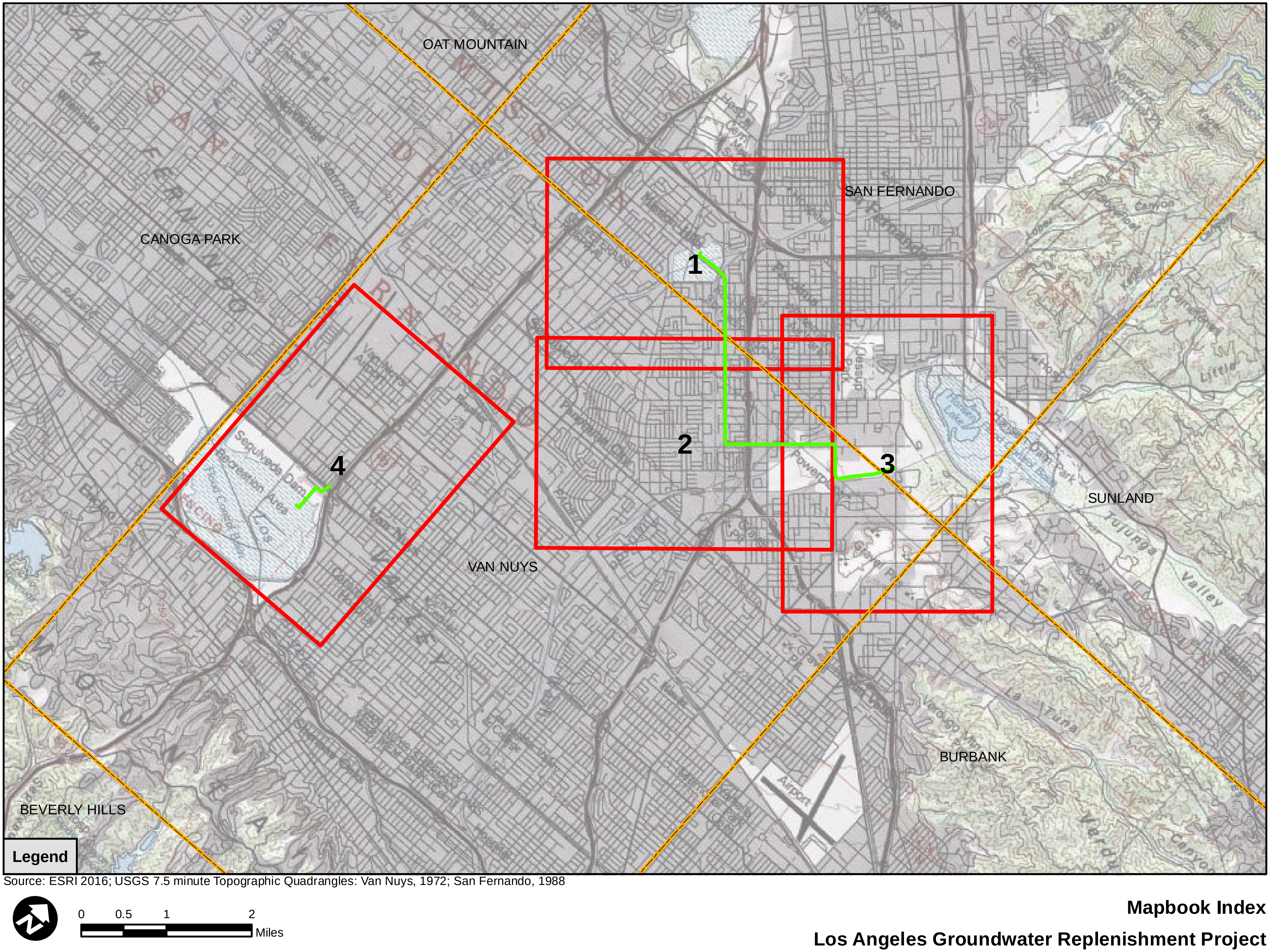
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

Enclosures:

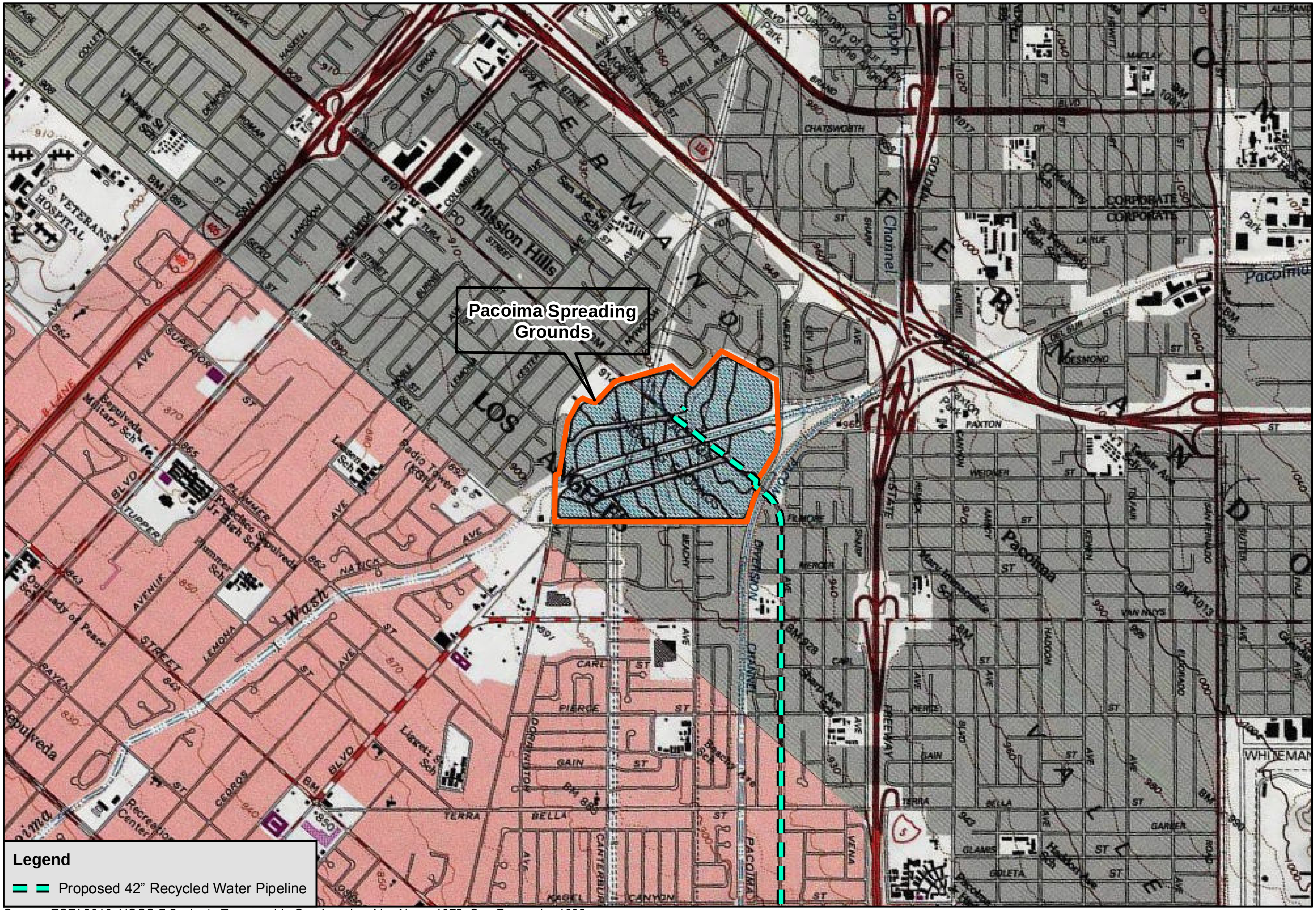
1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

Mapbook Index

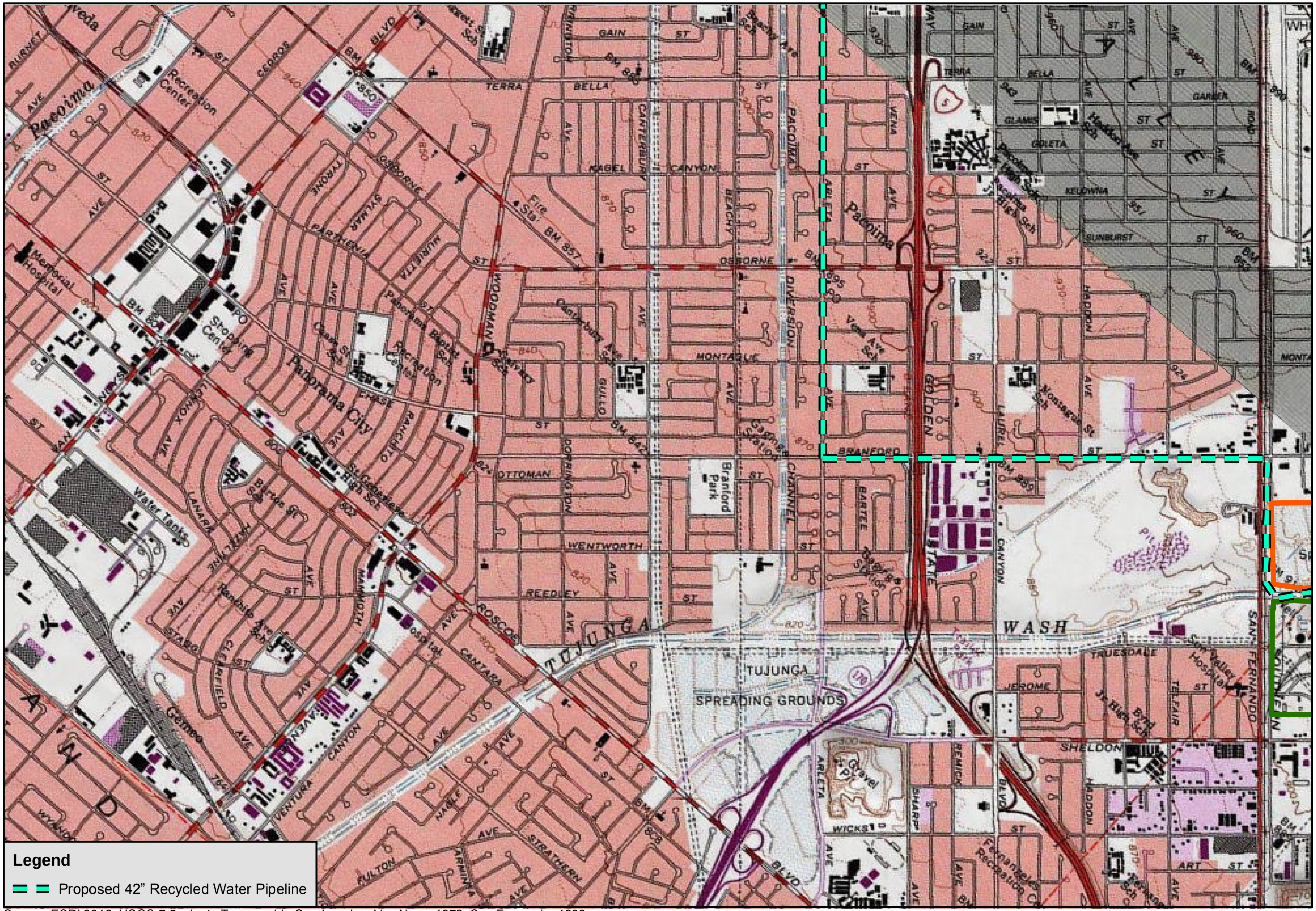
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

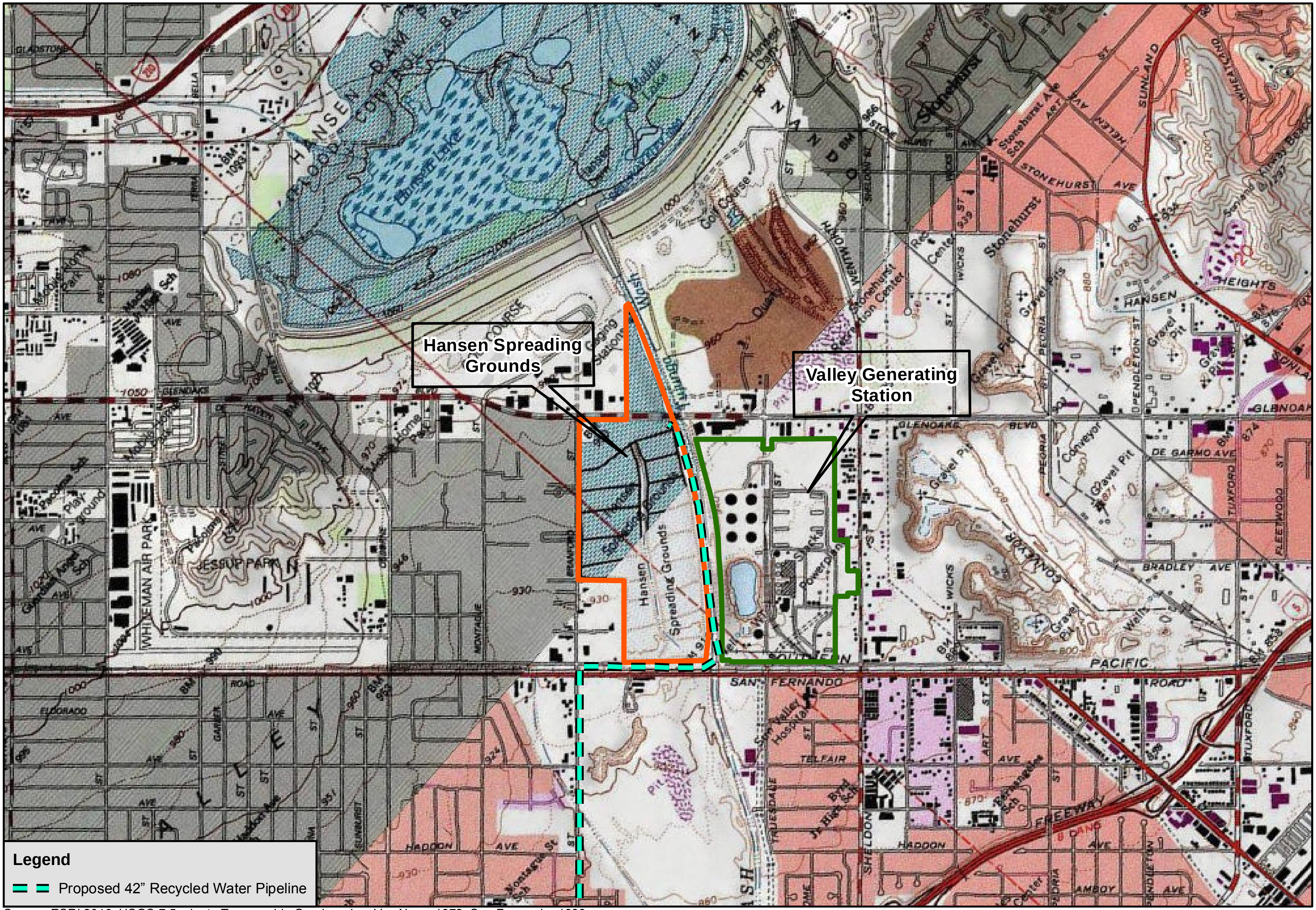
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1
Miles

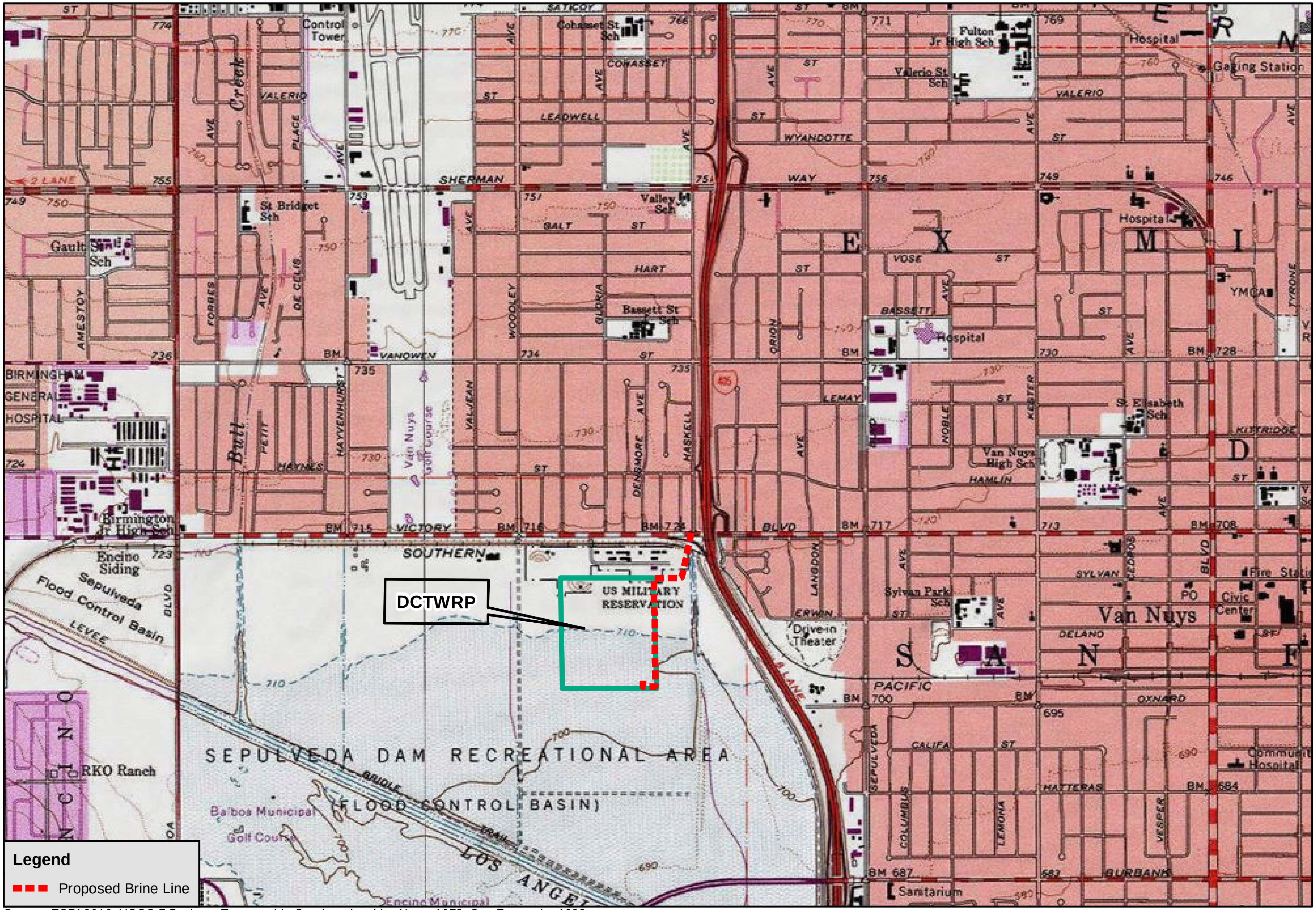
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Randy Guzman-Folkes

Phone # 805-905-1675

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Randy Guzman- Folkes was contacted at 3:56 pm. There was no answer. I left a message identifying myself (Alec Stevenson) and that I represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and that if the individual has any concerns or questions to please call the cultural resources lead , Marc Beherec. I then provided Marc's office number and ended the call.

Follow Up

AECOM

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Rosemary Morillo, Chairperson
Soboba Band of Mission Indians
Attn: Carrie Garcia
P.O. Box 487
San Jacinto, CA 92581

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Morillo:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

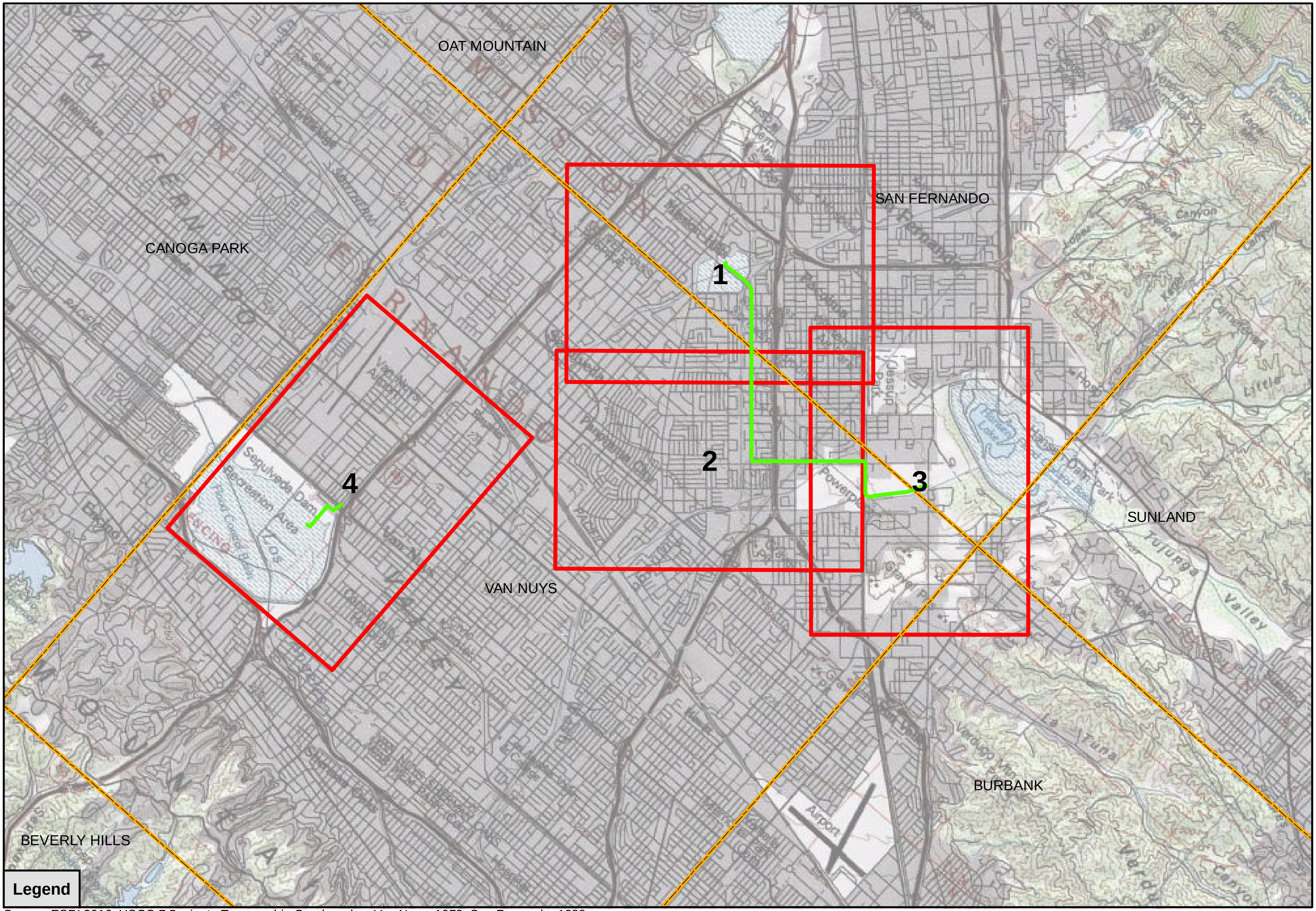
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
213.593.8481
marc.beherec@aecom.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

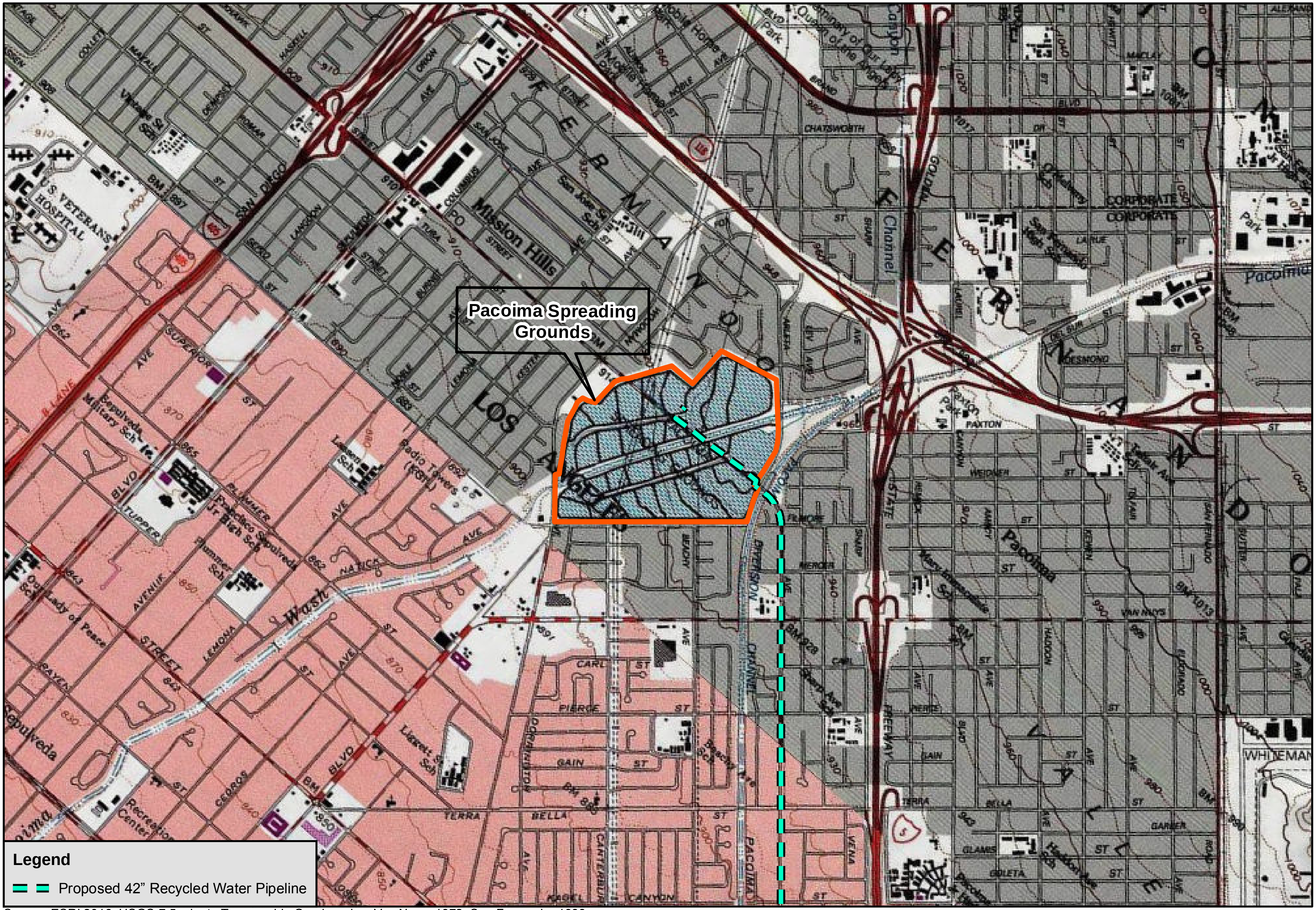


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

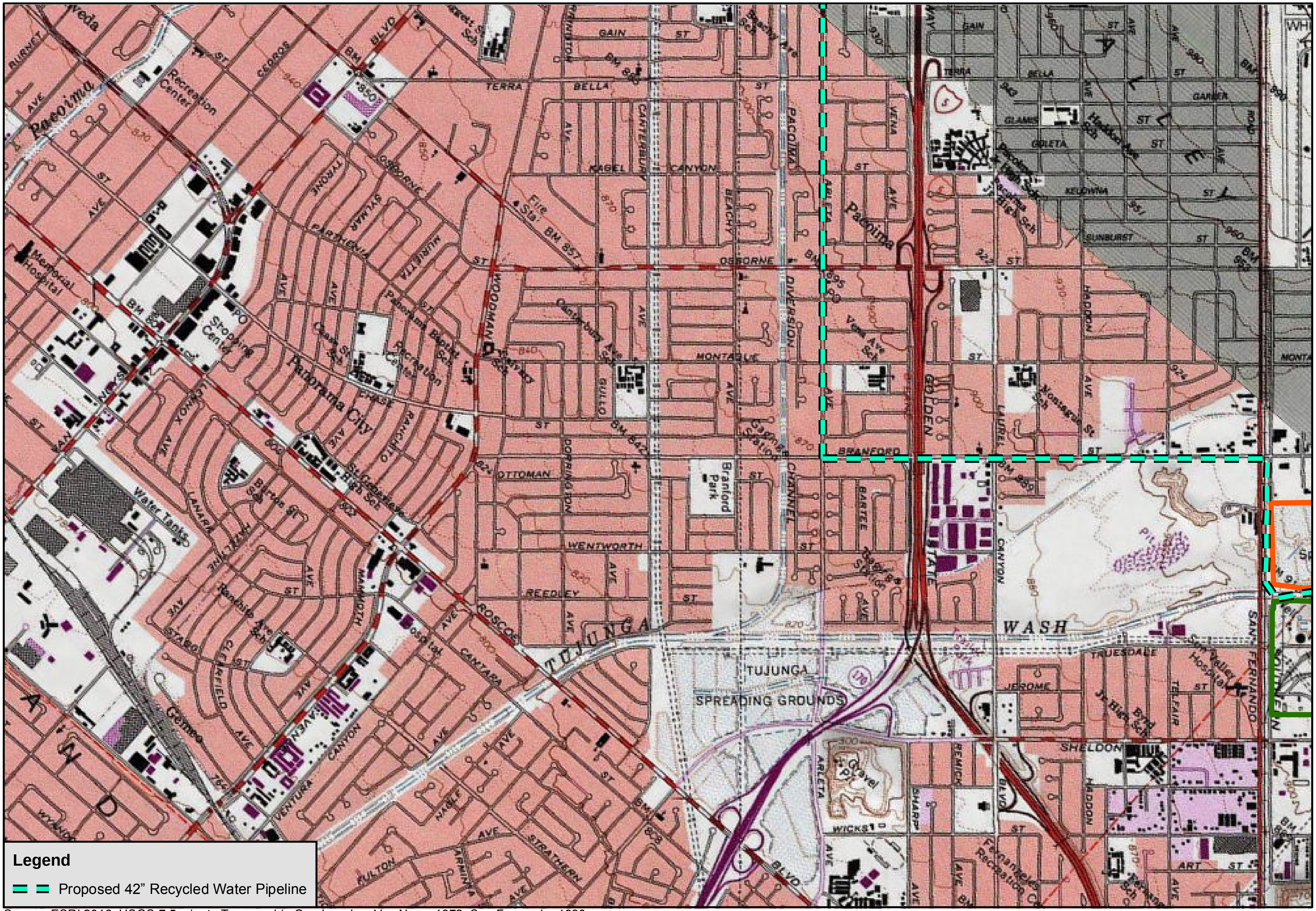
Los Angeles Groundwater Replenishment Project



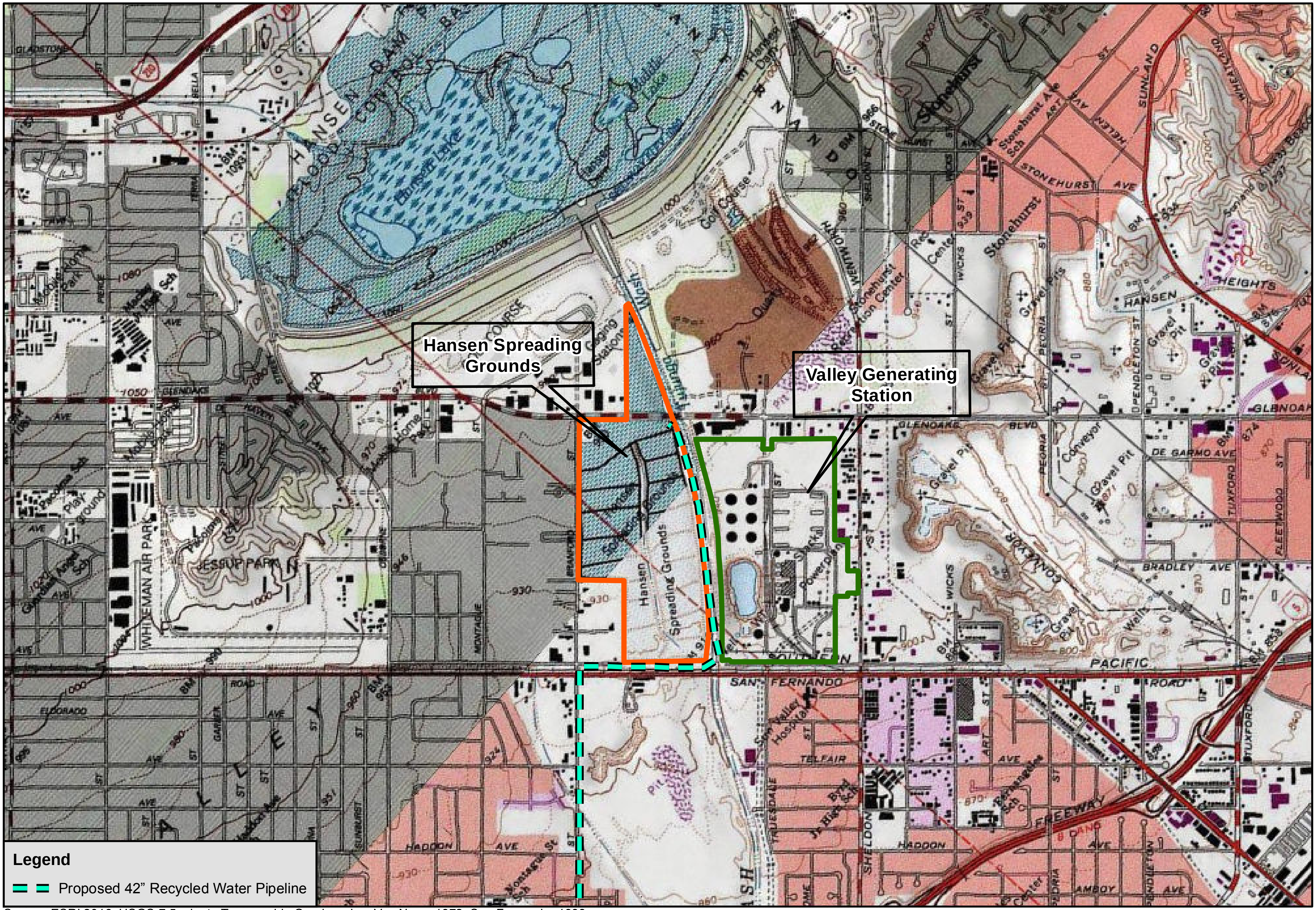
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project

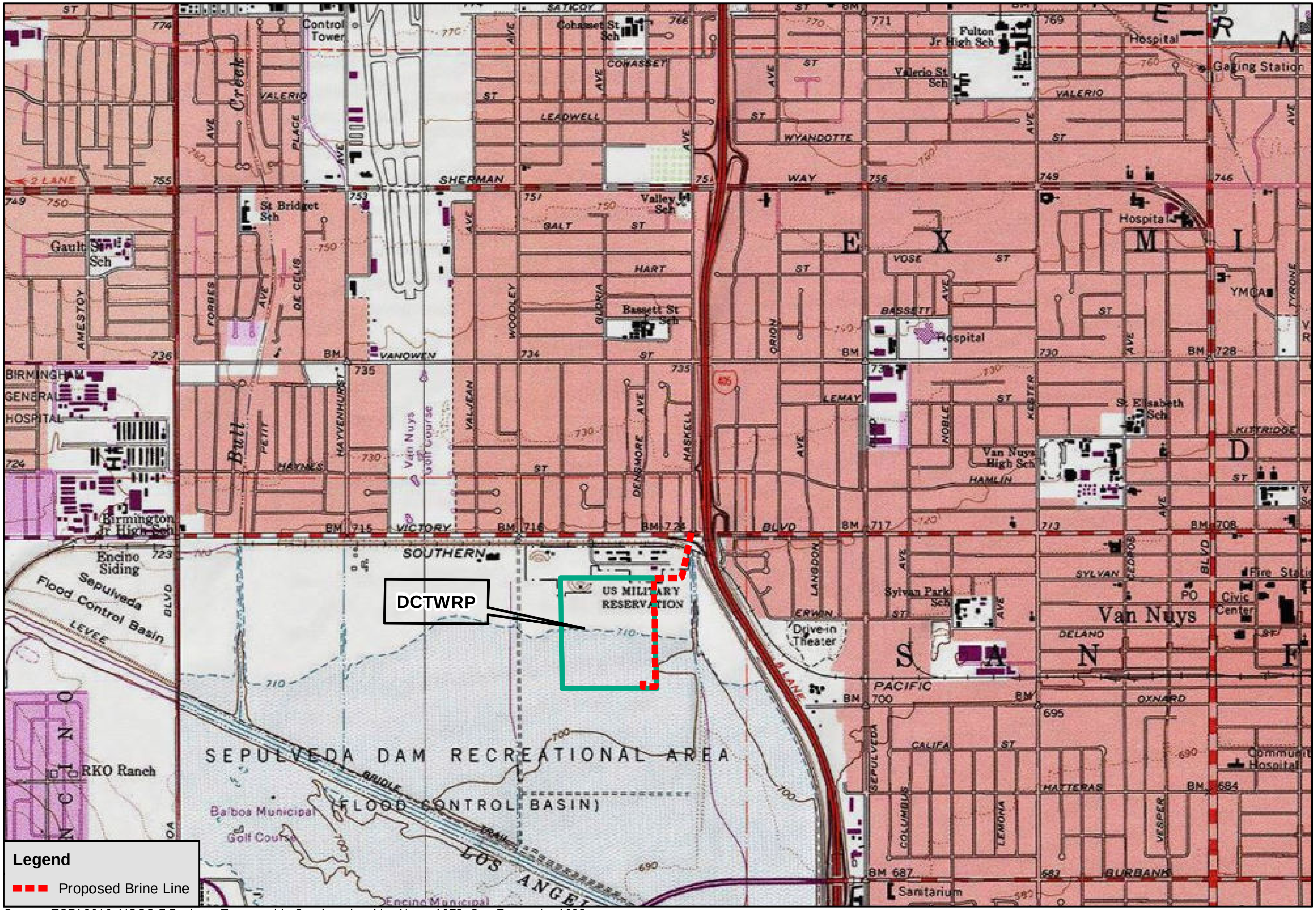


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

Signature   Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
April 5, 2016

Rudy Ortega, President
Fernandeno Tataviam Band of Mission Indians
1019 2nd Street
San Fernando, CA 91340

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear President Ortega:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission conducted a Sacred Lands File search for the project, and identified you as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than May 5, 2016.

Please feel free to contact me directly with any questions.

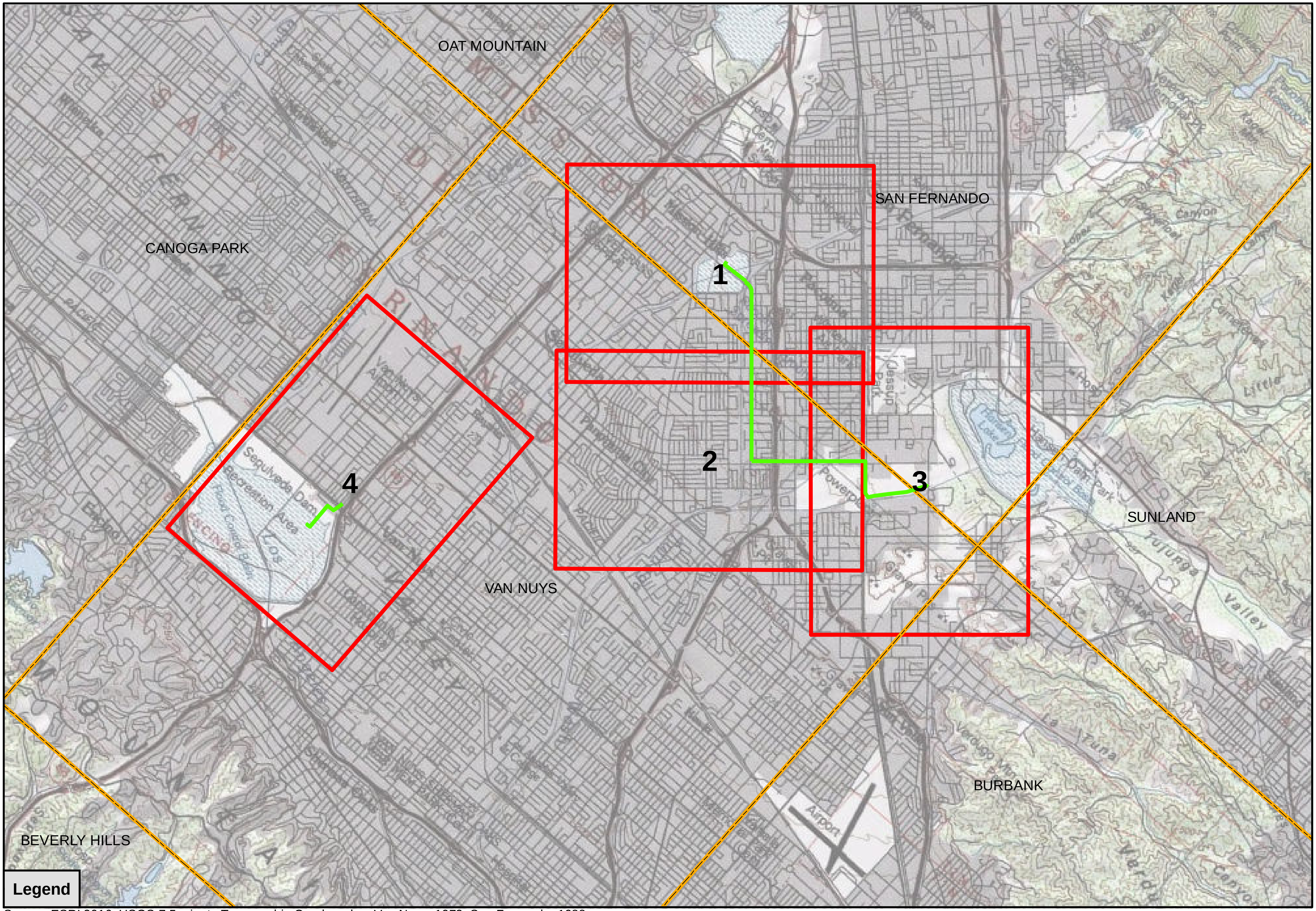
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481
marc.beherec@aecom.com

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

Enclosures:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

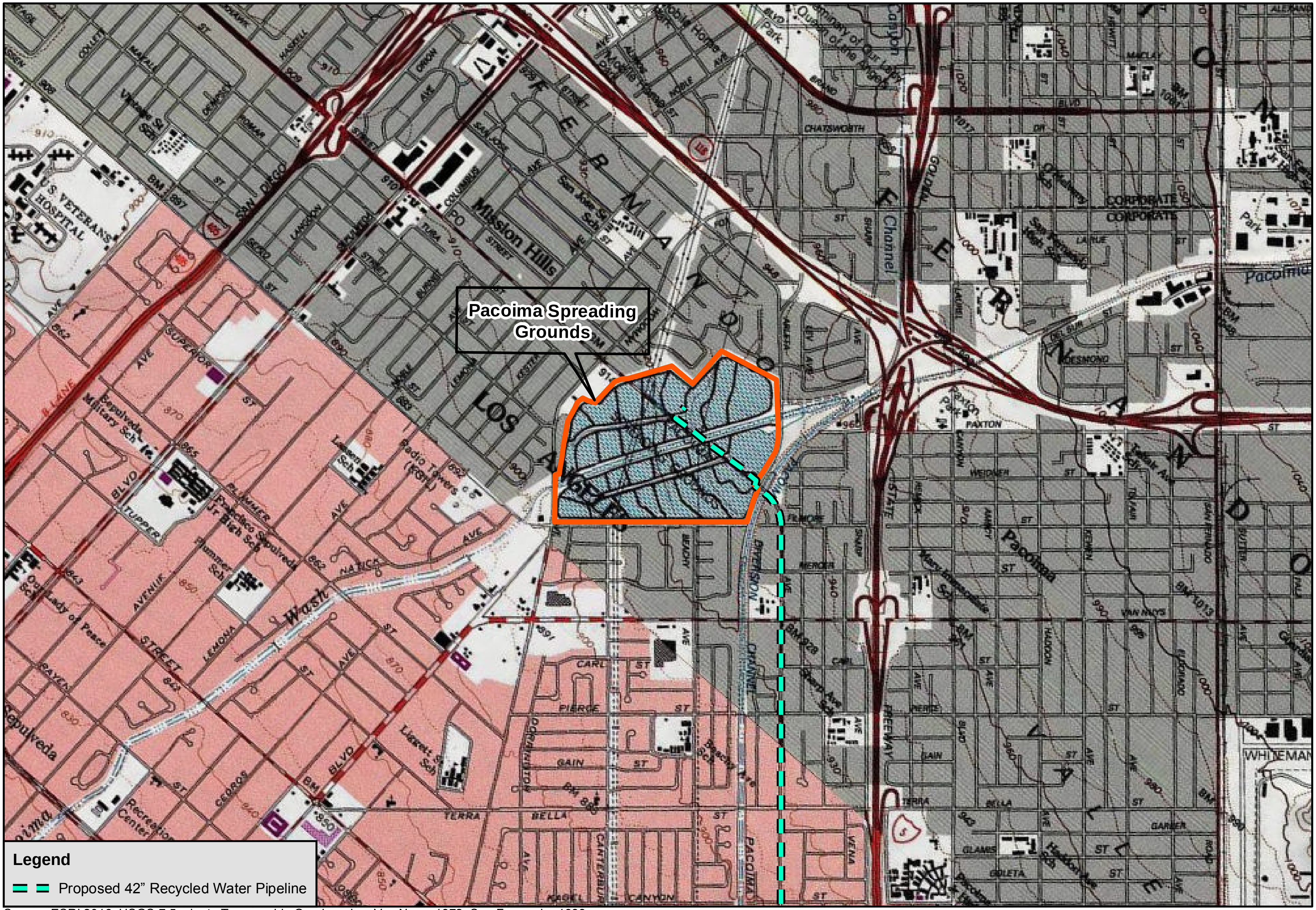


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

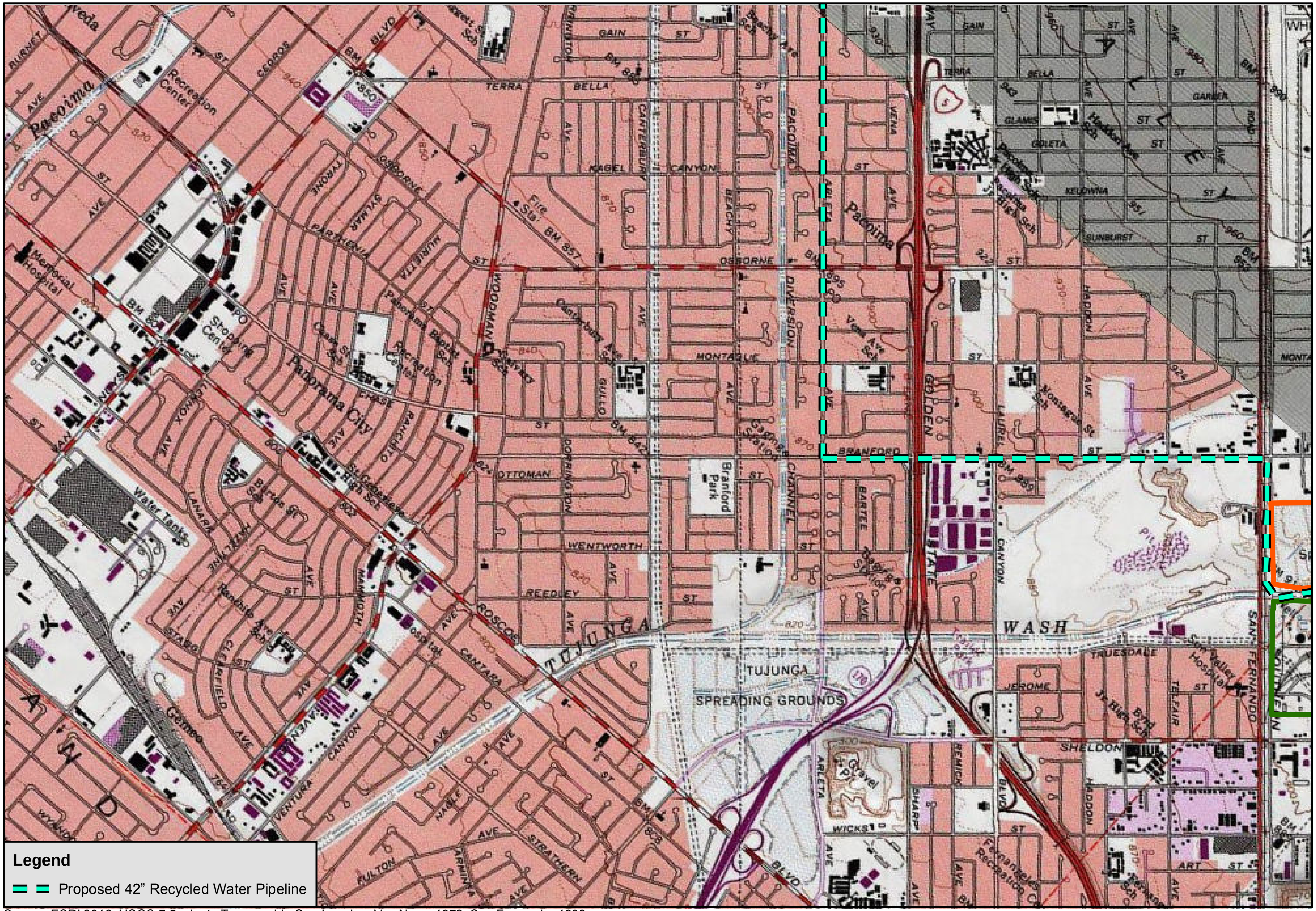
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

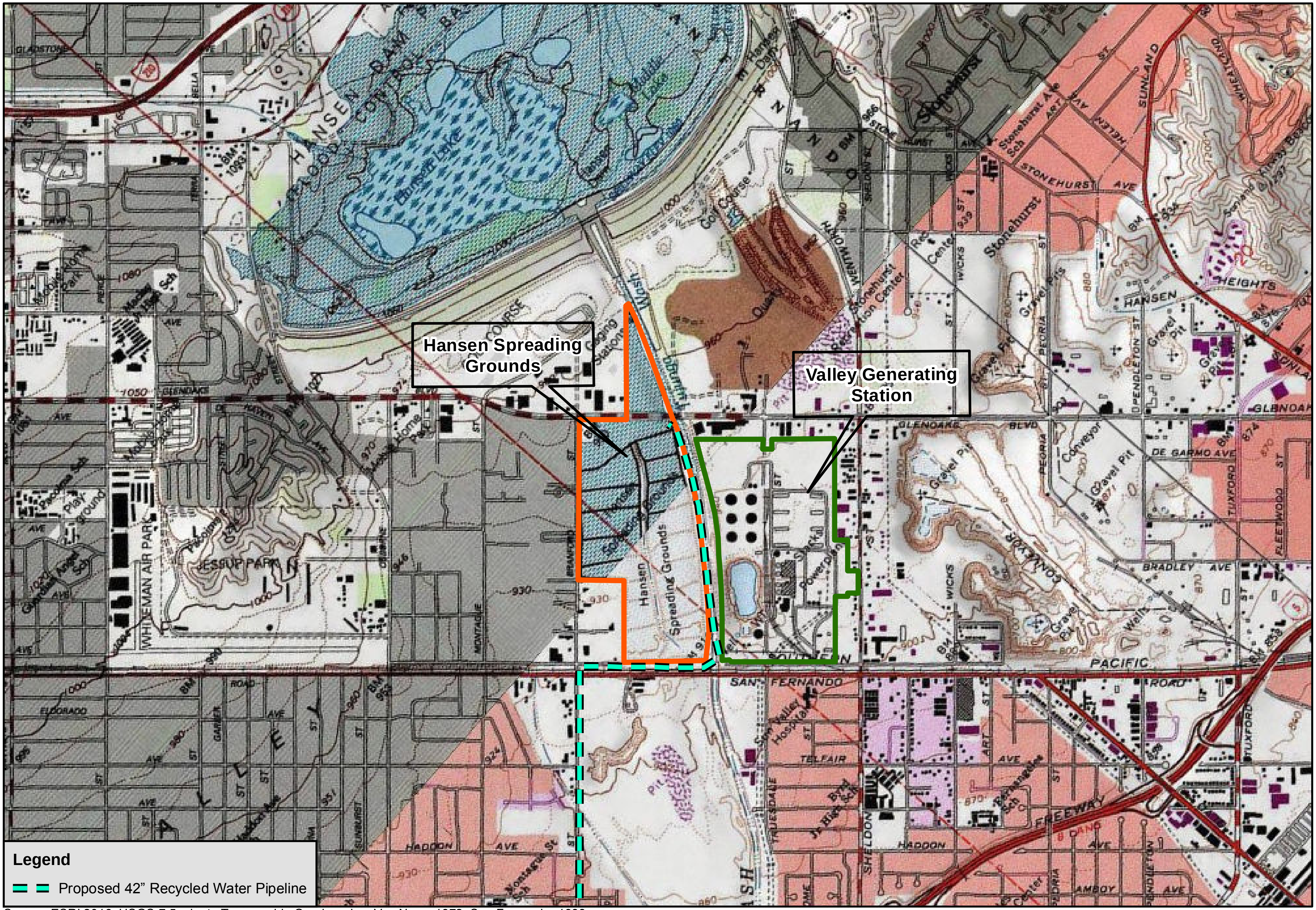
0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



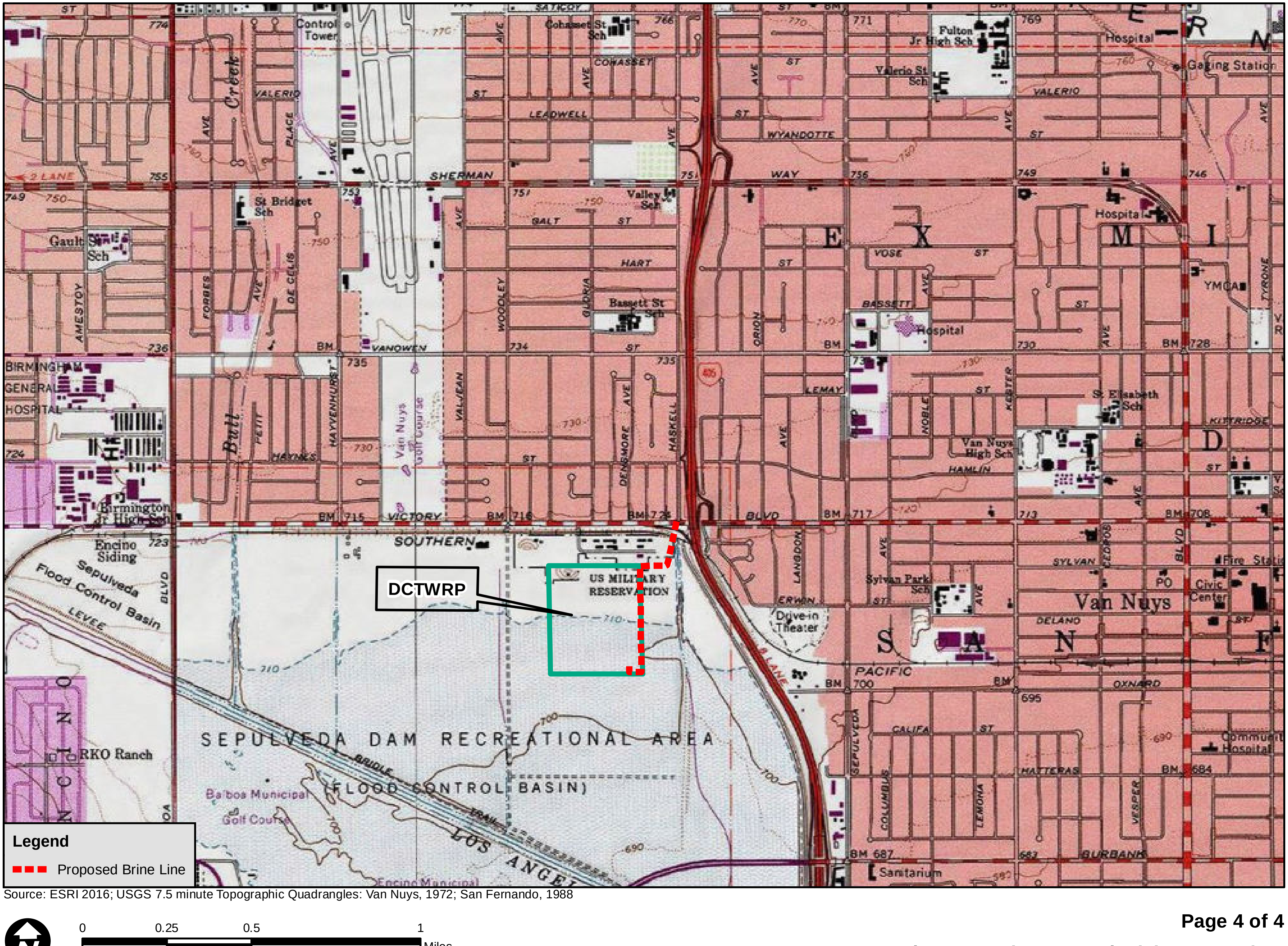
Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Rudy Ortega Jr.

Phone # 818-837-0794

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Rudy Ortega Jr., President of the Fernandeno Tataviam Band of Mission Indians was called three times at 2:07 pm but the phone continued to cut out. No contact was made.

Follow Up

Beherec, Marc

From: Caitlin Gulley <cgulley@tataviam-nsn.us>
Sent: Tuesday, April 12, 2016 6:23 PM
To: Beherec, Marc
Subject: Los Angeles Groundwater replenishment Project

Mr. Beherec,

Thank you for your invitation to comment on the above project. We have been interested in providing cultural resource report support to this project since we were notified of it several years ago. If LADWP or AECOM is interested in contracting us, we would be happy to contribute.

--

***Caitlin Gulley**, Director*
Tribal Historic and Cultural Preservation Department
Cell: (661) 433-0599
Office: (818) 837-0794
cgulley@tataviam-nsn.us

Fernandeño Tataviam Band of Mission Indians
1019 Second Street
San Fernando, California 91340
Phone: (818) 837-0794 Ext. 208
Website: http://www.tataviam-nsn.us

AECOM

Distribution

Contact Report Form

AECOM Contact: Marc Beherec

Date: April 14, 2016

Project # 60334580

Individual Contacted: Caitlin Gulley

Phone # 661-433-0599

Contact Information

Subject of Contact: Los Angeles Groundwater follow-up

Items Discussed

Ciatlin Gulley, Director, Tribal Historic and Cultural Preservation Department, Fernandeno Tataviam Band of Mission Indians emailed to follow-up on our letter to her Band's President, Rudy Ortega, Jr. She stated, "If LADWP or AECOM is interested in contact us, we would be happy to contribute" to the cultural study. I called Ms. Gulley. She stated that the project takes place in areas that are sensitive for her tribe. She also stated that artifacts can be found in disturbed soils and even in fill which retain their cultural value for the tribe, even if they no longer have the same archaeological value. Finally, she said that her tribe is interested in developing mitigation concepts with LADWP. She said the tribe has information it does not consider appropriate to share with a cultural resources management (CRM) firm, and wishes to consult directly with LADWP.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com

March 30, 2016

Sam Dunlap, Cultural Resources Director
Gabrielino/Tongva Nation
P.O. Box 86908
Los Angeles, CA 90086

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Mr. Dunlap:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

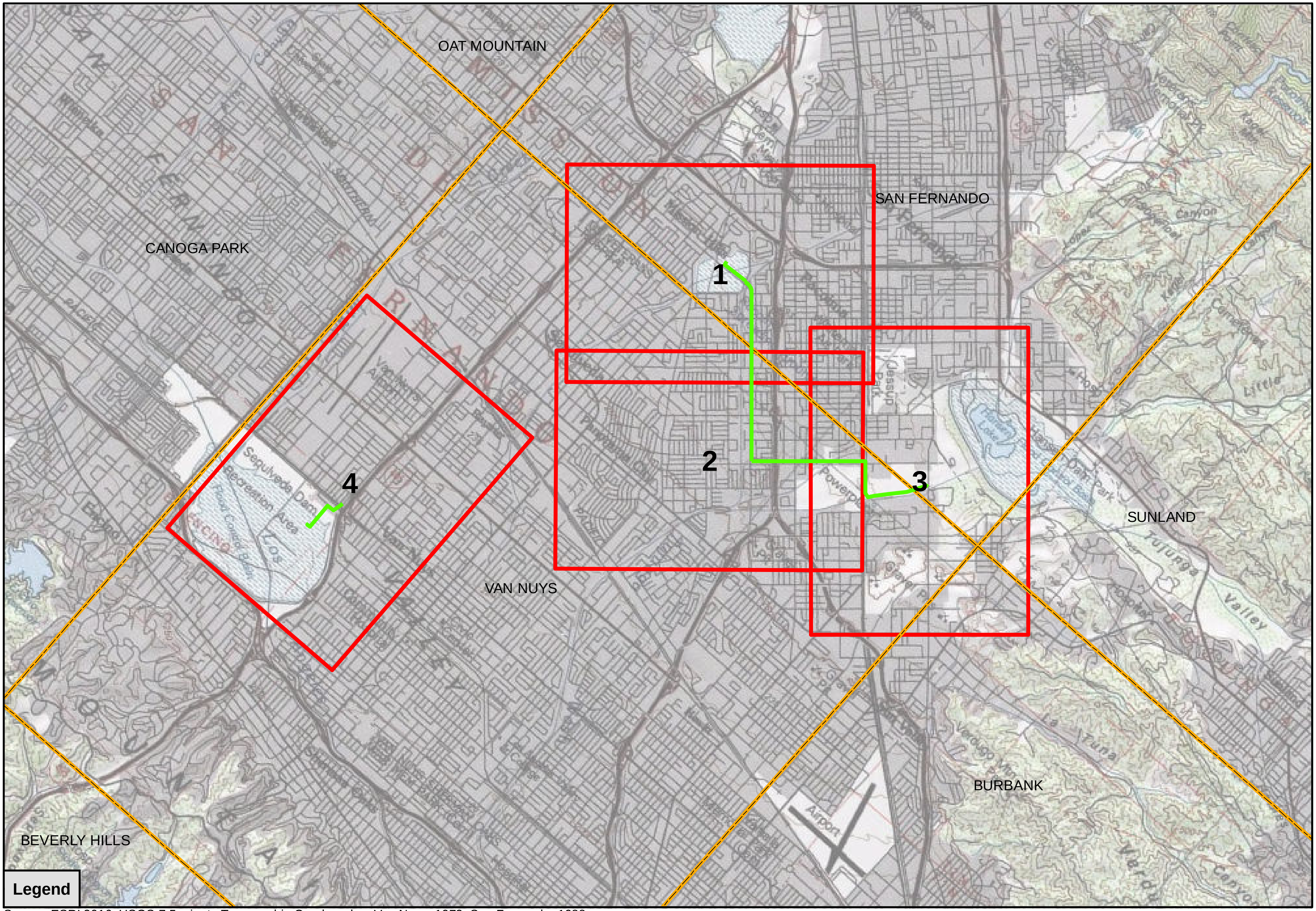
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 www.AECOM.com
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

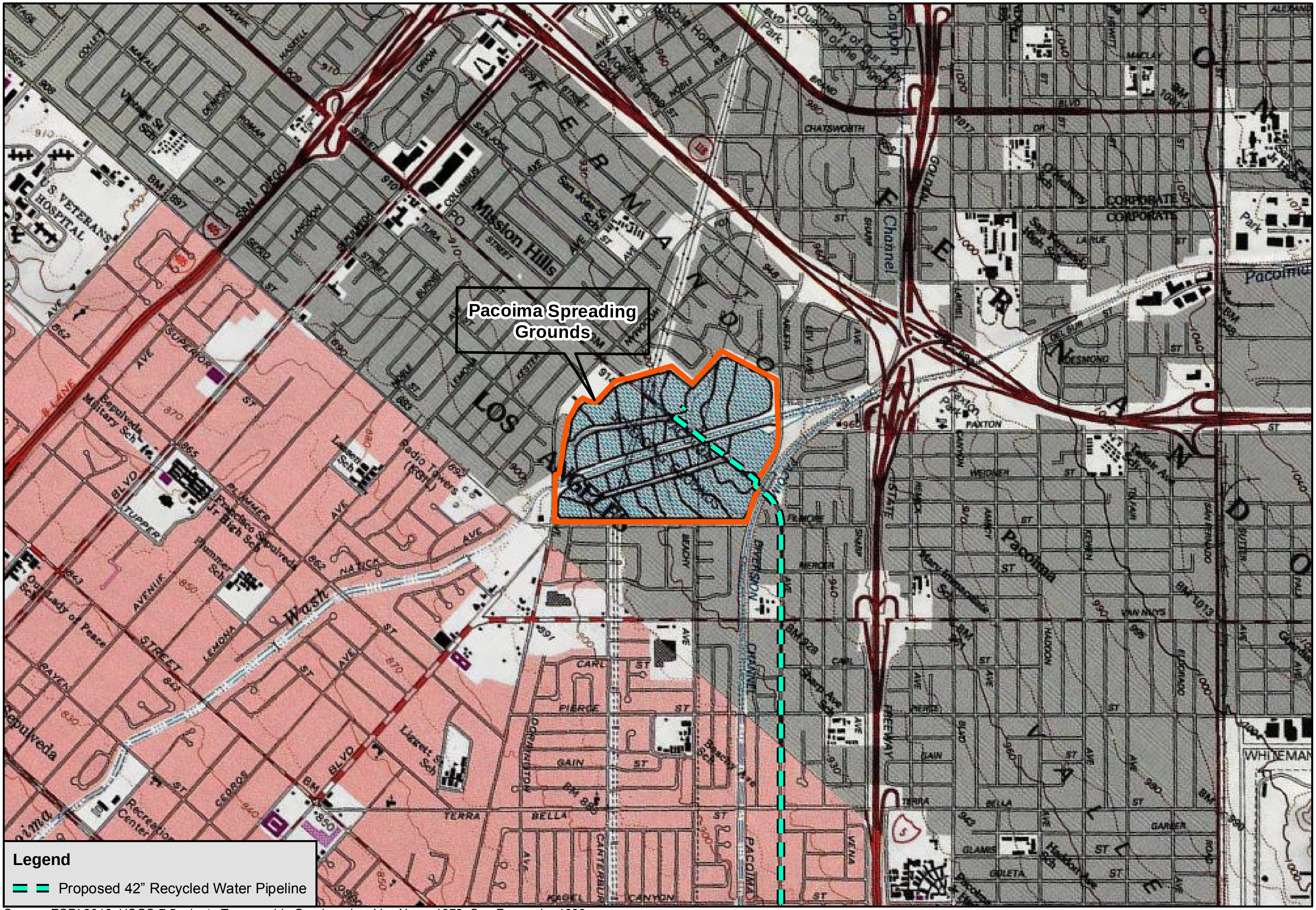


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

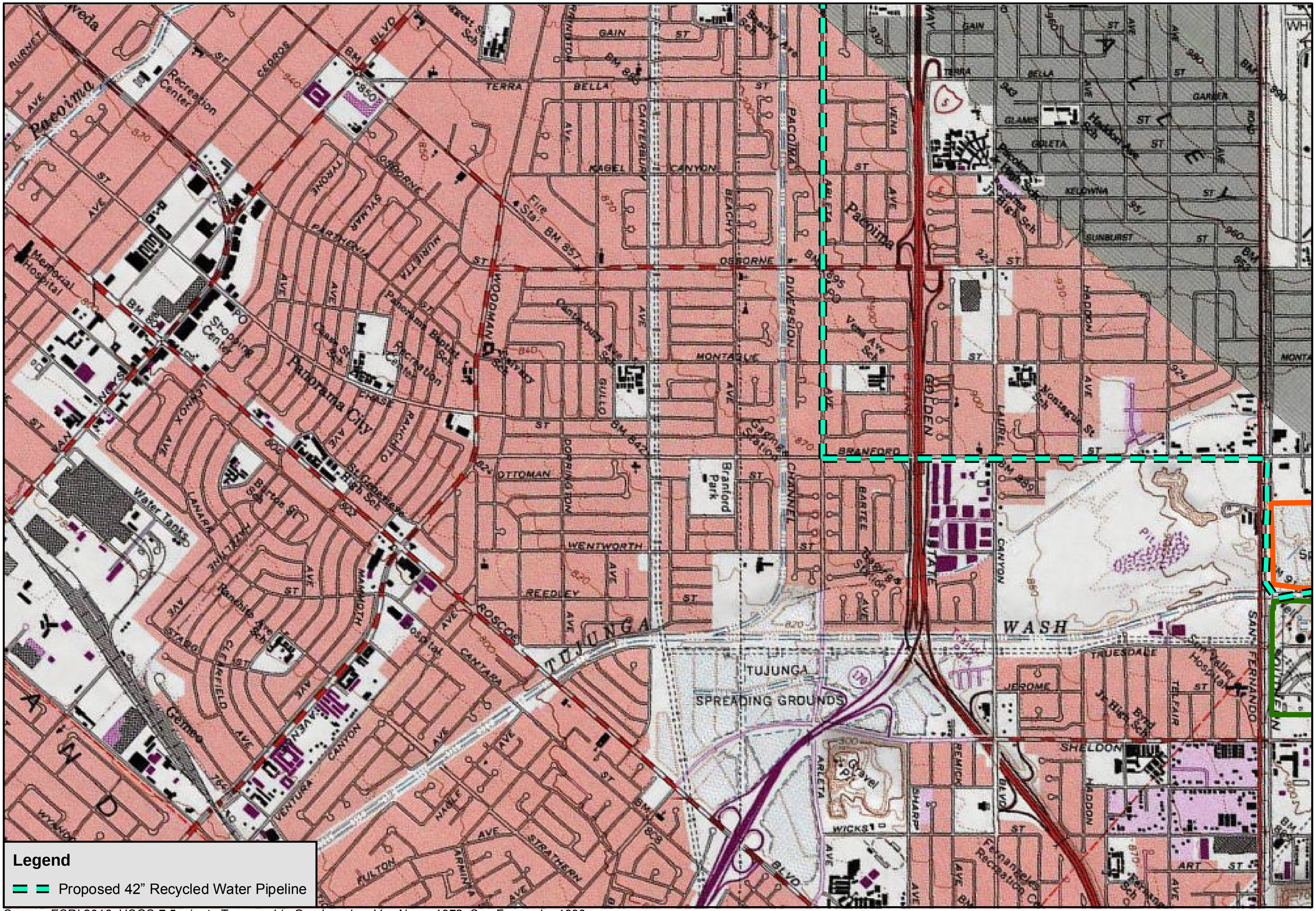
Mapbook Index

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

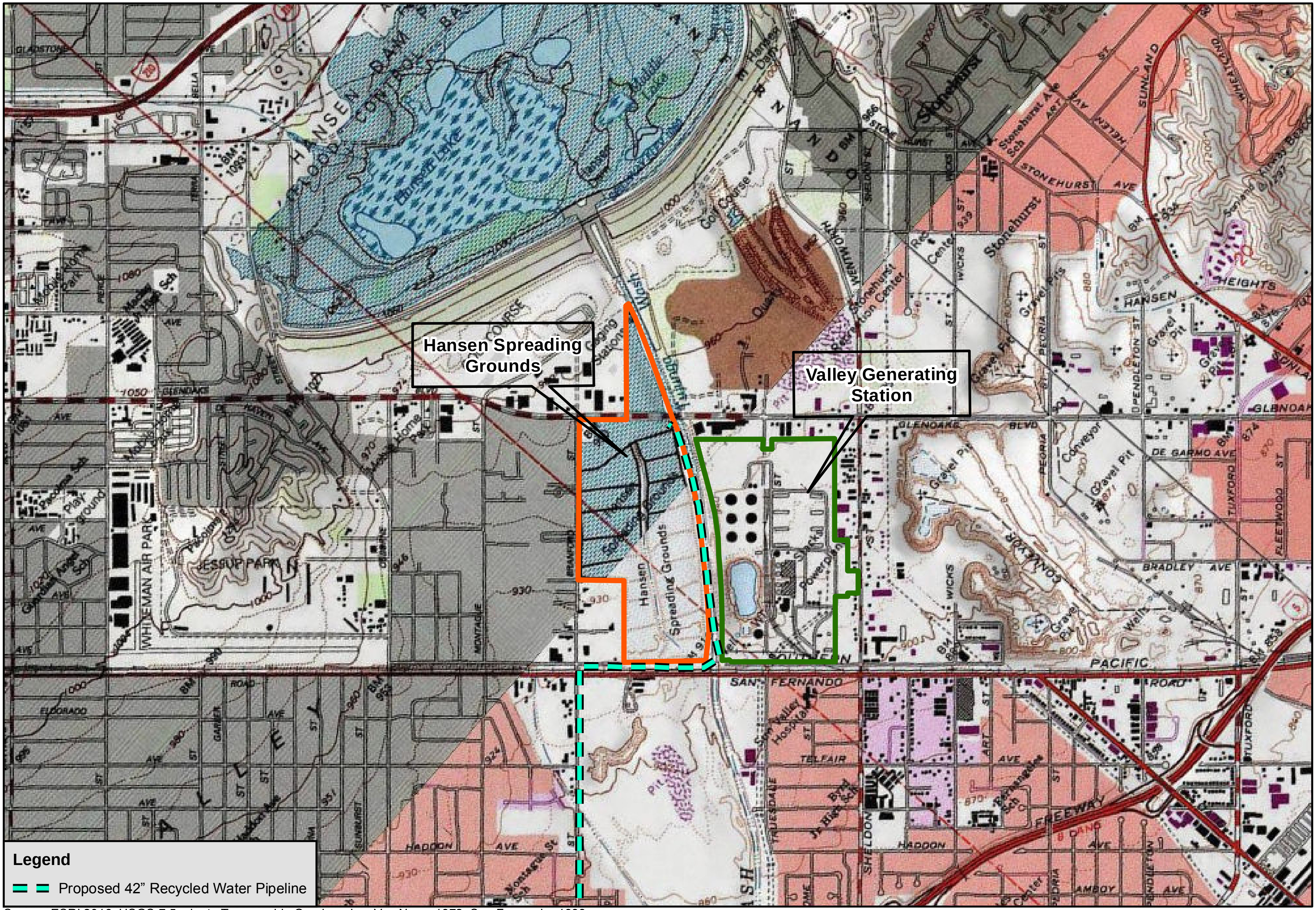
0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

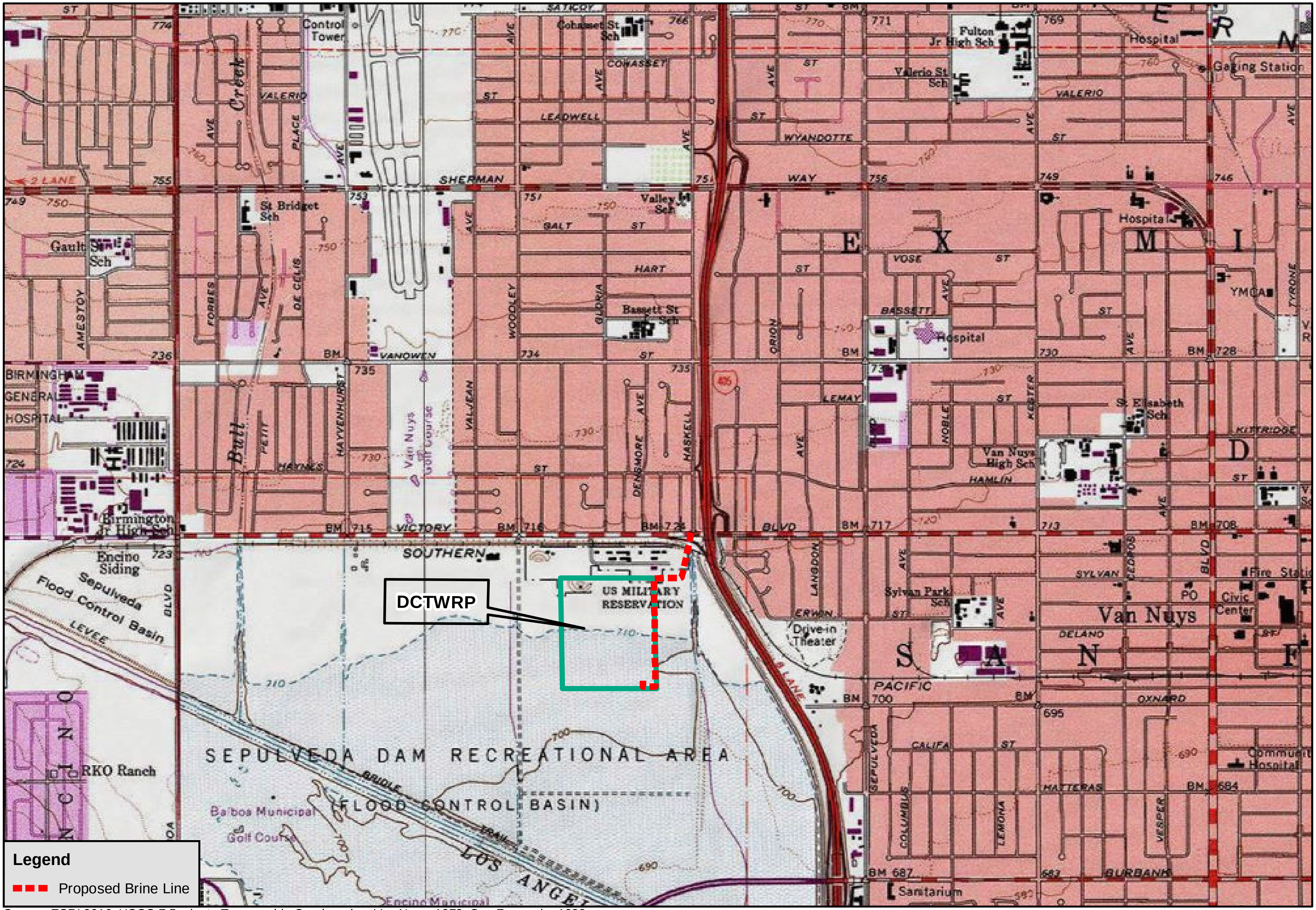
0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

____

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

____

________________________________ _______________

Signature Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Sam Dunlap

Phone # 909-262-9351

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Sam Dunlap, Cultural Resources Director of the Gabrielino/Tongva Nation was contacted at 3:45 pm. There was no answer. I left a message identifying myself (Alec Stevenson) and that I represent AECOM detained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and that if the individual has any concerns or questions to please call the cultural resources lead , Marc Beherec. I then provided Marc's office number and ended the call.

Follow Up

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

March 30, 2016

Sandonne Goad, Chairperson
Gabrieleno/Tongva Nation
106 ½ Judge John Aiso
Los Angeles, CA 90012

Subject: Los Angeles Groundwater Replenishment Project (As Revised)

Dear Chairperson Goad:

AECOM has been retained by the City of Los Angeles Department of Water and Power (LADWP) to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. The Native American Heritage Commission is conducting a Sacred Lands File search for the project, and we anticipate you will be identified as an individual who may have knowledge of cultural resources in or near the project area and interest in the project. **We may have contacted you in the past about this project. The project has since been revised, and certain elements have been altered and others abandoned. The following project description and enclosed maps supersede all previous project descriptions.**

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines within neighborhoods in the San Fernando Valley in the City of Los Angeles. An Advanced Water Purification Facility would be constructed at either the Donald C. Tillman Water Reclamation Plant in Van Nuys or the Valley Generating Station in Sun Valley. New pipelines would be constructed to convey purified recycled water to the Pacoima and Hansen Spreading Grounds – approximately 12,620 linear feet along Branford Street and Arleta Avenue in Pacoima and Arleta. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. The project components are shown in the enclosed maps.

The proposed project is located within the Arleta, Pacoima, Sun Valley, and Van Nuys neighborhoods of the San Fernando Valley in the City of Los Angeles. The proposed project is located in the former Rancho Ex-Mission San Fernando and Rancho los Encinos land grants, and in Township 2 North, Ranges 14 and 15 West and Township 1 South, Ranges 14 and 15 West, of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, as indicated on the enclosed map (Enclosure 1).

The response form (Enclosure 2) is provided to help us identify and address your concerns with this project. Return of this form does not imply that you approve or disapprove of the project, nor does it limit your opportunity to comment at a later time. In addition, any comments you made on previous versions of the project will also be included in our report. For the purposes of our report, please return the response form to the address shown below no later than April 30, 2016.

Please feel free to contact me directly with any questions.

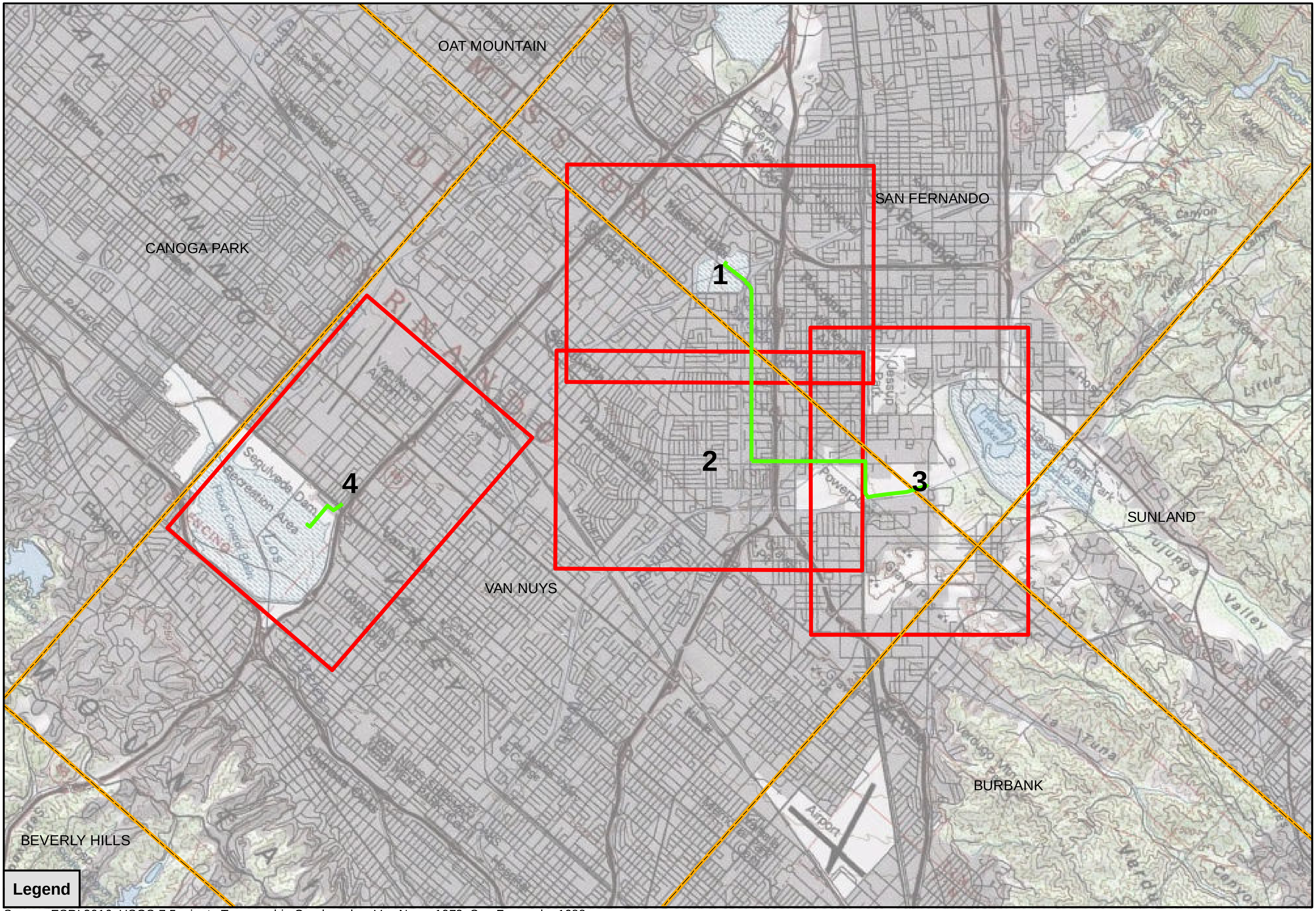
Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
213.593.8481

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com
marc.beherec@aecom.com

Enclosure:

1) Project Area Overview Map
2) Response Form
3) Self-Addressed Stamped Envelope

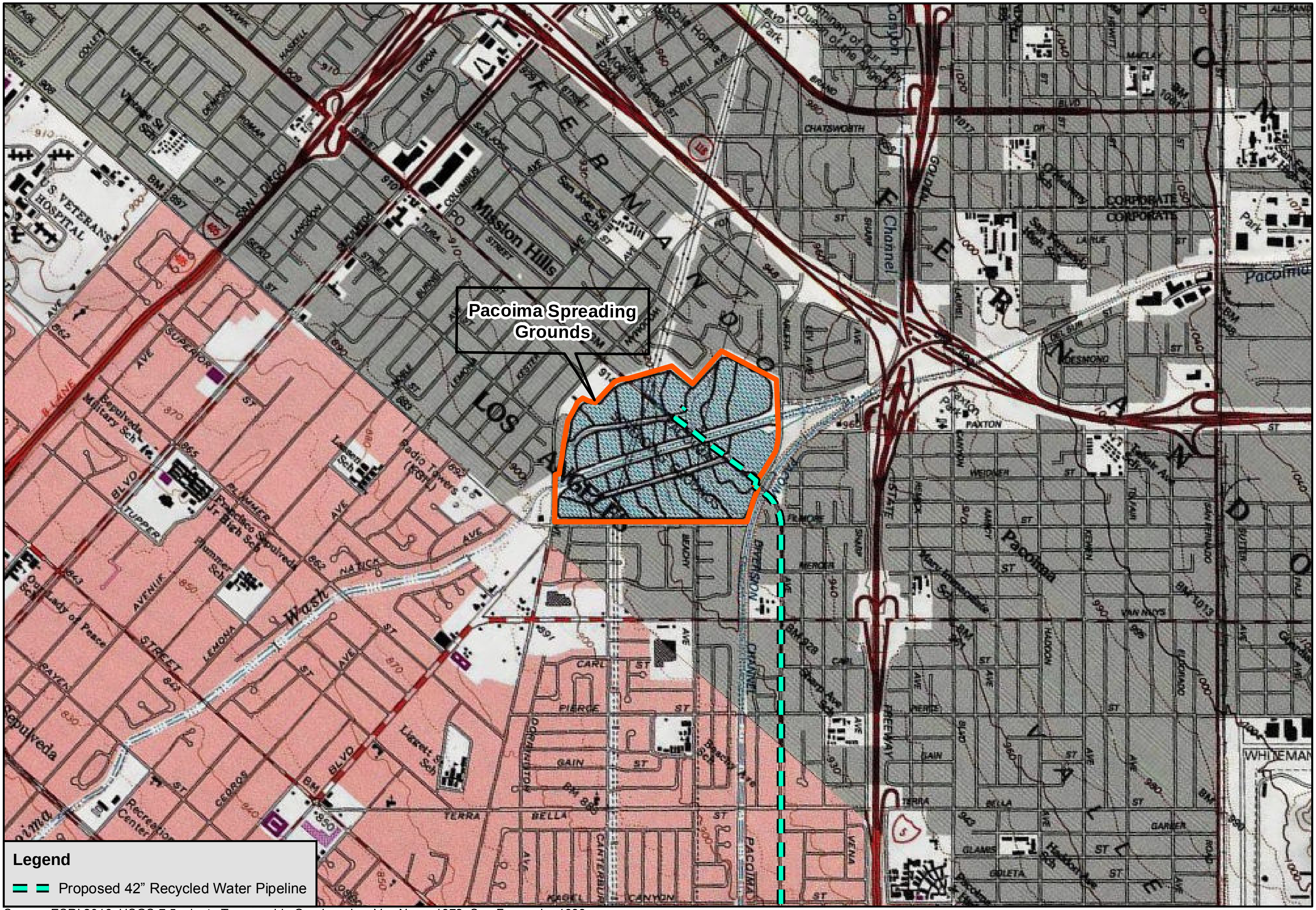


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.5 1 2 Miles

Mapbook Index

Los Angeles Groundwater Replenishment Project

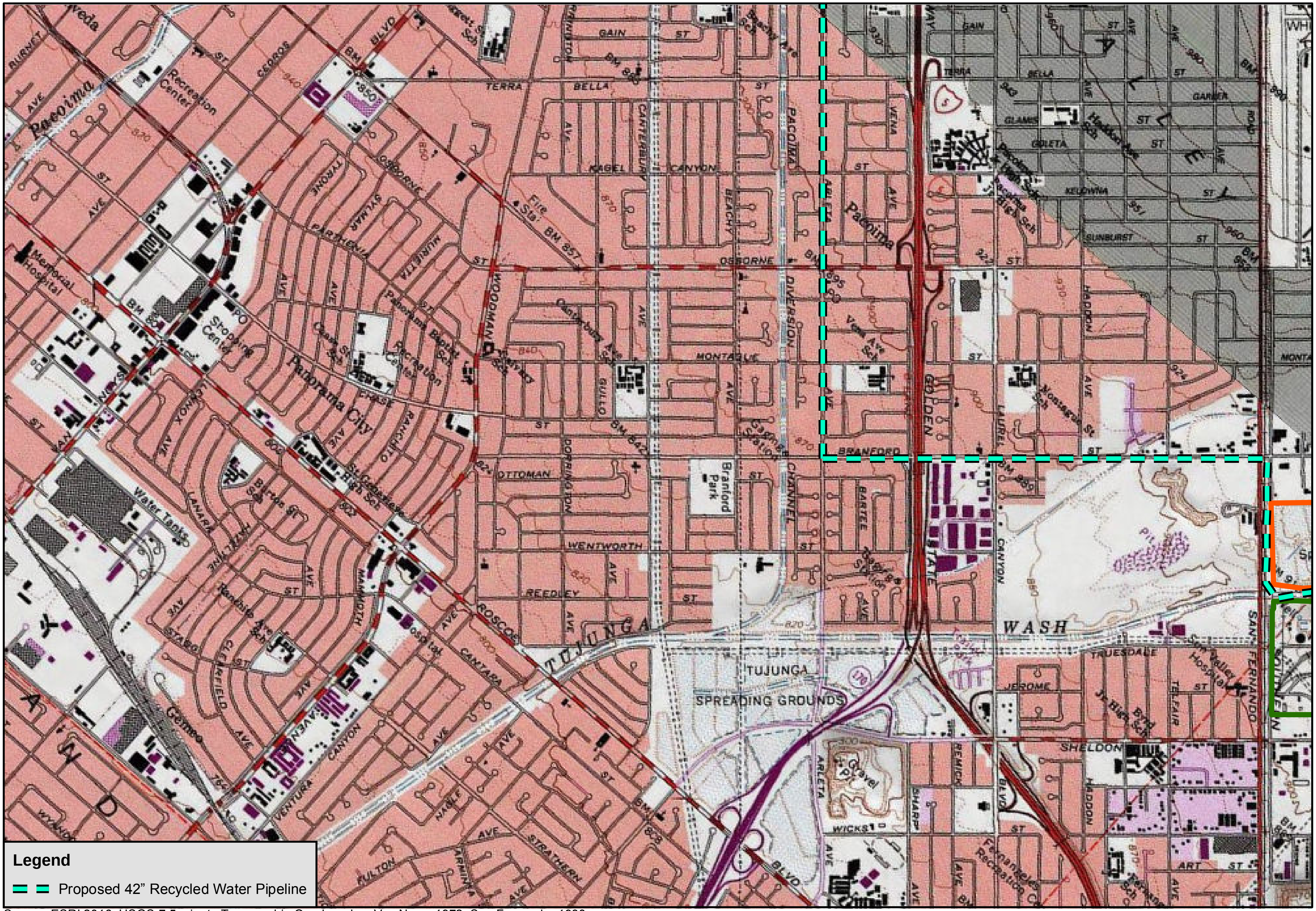


Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

Page 1 of 4

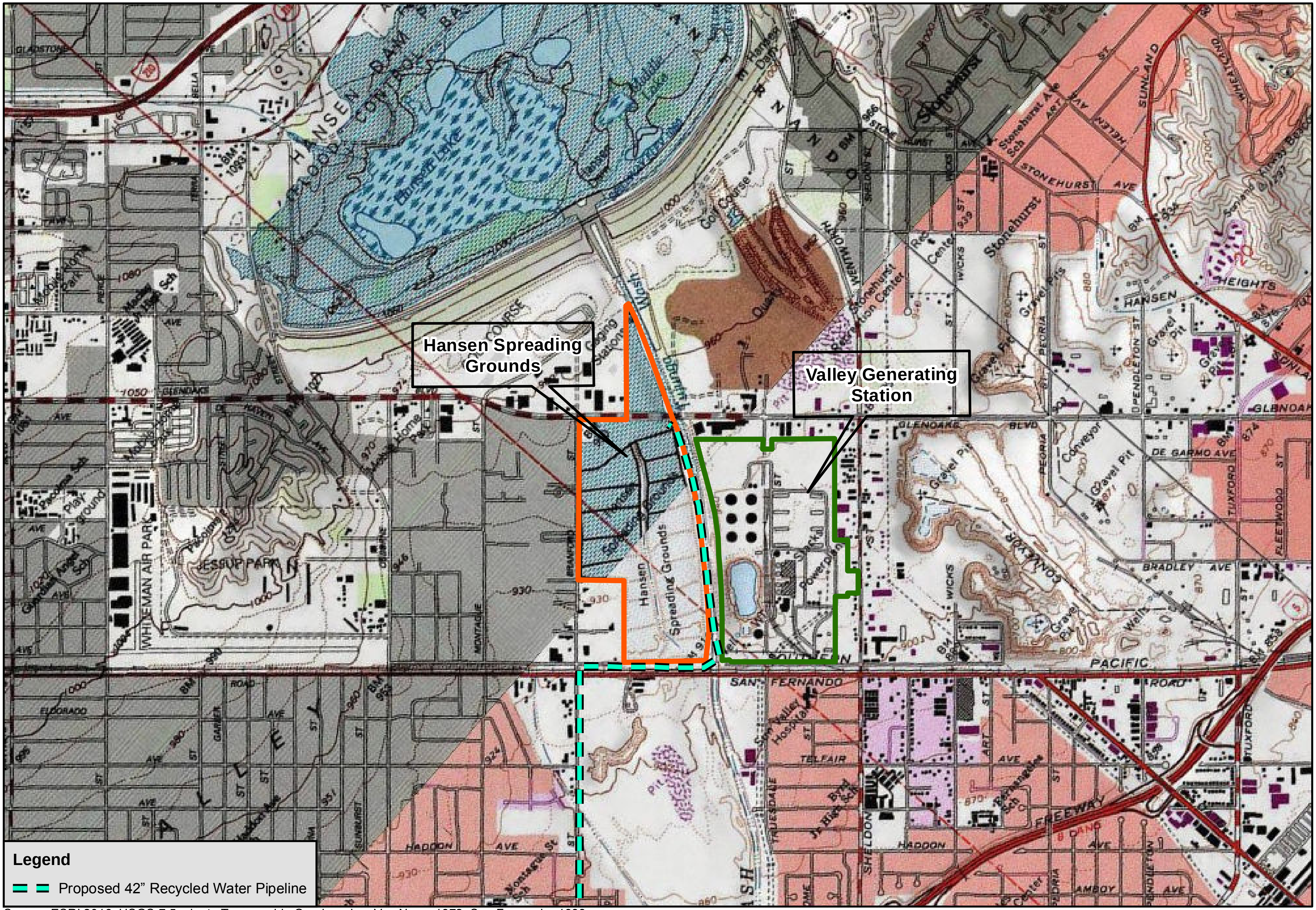
Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

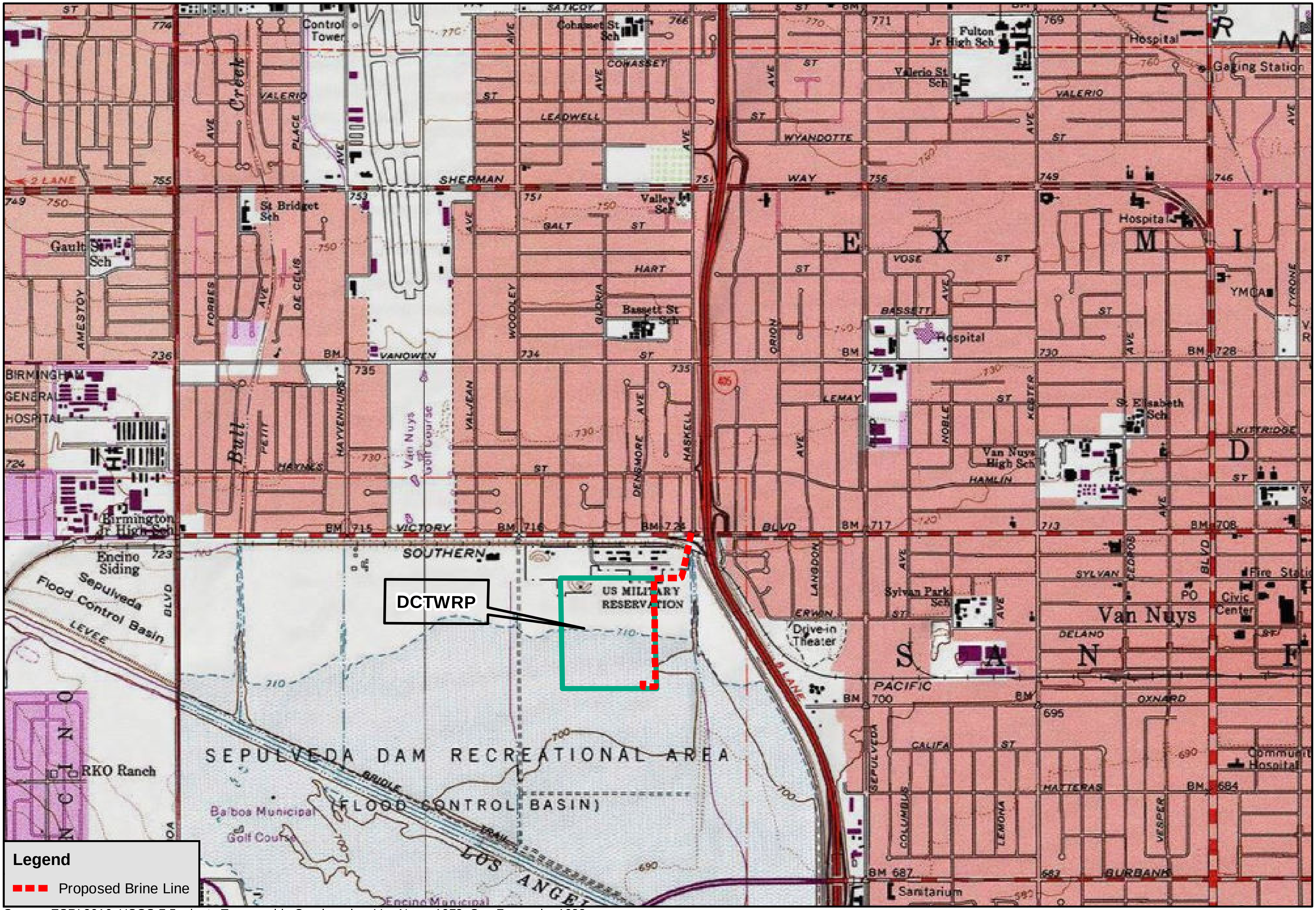
0 0.25 0.5 1 Miles

Los Angeles Groundwater Replenishment Project



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles



Source: ESRI 2016; USGS 7.5 minute Topographic Quadrangles: Van Nuys, 1972; San Fernando, 1988

0 0.25 0.5 1 Miles

NATIVE AMERICAN RESPONSE FORM

Please circle appropriate response below.

I/We (would like) (would not like) to be contacted. You may contact me/us at the address and phone number below.

I/We (do) (do not) have concerns. Concerns are outlined below:

Please Print Name, Tribal Office/Affiliation, Address, and Phone Number

Signature

Date

Please return completed form no later than April 30, 2016 to:

Marc A. Beherec, Ph.D., RPA
Archaeologist
AECOM
515 S. Flower St., 8th Floor,
Los Angeles, CA 90071
Marc.Beherec@aecom.com

AECOM

Distribution

Contact Report Form

AECOM Contact: Alec Stevenson

Date: 4/13/2016

Project # 60334580.3

Individual Contacted: Sandonne Goad

Phone # 951-807-0479

Contact Information

Subject of Contact: The Proposed Groundwater Replenishment Project Follow up Call

Items Discussed

Sandonne Goad, Chairperson of the Gabrielino/Tongva Nation was contacted at 3:33 pm. There was no answer. I left a message identifying myself (Alec Stevenson) and that I represent AECOM retained by LADWP to conduct Native American contact for the Los Angeles Groundwater Replenishment Project. Additionally, I stated that this is a follow-up call to a letter sent on March 30th and that if the individual has any concerns or questions to please call the cultural resources lead , Marc Beherec. I then provided Marc's office number and ended the call.

Follow Up

APPENDIX D

RESULTS OF PALEONTOLOGICAL RECORDS SEARCH

AECOM Inc
515 South Flower Street, 8th Floor, Los Angeles, CA 90071
T 213.593.7700 F 213.593.7715 www.AECOM.com

October 21, 2013

Dr. Sam McLeod
Natural History Museum of Los Angeles County
Vertebrate Paleontology
900 Exposition Blvd.
Los Angeles, CA 90007

Subject: Los Angeles Groundwater Replenishment Project

Dear Dr. McLeod:

I am writing to request a paleontological resources search for the planned Los Angeles Department of Water and Power (LADWP) Los Angeles Groundwater Replenishment Project. The proposed project is located within unsectioned land of the former Rancho los Encinos land grant, in Township 2 North, Range 16 West of the San Fernando 1988 and Van Nuys 1972 United States Geological Survey (USGS) 7.5-minute quadrangle maps, and is indicated on the enclosed maps (Enclosure 1).

The proposed work is a multistage project including a water treatment plant, spreading ground modifications, and pipelines. An Advanced Water Purification Facility would be constructed in the southwest or southeast corners of the Donald C. Tillman Water Reclamation Plant in Van Nuys. New pipelines would be constructed to convey purified recycled water to the spreading grounds – approximately 7,000 linear feet along Canterbury Avenue in Arleta. Twelve injection wells would be installed within the transmission line right of way located on the northeast side of Canterbury Avenue. Modifications, such as turnout structures, would be required within the Pacoima Spreading Grounds in Pacoima and the Hansen Spreading Grounds in Sun Valley. An offsite alternative for the Advanced Water Purification Facility could also be constructed at LADWP's Valley Generating Station in Sun Valley, which would require additional pipeline construction along Branford Avenue in Pacoima/Arleta and an approximately 7-mile brine discharge pipeline through the eastern portion of the San Fernando Valley.

Please direct bills to me at the above AECOM address. Feel free to call or email me if you have any questions or require further information.

Thank you for your assistance. Please feel free to contact me if you have any questions about this project.

Sincerely,

Marc A. Beherec, Ph.D., RPA
Archaeologist
D 213.593.8481 F 213.593.8623
marc.beherec@aecom.com

Enclosure: Project Area Maps (7 pages)

Natural History Museum
of Los Angeles County
900 Exposition Boulevard
Los Angeles, CA 90007

tel 213.763.DINO
www.nhm.org

NATURAL HISTORY MUSEUM
LOS ANGELES COUNTY

Vertebrate Paleontology Section
Telephone: (213) 763-3325
Fax: (213) 746-7431
e-mail: smcleod@nhm.org

6 December 2013

AECOM
515 South Flower Street, 8th Floor
Los Angeles, CA 90071

Attn: Marc Beherec, Ph.D., Archaeologist

re: Paleontological resources for the proposed LADWP Los Angeles Groundwater Replenishment Project, in the San Fernando Valley, Los Angeles County, project area

Dear Marc:

I have conducted a thorough search of our paleontology collection records for the locality and specimen data for the proposed LADWP Los Angeles Groundwater Replenishment Project, in the San Fernando Valley, Los Angeles County, project area as outlined on the portions of the San Fernando and Van Nuys USGS topographic quadrangle maps that you sent to me via e-mail on 21 October 2013. We do not have any vertebrate fossil localities that lie directly within the proposed project boundaries, but we do have localities nearby in the same sediments that occur at depth in the proposed project area.

At the Pacoima Spreading Grounds in the very northwestern portion of the propose project area the surface deposits consist of gravelly younger Quaternary Alluvium, derived of course from the Pacoima Wash. These deposits also occur in the northeastern portion of the proposed project area where it crosses the Tujunga Wash and further south where it crosses the Central Branch of the Tujunga Wash and crosses the Tujunga Wash again. Otherwise, surface deposits throughout the proposed project area consist of finer-grained younger Quaternary Alluvium, derived broadly as alluvial fan deposits from the washes draining from the San Gabriel Mountains and the Verdugo Mountains to the east, and as alluvial deposits from the confluence of the Tujunga Wash and the Los Angeles River in the very southern portion of the proposed project area. These deposits typically do not contain significant vertebrate fossil remains, at least in the uppermost layers. At depth, however, older Quaternary sediments that contain significant fossil vertebrate materials are likely to be encountered.

Our closest fossil vertebrate localities to the northern portion of the proposed project area from similar deposits are just west of north of the proposed project area at or near the Van Norman Reservoir. These localities include LACM 3397 that produced fossil bison, *Bison*, at a seventy-five foot depth, LACM 5745 that contained fossil mastodon, *Mammut*, and horse, *Equus*, in fill dirt and LACM 7152 that produced fossil mammoth, *Mammuthus*, and bison, *Bison*, in terrace deposits.

Our closest fossil vertebrate locality to the north-central portion of the proposed project area from similar deposits is LACM 1146, due south of the eastern-most portion of the proposed project area northeast of the Golden State Freeway (I-5) and east of San Fernando Road, that produced fossil specimens of mastodon, *Mammut*, horse, *Equus*, and camel, Camelidae, from a gravel pit at depths of 160-170 feet below the surface.

Our closest fossil vertebrate locality to the southern portion of the proposed project area from similar deposits is LACM 6970, due east of the southern terminus of the proposed project area approximately 60' to 80' below grade, excavated during construction of the Metrorail Redline Universal City Tunnel. Specimens of typical Late Pleistocene fossil vertebrates such as camel, *Camelops hesternus*, bison, *Bison antiquus* and ground sloth, *Glossotherium harlani* were recovered from locality LACM 6970. Our next closest localities in these Quaternary deposits are LACM 3263, 3822, and 6208, all west of the southern portion of the proposed project area just east of the Sepulveda Dam Recreation Area. Our locality LACM 3822, near Kester Avenue and Sepulveda Boulevard north of Oxnard Street, produced fossil specimens of extinct peccary, *Platygonus*, camel, *Camelops*, and bison, *Bison*, at depths between 75 and 100 feet below the surface. Locality LACM 6208, further south along Kester Avenue near Burbank Boulevard, produced fossil specimens of extinct bison, *Bison*, at a depth of 20 feet below the surface. Further south still locality LACM 3263, near the intersection of Kester Avenue and Otsego Street, produced fossil specimens of extinct horse, *Equus*, at a depth of 14 feet below the surface.

Surface grading or shallow excavations in the surficial younger Quaternary Alluvium in the proposed project area are unlikely to produce significant fossil vertebrate remains. Deeper excavations in the proposed project area that extend down into older Quaternary deposits, however, may well encounter significant vertebrate fossils. Any substantial excavations in the proposed project area, therefore, should be monitored closely to quickly and professionally recover any fossil remains discovered while not impeding development. Any fossils recovered during mitigation should be deposited in an accredited and permanent scientific institution for the benefit of current and future generations.

This records search covers only the vertebrate paleontology records of the Natural History Museum of Los Angeles County. It is not intended to be a thorough paleontological survey of the proposed project area covering other institutional records, a literature survey, or any potential on-site survey.

Sincerely,

Samuel A. McLeod

Samuel A. McLeod, Ph.D.
Vertebrate Paleontology

enclosure: invoice

APPENDIX E

DPR FORMS

(*CONFIDENTIAL)*

APPENDIX F

Hazardous Materials Sites Regulatory Databases Search Results

Table F-1
Proposed Project Regulatory Databases Search Results Returned

Location	Database	Type of Site	Name	Cleanup Status	Radius[a]
DCTWRP and Brine Line	EnviroStor	Military Evaluation	Sepulveda Air National Guard Station (ANGS)	Active as of 9/30/2015	0.5-mile
	GeoTracker	Permitted UST	City of LA/Dept. of Pub. Works	Permitted	Onsite
		WDR	DCTWRP	Active as of 1/11/2007	Onsite
		LUST Cleanup	Arco #5201	Completed – case closed on 8/1/1997	Adjacent to brine line connection with VORS
		Other Cleanup	Chevron Terminal #61001504	Completed – case closed as of 9/1/2015	0.5-mile
		Other Cleanup	Sepulveda ANGS (Missile Silo)	Completed – case closed as of 2/29/2016	0.5-mile
		Permitted UST	Arco SS#5201	Permitted	0.5-mile
		Permitted UST	Valley Service Yard	Permitted	0.5-mile
HSG	EnviroStor	Corrective Action	Express Metals Recycling	Certified as of 9/10/2015	0.5-mile
		Evaluation/ Tiered Permit	Alert Plating	Referred to RWQCB as of 9/8/2011 (See GeoTracker)	0.5-mile
		Evaluation	Branford Landfill	No further action as of 9/30/1998	0.5-mile
		Evaluation	Eagle Tech	Referred to the EPA as of 9/8/2011	0.5-mile
		Evaluation	Industrial Metal Plating	Inactive – action required as of 6/30/2007	0.5-mile
		Evaluation	Jesse's Plating	Inactive – needs evaluation as of 9/8/2011	0.5-mile
		Evaluation	LNL Anodizing	Inactive – needs evaluation as of 9/14/2011	0.5-mile
		Evaluation	Pacific Plating	Inactive – action required as of 9/8/2011	0.5-mile
		Evaluation	PB Fiberglass	Inactive – needs evaluation as of 9/5/2014	0.5-mile
		Evaluation	Tektoplate, Inc.	Referred to EPA as of 6/27/2013	0.5-mile
		Permitted Hazardous Waste	LADWP	Protective Filer	0.5-mile
		Tiered Permit	Pacific Plating, Inc	Referred to other agency	0.5-mile
		Tiered Permit	Pro-Circuits	Referred to other agency	0.5 mile
		Tiered Permit	Quality Finishing, Inc.	Referred to other agency	0.5-mile
		Voluntary Cleanup	Truesdale Center – LADWP	Active as of 6/28/2000	0.5-mile
		Voluntary Cleanup	VGS Gravel Pit	Active as of 6/28/2000	0.5-mile
	GeoTracker	LUST Cleanup	Flood Maintenance Hansen Yard	Completed – case closed as of 12/10/2010	Onsite
		Permitted UST	Hansen Yard	Permitted	Onsite
		WDR	Central LA Service Area	Draft WDR	Onsite

Table F-1
Proposed Project Regulatory Databases Search Results Returned

Location	Database	Type of Site	Name	Cleanup Status	Radius[a]
		WDR	Eastern LA Service Area	Draft WDR	Onsite
		WDR	Harbor Service Area	Draft WDR	Onsite
		WDR	San Fernando Valley Service Area	Draft WDR	Onsite
		WDR	Western LA Service Area	Draft WDR	Onsite
		Land Disposal	Branford Landfill	Open – verification monitoring as of 1/1/1965	0.5-mile
		Land Disposal	Ledger No. 2	Active as of 12/24/2013	0.5-mile
		Land Disposal	Valley Generating Station – L.A. City DWP	Open – Inactive as of 8/20/2013	0.5-mile
		LUST Cleanup	Ebrahim Sooferian	Completed – case closed as of 5/20/2013	0.5-mile
		LUST Cleanup	Fortin Industries #610	Completed – case closed as of 12/4/1996	0.5-mile
		LUST Cleanup	MOC Products Company, Inc.	Completed – case closed as of 4/28/1997	0.5-mile
		LUST Cleanup	Monarch Record MFG Corp Inc.	Completed – case closed as of 4/30/1987	0.5-mile
		LUST Cleanup	Roadway Express, Inc.	Completed – case closed as of 9/4/1996	0.5-mile
		LUST Cleanup	Southern CA Rapid Transit District Div. 15	Completed – case closed as of 3/10/2014	0.5-mile
		LUST Cleanup	Spartan Truck Equipment	Completed – case closed 6/6/1986	0.5-mile
		LUST Cleanup	Woodward HRT	Completed – case closed as of 3/22/2016	0.5-mile
		Other Cleanup	Alert Plating Company, Inc.	Completed – case closed as of 12/22/2014	0.5-mile
		Other Cleanup	DWP Valley Generating	Completed – case closed as of 12/19/2014	0.5-mile
		Other Cleanup	H.R. Textron	Completed – case closed as of 11/28/2000	0.5-mile
		Other Cleanup	Jesse's Plating (Former HVC)	Open – site assessment as of 2/11/2016	0.5-mile
		Other Cleanup	Mayoni Enterprises	Open – site assessment as of 12/16/2015	0.5-mile
		Other Cleanup	Pacific Resource Recovery Services Inc	Evaluation Inspection as of 3/22/2016	0.5-mile
		Other Cleanup	Reynolds Printasign (Former)	Open – site assessment as of 3/23/2016	0.5-mile
		Other Cleanup	Tektoplate	Completed – case closed as of 12/23/2014	0.5-mile
		Other Cleanup	Textron Pacoima	Completed – case closed as of 12/22/2014	0.5-mile
		Other Cleanup	Timely	Completed – cased closed as of 1/30/1997	0.5-mile
		Permitted UST	Alcorn Fence Company	Permitted	0.5-mile

Table F-1
Proposed Project Regulatory Databases Search Results Returned

Location	Database	Type of Site	Name	Cleanup Status	Radius[a]
		Permitted UST	City of LA East Valley Refuse	Permitted	0.5-mile
		Permitted UST	KITCOR Corporation	Permitted	0.5-mile
		Permitted UST	MTA – Division 15 Sun Valley	Permitted	0.5-mile
		Permitted UST	Pacifica Hospital	Permitted	0.5-mile
		Permitted UST	Robert C Worth, Incorporated	Permitted	0.5-mile
		Permitted UST	Southern California Gas Co	Permitted	0.5-mile
		Permitted UST	Structural Materials Co. Inc.	Permitted	0.5-mile
		Permitted UST	Viking Freight Inc.	Permitted	0.5-mile
		WDR	Valley Generating Station	Historical – WDR as of 5/19/1965	0.5-mile
PSG	EnviroStor	School Investigation	East Valley High School No. 2	No further action as of 2/26/2004	0.5 mile
	GeoTracker	LUST Cleanup	Arco #1575	Completed – case closed as of 4/4/1996; Completed – case closed as of 6/7/2004	0.5-mile
		LUST Cleanup	Unocal #6987	Completed – case closed as of 12/20/1996	0.5-mile
		Permitted UST	Arco Service Station 1575	Permitted	0.5-mile
Arleta Avenue	EnviroStor	Evaluation	Daniels Engraving Co., Inc.	Referred to the EPA as of 6/27/2013	0.5-mile
		Evaluation	Miles Chemical Company	No Further Action	0.5-mile
		Evaluation	Superior Thread Rolling Company	No further action as of 6/15/2011	0.5-mile
		School Investigation	Beachy Avenue Elementary School	No action required as of 8/23/2001	0.5-mile
		School Investigation	East Valley High School No. 2	No further action as of 2/26/2004	0.5-mile
	GeoTracker	LUST Cleanup	Al-Sal Oil Co. Station #15	Completed – case closed as of 6/11/2008	Adjacent to alignment
		Cleanup Program	Great Western	Completed - case closed as of 7/15/2004	0.5-mile
		LUST Cleanup	76 Products Station #5662	Completed - case closed as of 11/26/1996	0.5-mile
		LUST Cleanup	Arco #3039	Completed - case closed as of 12/8/1993	0.5-mile
		LUST Cleanup	B-Z Truck Stop	Completed - case closed as of 4/11/2001	0.5-mile
		LUST Cleanup	Exxon #7-3655	Completed - case closed as of 9/19/2007	0.5-mile
		LUST Cleanup	Shell - Shell Oil Co	Completed - Case Closed As Of 12/15/2011	0.5-mile
		LUST Cleanup	Shell Oil Products Co	Completed – case closed as of 8/1/2002	0.5-mile
		LUST Cleanup	Unocal #5704	Completed – case closed as of 7/1/1998	0.5-mile

Table F-1
Proposed Project Regulatory Databases Search Results Returned

Location	Database	Type of Site	Name	Cleanup Status	Radius[a]
		LUST Cleanup	Unocal #6987	Completed – case closed as of 12/20/1996	0.5-mile
		Permitted UST	Al Sal #15	Permitted	0.5-mile
		Permitted UST	Arleta Mobil	Permitted	0.5-mile
		Permitted UST	Tosco Corporation #30959	Permitted	0.5-mile
		Permitted UST	B-Z Truck Stop	Permitted	0.5-mile
		Permitted UST	Hashimoto Nursery	Permitted	0.5-mile
		Permitted UST	High 5 Shell	Permitted	0.5-mile
		Permitted UST	Tosco Corporation #30949	Permitted	0.5-mile

Notes: [a]Distances are given as Onsite/On Alignment, Adjacent, or 0.5-mile. Sites identified as 0.5-mile are within a half-mile radius of the Proposed Project, and actual distance may be less than 0.5 miles.

Source: Department of Toxic Substances Control EnviroStor database[1] ;
State Water Resources Control Board GeoTracker database[2] ;
DTSC Cortese List ;
Environmental Protection Agency (EPA) National Priorities List (NPL)

---

[1] *California Department of Toxic Substances Control, EnviroStor Database, website: http://www.envirostor.dtsc.ca.gov/public/, accessed April 12, 2016.*

[2] *State Water Resources Control Board, GeoTracker Database., website: http://geotracker.waterboards.ca.gov/, accessed April 12, 2016.*

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
VGS[1]	EnviroStor	Evaluation	Branford Landfill	No further action as of 9/30/1998	0.5-mile
		Evaluation	Eagle Tech	Referred to the EPA as of 9/8/2011	0.5-mile
		Evaluation	Industrial Metal Plating	Inactive – action required as of 6/30/2007	0.5-mile
		Voluntary Cleanup	VGS Gravel Pit	Active as of 6/28/2000	0.5-mile
	GeoTracker	Land Disposal	Branford Landfill	Open – verification monitoring as of 1/1/1965	0.5-mile
		Land Disposal	Valley Generating Station – L.A. City DWP	Open – Inactive as of 8/20/2013	0.5-mile
		LUST Cleanup	Monarch Record MFG Corp Inc.	Completed – case closed as of 4/30/1987	0.5-mile
		LUST Cleanup	Spartan Truck Equipment	Completed – case closed 6/6/1986	0.5-mile
		Other Cleanup	DWP Valley Generating	Completed – case closed as of 12/19/2014	0.5 mile
		Permitted UST	City of LA East Valley Refuse	Permitted	0.5-mile
		Permitted UST	Pacifica Hospital	Permitted	0.5-mile
		Permitted UST	Structural Materials Co. Inc.	Permitted	0.5-mile
		WDR	Valley Generating Station	Historical – WDR as of 5/19/1965	0.5-mile
HSG	EnviroStor	Corrective Action	Express Metals Recycling[3]	Certified as of 9/10/2015	0.5-mile
		Evaluation	Jesse's Plating	Inactive – needs evaluation as of 9/8/2011	0.5-mile
		Evaluation	LNL Anodizing	Inactive – needs evaluation as of 9/14/2011	0.5-mile
		Evaluation	Pacific Plating	Inactive – action required as of 9/8/2011/	0.5-mile
		Evaluation	PB Fiberglass	Inactive – needs evaluation as of 9/5/2014	0.5-mile
		Evaluation	Tektoplate, Inc.	Referred to EPA as of 6/27/2013	0.5-mile
		Evaluation/ Tiered Permit	Alert Plating	Referred to RWQCB as of 9/8/2011 (See GeoTracker)	0.5-mile
		Permitted Hazardous Waste	LADWP	Protective Filer	0.5-mile
		Tiered Permit	Pacific Plating, Inc.	Referred to other agency	0.5-mile
		Tiered Permit	Pro-Circuits	Referred to other agency	0.5 mile
		Tiered Permit	Quality Finishing, Inc.	Referred to other agency	0.5-mile
		Voluntary Cleanup	Truesdale Center – LADWP	Active as of 6/28/2000	0.5-mile
	GeoTracker	LUST Cleanup	Flood Maintenance Hansen Yard	Completed – case closed as of 12/10/2010	Onsite

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
		Permitted UST	Hansen Yard	Permitted	Onsite
		WDR	Central LA Service Area	Draft WDR	Onsite
		WDR	Eastern LA Service Area	Draft WDR	Onsite
		WDR	Harbor Service Area	Draft WDR	Onsite
		WDR	San Fernando Valley Service Area	Draft WDR	Onsite
		WDR	Western LA Service Area	Draft WDR	Onsite
		Land Disposal	Ledger No. 2	Active as of 12/24/2013	0.5-mile
		LUST Cleanup	Ebrahim Sooferian	Completed – case closed as of 5/20/2013	0.5-mile
		LUST Cleanup	Fortin Industries #610	Completed – case closed as of 12/4/1996	0.5-mile
		LUST Cleanup	MOC Products Company, Inc.	Completed – case closed as of 4/28/1997	0.5-mile
		LUST Cleanup	Roadway Express, Inc.	Completed – case closed as of 9/4/1996	0.5-mile
		LUST Cleanup	Southern CA Rapid Transit District Div. 15	Completed – case closed as of 3/10/2014	0.5-mile
		LUST Cleanup	Woodward HRT	Completed – case closed as of 3/22/2016	0.5-mile
		Other Cleanup	Alert Plating Company, Inc.	Completed – case closed as of 12/22/2014	0.5-mile
		Other Cleanup	H.R. Textron	Completed – case closed as of 11/28/2000	0.5-mile
		Other Cleanup	Jesse’s Plating (Former HVC)	Open – site assessment as of 2/11/2016	0.5-mile
		Other Cleanup	Mayoni Enterprises	Open – site assessment as of 12/16/2015	0.5-mile
		Other Cleanup	Pacific Resource Recovery Services Inc	Evaluation Inspection as of 3/22/2016	0.5-mile
		Other Cleanup	Reynolds Printasign (Former)	Open – site assessment as of 3/23/2016	0.5-mile
		Other Cleanup	Tektoplate	Completed – case closed as of 12/23/2014	0.5-mile
		Other Cleanup	Textron Pacoima	Completed – case closed as of 12/22/2014	0.5-mile
		Other Cleanup	Timely	Completed – cased closed as of 1/30/1997	0.5-mile
		Permitted UST	Alcorn Fence Company	Permitted	0.5-mile
		Permitted UST	KITCOR Corporation	Permitted	0.5-mile
		Permitted UST	MTA – Division 15 Sun Valley	Permitted	0.5-mile
		Permitted UST	Robert C Worth, Incorporated	Permitted	0.5-mile
		Permitted UST	Southern California Gas Co	Permitted	0.5-mile
		Permitted UST	Viking Freight Inc.	Permitted	0.5-mile

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
PSG	EnviroStor	Other Cleanup	East Valley High School No. 2	No further action as of 2/26/2004	0.5 mile
	GeoTracker	LUST Cleanup	Arco #1575	Completed – case closed as of 4/4/1996; Completed – case closed as of 6/7/2004	0.5-mile
		LUST Cleanup	Unocal #6987	Completed – case closed as of 12/20/1996	0.5-mile
		Permitted UST	Arco Service Station 1575	Permitted	0.5-mile
Conveyance pipeline	EnviroStor	Evaluation	A V Plating	No further action as of 5/25/2012	On alignment
		Evaluation	Branford Landfill[3]	No further action as of 9/30/1998	On alignment
		Evaluation	Daniels Engraving Co., Inc.	Referred to the EPA as of 6/27/2013	Adjacent to alignment
		Evaluation	California Chemical Company	No action required as of 9/8/2011	Adjacent to alignment
		Corrective Action	Express Metals Recycling[2]	Certified as of 9/10/2015	0.5-mile
		Evaluation	Eagle Tech[3]	Referred to the EPA as of 9/8/2011	0.5-mile
		Evaluation	Pacific Plating[2]	Inactive – action required as of 9/8/2011	0.5 mile
		Evaluation	PB Fiberglass[2]	Inactive – needs evaluation as of 9/5/2014	0.5-mile
		Evaluation	Superior Thread Rolling Company	No further action as of 6/15/2011	0.5-mile
		Evaluation	Tektoplate, Inc.[2]	Referred to the EPA as of 6/27/2013	0.5-mile
		Tiered Permit	Golden State Magnetic & Penetrant Lab	Referred to other agency	0.5-mile
		Tiered Permit	Pacific Plating, Inc.[2]	Referred to other agency	0.5-mile
		Tiered Permit	Quality Finishing, Inc.[2]	Referred to other agency (no date)	0.5-mile
		Voluntary Cleanup	VGS Gravel Pit[3]	Active as of 6/28/2000	0.5-mile
	GeoTracker	Land Disposal	Branford Landfill[3]	Open – verification monitoring as of 1/1/1965	On alignment
		LUST Cleanup	B-Z Truck Stop	Completed – case closed as of 4/11/2001	Adjacent to alignment
		Permitted UST	B-Z Truck Stop	Permitted	Adjacent to alignment
		Permitted UST	City of LA East Valley Refuse[3]	Permitted	Adjacent to alignment
		LUST Cleanup	Marfred Industries	Completed – case closed as of 4/7/1994/Completed – case closed as of 4/11/2001	Adjacent to alignment

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
		Permitted UST	Hashimoto Nursery	Permitted	Adjacent to alignment
		Permitted UST	Marfred Industries	Permitted	0.5-mile
		Cleanup Program	Great Western	Completed – case closed as of 7/15/2004	0.5-mile
		Evaluation	Industrial Metal Plating[3]	Inactive – action required as of 6/30/2007	0.5-mile
		LUST Cleanup	Fortin Industries #610[2]	Completed – case closed as of 12/4/1996	0.5-mile
		LUST Cleanup	MOC Products Company, Inc.[2]	Completed – case closed as of 4/28/1997	0.5-mile
		LUST Cleanup	Monarch Record MFG Corp Inc.[3]	Completed – case closed as of 4/30/1987	0.5-mile
		LUST Cleanup	Roadway Express, Inc[2]	Completed – case closed as of 9/4/1996	0.5-mile
		LUST Cleanup	Spartan Truck Equipment[3]	Completed – case closed as of 6/6/1986	0.5-mile
		Other Cleanup	DWP Valley Generating[3]	Completed – case closed as of 12/19/2014	0.5-mile
		Other Cleanup	Reynolds Printasign (Former)[2]	Open – site assessment as of 3/23/2016	0.5-mile
		Other Cleanup	Tektoplate[2]	Completed – cased closed as of 12/23/2014	0.5-mile
		Other Cleanup	Timely[2]	Completed – cased closed as of 1/30/1997	0.5-mile
		Permitted UST	Con-way Western Express[2]	Permitted	0.5-mile
		Permitted UST	Pacifica Hospital[3]	Permitted	0.5-mile
		Permitted UST	Southern California Gas Co[2]	Permitted	0.5-mile
		Permitted UST	Structural Materials Co. Inc.[3]	Permitted	0.5-mile
		WDR	Valley Generating Station[3]	Historical – WDR as of 5/19/1965	0.5-mile
Brine Line	EnviroStor	Evaluation	Eagle Tech	Referred to the EPA as of 9/8/2011	On alignment
		School Investigation	North Hollywood Elementary School No. 4	No action required as of 1/23/2002	On alignment
		School Cleanup	East Valley Middle School No. 1	Certified as of 1/26/2004	On alignment
		Corrective Action	Electrofilm Inc.	Inactive as of 1/1/2008	Adjacent to alignment
		Evaluation	Dixon Hard Chrome Inc.	Referred to the EPA as of 9/8/2011	0.5-mile
		NPL	San Fernando Valley Area 2	Active as of 5/15/1996	0.5-mile
		School Cleanup	Proposed Valley Region Bellingham Elementary School Addition	Certified as of 3/18/2010	0.5-mile

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
		School Cleanup	Valley Region Elementary School #7 Site 14	Certified as of 5/18/2007	0.5-mile
		School Investigation	Francis Polytechnic High School	No further action as of 5/4/2004	0.5-mile
		School Investigation	North Hollywood ES #3 Additional Area	No further action required as of 12/21/2005	0.5-mile
		School Investigation	Oxnard/Victory Elementary School No. 5	Inactive – needs evaluation as of 8/20/2002	0.5-mile
		School Investigation	Oxnard/Victory Elementary School No. 10	Inactive – needs evaluation as of 8/20/2002	0.5-mile
		School Investigation	Richard E. Byrd High School	No further action as of 11/14/2011	0.5-mile
		School Investigation	Victory Boulevard Elementary School 2nd addition	Inactive – action required as of 2/20/2013	0.5-mile
		Tiered Permit	Accurate Engineering Corp	Referred to other agency (no date)	0.5-mile
		Tiered Permit	Electromatic Inc. – North Hollywood	No action required as of 5/2/2006	0.5-mile
		Tiered Permit	F & H Plating Co	Referred to other agency (no date)	0.5-mile
	GeoTracker	Land Disposal	Valley Generating Station – LA City DWP	Open – inactive as of 8/20/2013	On alignment
		Permitted UST	Contempo Campers, Incorporated	Permitted	On alignment
		Permitted UST	Robinson's - May	Permitted	On alignment
		Permitted UST	Tibor Breir	Permitted	On alignment
		Permitted UST	Valley Car Wash	Permitted	On alignment
		WDR	Valley Generating Station	Historical WDR as of 5/19/1965	On alignment
		Cleanup Program	Time Aviation Services, Inc.	Completed – case closed as of 12/23/2003	Adjacent to alignment
		LUST Cleanup	Arco #1959	Completed – case closed as of 11/14/1996	Adjacent to alignment
		LUST Cleanup	Mobil Station 18L5K	Completed – case closed as of 1/16/2015	Adjacent to alignment
		LUST Cleanup	Thrifty #136/Arco #9587	Completed – case closed as of 7/1/1998	Adjacent to alignment
		LUST Cleanup	Unocal #4245	Completed – case closed as of 9/20/1996	Adjacent to alignment
		Permitted UST	Arco Service Station	Permitted	Adjacent to alignment
		Permitted UST	Chevron Station #9-6611	Permitted	Adjacent to alignment

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
		Permitted UST	City Of LA East Valley Refuse	Permitted	Adjacent to alignment
		Permitted UST	North Hollywood Repair Shop	Permitted	Adjacent to alignment
		Permitted UST	Pacifica Hospital	Permitted	Adjacent to alignment
		Cleanup Program	1928 Jewelry Company	Completed – case closed as of 12/23/2014	0.5-mile
		Cleanup Program	AJC Enterprises	Completed – case closed as of 1/30/1997	0.5-mile
		Cleanup Program	Andrew Jergen	Completed – case closed as of 12/22/2014	0.5-mile
		Cleanup Program	Bucy Die Casting Corp	Completed – case closed as of 11/14/2014	0.5-mile
		Cleanup Program	Buildit Engineering	Completed – case closed as of 9/9/2005	0.5-mile
		Cleanup Program	Burbank Foundry Inc.	Completed – case closed as of 8/25/1995	0.5-mile
		Cleanup Program	California Propeller	Completed – case closed as of 5/21/2015	0.5-mile
		Cleanup Program	Catalina Paints/Industries	Completed – case closed as of 7/8/2014	0.5-mile
		Cleanup Program	Electromatic Inc.	Completed – case closed as of 3/27/1987	0.5-mile
		Cleanup Program	Electrofilm Inc.	Completed – case closed as of 12/22/2014	0.5-mile
		Cleanup Program	F & H Plating Co	Completed case closed as of 12/23/2014	0.5-mile
		Cleanup Program	Foto-Kem Industries Inc.	Completed – case closed as of 2/11/2005	0.5-mile
		Cleanup Program	Ford Leasing Development Company (Former Zero Corp)	Open – site assessment as of 6/29/2001	0.5-mile
		Cleanup Program	Former Aviall Services Inc	Open – remediation as of 3/25/1996	0.5-mile
		Cleanup Program	Gegam Tech Autobody	Completed – case closed as of 12/22/2014	0.5-mile
		Cleanup Program	Haskel Inc.	Completed – case closed as of 12/23/2014	0.5-mile
		Cleanup Program	Hewitt Landfill	Open – site assessment as of 4/9/2015	0.5-mile
		Cleanup Program	Image Laboratories	Completed – case closed as of 12/31/1996	0.5-mile
		Cleanup Program	K & L Anodizing Corp	Completed – case closed as of 11/6/1995	0.5-mile
		Cleanup Program	Kleanerette Cleaners	Open – inactive as of 10/30/2014	0.5-mile
		Cleanup Program	J. Schwartzman MRG. & Supply Co	Completed – case closed as of 12/23/2014	0.5-mile
		Cleanup Program	LA Sign & Graphics	Completed – case closed as of 12/23/2014	0.5-mile
		LUST Cleanup	Livingston Graham Blue Diamond	Completed – case closed as of 11/13/1997	0.5-mile

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
		Cleanup Program	Lockheed A-1, B85, Lots 16, 16A	Open – site assessment as of 1/3/1990	0.5-mile
		Cleanup Program	Los Angeles Equest Center	Completed – case closed as of 12/22/2014	0.5-mile
		Cleanup Program	Magna Plating Co.	Open – site assessment as of 9/29/2005	0.5-mile
		Cleanup Program	Marfred Industries	Completed – case closed as of 12/22/2014	0.5-mile
		Cleanup Program	Mercury Aerospace Fasteners	Completed – case closed as of 12/22/2014	0.5-mile
		Cleanup Program	NBC Studios	Open – inactive as of 11/3/2014	0.5-mile
		Cleanup Program	Occupant	Completed – case closed as of 12/23/2003	0.5-mile
		Cleanup Program	Shades of Light	Completed – case closed as of 12/23/2014	0.5-mile
		Cleanup Program	SLS Auto Leasing and Sales Inc	Completed – case closed as of 9/19/2013	0.5-mile
		Cleanup Program	Somers & Elmores Plating Inc.	Open – site assessment as of 3/2/2015	0.5-mile
		Cleanup Program	Studio City Shopping Center	Completed – case closed as of 6/21/2000	0.5-mile
		Cleanup Program	U.S. Label Corp	Completed – case closed as of 12/19/2014	0.5-mile
		Cleanup Program	Uni-Plate Incorporated	Completed – case closed as of 12/23/2014	0.5-mile
		Land Disposal	Bradley East Landfill	Open – inactive as of 8/23/2103	0.5-mile
		Land Disposal	Bradley Landfill and Recycling	Open – verification monitoring as of 1/1/1965	0.5-mile
		Land Disposal	Gregg Pit/Bentz Dump Disposal Sites	Open – inactive as of 11/19/2012	0.5-mile
		Land Disposal	Livingston – Graham Sun Valley Sanitary Landfill	Open – inactive as of 12/30/2013	0.5-mile
		Land Disposal	Tuxford Pit Landfill	Open – inactive as of 6/3/2013	0.5-mile
		LUST Cleanup	76 Products Station #3263	Completed – case closed as of 9/14/1990	0.5-mile
		LUST Cleanup	76 Products Station #5261	Completed – case closed as of 3/5/1998	0.5-mile
		LUST Cleanup	Arco #1680	Open – eligible for closure as of 11/6/2014	0.5-mile
		LUST Cleanup	Arco #5200	Open – eligible for closure 1/3/2014	0.5-mile
		LUST Cleanup	CBS Studio Center	Completed – case closed as of 1/15/1997	0.5-mile
		LUST Cleanup	Chevron #9-6133	Open – remediation as of 2/14/1994	0.5-mile
		LUST Cleanup	ConocoPhilips Station 5261	Completed – case closed as of 10/25/2011	0.5-mile
		LUST Cleanup	Former Shell Service Station	Completed – case closed as of 5/22/2009	0.5-mile
		LUST Cleanup	Fortin Industries #610	Completed – case closed as of 12/4/1996	0.5-mile
		LUST Cleanup	LA City Dept. of Water & Power	Completed – case closed as of 3/29/1989	0.5-mile

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
		LUST Cleanup	Mobil Station HNG	Completed – case closed as of 4/11/2001	0.5-mile
		LUST Cleanup	Mobil #18-LC9 Former #17-LC9	Completed – case closed as of 1/7/1998	0.5-mile
		LUST Cleanup	N & K Auto Center	Completed - case closed as of 5/5/2003	0.5-mile
		LUST Cleanup	Rapid Gas No. 28	Completed – case closed as of 8/1/2011	0.5-mile
		LUST Cleanup	Shell	Completed – case closed as of 8/16/1985	0.5-mile
		LUST Cleanup	Shell	Completed – case closed as of 12/3/1997	0.5-mile
		LUST Cleanup	Shell Service Station	Completed – case closed as of 3/29/2012	0.5-mile
		LUST Cleanup	Swelldom Company	Completed – case closed as of 7/22/1996	0.5-mile
		LUST Cleanup	Tempco Engineering	Completed – case closed as of 12/20/2007	0.5-mile
		LUST Cleanup	Texaco Service Station	Completed – case closed as of 7/17/1996	0.5-mile
		LUST Cleanup	Tosco – 76 Station #6273	Completed – case closed as of 5/5/2003	0.5-mile
		LUST Cleanup	U-haul Center	Completed - case closed as of 5/5/2003	0.5-mile
		LUST Cleanup	Unocal #3459 (Former)	Completed – case closed as of 7/17/1996	0.5-mile
		LUST Cleanup	Willies Auto Service	Completed – case closed as of 8/24/1987	0.5-mile
		Permitted UST	Arco #1680	Permitted	0.5-mile
		Permitted UST	Arco #1959	Permitted	0.5-mile
		Permitted UST	Arco #1959	Permitted	0.5-mile
		Permitted UST	Arco #9587	Permitted	0.5-mile
		Permitted UST	Arco #9588	Permitted	0.5-mile
		Permitted UST	Arco #9588	Permitted	0.5-mile
		Permitted UST	Balou Garcia	Permitted	0.5-mile
		Permitted UST	California Apple Products Inc	Permitted	0.5-mile
		Permitted UST	CBS Studio Center	Permitted	0.5-mile
		Permitted UST	Central Valley Truck	Permitted	0.5-mile
		Permitted UST	Chevron Service Station #93909	Permitted	0.5-mile
		Permitted UST	Chevron Station #9-6133	Permitted	0.5-mile
		Permitted UST	City Of LA DWP	Permitted	0.5-mile
		Permitted UST	Duke’s Mobil Service	Permitted	0.5-mile

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
			Station Nvo		
		Permitted UST	Helo's Shell Service	Permitted	0.5-mile
		Permitted UST	Khoury Auto Care	Permitted	0.5-mile
		Permitted UST	LAFD Station 89	Permitted	0.5-mile
		Permitted UST	Lankershim Car Wash	Permitted	0.5-mile
		Permitted UST	Mobil , #11-FBD	Permitted	0.5-mile
		Permitted UST	Mobil Service Station #11-Ff3	Permitted	0.5-mile
		Permitted UST	Mobil Service Station HNG	Permitted	0.5-mile
		Permitted UST	Mobil Service Station L5K	Permitted	0.5-mile
		Permitted UST	Mobil Service Station LQ6	Permitted	0.5-mile
		Permitted UST	Mobil SS# 11-Lc9	Permitted	0.5-mile
		Permitted UST	North Hollywood Administrative And Service Center	Permitted	0.5-mile
		Permitted UST	North Hollywood Park	Permitted	0.5-mile
		Permitted UST	North Hollywood Police Station	Permitted	0.5-mile
		Permitted UST	Pacific Bell	Permitted	0.5-mile
		Permitted UST	Piper Technical Center	Permitted	0.5-mile
		Permitted UST	Richard Angelo Stay-Green Inc	Permitted	0.5-mile
		Permitted UST	Southern California Gas Co	Permitted	0.5-mile
		Permitted UST	Structural Materials Co. Inc.	Permitted	0.5-mile
		Permitted UST	Sun Valley Service Center	Permitted	0.5-mile
		Permitted UST	Superfine Texaco	Permitted	0.5-mile
		Permitted UST	Tempco Engineering Incorporate	Permitted	0.5-mile
		Permitted UST	Texaco SS# 61-106-2258	Permitted	0.5-mile
		Permitted UST	Texaco SS#61-106-0922	Permitted	0.5-mile
		Permitted UST	Tosco Corporation #30483	Permitted	0.5-mile

Table F-2
VGS Alternative Regulatory Databases Search Results

Location	Database	Type of Site	Name	Status	Radius[a]
		Permitted UST	Tosco Corporation #30624	Permitted	0.5-mile
		Permitted UST	Tosco Corporation #30836	Permitted	0.5-mile
		Permitted UST	Tosco Corporation #31134	Permitted	0.5-mile
		Permitted UST	United Oil	Permitted	0.5-mile
		Permitted UST	Waste Management Of Calif Inc	Permitted	0.5-mile

Notes: [a]Distances are given as Onsite/On Alignment, Adjacent, or 0.5-mile. Sites identified as 0.5-mile are within a half-mile radius of the VGS Alternative, and actual distance may be less than 0.5 miles.
[1] All VGS Sites are common to HSG
[2] Common to Conveyance Pipeline and HSG
[3] Common to Conveyance Pipeline, HSG, and VGS

Source: Department of Toxic Substances Control EnviroStor database[3] ;
State Water Resources Control Board GeoTracker database[4] ;
DTSC Cortese List ;
Environmental Protection Agency (EPA) National Priorities List (NPL)

---

[3] *California Department of Toxic Substances Control. EnviroStor Database. Website: http://www.envirostor.dtsc.ca.gov/public/. Accessed July 8, 2015.*

[4] *State Water Resources Control Board. GeoTracker Database. Website: http://geotracker.waterboards.ca.gov/. Accessed July 8, 2015.*

APPENDIX G

Noise and Vibration Impact Study

LOS ANGELES GROUNDWATER REPLENISHMENT PROJECT

environmental planners

NOISE AND VIBRATION IMPACT STUDY

Prepared for

AECOM

Prepared by

TERRY A. HAYES ASSOCIATES INC.

APRIL 2016

TABLE OF CONTENTS

Page No.

LIST OF TABLES

LIST OF FIGURES

TECHNICAL APPENDIX

1.0 SUMMARY OF FINDINGS

Terry A. Hayes Associates Inc. (TAHA) completed a noise and vibration impact analysis for the Los Angeles Groundwater Replenishment Project (proposed project). The analysis assessed construction and operational impacts associated with the proposed project. Impact conclusions associated with the California Environmental Quality Act (CEQA) are shown in **Table 1-1**. With mitigation, the majority of project components would result in less-than-significant impacts from noise and vibration. However, the Japanese Garden relies on a serene noise setting and is particularly sensitive to increased noise. Construction activity, especially associated with the warehouse building, would generate audible noise at the Japanese Garden. This is considered a significant and unavoidable impact despite the implementation of mitigation measures. **Table 1-1** also summarizes the analysis of the Valley Generating Station (VGS) Alternative. The VGS Alternative would require similar construction-related mitigation measures, although there would be no noise or vibration impacts to the Japanese Garden.

TABLE 1-1: SUMMARY OF IMPACT STATEMENTS

Impact Statement	Proposed Project Level of Significance	Applicable Mitigation Measures	VGS Alternative Level of Significance	Applicable Mitigation Measures
Would the proposed project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?	Significant and Unavoidable Impact Related to Construction Noise at the Japanese Garden	**N1** though **N9**	Less-than-Significant Impact With Mitigation	**N1** though **N9**
Would the proposed project expose people to or generate excessive ground-borne vibration or ground-borne noise levels?	Less-than-Significant Impact With Mitigation	**N10**	Less-than-Significant Impact	None
Would the proposed project create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project?	Less-than-Significant Impact	None	Less-than-Significant Impact	None
Would the proposed project create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project?	Significant and Unavoidable Impact Related to Construction Noise at the Japanese Garden	**N1** though **N9**	Less-than-Significant Impact With Mitigation	**N1** though **N9**

SOURCE: TAHA, 2015.

Mitigation Measures

N1 For construction activities lasting more than three months in one location and within 500 feet of a sensitive receptor, temporary barriers (e.g., noise blankets) shall be placed between the equipment and sensitive receptor.

N2 Construction equipment shall be properly maintained and equipped with mufflers.

N3 Rubber-tired equipment, rather than tracked equipment, shall be used when feasible.

N4 Equipment shall be turned off when not in use for an excess of five minutes, except for equipment that requires idling to maintain performance.

N5 A public liaison shall be appointed for project construction will be responsible for addressing public concerns about construction activities, including excessive noise. As needed, the liaison shall determine the cause of the concern (e.g., starting too early, bad muffler) and implement measures to address the concern.

N6 The public shall be notified in advance of the location and dates of construction hours and activities.

N7 Truck routes shall be limited to major arterial roads located within non-residential areas when feasible.

N8 Construction activities shall be prohibited between the hours of 9:00 p.m. and 7:00 a.m. when located within 500 feet of occupied sleeping quarters or other land uses sensitive to increased nighttime noise levels.

N9 The site administrator for the Japanese Garden shall be consulted to discuss construction activities associated with the warehouse building that may generate high noise levels (e.g., heavy-duty equipment activity near the warehouse building). If construction-related noise interferes with an event at the Japanese Garden, the activity shall be stopped until the event is over, or another construction technique is used that eliminates the noise disturbance.

N10 The site administrator for the Japanese Garden shall be consulted to discuss construction activities associated with the warehouse building that may generate perceptible vibration (e.g., heavy-duty equipment activity). If construction-related vibration interferes with an event at the Japanese Garden, the activity shall be stopped until the event is over, or another construction technique is used that eliminates perceptible vibration.

2.0 INTRODUCTION

2.1 PURPOSE OF REPORT

The purpose of this report is to evaluate the potential noise and vibration impacts associated with the proposed project.

2.2 PROJECT DESCRIPTION

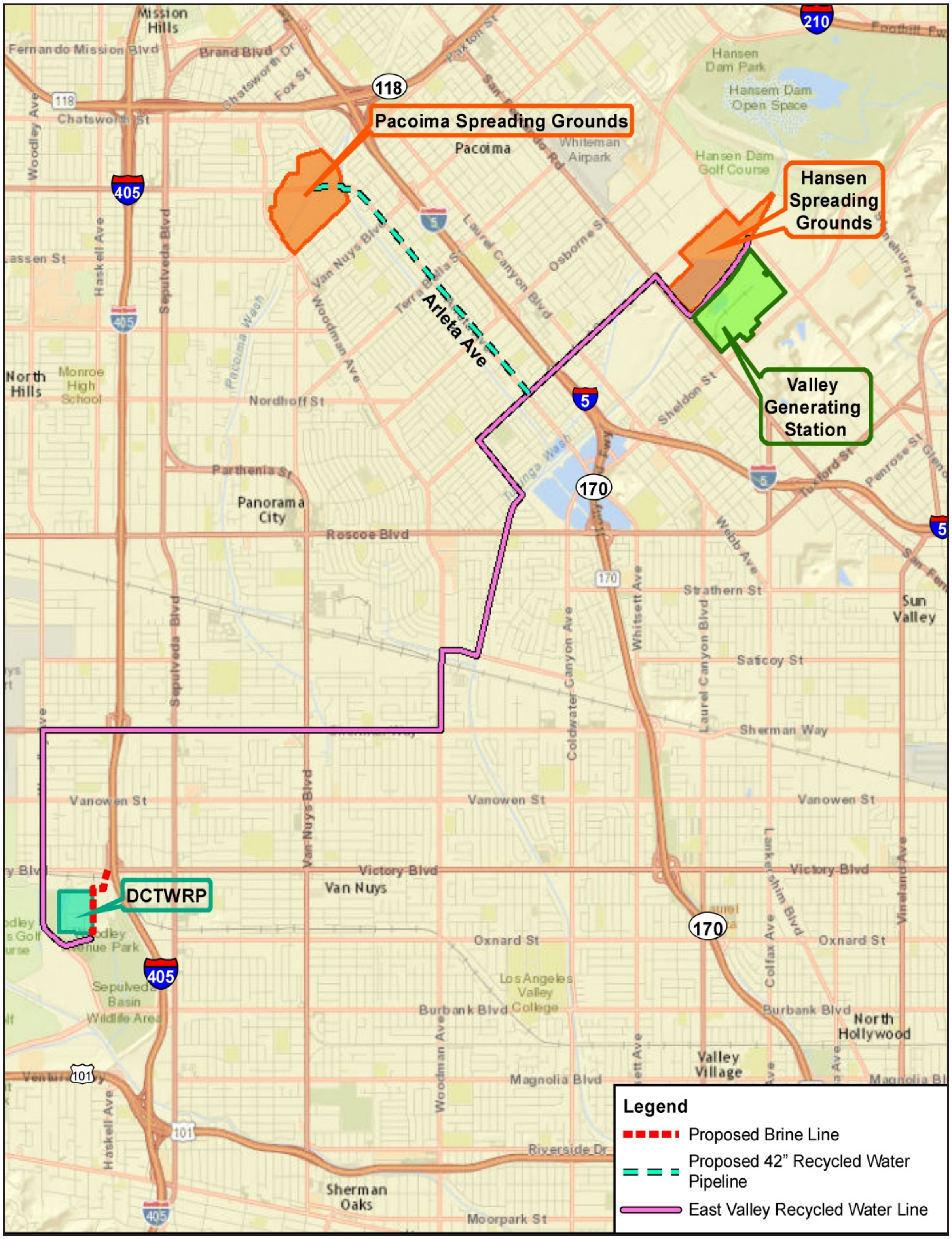
To maintain the reliability of the City of Los Angeles' potable water supply and reduce dependence on imported sources of water, the City, as represented by LADWP and the Los Angeles Department of Public Works Bureau of Sanitation (LASAN), proposes to implement the proposed project to replenish the San Fernando Basin (SFB) with up to 30,000 acre-feet per year (AFY) of purified recycled water from the Donald C. Tillman Water Reclamation Plant (DCTWRP). Achieving this replenishment goal would entail increasing the operation of DCTWRP to its full existing treatment capacity of 80 million gallons per day (mgd).

The proposed project would consist of three basic elements: 1) treatment, which would entail the construction of a new advanced water purification facility (AWPF) that would provide additional levels of treatment for recycled water generated at the DCTWRP to produce purified water; 2) conveyance, which would entail the use of existing and newly constructed pipelines to transport the purified water from AWPF to existing spreading grounds; and 3) replenishment, which would entail the spreading of the purified water at the existing spreading grounds so that it would percolate into the SFB.

The proposed project includes modifications to DCTWRP, a purified water pipeline for conveyance along Arleta Avenue from the intersection of Branford Street and Arleta Avenue to the Pacoima Spreading Grounds (PSG), and improvements to the PSG and Hansen Spreading Grounds (HSG) spreading basins. The locations of the project components are shown in **Figure 2-1**.

Construction of the proposed project would commence in fourth quarter of 2018 and is expected to last over four years, ending in late 2022. Construction would be conducted in several phases, which may partially overlap, especially since construction would occur at several physically separated sites (i.e., DCTWRP, HSG, PSG, and within City streets). Construction activities would typically occur from 7:00 a.m. to 3:30 p.m., but construction in major City streets would generally not occur before 9:00 a.m. in accordance with the City of Los Angeles Mayor's Executive Directive No. 2, which prohibits construction on selected roads between 6:00 a.m. and 9:00 a.m. and between 3:30 p.m. and 7:00 p.m. (i.e., during rush hours).

Refer to the Draft Environmental Impact Report for a detailed project description, including construction details.



Source: ESRI and AECOM 2016.

FIGURE 2-1

Project Component Locations

3.0 NOISE & VIBRATION

This section describes the characteristics of noise and vibration, discusses the applicable regulatory framework, defines the existing setting, and evaluates noise and vibration levels associated with the proposed project.

3.1 NOISE AND VIBRATION CHARACTERISTICS AND EFFECTS

3.1.1 Noise

Characteristics of Sound

Sound is technically described in terms of the loudness (amplitude) and frequency (pitch).[1] The standard unit of measurement for sound is the decibel (dB). The human ear is not equally sensitive to sound at all frequencies. The A-weighted scale, abbreviated dBA, reflects the normal hearing sensitivity range of the human ear. On this scale, the range of human hearing extends from approximately 3 to 140 dBA. **Figure 3-1** provides examples of A-weighted noise levels from common sounds.

Noise Definitions

This noise analysis discusses average sound levels in terms of Equivalent Noise Level (L_{eq}) and Community Noise Equivalent Level (CNEL).

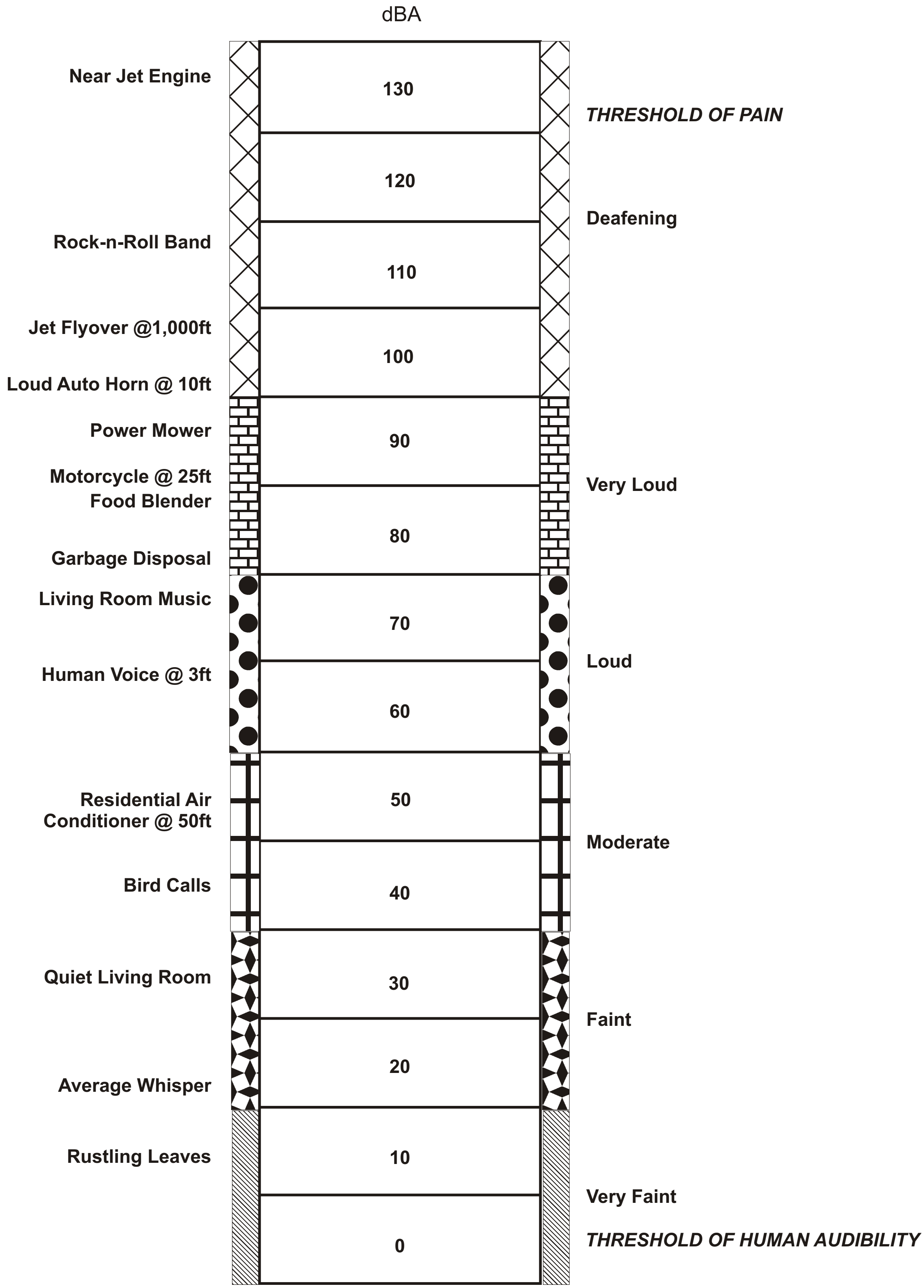
Equivalent Noise Level (L_{eq}). L_{eq} is the average sound level for any specific time period, on an energy basis. The L_{eq} for one hour is the energy average noise level during the hour. The average noise level is based on the energy content (acoustic energy) of the sound. L_{eq} can be thought of as the level of a continuous noise which has the same energy content as the fluctuating noise level. L_{eq} is expressed in units of dBA.

Community Noise Equivalent Level (CNEL). CNEL is an average sound level during a 24-hour period. CNEL is a noise measurement scale, which accounts for noise source, distance, single-event duration, single-event occurrence, frequency and time of day. Due to the lower background noise level, human reaction to sound between 7:00 p.m. and 10:00 p.m. is as if the sound were actually 5 dBA higher than if it occurred from 7:00 a.m. to 7:00 p.m. From 10:00 p.m. to 7:00 a.m., humans perceive sound as if it were 10 dBA higher. Hence, the CNEL is obtained by adding an additional 5 dBA to sound levels in the evening from 7:00 p.m. to 10:00 p.m. and 10 dBA to sound levels in the night from 10:00 p.m. to 7:00 a.m. Because CNEL accounts for human sensitivity to sound, CNEL is always a higher number than the actual 24-hour average sound level.

Effects of Noise

Noise is generally defined as unwanted sound. The degree to which noise can impact the human environment ranges from levels that interfere with speech and sleep (annoyance and nuisance) to levels that cause adverse health effects (hearing loss and psychological effects). Human response to noise is subjective and can vary greatly from person to person. Factors that influence individual response include the intensity, frequency, and pattern of noise, the amount of background noise present before the intruding noise, the nature of work or human activity that is exposed to the noise source.

[1] California Department of Transportation, *Technical Noise Supplement*, November 2009.



SOURCE: Cowan, James P., *Handbook of Environmental Acoustics*

FIGURE 3-1

A-Weighted Decibel Scale

Audible Noise Changes

Studies have shown that the smallest perceptible change in sound level for a person with normal hearing sensitivity is approximately 3 dBA. A change of at least 5 dBA would be noticeable and may evoke a community reaction. A 10-dBA increase is subjectively heard as a doubling in loudness and would likely cause a community response.

Noise levels decrease as the distance from the noise source to the receiver increases. Noise levels generated by a stationary noise source, or "point source," will decrease by approximately 6 dBA over hard surfaces (e.g., pavement) and 7.5 dBA over soft surfaces (e.g., grass) for each doubling of the distance. For example, if a noise source produces a noise level of 89 dBA at a reference distance of 50 feet, then the noise level would be 83 dBA at a distance of 100 feet over hard surface from the noise source, 77 dBA at a distance of 200 feet, and so on. Noise levels generated by a mobile source will decrease by approximately 3 dBA over hard surfaces and 4.5 dBA over soft surfaces for each doubling of the distance.

Generally, noise is most audible when traveling by direct line-of-sight.[2] In urban environments, barriers, such as walls, berms, or buildings, are often present, which breaks the line-of-sight between the source and the receiver, greatly reducing noise levels from the source since sound can only reach the receiver by bending over the top of the barrier (diffraction). However, if a barrier is not high or long enough to break the line-of-sight from the source to the receiver, its effectiveness is greatly reduced. In situations where the source or the receiver is located 3 meters (approximately 10 feet) above the ground, or whenever the line-of-sight averages more than 3 meters above the ground, sound levels would be reduced by approximately 3 dBA for each doubling of distance.

3.1.2 Vibration

Characteristics of Vibration

Vibration is an oscillatory motion through a solid medium in which the motion's amplitude can be described in terms of displacement, velocity, or acceleration. Vibration can be a serious concern, causing buildings to shake and rumbling sounds to be heard. In contrast to noise, vibration is not a common environmental problem. It is unusual for vibration from sources such as buses and trucks to be perceptible, even in locations close to major roads. Some common sources of vibration are trains, buses on rough roads, and construction activities, such as rock blasting, pile driving, and heavy earth-moving equipment.

Vibration Definitions

There are several different methods that are used to quantify vibration. The peak particle velocity (PPV) is defined as the maximum instantaneous peak of the vibration signal. The PPV is most frequently used to describe vibration impacts to buildings and is usually measured in inches per second. The root mean square (RMS) amplitude is most frequently used to describe the effect of vibration on the human body. The RMS amplitude is defined as the average of the squared amplitude of the signal. Decibel notation (Vdb) is commonly used to measure RMS. The Vdb acts to compress the range of numbers required to describe vibration.[3]

---

[2] Line-of-sight is an unobstructed visual path between the noise source and the noise receptor.
[3] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

Effects of Vibration

High levels of vibration may cause physical personal injury or damage to buildings. However, vibration levels rarely affect human health. Instead, most people consider vibration to be an annoyance that may affect concentration or disturb sleep. In addition, high levels of vibration may damage fragile buildings or interfere with equipment that is highly sensitive to vibration (e.g., electron microscopes).

Perceptible Vibration Changes

In contrast to noise, vibration is not a phenomenon that most people experience every day. The background vibration velocity level in residential areas is usually 50 Vdb RMS or lower, well below the threshold of perception for humans which is around 65 Vdb RMS.[4] Most perceptible indoor vibration is caused by sources within buildings, such as operation of mechanical equipment, movement of people, or slamming of doors. Typical outdoor sources of perceptible vibration are construction equipment, steel-wheeled trains, and traffic on rough roads. If the roadway is smooth, the vibration from traffic is rarely perceptible.

3.2 REGULATORY SETTING

3.2.1 Noise

Federal

The Noise Control Act of 1972 established programs and guidelines to identify and address the effects of noise on public health, welfare, and the environment. In 1981, the United States Environmental Protection Agency (USEPA) determined that subjective issues such as noise would be better addressed at local levels of government, thereby allowing more individualized control for specific issues by designated federal, state, and local government agencies. Consequently, in 1982, responsibilities for regulating noise control policies were transferred to specific federal agencies, and state and local governments. However, noise control guidelines and regulations contained in the USEPA rulings in prior years remain in place. No federal noise regulations are directly applicable to the proposed project.

State

The State of California has adopted noise standards in areas of regulation not preempted by the federal government. State standards regulate noise levels of motor vehicles, sound transmission through buildings, occupational noise control, and noise insulation. State regulations governing noise levels generated by individual motor vehicles and occupational noise control are not applicable to planning efforts, nor are these areas typically subject to CEQA analysis.

Local

The City of Los Angeles has established policies and regulations concerning the generation and control of noise that could adversely affect its citizens and noise-sensitive land uses. Regarding construction, Section 41.40 (Noise Due to Construction, Excavation Work – When Prohibited) of the Los Angeles Municipal Code (LAMC) states that no construction or repair work shall be performed between the hours of 9:00 p.m. and 7:00 a.m. on Monday through Friday since such activities would generate loud noises and disturb persons occupying sleeping quarters in any adjacent dwelling, hotel, apartment, or other place of residence. Further, no person, other than an individual home owner engaged in the repair or construction of his/her single-family dwelling, shall

[4]Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

perform any construction or repair work of any kind or perform such work within 500 feet of land so occupied before 8:00 a.m. or after 6:00 p.m. on any Saturday, nor at any time on any Sunday or on a federal holiday. Under certain conditions, the City may grant a waiver to allow limited construction activities to occur outside of the limits described above.

LAMC Section 112.05 (Maximum Noise Level of Powered Equipment or Powered Hand Tools) specifies the maximum noise level of powered equipment or powered hand tools. Any powered equipment or hand tool that produces a maximum noise level exceeding 75 dBA at a distance of 50 feet is prohibited. However, this noise limitation does not apply where compliance is technically infeasible. Technically infeasible means the above noise limitation cannot be met despite the use of mufflers, shields, sound barriers and/or any other noise-reduction device or techniques during the operation of equipment.

3.2.2 Vibration

Federal

The Federal Transit Administration (FTA) has published guidance for assessing building damage impacts from vibration. **Table 3-1** shows the FTA building damage criteria for vibration. FTA has also established criteria related to vibration annoyance, which are shown in **Table 3-2**.

TABLE 3-1: CONSTRUCTION VIBRATION DAMAGE CRITERIA

Building Category	PPV (inches per second
I. Reinforced-concrete, steel or timber (no plaster)	0.5
II. Engineered concrete and masonry (no plaster)	0.3
III. Non-engineered timber and masonry buildings	0.2
IV. Buildings extremely susceptible to vibration damage	0.12

SOURCE: FTA, *Transit Noise and Vibration Impact Assessment*, May 2006.

TABLE 3-2: CONSTRUCTION VIBRATION ANNOYANCE CRITERIA

	Vibration Impact Level (VdB re micro-inch per second)		
Land Use Category	Frequent Events /a/	Occasional Events /b/	Infrequent Events /c/
1. Buildings where vibration would interfere with interior operations.	65 /d/	65 /d/	65 /d/
2. Residences and buildings where people normally sleep.	72	75	80
3. Institutional land uses with primarily daytime use.	75	78	83

/a/ Frequent Events are defined as more than 70 vibration events of the same source per day.
/b/ Occasional Events" are defined as between 30 and 70 vibration events of the same source per day.
/c/ Infrequent Events" are defined as fewer than 30 vibration events of the same kind per day.
/d/ This criterion limit is based on levels that are acceptable for most moderately-sensitive equipment such as optical microscopes. Vibration-sensitive manufacturing or research will require detailed evaluation to define the acceptable vibration levels. Ensuring lower vibration levels in a building often requires special design of the HVAC systems and stiffened floors.
SOURCE: FTA, *Transit Noise and Vibration Impact Assessment*, May 2006.

State

There are no adopted State vibration standards.

Local

There are no adopted City of Los Angeles vibration standards.

3.3 EXISTING SETTING

3.3.1 Existing Noise and Vibration Environment

To characterize the existing noise environment around the project site, ambient noise was monitored using a SoundPro DL Sound Level Meter on Wednesday, July 8, 2015, between 10:00 a.m. and 4:00 p.m. Measurements were also taken on Tuesday, July 14, 2015 between 9:30 a.m. and 1:00 p.m. Additional measurements were taken on Thursday, March 31, 2016 between 9:30 a.m. and 11:00 a.m. The detailed locations are shown in **Figures 3-2** through **3-5**. Measurements were taken for 15-minute periods at each site. As shown in **Table 3-3**, the existing ambient sound levels range between 55.4 and 77.3 dBA L_{eq}. Traffic was the primary source of noise at each site.

TABLE 3-3: EXISTING AMBIENT NOISE LEVELS

Figure Key	Noise Monitoring Location	Sound Level (dBA, L_{eq})
1	Single-Family Residence Fronting Victory Blvd. (6403 Densmore Ave.)	77.3
2	Woodley Park (6350 Woodley Ave.)	69.4
3	Japanese Garden - Southwest Corner (6100 Woodley Ave.)	55.4
4	Japanese Garden - Northeast Corner (6100 Woodley Ave.)	56.3
5	Devonshire Arleta Park (14215 Devonshire St.)	68.1
6	Nikkei Senior Gardens (9221 Arleta Ave.)	65.9
7	Devonwood Park (10230 Woodman Ave.)	66.3
8	Single-Family Residence (10534 Arleta Ave.)	60.5
9	Serra Medical Community Clinic (9375 San Fernando Rd.)	76.6

SOURCE: TAHA, 2015.

3.3.2 Sensitive Receptors

Sensitive receptors are locations where people reside or where the presence of unwanted sound could adversely affect the use of the land. They typically include residences, schools, hospitals, guest lodging, libraries, and some passive recreation areas. The project is located in an urban environmental and many sensitive receptors are located near construction zones. These include, but are not limited to, the Japanese Garden, Woodley Park, Nikkei Senior Gardens, Devonshire Arleta Park, residences, community parks, medical facilities, and religious institutions.

3.4 METHODOLOGY AND SIGNIFICANCE CRITERIA

3.4.1 Methodology

The noise and vibration analysis considers construction and operational sources. Construction noise levels were based on information obtained from USEPA. Noise levels associated with typical construction equipment were obtained from the Federal Highway Administration (FHWA) Roadway Construction Noise Model.[5] This model predicts noise from construction operations based on a compilation of empirical data and the application of acoustical propagation formulas. Maximum equipment noise levels were adjusted based on anticipated percent of use. Example equipment noise levels at 15 and 50 feet were estimated by making a distance adjustment to the construction source noise level. The methodology used for this analysis can be viewed in Section 2.1.4 (Sound Propagation) of the California Department of Transportation (Caltrans) Technical Noise Supplement.

[5]Federal Highway Administration, *Roadway Construction Noise Model*, Version 1.1, August 2006.

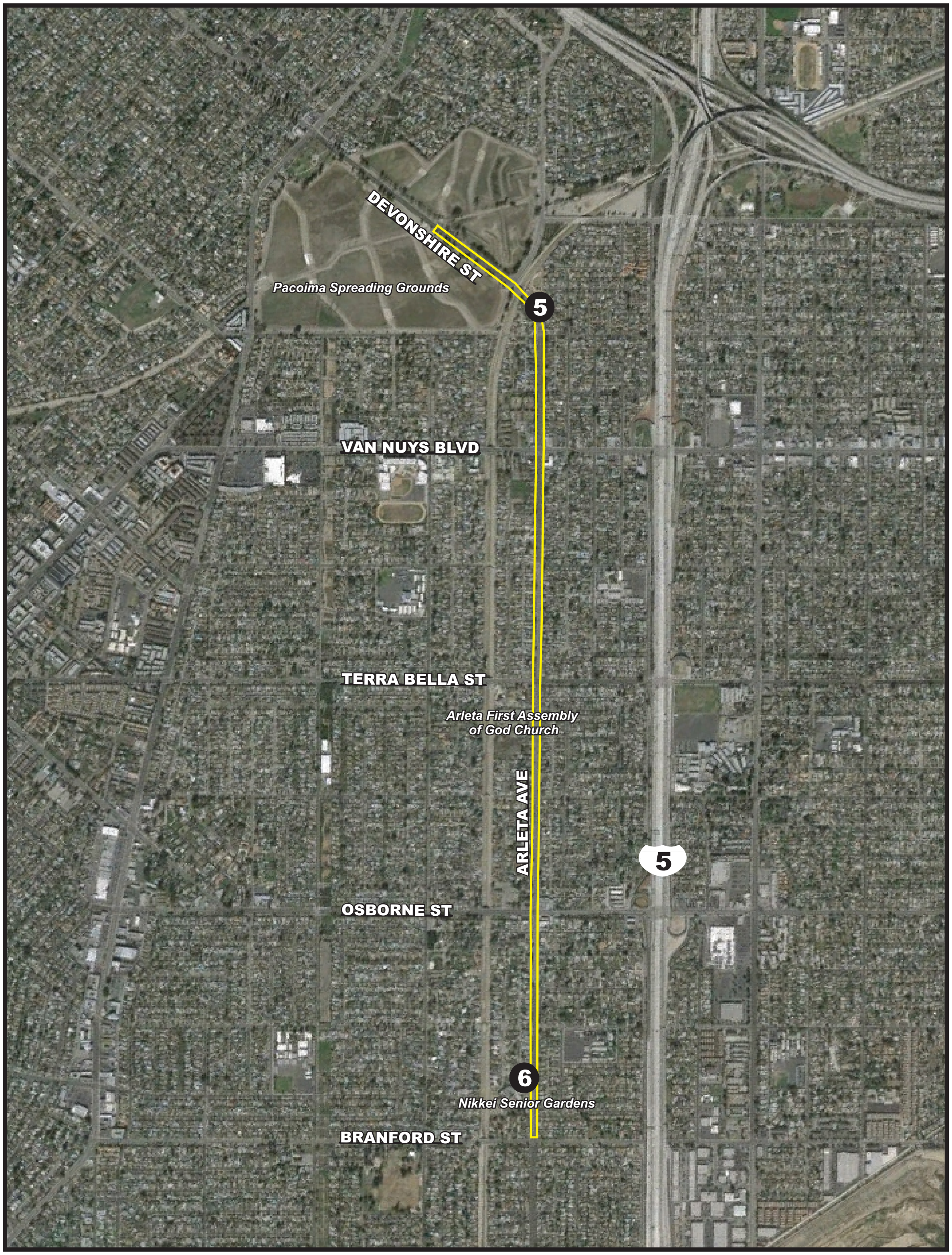
LEGEND
Project Site Boundary
Noise Monitoring Locations
1. Single-Family Residence
2. Woodley Park
3. Japanese Garden - Southeast Corner
4. Japanese Garden - Northeast Corner

Approx. Scale
0 440 880 feet
N

Source: TAHA 2016.

FIGURE 3-2

Donald C. Tillman Water Reclamation Plant



LEGEND
Project Site Boundary
Noise Monitoring Locations
5. Devonshire Arleta Park
6. Nikkei Senior Gardens

Approx. Scale
0 1,150 2,300 feet

N

Source: TAHA 2016.

taha environmental planners
taha 2013-083

Los Angeles Groundwater Replenishment Project
Noise and Vibration Impact Study
Los Angeles Department of Water and Power

FIGURE 3-3

Purified Water Pipeline

LEGEND
Project Site Boundary
Noise Monitoring Locations
5. Devonshire Arleta Park
7. Devonwood Park
8. Single-Family Residence

Approx. Scale
0 410 820 feet

Source: TAHA 2016.

FIGURE 3-4

Pacoima Spreading Grounds

LEGEND
Project Site Boundary
Noise Monitoring Locations
9. Serra Community Medical Clinic

Approx. Scale
0 330 960 feet

N

Source: TAHA 2016.

FIGURE 3-5

Hansen Spreading Grounds

Vibration levels generated by construction equipment were estimated using example vibration levels and propagation formulas provided by FTA.[6] The methodology used for the analysis can be viewed in Section 12.2 (Construction Vibration Assessment) of the FTA guidance.

3.4.2 CEQA Significance Thresholds

As part of the Initial Study, it was determined that the proposed project would not result in a substantial permanent increase in ambient noise levels or expose persons to excessive noise from public or private airports.[7] Accordingly, this issue is not further analyzed for potential impacts.

In accordance with Appendix G of the State CEQA Guidelines, the proposed project would have a significant impact related to noise and vibration if it would:

- Expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies;
- Expose people to or generate excessive ground-borne vibration or ground-borne noise levels;
- Create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project; and/or
- Create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project.

Construction Equipment Significance Criteria

Based on the LAMC, the proposed project would exceed the local standards and substantially increase temporary construction noise levels if:

- Construction activities would occur within 500 feet of a noise-sensitive use and outside the hours allowed in the LAMC. The allowable hours of construction in the LAMC include 7:00 a.m. to 9:00 p.m. Monday through Friday and 8:00 a.m. to 6:00 p.m. on Saturday. No construction activity is allowed on Sundays or federal holidays; and/or
- Equipment noise levels would exceed 75 dBA at 50 feet unless technically infeasible.

Construction Truck Significance Criteria

Project-related truck traffic would occur intermittently during daily construction activities. Truck activity could increase existing daytime noise levels along the roadway network. Based on what is described by Caltrans and FTA as a noticeable increase in mobile source noise, the proposed project would have a significant impact related to off-site truck noise if:

- Mobile source noise causes the ambient noise level measured at the property line of the affected uses to increase by 3 dBA.

Operational Phase Significance Criteria

Based on the potential to generate a noticeable noise increase, as stated by the Caltrans and FTA, the proposed project would have a significant impact related to operational noise if:

- Operational activities would increase noise levels at sensitive receptors by 5 dBA.

Vibration Significance Criteria

The construction-related vibration analysis considers the potential for building damage and annoyance. There are no standards directly related to a sensitive land use like the Japanese Garden. The Japanese Garden has been assessed using the federal standards for land uses with

[6] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.
[7] LADWP, *Initial Study for the Los Angeles Groundwater Replenishment Project*, September 2013.

high sensitivity to vibration. The proposed project would result in a significant construction or operational vibration impact if:

- Vibration levels would exceed 0.3 inches per second or 72 VdB at engineered concrete and masonry buildings (e.g., typical residential buildings).
- Vibration levels would exceed 0.12 inches per second or 65 VdB at the Japanese Garden.

3.5 ENVIRONMENTAL IMPACTS

3.5.1 Would the proposed project expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (*Significant and Unavoidable Impact*)

Impact Analysis

Construction

On-Site Equipment. Noise impacts from construction of the proposed project would fluctuate depending on the construction phase, equipment type and duration of use, distance between the noise source and receptor, and presence or absence of noise attenuation barriers. Construction activities typically require the use of numerous pieces of noise-generating equipment. Typical noise levels from various types of equipment that may be used during construction are listed in **Table 3-4**. Noise levels from individual pieces of equipment typically are between 72.6 and 81.0 dBA L_{eq} at 50 feet. Trenching activity typically includes equipment similar to a backhoe or front loader and activity at the spreading grounds would typically include scrapers, graders, and excavators. Pipe jacking, if necessary, would generate noise levels similar to an auger drill rig.

TABLE 3-4: NOISE LEVEL RANGES OF TYPICAL CONSTRUCTION EQUIPMENT

Construction Equipment	Noise Level at 50 feet (dBA)
Backhoe	73.6
Front Loader	75.1
Scraper	79.6
Grader	81.0
Excavator	76.7
Crane	72.6
Concrete Mixer Truck	74.8
Compactor	76.2
Auger Drill Rig	77.4

SOURCE: FHWA, *Roadway Construction Noise Model*, Version 1.1, 2008.

Table 3-4 presents anticipated noise levels when construction equipment is operating under full power conditions. However, equipment used on construction sites often operates at less than full power. To more accurately characterize construction-period noise levels, the noise levels shown in **Table 3-5** take into account the likelihood that multiple pieces of construction equipment would be operating simultaneously and the typical overall noise levels that would be expected for each phase of construction. Based on the types of equipment used for the proposed activity, trenching is best represented by foundation noise levels, construction work at PSG and HSG is best represented by site preparation noise levels, and building-related construction activity is best represented by structural noise levels.

TABLE 3-5: TYPICAL OUTDOOR CONSTRUCTION NOISE LEVELS	
Construction Method	**Noise Level at 50 feet (dBA, L_{eq})**
Ground Clearing	84
Site Preparation	89
Foundations	78
Structural	85
Finishing	89
SOURCE: USEPA, *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances*, PB 206717, 1971.	

The impact analysis is based on the construction limits in the LAMC. Construction activity would comply with the allowable hours of construction in the LAMC, including 7:00 a.m. to 9:00 p.m. Monday through Friday, 8:00 a.m. to 6:00 p.m. on Saturday, and no construction activity on Sundays or federal holidays. The LAMC limits equipment noise levels to 75 dBA at 50 feet unless technically infeasible. Noise levels from individual pieces of equipment would typically range from 72.6 to 81.0 dBA L_{eq} at 50 feet. As a whole process, unmitigated noise levels would typically exceed the allowable noise level stated in the LAMC. There are no sensitive receptors within 1,000 feet of the HSG, and there is no potential for construction activity to audibly increase noise levels. However, there are sensitive receptors adjacent to the construction zones at DCTWRP (e.g., Woodley Park), along the Purified Water Pipeline (e.g., Nikkei Senior Gardens and Devonshire Arleta Park), and at PSG (e.g., residences). Therefore, without mitigation, the proposed project would result in a significant impact related to construction noise.

For informational purposes, the noise levels associated with each construction component and phase are discussed below.

<u>Donald C. Tillman Water Reclamation Plant</u>. Construction at the DCTWRP would include a number of activities. A new warehouse building would be constructed in the northwest corner of the complex. This site is currently vacant and partially used for materials storage. This facility would accommodate all warehousing functions at DCTWRP to support both the recycled water treatment and advanced water purification processes. Construction activity would be located approximately 75 feet from the Japanese Garden. It is anticipated that construction activity would generate a noise level of 89 dBA L_{eq} at 50 feet. The existing noise level in the northeast corner of the Japanese Garden is 56.3 dBA L_{eq}. When added to the existing noise level, construction activity would raise the existing noise level by up to 29.2 dBA. The majority of construction activity would occur away from the perimeter and central to the project site. Based on the size of the project site, construction activity would typically be located 250 feet from the perimeter. At this distance, construction activity would generate a noise level of 75.0 dBA, which would raise the existing noise level by up to 18.8 dBA. It is not anticipated that construction activity associated with the warehouse building would be audible at Woodley Park due to distance (500 feet) and intervening facilities (berms and Japanese Garden walls).

By relocating and consolidating the warehousing functions to the northern part of DCTWRP, all maintenance functions (i.e., for both recycled water treatment and advanced water purification processes) would be located at the site of the existing maintenance/warehouse complex in the southwest corner of DCTWRP. However, some modification and/or expansion of the existing facilities would be required. These improvements would remain within the overall footprint of the existing maintenance/warehouse facilities site, including vehicle access and parking areas. The line-of-sight between noise-generating activities at the modified facility and the Japanese Garden would be blocked by buildings and an approximately 8-foot wall. It is anticipated that construction activity would generate a noise level of 89 dBA L_{eq} at 50 feet. The existing noise level in the southwest corner of the Japanese Garden is 55.4 dBA L_{eq}. When added to the existing noise level, construction activity would raise the existing noise level by up to 9.2 dBA. In addition, construction activity associated with the maintenance facility would audibly increase noise levels at the portions Woodley Park closest to the construction zone despite the presence of berms.

A flow equalization tank would be constructed on the eastern side of the project site, approximately 675 feet from the Japanese Garden. The existing noise level in the northeast corner of the Japanese Garden is 56.3 dBA L_{eq}. When added to the existing noise level, and considering intervening structures, construction activity would raise the existing noise level by up to 3.1 dBA. In addition, construction activity associated with the maintenance facility would audibly increase noise levels at the portions of the Woodley Park cricket fields closest to the construction zone despite the presence of berms.

The AWPF would be approximately 1,050 feet from the Japanese Garden. To support the AWPF processes, additional functions, such as pumps, filters, tanks, piping, chemical storage, alarm systems, security surveillance, and distributed control systems for remote monitoring and controls, would be required within or adjacent to the main AWPF facility. Numerous structures and buildings intervene and block the line-of-site between the garden and AWPF. There is no potential for construction noise associated with the AWPF to be audible at the Japanese Garden based on distance attenuation and presence of barriers. However, construction activity associated with the AWPF would audibly increase noise levels at the portions of Woodley Park closest to the construction zone despite the presence of berms.

The Brine Line, a newly constructed pipeline, would be constructed along the eastern portion of the DCTWRP. When trenching activity exits the project site at Victory Boulevard, residences would be located approximately 200 feet to the west. Trenching activity would typically involve a backhoe and front end loader operating simultaneously. The construction-related noise level would be approximately 78 dBA L_{eq} at 50 feet. The existing ambient noise level along Victory Boulevard is approximately 77.3 dBA L_{eq}, and construction activity would increase the existing noise level at residences along Victory Boulevard by approximately 0.2 dBA. In addition, construction activity associated with the Brine Line would audibly increase noise levels at the portions of Woodley Park closest to the construction zone despite the presence of berms.

Several ancillary facilities would also be required to support the AWPF and GWR operations at DCTWRP. Due to an increased electric power demand to operate the AWPF, a new substation would be constructed. A small pump station required to feed the MF process of the AWPF would also be constructed in the south-central part of DCTWRP on a currently vacant site, and several relatively small chemical system facilities necessary to support the AWPF processes would be located adjacent or near the primary AWPF facility. The existing Balboa Pump Station, located in the far southeast corner of the DCTWRP complex, would also be expanded by adding a single additional pump. These facilities would be at least 750 feet from the Japanese Garden with numerous intervening structures and buildings. The existing noise level in the northeast corner of the Japanese Garden is 56.3 dBA L_{eq}. When added to the existing noise level, and considering intervening structures, construction activity would raise the existing noise level by up to 1.0 dBA. However, construction activity associated with ancillary facilities would audibly increase noise levels at the portions of Woodley Park closest to the construction zone despite the presence of berms.

Purified Water Pipeline. Construction activity for the purified water pipeline would use a trenching technique and would proceed northwest along Arleta Avenue from Branford Street, then continue on Devonshire Street into the Pacoima Spreading Grounds. Arleta Avenue is lined with residences. Nikkei Senior Gardens is located on the southwestern side of Arleta Avenue approximately 400 feet to the northwest of Branford Street, and Arleta First Assembly of God Church is located at the intersection of Arleta Avenue and Garber Street. Construction activity would occur within the Arleta

Avenue right-of-way, approximately 50 feet from residences on either side of the street. Trenching activity would typically involve a backhoe and front end loader operating simultaneously. The construction-related noise level would be approximately 78 dBA L_{eq} at 50 feet. The existing ambient noise level along Arleta Avenue is approximately 65.9 dBA L_{eq}, and construction activity would increase the existing noise level at residences along Arleta Avenue by up to 9.6 dBA. This increased noise level would occur for two or three days at each location as trenching activity would move relatively rapidly along the alignment.

Trenching activity would require lane closures on local roadways. The majority of vehicle noise generated on roadways is related to the generation of sound pressure waves as vehicles pass by the stationary receiver. Vehicles traveling at faster speeds generate larger sound pressure waves and more noise. Lane closures would reduce vehicle speeds and idling noise would not exceed the noise that would have been generated by vehicles traveling at regular speeds.

Pacoima Spreading Grounds. The PSG is surrounded by residences, with the closest residences located approximately 75 feet from the spreading grounds. In addition, Devonwood and Devonshire Arleta Parks are approximately 75 and 225 feet from the PSG, respectively. It is anticipated that construction activity occurring within the PSG would generate a noise level of 89 dBA L_{eq} at 50 feet. The existing noise levels around the PSG perimeter are between 56.2 and 68.1 dBA L_{eq}. Construction activity occurring at the perimeter of the PSG would raise the existing noise level by up to 32.8 dBA. The majority of construction activity would occur away from the perimeter and central to the project site. Based on the size of the PSG, construction activity would typically be located over 500 feet from the perimeter. At this distance, construction activity would generate a noise level of 64 dBA, which would raise the existing noise level by up to 8.5 dBA.

Hansen Spreading Grounds. The HSG is surrounded by industrial and commercial land uses. The nearest sensitive receptor is a residence located approximately 1,175 feet to the south. In addition, the Serra Medical Clinic is located approximately 1,375 feet to the south. The construction-related noise level at the closest residence would be approximately 52 dBA, which would increase the 76.6 dBA L_{eq} existing noise level by less than 0.1 dBA. This increase would be less than the 3-dBA audibility threshold. The noise level increase would be less at the Serra Medical Clinic. There is no potential for construction activity HSG to audibly increase noise levels at sensitive land uses.

Off-Site Trucks. In addition to on-site construction activities, noise would be generated off-site by construction-related trucks and construction worker vehicles. Construction trucks generate higher noise levels than construction worker-related traffic. For example, one heavy-duty truck, traveling 35 miles per hour, generates the equivalent noise of 31 passenger vehicles.[8]

It is acknowledged that project-related truck trips would instantaneously increase the ambient noise levels along haul routes. The impact analysis is based on the potential for truck activity to result in prolonged noise exposure. A doubling of traffic volume is typically needed to audibly increase noise levels along a roadway segment. **Table 3-6** presents traffic volumes along a sample of roadway segments affected by the proposed project. Daily traffic volumes based on the equivalent truck noise levels would not double along any roadway segment. It is commonly assumed that peak-hour traffic is 10 percent of daily traffic. Based on this assumption, peak hour volumes would also not double along any roadway segment. It is not anticipated that off-site vehicle activity would audibly change average daily noise levels. Therefore, the proposed project would result in a less-than-significant impact related to construction-related off-site noise.

[8]California Department of Transportation, *Technical Noise Supplement*, November 2009.

TABLE 3-6: PROPOSED PROJECT OFF-SITE CONSTRUCTION NOISE LEVELS

Project Aspect	Roadway Segment	Vehicle Trips					
		Future No Project	Project-Related Employee Trips	Project-Related Truck Trips	Project-Related Truck Trips (Passenger Vehicle Equivalence)	Future With Project	Percent Change
DCTWRP (Includes all components)	Victory Blvd. (Between Woodley Ave. and I-405)	59,469	68	34	1,054	60,591	2%
Purified Water Pipeline	Arleta Ave. (Between Devonshire St. and Van Nuys Blvd.)	19,638	20	12	372	20,030	2%
PSG	Branford St. (Between Arleta Ave. and I-5)	22,008	27	6	186	22,221	1%
HSG	Branford St. (Between I-5 and San Fernando Rd.)	14,367	27	6	186	14,580	2%

SOURCE: TAHA, 2015.

Operations

Donald C. Tillman Water Reclamation Plant. The proposed project would double the influent to the treatment facilities from approximately 40 mgd to 80 mgd. Each of the project components have been assessed for potential operational impacts. A new warehouse building would be constructed in the northwest corner of the complex. This site is currently vacant and partially used for materials storage. This facility would accommodate all warehousing functions at DCTWRP to support both the recycled water treatment and advanced water purification processes. The majority of activity would be interior to the warehouse and would not generate audible noise levels. Vehicles would access the warehouse building using the roads adjacent to the Japanese Garden. These roads are currently utilized by maintenance vehicles and trucks. Additional vehicle noise would be intermittent and limited to a few seconds of pass-by noise. It is not anticipated that warehouse-related vehicles would increase noise levels by more than 5 dBA. Therefore, the proposed project would result in a less-than-significant impact related to operational warehouse building noise. In addition, it is not anticipated that operational activity associated with the warehouse building would be audible at Woodley Park due to distance (500 feet) and intervening facilities (berms and Japanese Garden walls).

By relocating and consolidating the warehousing functions to the northern part of DCTWRP, all maintenance functions (i.e., for both recycled water treatment and advanced water purification processes) would be located at the site of the existing maintenance/warehouse complex in the southwest corner of DCTWRP. However, some modification and/or expansion of the existing facilities would be required. These improvements would remain within the overall footprint of the existing maintenance/warehouse facilities site, including vehicle access and parking areas. The noise-generating activities at the modified facility would be identical to the existing activities, which are over 275 feet from the Japanese Garden and not audible. The line-of-sight between noise-generating activities at the modified facility and the gardens would be blocked by buildings and an approximately 8-foot wall. The modified facility would not generate audible noise at the Japanese Garden. Similarly, the modified facility would not generate audible noise at Woodley Park. Therefore, the modified maintenance facility would result in a less-than-significant impact related to operational noise.

The flow equalization tank is a passive operational activity and would not generate substantial noise. Therefore, the flow equalization tank would result in a less-than-significant impact related to operational noise.

The AWPF would be approximately 1,050 feet from the Japanese Garden. To support the AWPF processes, additional functions, such as pumps, filters, tanks, piping, chemical storage, alarm systems, security surveillance, and distributed control systems for remote monitoring and controls, would be required within or adjacent to the main AWPF facility. Alarms would be intermittent and the additional functions are generally passive. AWPF pumps would either be inside structures or general low-level humming noise. Numerous structures and buildings intervene and block the line-of-site between the garden and AWPF. There is no potential for noise associated with the AWPF to be audible at the Japanese Garden or Woodley Park based on distance attenuation, barriers and berms. Therefore, the AWPF would result in a less-than-significant impact related to operational noise.

The Brine Line would be subterranean, and would not generate audible noise. Therefore, the Brine Line would result in a less-than-significant impact related to operational noise.

Several ancillary facilities would also be required to support the AWPF and GWR operations at DCTWRP. Due to an increased electric power demand to operate the AWPF, a new substation would be constructed. A small pump station would also be constructed in the south-central part of DCTWRP on a currently vacant site, and several relatively small chemical system facilities necessary to support the AWPF processes would be located adjacent or near the primary AWPF facility. The existing Balboa Pump Station, located in the far southeast corner of the DCTWRP complex, would also be expanded by adding a single pump. These facilities would be at least 750 feet from the Japanese Garden with numerous intervening structures and buildings. There is no potential for noise associated with the AWPF to be audible at the Japanese Garden based on distance attenuation and presence of barriers. Existing pump noise associated with the Balboa Pump Station is not audible beyond the DCTWRP property due to the existing berm. It is not anticipated that additional equipment would audibly increase noise levels beyond the DCTWRP property, including at Woodley Park. Therefore, the ancillary facilities would result in a less-than-significant impact related to operational noise.

<u>Purified Water Pipeline</u>. Purified water would be conveyed to PGS via the proposed 42-inch pipeline that would branch off the existing 54-inch line at Branford Street and Arleta Avenue. The pipeline would be subterranean, and would not generate audible noise. Therefore, the Purified Water Pipeline would result in a less-than-significant impact related to operational noise.

<u>Pacoima Spreading Grounds</u>. Two new outlet structures and a flow meter would be constructed in the center of the PSG. Based on monitoring of an existing outlet structure, it is anticipated that these facilities would generate a noise level of approximately 60 dBA L_{eq} at five feet. At the closest point, an outlet structure would be approximately 475 feet from a sensitive receptor. The existing noise levels around the PSG perimeter are between 56.2 and 68.5 dBA L_{eq}. The maximum increase would be less than 0.1 dBA. This increase would be less than the 3-dBA audibility threshold. There is no potential for operational activity at PSG to audibly increase noise levels at sensitive receptors.

<u>Hansen Spreading Grounds</u>. A new outlet structure would be located on the southeast side of the HSG. The outlet structure would increase noise levels at the nearest sensitive receptor by less than 0.1 dBA based on the 59 dBA L_{eq} at 5 feet reference noise level and the approximately 2,000-foot from the source to the receptor. This increase would be less than the 3-dBA audibility threshold. There is no potential for operational activity at HSG to audibly increase noise levels at sensitive receptors.

Proposed Project Off-Site Operational Activity. A doubling of traffic volumes is needed for a person with normal hearing to perceive an increase mobile noise levels. There is no potential for the increase in operational activity to double traffic volumes on the roadway system based on an additional 16 daily employees and 7 chemical deliveries per month. Therefore, the proposed project would result in a less-than-significant impact related to operational mobile noise.

Mitigation Measures

N1 For construction activities lasting more than three months in one location and within 500 feet of a sensitive receptor, temporary barriers (e.g., noise blankets) shall be placed between the equipment and sensitive receptor.

N2 Construction equipment shall be properly maintained and equipped with mufflers.

N3 Rubber-tired equipment, rather than tracked equipment, shall be used when feasible.

N4 Equipment shall be turned off when not in use for an excess of five minutes, except for equipment that requires idling to maintain performance.

N5 A public liaison shall be appointed for project construction will be responsible for addressing public concerns about construction activities, including excessive noise. As needed, the liaison shall determine the cause of the concern (e.g., starting too early, bad muffler) and implement measures to address the concern.

N6 The public shall be notified in advance of the location and dates of construction hours and activities.

N7 Truck routes shall be limited to major arterial roads located within non-residential areas when feasible.

N8 Construction activities shall be prohibited between the hours of 9:00 p.m. and 7:00 a.m. when located within 500 feet of occupied sleeping quarters or other land uses sensitive to increased nighttime noise levels.

N9 The site administrator for the Japanese Garden shall be consulted to discuss construction activities associated with the warehouse building that may generate high noise levels (e.g., heavy-duty equipment activity near the warehouse building). If construction-related noise interferes with an event at the Japanese Garden, the activity shall be stopped until the event is over, or another construction technique is used that eliminates the noise disturbance.

Significance After Mitigation

Construction. Mitigation Measures **N1** through **N9** are designed to reduce construction noise levels. When the line-of-sight would be blocked from the equipment to the receptor, the barriers associated with Mitigation Measure **N1** would reduce construction noise levels by approximately 5 dBA. The equipment mufflers associated with Mitigation Measure **N2** would reduce construction noise levels by approximately 3 dBA. Mitigation Measures **N3** through **N8**, although difficult to quantify, would also reduce and/or control construction noise levels. Mitigation Measure **N9** would ensure that construction noise would not disrupt activities at the Japanese Garden. Temporary noise barriers were considered for placement along the Purified Water Pipeline and PSG. However, such barriers were determined to be infeasible along the Purified Water Pipeline for multiple reasons, including safety at intersections and cost effectiveness given the transient and short-term nature of the proposed construction activity in any one location. Other measures included the following:

- Electric Equipment - Electric equipment would generate less noise than diesel equipment but is not widely available and the horsepower associated with electric equipment would not meet project requirements.
- Relocation - Removing the affected land uses from the construction zone would eliminate the impact. This measure would not be feasible due to the number of affected land uses and associated cost of relocation.

- Window Retrofits - Retrofitting windows at affected land uses would reduce noise exposure. This measure would not be feasible due to the number of affected land uses and associated cost of retrofitting considering the temporary nature of the noise from construction.

Based on compliance with the LAMC, construction equipment noise would be mitigated to the greatest extent feasible. The implementation of Mitigation Measures **N1** through **N8** would reduce noise impacts associated with the Purified Water Pipeline and PSG to a less-than-significant level. However, the Japanese Garden relies on a serene noise setting and is particularly sensitive to increased noise, especially instantaneous noise spikes. Construction activity, especially associated with the warehouse building, would generate audible noise at the Japanese Garden. This is considered a significant and unavoidable impact despite the implementation of mitigation measures.

Operations. No significant impacts have been identified related to operational noise. Therefore, no mitigation measures are required.

3.5.2 Would the proposed project expose people to or generate excessive ground-borne vibration or ground-borne noise levels? (*Less-than-Significant Impact with Mitigation*)

Impact Analysis

Construction

Construction activity can generate varying degrees of vibration, depending on the procedure and equipment. Operation of construction equipment generates vibrations that spread through the ground and diminish in amplitude with distance from the source. The effect on buildings located in the vicinity of a construction site often varies depending on soil type, ground strata, and construction characteristics of the receiver building(s). The results from vibration can range from no perceptible effects at the lowest vibration levels, to low rumbling sounds and perceptible vibration at moderate levels, and to slight damage at the highest levels. In most cases, the primary concern regarding construction vibration relates to damage. Land uses that are designed to be serene environments, such as the Japanese Garden, warrant added protection from vibration annoyance. Community parks are not typically considered sensitive to short-term vibration levels.

On-Site Equipment. The FTA provides vibration levels for various types of construction equipment with an average source level reported in terms of velocity.[9] **Table 3-7** provides estimates of vibration levels for a wide range of soil conditions. The reference levels were used to estimate vibration levels at the sensitive receptors most likely to be impacted by equipment at each location of construction activity. Vibration levels are shown in **Table 3-8** and discussed in detail for each construction component.

TABLE 3-7: VIBRATION VELOCITIES FOR CONSTRUCTION EQUIPMENT

Equipment	PPV at 25 feet (Inches/Second)	Approximate L_v at 25 feet /a/
Large Bulldozer	0.089	87
Caisson Drilling	0.089	87
Loaded Trucks	0.076	86
Jackhammer	0.035	79
Small Bulldozer	0.003	58

/a/ RMS velocity in decibels (VdB) related to 1 micro-inch/second.
SOURCE: Federal Transit Authority, *Transit Noise and Vibration Impact Assessment*, May 2006.

[9] Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

TABLE 3-8: ESTIMATED VIBRATION LEVELS				
		Distance	Vibration Level	
Component and Phase	**Receptor**	**(Feet)**	**Inches/Second /a/**	**VdB /b/**
DONALD C. TILLMAN WATER RECLAMATION PLANT				
Warehouse Building	Japanese Garden	75	0.017	73
Maintenance Building	Japanese Garden	275	0.002	56
Flow Equalization Tank	Japanese Garden	675	0.001	44
AWPF	Japanese Garden	1,050	0.0003	38
Brine Line	Residences	200	0.002	52
Balboa Pump Station	Japanese Garden	750	0.001	43
PURIFIED WATER PIPELINE				
	Residences, Nikkei Senior Gardens, and Religious Facilities	50	0.012	70
PACOIMA SPREADING GROUNDS				
	Residences	75	0.017	73
HANSEN SPREADING GROUNDS				
	Residences	1,175	0.0003	37

/a/ The applicable building damage impact criterion is 0.3 inches per second.
/b/ The applicable annoyance impact criterion for residences experiencing frequent events (i.e., over 70 vibration events from the same source per day) is 72 VdB. Activity occurring at the property boundary of PSG was assessed as an occasional event (i.e., between 30 and 70 vibrations events from the same source per day). The applicable annoyance impact criterion is 75 VdB.
SOURCE: TAHA, 2015.

Donald C. Tillman Water Reclamation Plant. Construction at the DCTWRP would include a number of activities, each of which are assessed in **Table 3-8**, above. The Japanese Garden is particularly sensitive to increased vibration levels. Construction activity would utilize equipment that is best characterized in **Table 3-7**, above, by large bulldozers, such as an excavator. The nearest structure would be approximately 75 feet from equipment activity, and the vibration level would be 0.017 inches per second. This would be below the 0.12 inches per second significance threshold designed for buildings extremely susceptible to vibration damage.

Regarding annoyance, the nearest walking path within the garden would be approximately 75 feet from construction activity. The typical vibration level generated by equipment would be 73 VdB. FTA has not established vibration impact criteria for sensitive outdoor spaces. It was determined that the most strict FTA impact criteria would be relevant to the Japanese Garden, which is 65 VdB for building where vibration would interfere with interior operations. Equipment activity would exceed 65 VdB at up to 140 feet from the source. This distance covers a small portion of the northwest corner of the Japanese Garden. In addition, the equipment associated with construction of the warehouse building would be short-term and intermittent events. As shown in **Table 3-8**, above, no other phase of DCTWRP construction activity would exceed the 65 VdB significance threshold. Nonetheless, without mitigation, the proposed project would result in a significant impact to the small portion in the northwest corner of the Japanese Garden related to vibration annoyance during construction.

DCTWRP construction activity includes the Brine Line. Construction activity would use a trenching technique, and would be located approximately 200 feet from residences on Victory Boulevard. Trenching activity would utilize equipment that is best characterized in **Table 3-7**, above, by jackhammers and small bulldozers. The typical vibration level generated by trenching and paving equipment would be 0.002 inches per second at the closest building, which would not exceed the 0.3 inches per second significance threshold for building damage.

Construction vibration related to trenching (e.g., pavement breaking) would be a frequent event (more than 70 vibrations events from the same source per day). The typical vibration level generated by trenching equipment would be 52 VdB, which would not exceed the 72 VdB significance thresholds for residential annoyance.

Purified Water Pipeline. Construction activity for the purified water pipeline would use a trenching technique and would proceed northwest along Arleta Avenue from Branford Street, then continue on Devonshire Street into the Pacoima Spreading Grounds. Arleta Avenue is lined with residences on both sides. Nikkei Senior Gardens is located on the southwestern side of Arleta Avenue approximately 400 feet to the northwest of Branford Street, and Arleta First Assembly of God Church is located at the intersection of Arleta Avenue and Garber Street. Construction activity would occur within the Arleta Avenue right-of-way, approximately 50 feet from residences on either side of the street. Trenching activity would utilize equipment that is best characterized in **Table 3-7** by jackhammers and small bulldozers. The typical vibration level generated by trenching and paving equipment would be 0.017 inches per second at the nearest residential buildings and Nikkei Senior Gardens, which would not exceed the 0.3 inches per second significance threshold for building damage.

Construction vibration related to trenching (e.g., pavement breaking) would be a frequent event (more than 70 vibrations events from the same source per day). The typical vibration level generated by trenching equipment would be 70 VdB, which would not exceed the 72 VdB significance threshold for residential annoyance.

Therefore, construction equipment would not result in a significant vibration impact along the Purified Water Pipeline.

Pacoima Spreading Grounds. The PSG property is surrounded by residences, with the closest residences located approximately 75 feet from the spreading grounds. Construction activity would utilize equipment that is best characterized in **Table 3-7**, above, by large bulldozers, such as an excavator. The typical vibration level generated by equipment would be 0.017 inches per second at the nearest residential buildings, which would not exceed the 0.3 inches per second significance threshold for building damage.

Construction vibration occurring directly along the 75-foot receptor distance at the property boundary would be an occasional event (between 30 and 70 vibrations events from the same source per day) as the majority of activity would be central to the construction area. The typical vibration level generated by equipment would be 73 VdB, which would not exceed the 75 VdB significance thresholds for annoyance.

Therefore, construction equipment would not result in a significant vibration impact at PSG.

Hansen Spreading Grounds. The HSG is surrounded by industrial and commercial land uses. The nearest sensitive receptor is a residence located approximately 1,175 feet to the southwest. Construction-related vibration from damage and annoyance would not be perceptible at this residence due to distance attenuation. Construction equipment would not result in a significant vibration impact at HSG.

Off-Site Trucks. In addition to on-site construction activities, construction trucks on the roadway network have the potential to expose vibration-sensitive land uses located near the proposed project access route. As shown in **Table 3-7**, above, loaded trucks generate vibration levels of 0.076 inches per second at a distance of 25 feet. Rubber-tired vehicles, including trucks, do not generate significant roadway vibrations that can cause building damage. It is possible that trucks would generate perceptible vibration at sensitive receptors adjacent to the roadway. However, these would be transient and instantaneous events typical to the roadway network. This level of activity is not considered substantial enough to generate a vibration annoyance. Therefore, construction truck activity would result in a less-than-significant impact related to vibration.

Operations

The primary sources of proposed project operational-related vibration would include vehicles traveling to the project site for routine inspection and maintenance activities. Vehicular movements would generate similar vibration levels as existing traffic conditions. The proposed project would not introduce any significant stationary sources of vibration, including mechanical equipment that would be perceptible at sensitive receptors. Therefore, operational activity would result in a less-than-significant impact related to vibration.

Mitigation Measures

N10 The site administrator for the Japanese Garden shall be consulted to discuss construction activities associated with the warehouse building that may generate perceptible vibration (e.g., heavy-duty equipment activity). If construction-related vibration interferes with an event at the Japanese Garden, the activity shall be stopped until the event is over, or another construction technique is used that eliminates perceptible vibration.

Significance After Mitigation

Mitigation Measure **N10** ensures that construction of the warehouse building would not generate perceptible vibration that interferes with events at the Japanese Garden. In addition, the vibration impact would extend 140 feet from the source, which covers from the edge of the construction zone to a small portion of the northwest corner of the Japanese Garden. Much of the warehouse building construction area is further than 140 feet from the Japanese Garden. The unmitigated vibration impact is not considered significant given the intermittent nature of construction vibration from heavy-duty equipment, that much of the construction zone is beyond 140 feet from the Japanese Garden, and that Mitigation Measure **N10** would prevent vibration from interfering with events. Therefore, with mitigation, construction activity would result in a less-than-significant impact related to vibration.

3.5.3 Would the proposed project create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (*Less-than-Significant Impact*)

Impact Analysis

As discussed in Section 3.5.1, above, permanent operational noise levels were considered for each project component. Operational activity would not generate mechanical or mobile noise that would exceed the significance thresholds. Therefore, the proposed project would result in a less-than-significant impact related to operational noise.

Mitigation Measures

No significant impacts have been identified related to the proposed project creating a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the proposed project. Therefore, no mitigation measures are required.

3.5.4 Would the proposed project create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (*Significant and Unavoidable Impact*)

Impact Analysis

As described above, sensitive receptors adjacent to the construction zones at DCTWRP, along the Purified Water Pipeline, and at PSG would experience increased noise levels associated with construction. Construction noise impacts would be temporary in nature, but equipment noise levels would exceed 75 dBA at the nearest sensitive receptors. Therefore, without mitigation, the proposed project would result in a significant noise impact related to temporary and periodic construction activity.

Mitigation Measures

Refer to Mitigation Measures **N1** through **N9**, above.

Significance After Mitigation

Based on compliance with the LAMC, construction equipment noise would be mitigated to the greatest extent feasible. The implementation of Mitigation Measures **N1** through **N8** would reduce noise impacts associated with the Purified Water Pipeline and PSG to a less-than-significant level. However, the Japanese Garden relies on a serene noise setting and is particularly sensitive to increased noise. Construction activity, especially associated with the warehouse building, would generate audible noise at the Japanese Garden. This is considered a significant and unavoidable temporary impact despite the implementation of mitigation measures, including Mitigation Measure **N9**.

3.6 CUMULATIVE IMPACTS

All related projects would be 0.25 miles or further from the proposed project except for one industrial project near HSG. Except for this proposed industrial project located at 12450 Branford Street, there is no potential for the proposed project to combine with a related project to result in a cumulatively considerable increase in noise or vibration levels. It is anticipated that construction activity at HSG would occur during three months in 2022. It is unlikely that construction activity in this three month window would overlap with construction of the proposed industrial project. In addition, existing site conditions (e.g., intervening structures between HSG and the proposed industrial facility) would likely prevent overlapping construction activity from being audible by the same receptor. Therefore, significant cumulative noise impacts are not anticipated.

3.7 PROJECT ALTERNATIVES IMPACTS

No Project Alternative

The No Project Alternative assumes that all facilities continue to operate under current conditions. Improvements identified under the proposed project would not be implemented under the No Project Alternative. There would be no noise or vibration effects, and the No Project Alternative would not result in significant impacts related to noise or vibration.

Valley Generating Station (VGS) Alternative

Under the VGS Alternative, an AWPF would be constructed in the northwest corner of LADWP's VGS property to treat recycled water produced by the DCTWRP using advanced treatment technology. Similar to the proposed project, the VGS Alternative also consists of three components: treatment, conveyance, and replenishment. The expansion of the flow equalization tank and the Balboa Pump Station would still occur at DCTWRP under this alternative. Recycled water would be conveyed from DCTWRP to VGS using the existing 54-inch-diameter pipeline. Purified water would be conveyed from VGS to PSG via a new 42-inch-diameter pipeline that would be located northerly along San Fernando Road, westerly along Branford Street, and northerly along Arleta Avenue to PSG at Devonshire Street. In addition to the AWPF, warehouse, maintenance, and administrative facilities would be built at VGS. Refer to the Draft Environmental Impact Report Chapter 2 for a detailed description of the VGS Alternative, including construction details.

The VGS Alternative was assessed using the same methodology and significant thresholds used for the proposed project. The potential impact areas are discussed below.

Would the VGS Alternative expose persons to or generate noise levels in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies? (*Less-than-Significant With Mitigation*)

Construction. The construction noise impact analysis is based on the construction limits in the LAMC. Construction activity would comply with the allowable hours of construction in the LAMC, including 7:00 a.m. to 9:00 p.m. Monday through Friday, 8:00 a.m. to 6:00 p.m. on Saturday, and no construction activity on Sundays or federal holidays. The LAMC limits equipment noise levels to 75 dBA at 50 feet unless technically infeasible. Noise levels from individual pieces of equipment would typically range from 72.6 to 81.0 dBA L_{eq} at 50 feet. Unmitigated noise levels would typically exceed the allowable noise level stated in the LAMC.

Construction activity associated with the AWPF would be located approximately 375 feet from the nearest sensitive receptor, which is a residence located to the southwest of the project site. Additional sensitive receptors near the AWPF project site include the Pink Motel filming location (450 feet), Pacifica Hospital (800 feet), Emerson Inn (950 feet), and Serra Medical Clinic (1,375 feet). The existing noise level along San Fernando Road was monitored at 76.6 dBA L_{eq}. It is anticipated that the construction noise level at 375 feet would be 71.5 dBA L_{eq}, which would increase the existing noise level at the nearest sensitive receptor by up to 1.2 dBA. This increase would be less than the 3-dBA audibility threshold. There is no potential for construction activity associated with the AWPF to audibly increase noise levels at sensitive land uses.

Construction of the Brine Line and Purified Water Pipeline would occur in close proximity to sensitive receptors, including residences, schools, and religious facilities. The increase in existing noise levels would be noticeable, although increased noise levels would occur for two or three days at each location as trenching activity would move relatively rapidly along the alignment. Similar to the proposed project, implementation of Mitigation Measures **N1** through **N8** would reduce noise impacts associated with the Brine Line and Purified Water Pipeline to less than significant.

Trenching activity would require lane closures on local roadways. The majority of vehicle noise generated on roadways is related to the generation of sound pressure waves as vehicles pass by the stationary receiver. Vehicles traveling at faster speeds generate larger sound pressure waves and more noise. Lane closures would reduce vehicle speeds and idling noise would not exceed the noise that would have been generated by vehicles traveling at regular speeds.

The VGS Alternative includes flow equalization tanks and improvements to the Balboa Pump Station at DCTWRP. The location of the flow equalization tanks and the pump station would be the same between the proposed project and VGS Alternative. Construction noise at the Japanese Garden and Woodley Park from these components was assessed under the proposed project, and no significant impacts were identified. Therefore, construction activity at DCTWRP under the VGS Alternative would not result in a significant impact.

Construction activity at PSG and HSG would be identical between the VGS Alternative and the proposed project. Construction activity at HSG would not generate audible noise at the nearest sensitive receptor, although activity at PSG would noticeably increased existing noise levels at the sensitive receptors adjacent to the facility. Mitigation Measures **N1** through **N8** would apply to construction activity at PSG.

Regarding off-site mobile noise, it is acknowledged that project-related truck trips would instantaneously increase the ambient noise levels along haul routes. The impact analysis is based on the potential for truck activity to result in prolonged noise exposure. A doubling of traffic volume is typically needed to audibly increase noise levels along a roadway segment. **Table 3-9** presents traffic volumes along a sample of roadway segments affected by the VGS Alternative. Traffic volumes based on the equivalent truck noise levels would not double along any roadway segment. It is commonly assumed that peak-hour traffic is ten percent of daily traffic. Based on this assumption, peak-hour volumes would also not double along any roadway segment. It is not anticipated that off-site vehicle activity would audibly change average daily noise levels. Therefore, the VGS Alternative would result in a less-than-significant impact related to construction-related off-site noise.

TABLE 3-9: OFF-SITE CONSTRUCTION NOISE LEVELS - VGS ALTERNATIVE

		Vehicle Trips					
Project Aspect	Roadway Segment	Future No Project	Project-Related Employee Trips	Project-Related Truck Trips	Project-Related Truck Trips (Passenger Vehicle Equivalence)	Future With Project	Percent Change
Brine Line	Laurel Canyon Blvd. (Webb Ave./Roscoe Blvd.)	16,646	30	12	372	17,048	2%
VGS AWPF	San Fernando Rd. (Between Sheldon St./Peoria St.)	20,327	50	10	310	20,687	2%
Purified Water Pipeline	Arleta Ave. (Between Devonshire St. and Van Nuys Blvd)	19,638	20	12	372	20,030	2%
PSG	Branford St. (Between Arleta Ave./I-405)	22,008	27	6	186	22,221	1%
HSG	Branford St. (Between I-5/ San Fernando Rd.)	14,367	27	6	186	14,580	2%
DCTWRP	Victory Blvd. (Between Woodley Ave./I-405)	59,469	18	30	930	60,417	2%

SOURCE: TAHA, 2015.

Operations. The AWPF at VGS would include a microfiltration/reverse osmosis building, advanced oxidation processes and chemical storage area under canopies, and piping. Warehouse, maintenance, and administration facilities, security fencing and guard shack, and a 30-space parking lot would also be constructed. The AWPF would be located approximately 375 feet from the nearest sensitive receptor, which is a residence located to the southwest of the project site. Additional sensitive receptors near the AWPF project site include the Pink Motel filming location (450 feet), Pacifica Hospital (800 feet), Emerson Inn (950 feet), and Serra Medical Clinic (1,375 feet). The primary source of noise associated with the AWPF would be ancillary equipment used to operate the microfiltration/reverse osmosis and advanced oxidation processes. Based on existing activity at DCTWRP, it is not anticipated that the facility, as a whole, would generate a noise level that exceed 65 dBA L_{eq} at 50 feet. The existing noise level along San Fernando Road was monitored at 76.6 dBA L_{eq}. It is anticipated that the construction noise level at 375 feet would be 71.5 dBA L_{eq}, which would increase the existing noise level at the nearest sensitive receptor by less than 1.0 dBA. This increase would be less than the 3-dBA audibility threshold. There is no potential for operational activity associated with the AWPF to audibly increase noise levels at sensitive land uses.

The VGS Alternative includes flow equalization tanks and improvements to the Balboa Pump Station at DCTWRP. The flow equalization tank is a passive operational activity and would not generate substantial noise. One new pump would be added to the existing Balboa Pump Station. Existing pump noise associated with the Balboa Pump Station is not audible beyond the DCTWRP property due to the existing berm. It is not anticipated that an additional pump would audibly increase noise levels beyond the DCTWRP property, including at Woodley Park.

The Brine Line and Purified Water Pipeline would be subterranean, and would not generate audible noise. Operational activity at PSG and HSG would be identical between the VGS Alternative and the proposed project. As discussed above, there is no potential for operational activity at PSG and HSG to audibly increase noise levels at sensitive receptors.

A doubling of traffic volumes is needed for a person with normal hearing to perceive an increase in mobile noise levels. There is no potential for the increase in operational activity to double traffic volumes on the roadway system bases on an additional 16 daily employees and 7 chemical deliveries per month. Therefore, the proposed project would result in a less-than-significant impact related to operational mobile noise.

Would the VGS Alternative expose people to or generate excessive ground-borne vibration or ground-borne noise levels? (*Less-than-Significant Impact*)

As with the proposed project, construction vibration was estimated using FTA reference levels and impact criteria. Vibration levels are shown in **Table 3-10** for each construction component. Construction-related vibration would not exceed the significance thresholds. The primary differences related to potential vibration impacts between the VGS Alternative and the proposed project are associated with the Brine Line and the extension of the Purified Water Pipeline. In the absence of detailed engineering drawings, it was assumed that receptors along the Brine Line and Purified Water Pipeline would typically be approximately 50 feet from equipment activity. Similar to the proposed project, construction equipment would not result in a significant vibration impact. In addition, the VGS Alternative would not require the Mitigation Measure **N10** associated with the proposed project and potential impacts to the Japanese Garden.

In addition to on-site construction activities, construction trucks on the roadway network have the potential to expose vibration-sensitive land uses located near the proposed project access route. Rubber-tired vehicles, including trucks, do not generate significant roadway vibrations that can cause building damage. It is possible that trucks would generate perceptible vibration at sensitive receptors adjacent to the roadway. However, these would be transient and instantaneous events typical to the roadway network. Similar to the proposed project, construction truck activity associated with the VGS Alternative would result in a less-than-significant impact related to vibration.

TABLE 3-10: ESTIMATED VIBRATION LEVELS - VGS ALTERNATIVE				
		Distance	Vibration Level	
Component and Phase	**Receptor**	**(Feet)**	**Inches/Second /a/**	**VdB /b/**
VALLEY GENERATING STATION				
AWPF	Residences	375	0.002	52
BRINE LINE				
	Residences, schools, and religious facilities	50	0.012	70
DONALD C. TILLMAN WATER RECLAMATION PLANT				
Flow Equalization Tank	Japanese Garden	675	0.001	44
Balboa Pump Station	Japanese Garden	750	0.001	43
PURIFIED WATER PIPELINE				
	Residences, Nikkei Senior Gardens, and Religious Facilities	50	0.012	70
PACOIMA SPREADING GROUNDS				
	Residences	75	0.017	73
HANSEN SPREADING GROUNDS				
	Residences	1,175	0.0003	37

/a/ The applicable building damage impact criterion is 0.3 inches per second.
/b/ The applicable annoyance impact criterion for residences experiencing frequent events (i.e., over 70 vibration events from the same source per day) is 72 vdB. Similar to the proposed project, activity occurring at the property boundary of PSG was assessed as an occasional event (i.e., between 30 and 70 vibrations events from the same source per day). The applicable annoyance impact criterion is 75 VdB.
SOURCE: TAHA, 2015.

Would the VGS Alternative create a substantial permanent increase in ambient noise levels in the project vicinity above levels existing without the project? (*Less-than-Significant Impact*)

As discussed above, permanent operational noise levels were considered for each project component. Operational activity would not generate mechanical or mobile noise that would exceed the significance thresholds. Therefore, the VGS Alternative would result in a less-than-significant impact related to operational noise.

Would the VGS Alternative create a substantial temporary or periodic increase in ambient noise levels in the project vicinity above levels existing without the project? (*Significant and Unavoidable Impact*)

As described above, sensitive receptors along the Brine Line, the Purified Water Pipeline, and adjacent to PSG would experience increased noise levels associated with construction. Construction noise impacts would be temporary in nature, but equipment noise levels would exceed 75 dBA at 50 feet. Therefore, without mitigation, the proposed project would result in a significant noise impact related to temporary and periodic construction activity. Similar to the proposed project, Mitigation Measures **N1** through **N8** would reduce impacts at these locations to less than significant.

4.0 REFERENCES

California Department of Transportation, *Technical Noise Supplement*, November 2009.

Federal Highway Administration, *Roadway Noise Construction Model*, Software Version 1.1.

Federal Transit Administration, *Transit Noise and Vibration Impact Assessment*, May 2006.

Los Angeles Department of Water and Power, *Initial Study for the Los Angeles Groundwater Replenishment Project*, September 2013.

Los Angeles Municipal Code, Section 41.40 (*Noise Due to Construction, Excavation Work – When Prohibited*), adopted through June 30, 2015.

Los Angeles Municipal Code, Section 112.05 (*Maximum Noise Level of Powered Equipment or Powered Hand Tools*), adopted through June 30, 2015.

USEPA, *Noise from Construction Equipment and Operations, Building Equipment and Home Appliances*, PB 206717, 1971.

APPENDIX A

Noise Data and Calculations

CONSTRUCTION NOISE - Proposed Project

Reference Noise Distance	50	50				
Reference Noise Level	**89**	**75**				
Sensitive Receptor	**Distance (feet)**	**Attenuation Factors**	**Maximum Construction Noise Level (dBA)**	**Existing Ambient (dBA, Leq)**	**New Ambient (dBA, Leq)**	**Increase**
DCTWRP						
Warehouse Building	75	0	**85.5**	56.3	**85.5**	**29.2**
Warehouse Building	250	0	**75.0**	56.3	**75.1**	**18.8**
Maintenance Building	500	5	**64.0**	55.4	**64.6**	**9.2**
Flow Equalization Tank	675	10	**56.4**	56.3	**59.4**	**3.1**
AWPF	1,050	25	**37.6**	57.3	**57.3**	**0.0**
Brine Line	198	0	**63.0**	77.3	**77.5**	**0.2**
Balboa Pump Station	750	15	**50.5**	56.3	**57.3**	**1.0**
Purified Water Pipeline	50	0	**75.0**	65.9	**75.5**	**9.6**
Pacoima Spreading Grounds						
Edge of Project Site	50	0	**89.0**	56.2	**89.0**	**32.8**
Central to the Project Site	500	0	**69.0**	56.2	**69.2**	**13.0**
Hansen Spreading Grounds	1900	0	**57.4**	76.6	**76.7**	**0.1**

CONSTRUCTION NOISE - VGS Alternative	50	50				
Reference Noise Distance	**89**	**75**				
Sensitive Receptor	**Distance (feet)**	**Attenuation Factors**	**Maximum Construction Noise Level (dBA)**	**Existing Ambient (dBA, Leq)**	**New Ambient (dBA, Leq)**	**Increase**
AWPF	375	0	**71.5**	76.6	**77.8**	**1.2**
Brine Line	50	0	**89.0**	76.6	**89.2**	**12.6**
DCTWRP						
Flow Equalization Tank	675	10	**56.4**	56.3	**59.4**	**3.1**
Balboa Pump Station	750	15	**50.5**	56.3	**57.3**	**1.0**
Pacoima Spreading Grounds						
Edge of Project Site	50	0	**89.0**	56.2	**89.0**	**32.8**
Central to the Project Site	500	0	**69.0**	56.2	**69.2**	**13.0**
Hansen Spreading Grounds	1900	0	**57.4**	76.6	**76.7**	**0.1**

Construction Vibration - Proposed Project

Reference Distance	**25**	Large Bulldozer	Jackhammer	Large Bulldozer	Jackhammer
Reference Vibration Level		**0.089**	**0.035**	**87**	**79**
Sensitive Receptor	**Distance (feet)**	**PPV**	**PPV**	**RMS**	**RMS**
DCTWRP					
Warehouse Building	75	0.017	0.007	73	65
Maintenance Building	275	0.002	0.001	56	48
Flow Equalization Tank	675	0.001	0.0002	44	36
AWPF	1,050	0.0003	0.0001	38	30
Brine Line	200	0.004	0.0015	60	52
Balboa Pump Station	750	0.001	0.0002	43	35
Purified Water Pipeline	50	0.0315	0.0124	78	70
Pacoima Spreading Grounds	75	0.0171	0.0067	73	65
Hansen Spreading Grounds	1,175	0.0003	0.0001	37	29

Construction Vibration - VGS Alternative

Reference Distance	**25**	Large Bulldozer	Jackhammer	Large Bulldozer	Jackhammer
Reference Vibration Level		**0.089**	**0.035**	**87**	**79**
Sensitive Receptor	**Distance (feet)**	**PPV**	**PPV**	**RMS**	**RMS**
DCTWRP					
Flow Equalization Tank	675	0.001	0.0002	44	36
Balboa Pump Station	750	0.001	0.0002	43	35
Purified Water Pipeline	50	0.0315	0.0124	78	70
Pacoima Spreading Grounds	75	0.0171	0.0067	73	65
Hansen Spreading Grounds	1,175	0.0003	0.0001	37	29
AWPF	375	0.0015	0.0006	52	44
Brine Line	50	0.0315	0.0124	78	70

Noise Monitoring Report

TAHA

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DI
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	DCTWR Plant: North Residential: 6403 Densmore Ave
Date	7-8-15
Start Time	1030
Stop Time	1046
15 min Leq (dBA)	77.3
File Session #	63
Other Noise Sources	
Notes	battery died, had to restart study

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DI
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	DCTWR Plant:Woodley Creek/Golf Course: Woodley Park 6350 Woodley Ave
Date	7-8-15
Start Time	1110
Stop Time	1125
15 min Leq (dBA)	69.4
File Session #	64
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DI
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Canterbury Elementary:13670 Montague St
Date	7-8-15
Start Time	1158
Stop Time	1214
15 min Leq (dBA)	55.8
File Session #	65
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DI
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Canterbury Ave North: 14271 Carl Street
Date	7-8-15
Start Time	1231
Stop Time	1246
15 min Leq (dBA)	59.2
File Session #	66
Other Noise Sources	
Notes	

Initial Calibration	113.9 dBA
Final Calibration	114.0 dBA

Noise Monitoring Report

TAHA

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Paicoma Spreading Grounds: 14500 Filmore Street
Date	7-8-15
Start Time	1302
Stop Time	1317
15 min Leq (dBA)	56.2
File Session #	67
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Paicoma Spreading Grounds: Devonwood Park 10230 Woodman Avenue
Date	7-8-15
Start Time	1326
Stop Time	1341
15 min Leq (dBA)	66.3
File Session #	68
Other Noise Sources	Icecream man
Notes	Had to move at 12min to a different location at site

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Paicoma Spreading Grounds: 10534 Arleta Avenue
Date	7-8-15
Start Time	1355
Stop Time	1410
15 min Leq (dBA)	60.5
File Session #	69
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Brine #1:Serra Community Medical Clinic (9375 San Fernando Road)
Date	7-8-15
Start Time	1345
Stop Time	1600
15 min Leq (dBA)	76.6
File Session #	70
Other Noise Sources	
Notes	

Initial Calibration	113.9 dBA
Final Calibration	114.0 dBA

Noise Monitoring Report

TAHA

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DI
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Brine#2 : 5900-5912 Laurel Canyon Blvd
Date	7-14-15
Start Time	0934
Stop Time	0949
15 min Leq (dBA)	71.7
File Session #	72
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DI
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Brine #1: 7554 Laurel Canyon Blvd
Date	7-14-15
Start Time	1031
Stop Time	1046
15 min Leq (dBA)	70.1
File Session #	73
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DI
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Brine #1: Fernangeles Recreation Center (8851 Laurel Canyon boulevard)
Date	7-14-15
Start Time	1102
Stop Time	1117
15 min Leq (dBA)	67.5
File Session #	74
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro SE/DI
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	VGS, 12967 Branford Street
Date	7-14-15
Start Time	1150
Stop Time	1205
15 min Leq (dBA)	68.6
File Session #	75
Other Noise Sources	
Notes	Construction Along Brandford Street by VGS. Moved Eastern Site Close to Freeway

Initial Calibration	113.9
Final Calibration	113.9

Noise Monitoring Report

TAHA

Operator	Kieran Bartholow
Meter Model	Soundpro DE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	VGS: Branford Park: 13310 Branford Street
Date	7-14-15
Start Time	1217
Stop Time	1232
15 min Leq (dBA)	70.3
File Session #	76
Other Noise Sources	
Notes	

Operator	
Meter Model	
Calibration Model	
Project	
Location	
Date	
Start Time	
Stop Time	
15 min Leq (dBA)	
File Session #	
Other Noise Sources	
Notes	

Operator	
Meter Model	
Calibration Model	
Project	
Location	
Date	
Start Time	
Stop Time	
15 min Leq (dBA)	
File Session #	
Other Noise Sources	
Notes	

Operator	
Meter Model	
Calibration Model	
Project	
Location	
Date	
Start Time	
Stop Time	
15 min Leq (dBA)	
File Session #	
Other Noise Sources	
Notes	

Initial Calibration	113.9
Final Calibration	113.9

Noise Monitoring Report

TAHA

Operator	Kieran Bartholow
Meter Model	Soundpro DE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Japanese Garden Southwest Corner: 6100 Woodley Avenue
Date	7-23-15
Start Time	1127
Stop Time	1142
15 min Leq (dBA)	55.4
File Session #	81
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro DE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Japanese Garden Northeast Corner: 6100 Woodley Avenue
Date	7-23-15
Start Time	1243
Stop Time	1258
15 min Leq (dBA)	56.3
File Session #	83
Other Noise Sources	
Notes	

Operator	
Meter Model	
Calibration Model	
Project	
Location	
Date	
Start Time	
Stop Time	
15 min Leq (dBA)	
File Session #	
Other Noise Sources	
Notes	

Operator	
Meter Model	
Calibration Model	
Project	
Location	
Date	
Start Time	
Stop Time	
15 min Leq (dBA)	
File Session #	
Other Noise Sources	
Notes	

Initial Calibration	114.0
Final Calibration	114.0

Noise Monitoring Report

TAHA

Operator	Kieran Bartholow
Meter Model	Soundpro DE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Devonshire Arleta Park
Date	3-31-16
Start Time	0958
Stop Time	1013
15 min Leq (dBA)	68.1
File Session #	173
Other Noise Sources	
Notes	

Operator	Kieran Bartholow
Meter Model	Soundpro DE/DL
Calibration Model	QC-10/QC-20
Project	LADWP GW Replenishment
Location	Nikkei Senior Gardens
Date	3-31-16
Start Time	1024
Stop Time	1039
15 min Leq (dBA)	65.9
File Session #	174
Other Noise Sources	
Notes	

Operator	
Meter Model	
Calibration Model	
Project	
Location	
Date	
Start Time	
Stop Time	
15 min Leq (dBA)	
File Session #	
Other Noise Sources	
Notes	

Operator	
Meter Model	
Calibration Model	
Project	
Location	
Date	
Start Time	
Stop Time	
15 min Leq (dBA)	
File Session #	
Other Noise Sources	
Notes	

Initial Calibration	114.0
Final Calibration	114.0

APPENDIX H

Traffic Study

Traffic Study for the
Los Angeles Department of Water and Power
Groundwater Replenishment Project

Los Angeles, California

April 27, 2016

Prepared for:

AECOM

515 South Flower Street
Los Angeles, California 90017
(213) 593-8730

Prepared by:

KOA CORPORATION
PLANNING & ENGINEERING

1100 Corporate Center Drive, Suite 201
Monterey Park, California 91754
(323) 260-4703

JB21022

Table of Contents

List of Figures

List of Tables

Appendices

1. Introduction

This report documents the traffic analysis prepared by KOA Corporation to assess the traffic impact of the proposed LADWP Groundwater Replenishment Project, located in the San Fernando Valley area within the City of Los Angeles.

The City of Los Angeles Department of Water and Power (LADWP) and the Department of Public Works, Bureau of Sanitation (LASAN) is considering the following under the Project environmental review effort:

<u>Proposed Project, Donald C. Tillman Plant (DCT) Advanced Water Purification Facility (AWPF)</u> – A new AWPF facility would treat recycled water, and purified water would be pumped from the DCTWRP site to the Hansen Spreading Grounds (HSG) and the Pacoima Spreading Grounds (PSG) via an existing 54" pipeline and a new 42" pipeline extension located on Arleta Avenue between the PSG and the Arleta/Branford intersection. A brine disposal line would also be constructed from DCT along Haskell Avenue to Victory Boulevard.

<u>Alternative, VGS AWPF</u> – Recycled water would be pumped from DCT to the Valley Generating Station (VGS) via the existing 54" pipeline. A new AWPF facility at VGS would treat recycled water, and purified water would be pumped from the VGS site to the adjacent HSG and to the PSG. New connecting pipelines on Arleta Avenue between the PSG and the Arleta/Branford intersection, on Branford Street from that intersection to San Fernando Road, and on San Fernando Road to the VGS, would be required. A brine disposal line would also be constructed along Sheldon Street, San Fernando Road, Laurel Canyon Boulevard, Erwin Street, and Colfax Avenue.

The traffic study was conducted by KOA to satisfy the requirements of project environmental documentation by LADWP. The analysis focused on project construction-related effects on intersection and roadway lane capacity and trip generation for site-based construction of necessary facilities (at the DCT site under the proposed Project and at the VGS site under the Alternative). Pipeline construction alignments were analyzed for both the proposed Project and the VGS alternative. Additional focus of the traffic study effort was on the effects on potential impacts to transit access and pedestrian/bicycle access.

This analysis assumes that any trip generation increases in the post construction period, as a result of new site facilities, would not require the analysis of project operations traffic impacts, due to the anticipated low number of trips that would be generated by operations. Routine project maintenance in the operations period will not create a significant level of regularly-generated trips, and only 16 additional personnel would be required to operate the facilities.

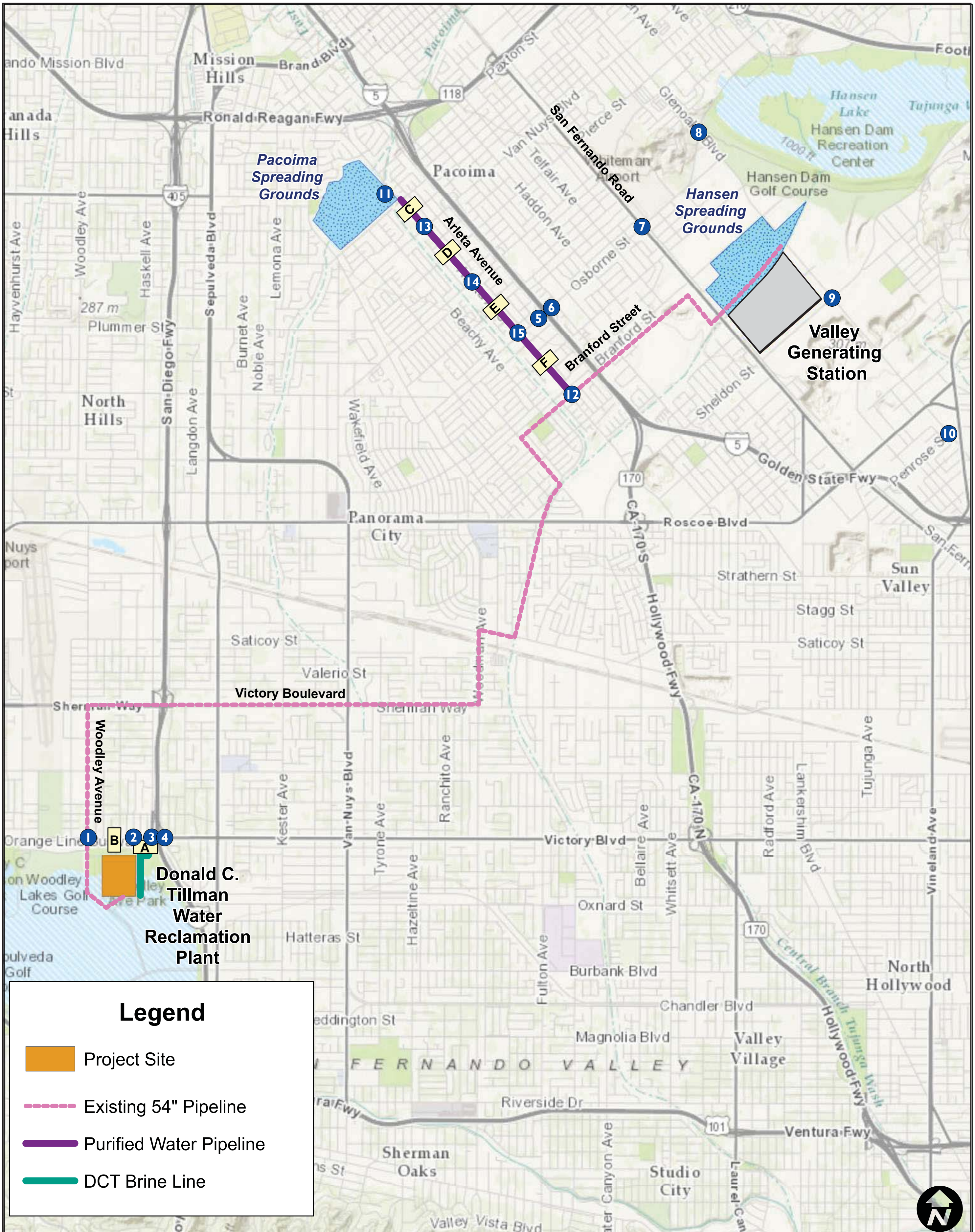
1.1 Project Location

The Donald C. Tillman Water Reclamation Plant (DCTWRP) is located at 6100 Woodley Avenue in the Encino community of the San Fernando Valley in the City of Los Angeles.

The Project will also require construction activities at the Hansen Spreading Grounds (HSG), the Pacoima Spreading Grounds (PSG), and along Arleta Avenue in the Pacoima community of the City of Los Angeles.

Figure 1 illustrates the Project study area.

The Project would be located within a highly urbanized area in the City of Los Angeles. Land uses in the vicinity of the proposed project are predominantly residential (single- and multi-family), commercial, and industrial.



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 1

Project Study Area

1.2 Project Description

The proposed project would involve the construction of an Advanced Water Purification Facility (AWPF) to treat recycled water produced by the Donald C. Tillman treatment plan using advanced treatment technology. Purified water produced by the AWPF at DCT would be conveyed to the Hansen Spreading Grounds (HSG) using an existing 54-inch diameter pipeline along Branford Street that currently conveys recycled water from the Balboa Pumping Station at DCTWRP to VGS, adjacent to HSG. Treated water will also need to be conveyed to the Pacoima Spreading Grounds (PSG). In order to convey water to PSG, a new 42-inch-diameter lateral transmission pipeline would be constructed from the existing 54-inch pipeline at Branford Street along Arleta Avenue to PSG. The new pipeline would be about 11,000 linear-feet in length.

The City would recharge the purified water at both HSG and PSG, based on capacity availability. New outlet structures and pipelines will need to be constructed at both facilities.

The traffic study analyzed construction impacts and roadway modifications at the four areas that are expected to experience construction activities: DCT, Arleta Avenue, HSG, and PSG.

1.3 Traffic Analysis Methodology

The focus of this traffic impact study is on the construction period of the proposed Project. The post-construction operations period will not generate significant levels of daily traffic, and only routine maintenance activities will be required. Selected intersections and roadway segments were analyzed along the construction routes and sites.

Intersections were examined for approach lane reductions and removal due to establishment of construction-related work areas and necessary diversions during trenching activities adjacent to or within the intersection. Roadway segments were examined for travel lane reductions due the same construction activities.

The steps involved in the analysis included internal scoping of the work with the project team; collection of baseline traffic data; analysis of existing, existing-with-construction, and future with-construction conditions; identification of significant impacts and other circulation issues; and development of recommendations for mitigation. Further details of the methodology applied to this effort are summarized below.

<u>Study Area and Orientation</u>

Major signalized intersections and roadway segments near the project sites and along the project routes were identified that would be affected by the establishment of construction work zones.

<u>Data Collection</u>

Weekday turn movement counts (7:00 a.m. to 10:00 a.m. and 3:00 p.m. to 6:00 p.m.) were conducted at 14 signalized study intersections. In addition, daily roadway volume counts were collected at 5 study area roadway segments. Study intersection and roadway segment traffic volumes were collected on Wednesday, May 27, 2015.

<u>Definition of Analysis Periods</u>

The study analysis periods were based on existing conditions (the time when the traffic counts were conducted), and the peak and latest year of construction of the proposed Project (defining the future analysis year with the highest background traffic volumes). The future analysis period was defined as the year 2022, based on construction details.

1.4 Level of Service Definition

The concept of level of service (LOS) for roadway segments is typically defined in terms of average travel speed of all vehicles on the facility. The number of vehicles using the roadway, as compared to the capacity of the roadway, greatly affects travel speed. Roadway operations are influenced by the density of signalized intersections per mile, average intersection delay, the number of driveways per segment and the presence of on-street parking.

Table 1 provides descriptions of general roadway operations for each LOS value, as defined within the 2000 *Highway Capacity Manual* (published by the Transportation Research Board).

All signalized intersection volume-to-capacity (V/C) calculations, which define the LOS values, were adjusted downward based on the presence within the corridor of the Automated Traffic Surveillance and Control / Adaptive Traffic Control System (ATSAC/ATCS) signal synchronization and adaptive control system of the City of Los Angeles. The Department of Transportation (LADOT) allows for a factor to be applied that acknowledges the traffic flow benefits of the system. The table data incorporates this factor, and the appendix worksheets provide the non-factored calculations.

Table 1 – Level of Service Definitions

Level of Service	**Flow Conditions**	Volume to Capacity Ratio
A	LOS A describes primarily free-flow operations at average travel speeds, usually about 90 percent of the free-flow speed for the arterial classification. Vehicles are completely unimpeded in their ability to maneuver within the traffic stream. Stopped delay at signalized intersections is minimal.	0.00-0.60
B	LOS B represents reasonably unimpeded operations at average travel speeds, usually about 70 percent of the free-flow speed for the arterial classification. The ability to maneuver within the traffic stream is only slightly restricted and stopped delays are not bothersome. Drivers are not generally subjected to appreciable tension.	0.61-0.70
C	LOS C represents stable operations; however, ability to maneuver and change lanes in mid-block locations may be more restricted than at LOS B, and longer queues, adverse signal coordination, or both may contribute to lower average speeds of about 50 percent of the average free-flow speed for the arterial classification. Motorists will experience appreciable tension while driving.	0.71-0.80
D	LOS D borders on a range in which small increases in flow may cause a substantial increase in delay and hence decreases in arterial speed. LOS D may be due to adverse signal progression, inappropriate signal timing, high volumes, or some combination of these factors. Average travel speeds are about 40 percent of free-flow speed.	0.81-0.90
E	LOS E is characterized by significant delays and average travel speeds of one-third the free-flow speed of less. Such operations are caused by some combination of adverse progression, high signal density, high volumes, extensive delays at critical intersections, and inappropriate signal timing.	0.91-1.00
F	LOS F characterizes arterial flow at extremely low speeds below one-third to one-fourth of the free-flow speed. Intersection congestion is likely at critical signalized locations, with high delays and extensive queuing. Adverse progression is frequently a contributor to this condition.	Over 1.00

Section 3 of this report provides a review of existing LOS values at the study intersections and roadway segments. Section 5 provides a review of existing plus-Project conditions and impacts, and Section 6 provides a review of pre-Project (pre-construction and pre-operations) conditions. Future with-Project construction period conditions and impacts are reviewed within Section 7. Section 8 of this report provides an overview of the traffic impacts under the VGS alternative.

2. Project Construction Summary

This section of the report identifies the construction activity that would occur with the proposed Project and pipeline construction.

Truck traffic and construction employee traffic at the DCTWRP, HSG, and PSG sites has been included in this analysis. Due to the extensive surface work that is required, excavations within open trenches will have the greatest traffic circulation impacts. Temporary lane closures along the proposed Project alignment would be required. The roadways would be restricted in capacity while work area boundaries are maintained.

2.1 Project Construction Details

Project construction would commence in the fourth quarter of 2018 and is expected to last over four (4) years, ending in late 2022. Construction would be conducted in several phases, which may partially overlap, especially since construction would occur at several physically separated sites. Construction activities would typically occur from 7:00am to 3:30pm, but with construction on major city streets not beginning before 9:00am in accordance with the City of Los Angeles Mayor's Directive No. 2, which prohibits construction on selected roads between 6:00am and 9:00am and between 3:30pm and 7:00pm.

DCTWRP – Construction at DCTWRP would commence in late 2018 and continue until late 2022. It would include the AWPF, a warehouse, maintenance building, expansion of the existing flow equalization tanks, expansion of the Balboa Pump Station, and a brine disposal line.

Purified Recycled Water Pipeline – The extension of the recycled water conveyance pipeline would commence in mid-2020 and take approximately 18 months to complete. The construction would use trenching techniques and would proceed northwest along Arleta Avenue from Branford Street to PSG at Devonshire Street. The trench would be 7.5-feet wide and approximately 12 to 15 feet deep. Materials and equipment staging and construction worker parking would occur on City facilities and public parking lots located along or near the alignment. Pipeline construction would necessitate restrictions on on-street parking and closure of up to two lanes of the roadway in the section under construction. Portion of the construction zone may be covered with metal plates during periods of the day when construction is not ongoing to allow for continued passage of traffic.

Pacoima Spreading Grounds – Improvements at PSG would take approximately 9 months to complete, commencing after the completion of the conveyance pipeline along Arleta Avenue. A 1,500-foot extension of the conveyance pipeline would be constructed within PSG property south of Devonshire Street to minimize impacts to the roadway. An outlet structure would also be built within PSG property.

Hansen Spreading Grounds – Improvements at HSG, including piping and outlet and gate structures, would take approximately 3 months to complete, commencing after the completion of the PSG improvements.

The construction activities for the Project will occur within public rights-of-way on City roadways. Temporary lane closures along streets as required for construction would be coordinated with the other City of Los Angeles entities such as the Bureau of Engineering (LABOE) and the Department of Transportation (LADOT). LADWP is a member of the California Joint Utility Traffic Control Committee, which in 1996 published the *Work Area Protection and Traffic Control Manual.* The traffic control plans and associated text depicted in this manual conform to the guidelines established by the

Federal and State Departments of Transportation.

LADWP would follow the recommendations in the Manual regarding basic standards for the safe movement of traffic upon highways and streets in accordance with Section 21400 of the California Vehicle Code. These recommendations include provisions for safe access of police, fire, and other rescue vehicles. In addition, LADWP would obtain roadway encroachment permits and would submit traffic management plans to LABOE and LADOT for review and approval.

Throughout the construction of the trench, asphalt, concrete, and excavated material would be hauled off by truck for disposal at a designated disposal site.

In roadways, trucks would be used to haul material, typically as it is excavated from the trenches. As trucks are filled with spoils, they would leave the work areas and be replaced by empty trucks. Delivery trucks carrying materials and pipeline elements would arrive as-needed during construction, with a low average number of truck trips generated on an average day. As part of the final construction activities, roadway pavement would be restored.

Lane closure for construction activities will be shown on the traffic control plans, to be submitted by the applicant to LADOT on each construction segment.

3. Existing Area Traffic Conditions

This report section describes the characteristics of the intersections and roadways within the study area. A review of the collected traffic volumes is provided, along with a level of service analysis for these facilities.

3.1 Study Intersections and Roadway Segments

For the traffic impact analysis, 15 locations were defined as study intersections. Existing intersection traffic volumes were collected on Wednesday, May 27, 2015 and on Thursday, September 3, 2015. The following are the 15 signalized study intersections:

1. Woodley Avenue & Victory Boulevard
2. Densmore Avenue & Victory Boulevard
3. Haskell Avenue & Victory Boulevard
4. I-405 NB Ramps & Victory Boulevard
5. I-5 SB Ramps & Osborne Street
6. I-5 NB Ramps & Osborne Street
7. San Fernando Road & Osborne Street
8. Glenoaks Boulevard & Osborne Street
9. Glenoaks Boulevard & Sheldon Street
10. Glenoaks Boulevard & Penrose Street
11. Arleta Avenue & Devonshire Street
12. Arleta Avenue & Branford Street
13. Arleta Avenue & Van Nuys Boulevard
14. Arleta Avenue & Terra Bella Street
15. Arleta Avenue & Osborne Street

The following 6 roadway segments were also included in the study area:

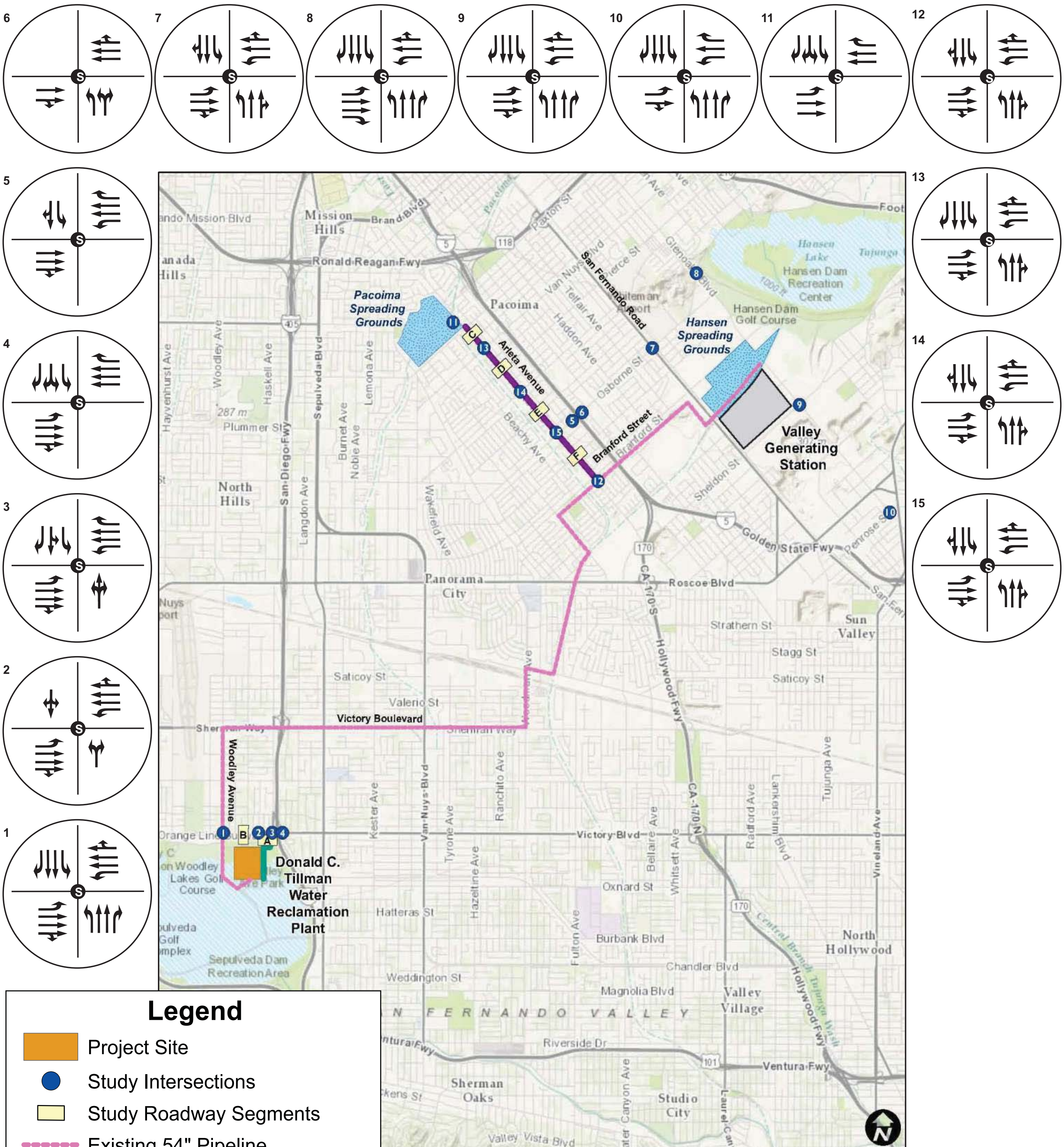
A. Haskell Avenue, between Victory Boulevard and Orange Line Busway
B. Victory Boulevard, between Woodley Avenue and I-405
C. Arleta Avenue, between Devonshire Street and Van Nuys Boulevard
D. Arleta Avenue, between Van Nuys Boulevard and Terra Bella Street
E. Arleta Avenue, between Terra Bella Street and Osborne Street
F. Arleta Avenue, between Osborne Street and Branford Street

The associated daily study roadway segment counts were collected during the same days as the study intersection counts.

Figure 2 illustrates the study intersection approach lanes and control configurations. The intersection traffic count summaries are provided in Appendix A1 of this report, and roadway segment count summaries are provided in Appendix A2.

3.2 Local Roadway Characteristics

Table 2 summarizes the characteristics of key roadway segments along the project corridor of construction.



Legend

- Project Site
- Study Intersections
- Study Roadway Segments
- Existing 54" Pipeline
- Purified Water Pipeline
- DCT Brine Line
- Unsignalized Intersection
- Signalized Intersection
- Intersection Lane Configuration

Note

* De facto right turn lane assumed due to wide curb lane

KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project | Figure 2

Intersection Lane Configuration

Table 2 – Project Corridor Roadway Characteristics

Street	From	To	Functional Classification	Lane		Median Type	Parking Restrictions		Land Use	Speed Limit	Roadway Width (feet)
				NB / EB	SB / WB		NB / EB	SB / WB			
Victory Boulevard	Woodley Avenue	I-405	Major Hwy Class II	3	2	CLTL	NSAT	NS 4pm – 7pm	Residential	35	80'
Arleta Avenue	Van Nuys Boulevard	Branford Street	Avenue II	2	2	CLTL / DY	NL	NL	Residential	40	60'
San Fernando Road	Branford Street	Sheldon Street	Major Highway Class II	2	2	CLTL	NSAT	NSAT	Industrial	35	50' to 60'
Sheldon Street	Glenoaks Boulevard	San Fernando Road	Secondary Highway	2	2	CLTL	NL	NL	Industrial	40	60' to 70'
San Fernando Road	Sheldon Street	Peoria Street	Major Highway Class II	2	2	DY	NSAT	NL	Industrial	35	50' to 60'
Glenoaks Boulevard	Osborne Street	Penrose Street	Boulevard II	2	2	CLTL / Median	NL / NSAT	NL / NSAT	Industrial	45	70' to 80'

DY - Double Yellow   2LT - Dual Left Turn   PA - Parking Anytime   NSAT - No Stopping Anytime   NPAT - No Parking Anytime

3.3 Existing Area Transit Service

The project study area is served by public transit bus lines operated by the County of Los Angeles Metropolitan Transportation Authority (Metro). Table 3 provides a description of the transit lines that serve the Project corridors.

Table 3 – Transit Service Summary

Agency	Line	From	To	Via	Approx. Peak Frequency
Metro	237	Sylmar	Encino	Woodley Avenue, Victory Boulevard	45 – 70 Minutes
Metro	164	West Hills	Burbank	Victory Boulevard	10 – 30 Minutes
Metro	94	Sylmar	Downtown LA	San Fernando Road	15 – 20 Minutes
Metro	292	Sylmar	Burbank	Glenoaks Boulevard	10 – 30 Minutes
Metro	166 / 364	Sun Valley	Chatsworth Station	Nordoff Street, Osborne Street	8 – 20 Minutes
Metro	158	Sherman Oaks	Chatsworth	Arleta Avenue, Woodman Avenue, Devonshire Street	20 – 45 Minutes
Metro	230	Mission College	Studio City	Laurel Canyon Boulevard	12 – 20 Minutes

3.4 Existing Intersection Levels of Service

This report section documents existing weekday a.m. and p.m. peak-hour traffic conditions within the study area. Based on the traffic counts conducted at the study intersections, a level of service (LOS) value and a corresponding volume-to-capacity (v/c) ratio was determined for each study intersection.

Table 4 provides the V/C and LOS values under existing conditions, for the a.m. and p.m. peak hours.

Table 4 – Intersection Level of Service Calculations – Existing Conditions

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Woodley Avenue & Victory Boulevard	1.107	**F**	0.985	**E**
2	Densmore Avenue & Victory Boulevard	0.650	B	0.564	A
3	Haskell Avenue & Victory Boulevard	1.071	**F**	1.044	**F**
4	I-405 NB Ramps & Victory Boulevard	0.734	C	0.760	C
5	I-5 SB Ramps & Osborne Street	0.638	B	0.765	C
6	I-5 NB Ramps & Osborne Street	0.628	B	0.753	C
7	San Fernando Road & Osborne Street	0.649	B	0.709	C
8	Glenoaks Boulevard & Osborne Street	0.999	**E**	0.956	**E**
9	Glenoaks Boulevard & Sheldon Street	0.743	C	0.733	C
10	Glenoaks Boulevard & Penrose Street	0.434	A	0.421	A
11	Arleta Avenue & Devonshire Street	0.592	A	0.749	C
12	Arleta Avenue & Branford Street	0.853	D	0.862	D
13	Arleta Avenue & Van Nuys Boulevard	0.885	D	0.905	**E**
14	Arleta Avenue & Terra Bella Street	0.778	C	0.671	B
15	Arleta Avenue & Osborne Street	0.908	**E**	0.939	**E**

LOS = Level of Service; V/C = Volume-to-Capacity Ratio

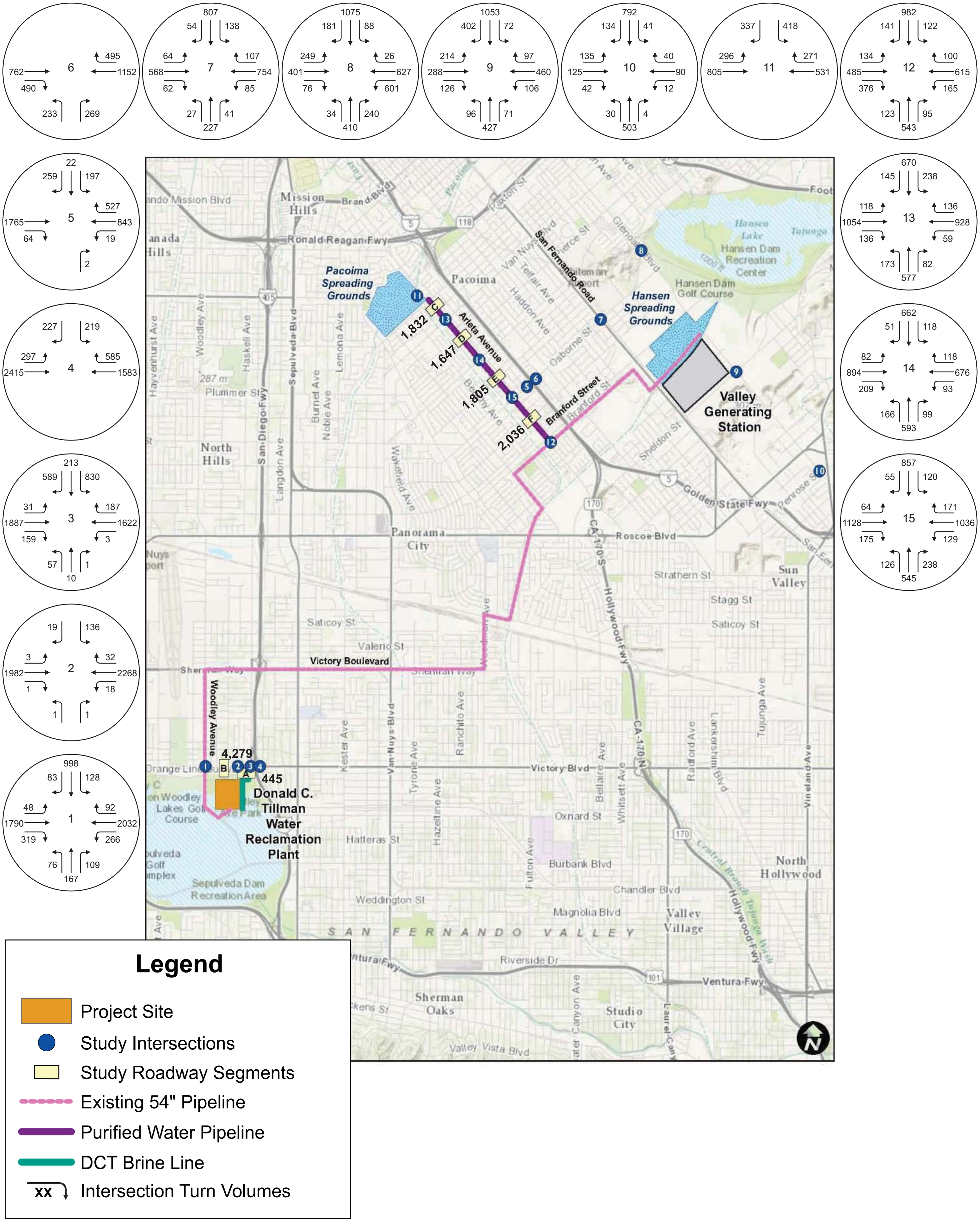
** Unsignalized Intersection*

The data in Table 4 indicates that 10 of the 15 study intersections are currently operating at LOS D or better during the a.m. and p.m. peak hours. The following intersections are operating at LOS E (poor operating conditions, nearing capacity) or LOS F (at / overcapacity):

- Woodley Avenue / Victory Boulevard – Operating at LOS F in the a.m. peak hour and E in the p.m. peak hour.
- Haskell Avenue / Victory Boulevard – Operating at LOS F in the a.m. and p.m. peak hours.
- Glenoaks Boulevard / Osborne Street – Operating at LOS E in the a.m. and p.m. peak hours.
- Arleta Avenue / Van Nuys Boulevard – Operating at LOS E in the p.m. peak hour.
- Arleta Avenue / Osborne Street – Operating at LOS E in the a.m. and p.m. peak hours.

The existing peak-hour turn movement volumes at the study intersections are provided on Figure 3 (a.m. peak) and Figure 4 (p.m. peak).

The intersection level of service worksheets for the existing conditions scenario are provided in Appendix B of this report.

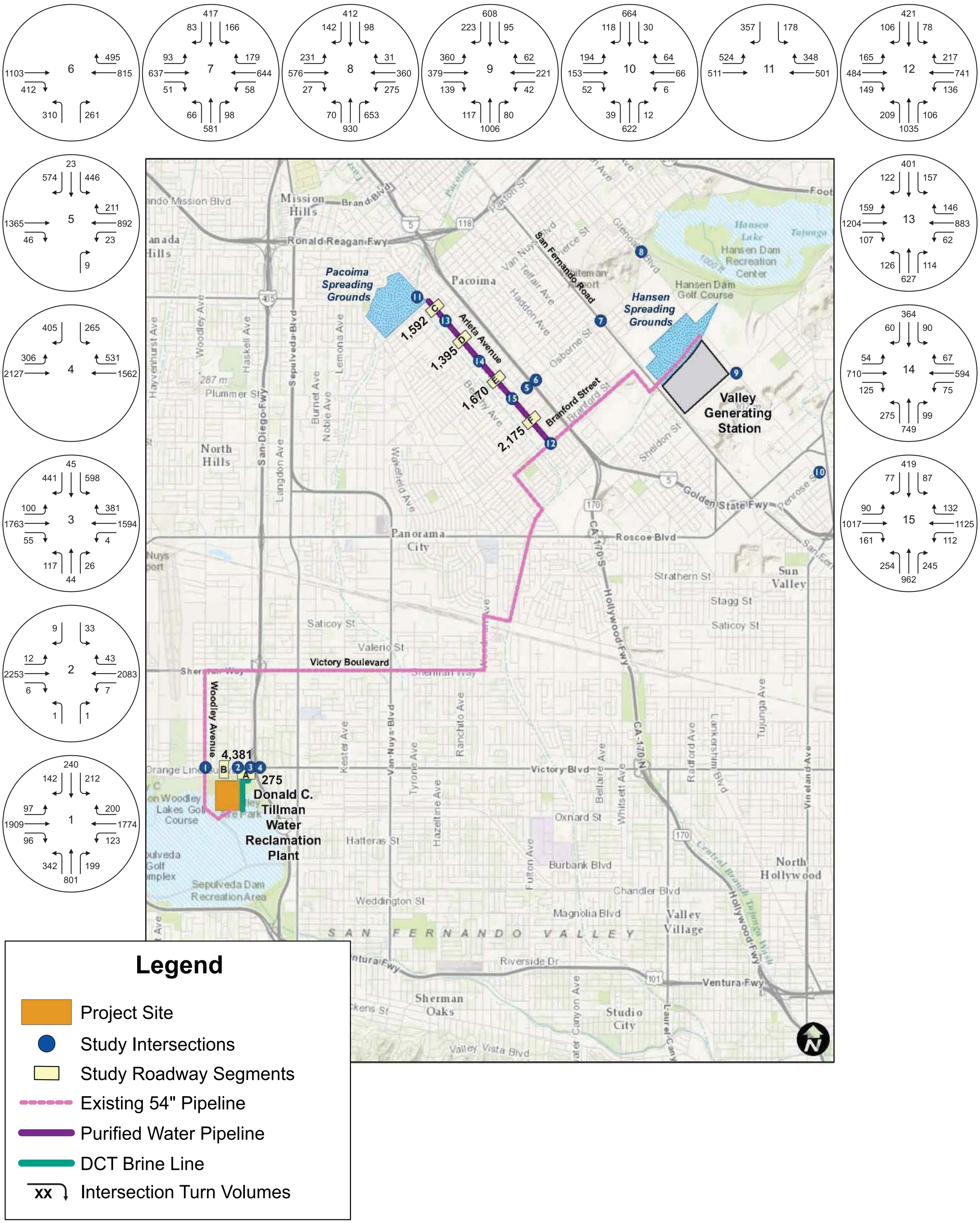


KOA Corporation Planning & Engineering

LADWP Groundwater Replenishment Project

Figure 3

Existing AM Peak Hour Traffic Volumes



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 4

Existing PM Peak Hour Traffic Volumes

3.5 Existing Roadway Segment Volumes

Table 5 provides a summary of the average daily traffic (ADT) volumes at the study roadway segment locations. Table 6 provides a summary of the existing peak-hour conditions.

Table 5 – Study Roadway Segments –
Existing Weekday Daily Vehicle Volumes

	Street Segments	Existing ADT
A	Haskell Avenue Between Victory Boulevard & Orange Line Busway	2,642
B	Victory Boulevard Between Woodley Avenue & I-405	51,757
C	Arleta Avenue Between Devonshire Street & Van Nuys Boulevard	17,091
D	Arleta Avenue Van Nuys Boulevard & Terra Bella Street	14,036
E	Arleta Avenue Between Terra Bella Street and Osborne Street	16,260
F	Arleta Avenue Between Osborne Street and Branford Street	20,684

**Table 6 – Study Roadway Segments –
Existing Peak-Hour Weekday Level of Service**

	Street Segments	Peak Period	Existing Volumes				
			# of Lanes	Capacity	Existing		
					Volumes	V/C	LOS
A	Haskell Avenue	AM	2	1,600	445	0.278	A
	Between Victory Boulevard & Orange Line Busway	PM			275	0.172	A
B	Victory Boulevard	AM	6	4,800	4,279	0.891	D
	Between Woodley Avenue & I-405	PM			4,381	0.913	**E**
C	Arleta Avenue	AM	4	2,800	1,832	0.654	B
	Between Devonshire Street & Van Nuys Boulevard	PM			1,592	0.569	A
D	Arleta Avenue	AM	4	2,800	1,647	0.588	A
	Van Nuys Boulevard & Terra Bella Street	PM			1,395	0.498	A
E	Arleta Avenue	AM	4	2,800	1,805	0.645	B
	Between Terra Bella Street and Osborne Street	PM			1,670	0.596	A
F	Arleta Avenue	AM	4	2,800	2,036	0.727	C
	Between Osborne Street and Branford Street	PM			2,175	0.777	C

Of the six roadway segments, five are operating at LOS D or better.

4. Construction Period Trip Generation

This section provides definitions for truck and employee vehicle trip generation during the peak period of Project construction, along with the distribution and assignment of those trips to the study area roadway network. To evaluate a worst-case scenario for construction trip generation of the proposed Project, it is assumed that each employee will drive to and from the work areas, with 50% arriving and departing during peak periods.

This is a planning-level analysis of construction activity, used for the purposes of determining traffic impacts during the project construction period. Prior to initiating construction, a detailed construction plan will be developed by the construction manager to identify necessary resources and to define the construction supervisory and technical field organization and staffing levels required for the project. The methods and procedures for sequencing and implementing construction operations will also be detailed in the construction plan. In addition, a project safety program will be developed by the operator, consistent with federal and state requirements. This is a standard LADWP procedural requirement.

Therefore, basic construction details defined for the project planning process have been used to analyze potential construction-period impacts.

4.1 Project Trip Generation Methodology

Project trip generation calculations included construction employee vehicle trips and construction truck trip estimates. The trip generation totals were determined based on the most intense period of construction activity for the project.

In converting trucks to passenger car equivalents, a Passenger Car Equivalent (PCE) factor of 2.5 was assumed. This factoring was used to increase truck volumes due to the additional roadway space and design capacity utilized by larger and slower trucks. The applied value matches typical factors used in area studies that include trips generated by trucking activities. The factor is based on conservative factors defined by the Southern California Association of Governments (SCAG) Heavy Duty Truck Model.

The project construction efforts would require approximately 142 total daily workers throughout the various construction areas; 68 workers would be at the Donald C. Tillman Plant, 20 will be working on the purified recycled water pipeline along Arleta Avenue, 27 will be working in the Pacoima Spreading Grounds, and 27 at the Hansen Spreading Grounds.

4.2 Project Trip Generation Calculations

In calculating peak-hour trips for the project, it is assumed that a majority of the construction employees will arrive and depart the construction work areas by personal vehicles. The morning arrival by employees is assumed to overlap the a.m. peak hour by 50 percent, with the remaining 50 percent of employees assumed to be at the sites before 7:00 a.m. The same would occur during the p.m. peak hour, with 50 percent of employees assumed to depart the site before 4:00 p.m. Therefore, the same reduction was taken for both peak periods.

During project construction activity, daily truck haul activities will occur over an eight-hour period that begins during the a.m. peak period, and is complete during the p.m. peak period.

As indicated in Table 7, the Proposed Project construction would generate a daily total of 494 passenger car equivalent trips, with 100 (86 inbound and 14 outbound) trips occurring during the a.m. peak hour and 100 (14 inbound and 86 outbound) trips occurring during the p.m. peak hour. However, these trips are widely distributed between various sites, as discussed below.

Table 7 – Project Trip Generation

TRIP GENERATION SOURCE	AVERAGE DAILY TRIPS			AM PEAK HOUR						PM PEAK HOUR					
				Truck Trips*		Employee Trips		Total Trips		Truck Trips*		Employee Trips		Total Trips	
	Trucks*	Employee	Total	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
DCT - SE Trip Generation															
Field Personnel	0	136	136	0	0	34	0	34	0	0	0	0	34	0	34
Trucks	90	0	90	6	6	0	0	6	6	6	6	0	0	6	6
DCT Trips	**90**	**136**	**226**	**6**	**6**	**34**	**0**	**40**	**6**	**6**	**6**	**0**	**34**	**6**	**40**
Purified Recycled Water Pipeline - Trip Generation															
Field Personnel	0	40	40	0	0	10	0	10	0	0	0	0	10	0	10
Trucks	60	0	60	4	4	0	0	4	4	4	4	0	0	4	4
Pipeline Trips	**60**	**40**	**100**	**4**	**4**	**10**	**0**	**14**	**4**	**4**	**4**	**0**	**10**	**4**	**14**
Pacoima Spreading Grounds - Trip Generation															
Field Personnel	0	54	54	0	0	14	0	14	0	0	0	0	14	0	14
Trucks	30	0	30	2	2	0	0	2	2	2	2	0	0	2	2
Pacoima Trips	**30**	**54**	**84**	**2**	**2**	**14**	**0**	**16**	**2**	**2**	**2**	**0**	**14**	**2**	**16**
Hansen Spreading Grounds - Trip Generation															
Field Personnel	0	54	54	0	0	14	0	14	0	0	0	0	14	0	14
Trucks	30	0	30	2	2	0	0	2	2	2	2	0	0	2	2
Hansen Trips	**30**	**54**	**84**	**2**	**2**	**14**	**0**	**16**	**2**	**2**	**2**	**0**	**14**	**2**	**16**
Grand Total Trips	**210**	**284**	**494**	**14**	**14**	**71**	**0**	**86**	**14**	**14**	**14**	**0**	**71**	**14**	**86**

** Truck trips include a Passenger Car Equivalency (PCE) factor of 2.5.*

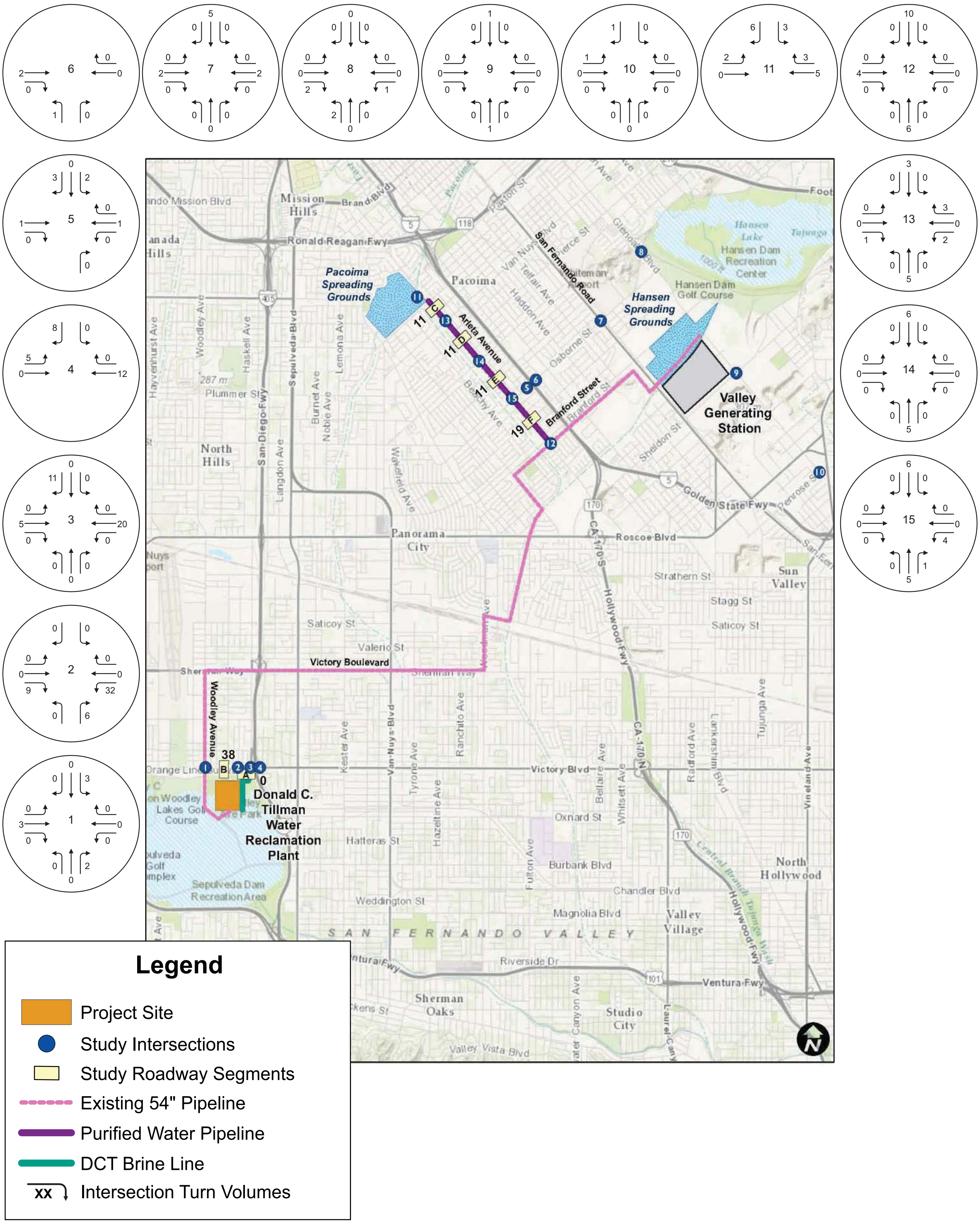
Trucks - DCT includes 90 daily trucks, Pipeline includes 60 daily trucks, Pacoima includes 30 daily trucks, and Hansen includes 30 daily trucks, all assumed to all take place on a peak day of construction activity. Assuming 8 hour work day.

Field Personnel – A maximum of 68 workers (DCT), 20 workers (Pipeline), 27 workers (Pacoima), and 27 workers (Hansen) on an average day of construction. Assume 50% of Field Personnel arrive/depart during peak periods.

4.3 Construction Project Trip Distribution/Assignment

The distribution of construction truck trips was assumed to be primarily freeway-oriented.

The distribution pattern for analyzed employee trips assumed that employees would arrive to construction sites using primarily major surface streets and freeways. Construction trip assignment is shown in Figure 5 (a.m. peak hour) and Figure 6 (p.m. peak hour).

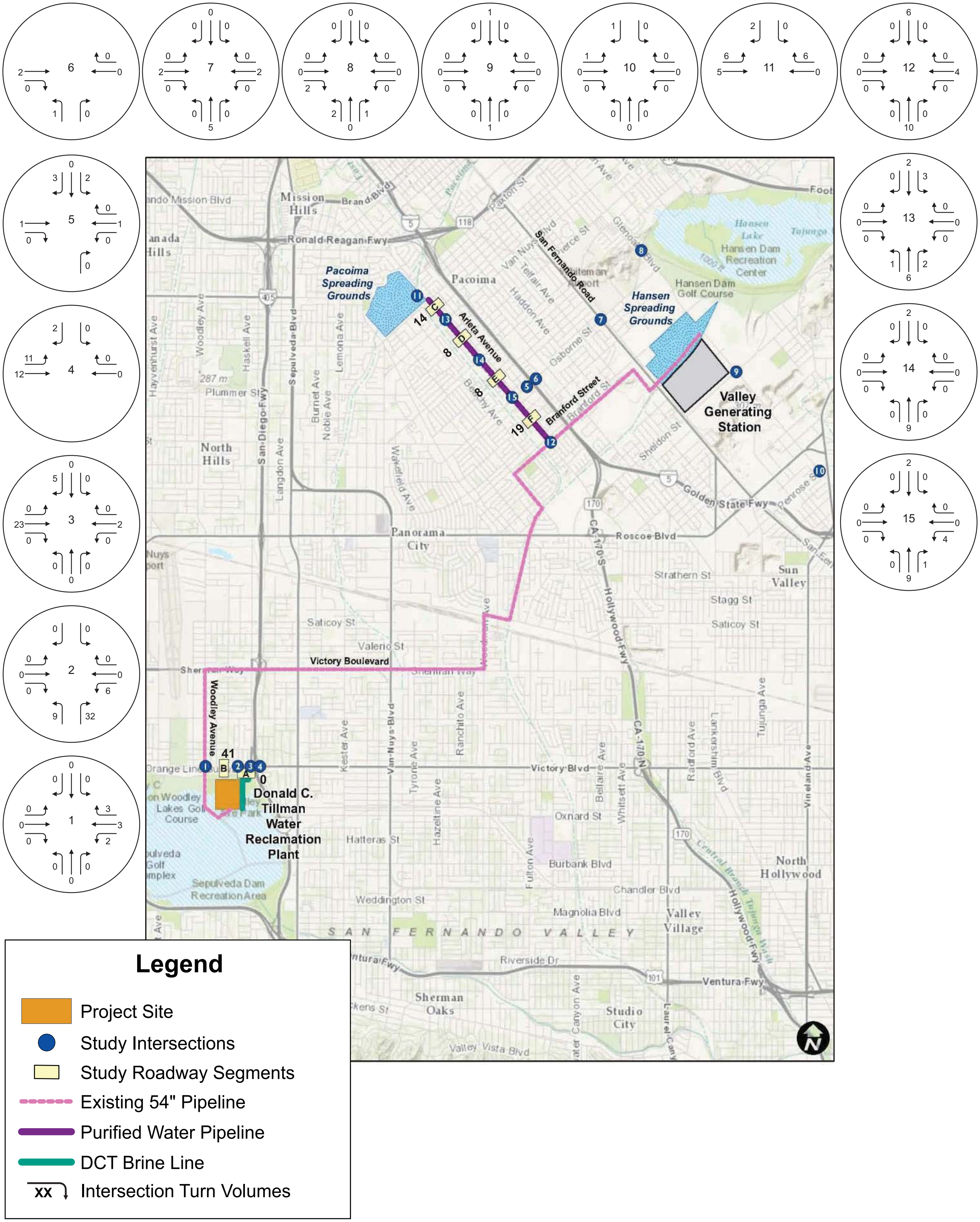


KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 5

Construction Trip Assignment - AM Peak Hour



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 6

Construction Trip Assignment - PM Peak Hour

5. Existing Plus-Project Traffic Conditions and Impacts

An additional existing plus-Project scenario was included in the analysis, to comply with rulings on existing conditions baseline analysis from the *Sunnyvale West Neighborhood Association v. City of Sunnyvale City Council* and *Neighbors for Smart Rail v. Exposition Metro Rail Construction Authority* California Environmental Quality Act (CEQA) court cases. This additional analysis scenario provides information about project impacts under the current baseline conditions.

5.1 Project Construction Period Intersection Analysis

The study intersection operations for the existing and existing plus-Project scenarios are summarized in Table 8.

For the study intersections, the following significant level of service and operational changes would occur:

- Glenoaks Boulevard / Osborne Street – Operations would worsen to LOS F during the a.m. peak hour.

Construction of the proposed Project would worsen operations to or within LOS E or F, triggering significant impacts at the following intersections:

- Woodley Avenue / Victory Boulevard – Operations would worsen within LOS F during the a.m. peak hour and within LOS E during the p.m. peak hour.
- Haskell Avenue / Victory Boulevard – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Glenoaks Boulevard / Osborne Street – Operations would worsen to LOS F during the a.m. peak hour and within LOS E during the p.m. peak hour.
- Arleta Avenue / Van Nuys Boulevard – Operations would worsen within LOS E during the p.m. peak hour.
- Arleta Avenue / Osborne Street – Operations would worsen within LOS E in both the a.m. and p.m. peak hours.

All of the other study intersections will continue operating at the same level of service.

Intersection capacity would is not expected to be reduced as construction operations would primarily occur on short segments along the study roadways, and potential pipe jacking under major intersections, with minimal impacts on intersection operations.

The thru capacity of the roadway through lanes would be effectively reduced by 50 percent where work areas would be established.

The construction period analyzed traffic volumes for the existing plus-Project scenario at the study intersections and roadways are provided on Figure 7 (a.m. peak) and Figure 8 (p.m. peak).

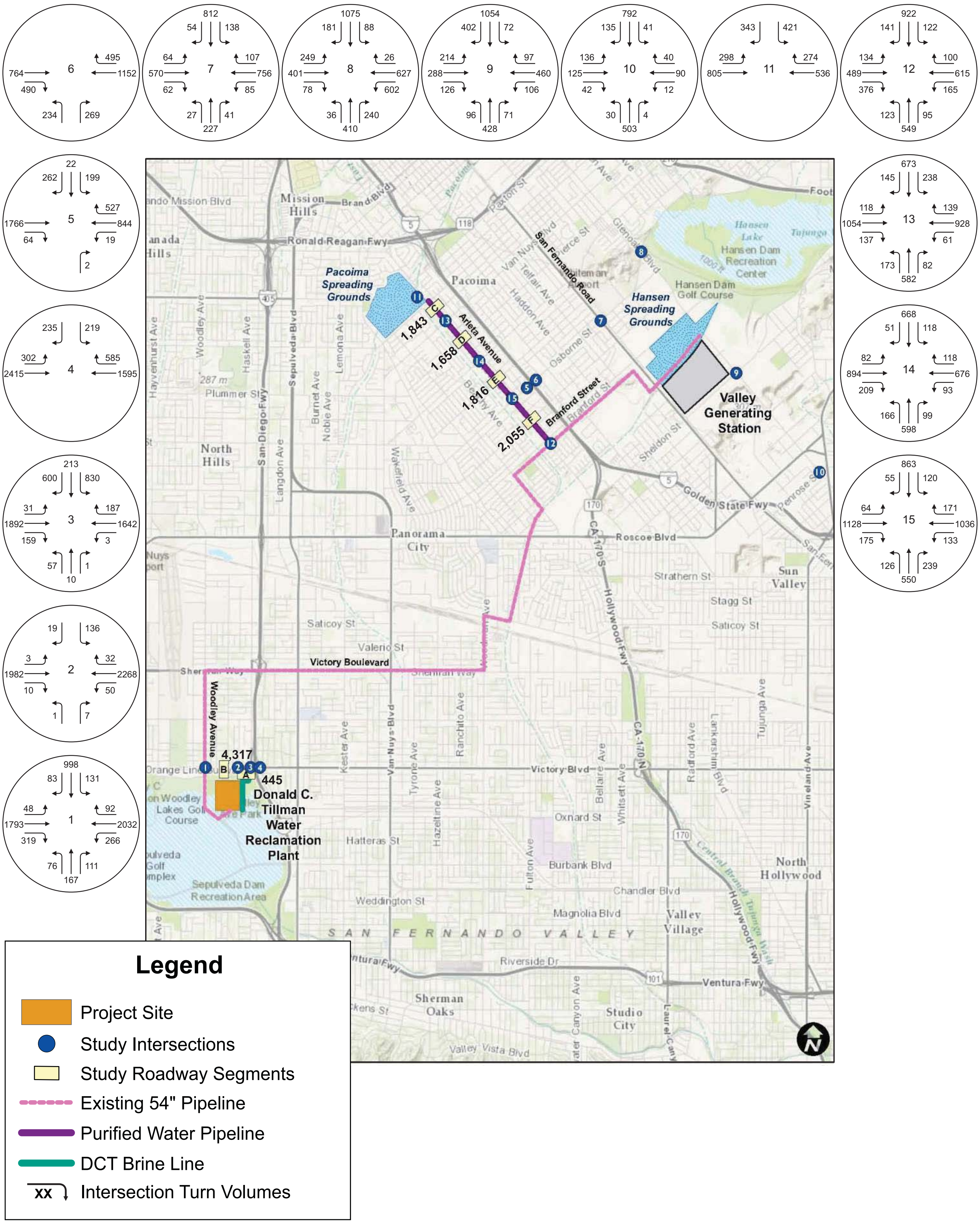
The level of service calculation worksheets for this analysis scenario are provided in Appendix C.

**Table 8 – Study Intersection Conditions –
Existing plus-Project Conditions**

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Woodley Avenue & Victory Boulevard	1.109	**F**	0.987	**E**
2	Densmore Avenue & Victory Boulevard	0.655	B	0.597	A
3	Haskell Avenue & Victory Boulevard	1.079	**F**	1.045	**F**
4	I-405 NB Ramps & Victory Boulevard	0.739	C	0.768	C
5	I-5 SB Ramps & Osborne Street	0.641	B	0.767	C
6	I-5 NB Ramps & Osborne Street	0.630	B	0.756	C
7	San Fernando Road & Osborne Street	0.652	B	0.711	C
8	Glenoaks Boulevard & Osborne Street	1.001	**F**	0.956	**E**
9	Glenoaks Boulevard & Sheldon Street	0.744	C	0.733	C
10	Glenoaks Boulevard & Penrose Street	0.435	A	0.421	A
11	Arleta Avenue & Devonshire Street	0.598	A	0.758	C
12	Arleta Avenue & Branford Street	0.858	D	0.866	D
13	Arleta Avenue & Van Nuys Boulevard	0.888	D	0.911	**E**
14	Arleta Avenue & Terra Bella Street	0.780	C	0.674	B
15	Arleta Avenue & Osborne Street	0.913	**E**	0.943	**E**

LOS = Level of Service; V/C = Volume-to-Capacity Ratio

** Unsignalized Intersection*

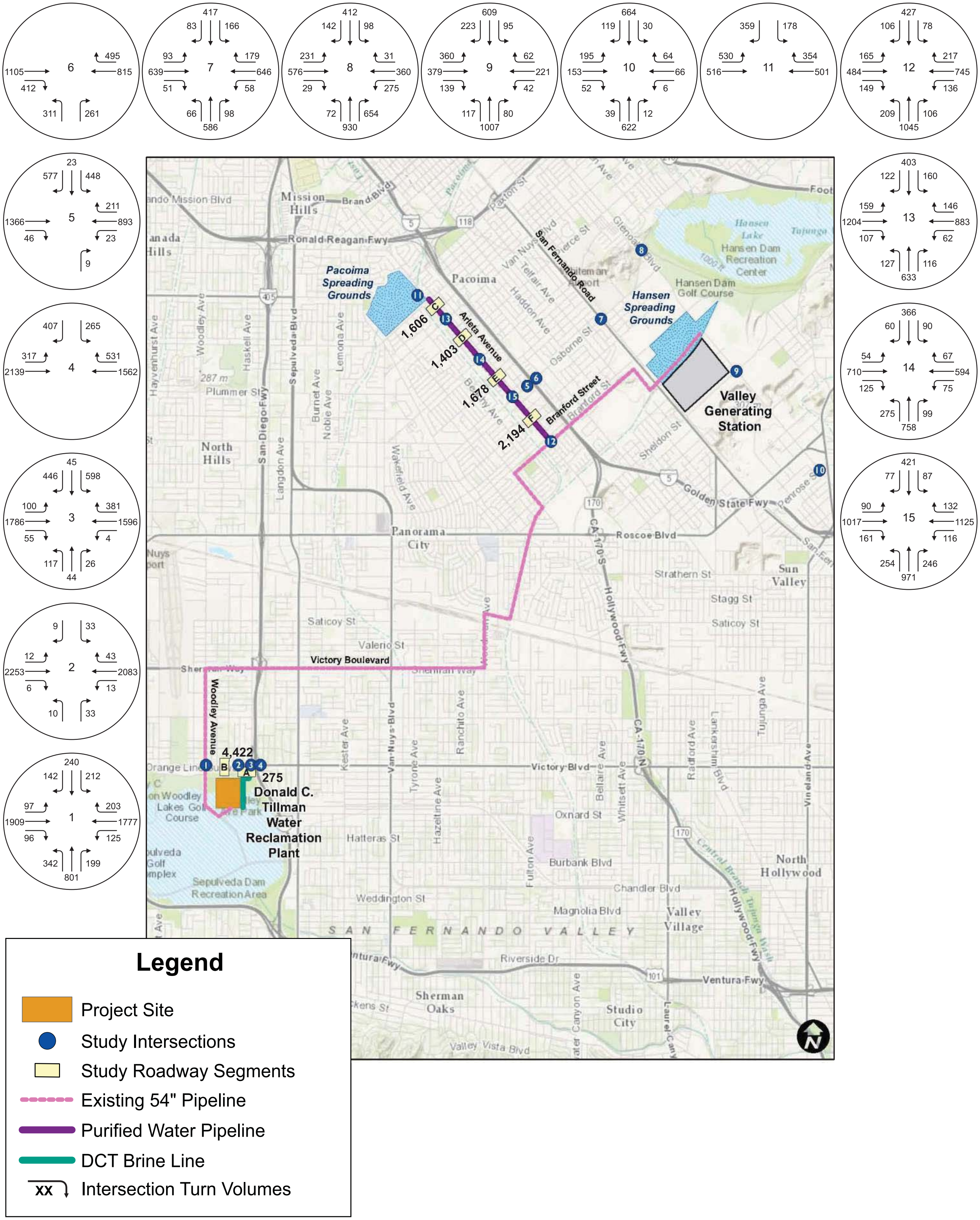


KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 7

Existing with Project Construction - AM Peak Hour Intersection Volumes



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 8

Existing with Project Construction - PM Peak Hour Intersection Volumes

5.2 Project Construction Period Roadway Segment Analysis

The daily volumes on the study roadway segments, for conditions with the proposed Project under the existing baseline, are provided in Table 9.

Table 9 – Study Roadway Segments –
Existing Plus-Project Weekday Daily Vehicle Volumes

	Street Segments	Existing + Project ADT
A	Haskell Avenue Between Victory Boulevard & Orange Line Busway	2,642
B	Victory Boulevard Between Woodley Avenue & I-405	51,983
C	Arleta Avenue Between Devonshire Street & Van Nuys Boulevard	17,160
D	Arleta Avenue Van Nuys Boulevard & Terra Bella Street	14,090
E	Arleta Avenue Between Terra Bella Street and Osborne Street	16,314
F	Arleta Avenue Between Osborne Street and Branford Street	20,778

The Victory Boulevard segment between Woodley Avenue and I-405 has the highest volume in the Project construction corridor under this scenario.

Peak hour operations were analyzed at the study roadway segments. Table 10 summarizes the peak-hour volumes from the daily counts.

Most of the analyzed roadway segment's LOS would worsen with Project construction activities and reduced roadway capacity, as indicated below:

- <u>Victory Boulevard, between Woodley Avenue and I-405</u> – Operations would worsen within LOS E during the p.m. peak hour.
- <u>Arleta Avenue, between Devonshire Street and Van Nuys Boulevard</u> – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- <u>Arleta Avenue, between Van Nuys Boulevard and Terra Bella Street</u> – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- <u>Arleta Avenue, between Terra Bella Street and Osborne Street</u> – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- <u>Arleta Avenue, between Osborne Street and Branford Street</u> – Operations would worsen to LOS F during the a.m. and p.m. peak hours.

Table 10 – Peak-Hour Study Roadway Segment Impacts

			Existing Volumes					Proposed Project					
					Existing						Existing with Project		
	Street Segments	Peak Period	# of Lanes	Capacity	Volumes	V/C	LOS	# of Lanes	Capacity	Project Only	Volumes	V/C	LOS
A	Haskell Avenue	AM	2	1,600	445	0.278	A	1	800	0	445	0.556	A
	Between Victory Boulevard & Orange Line Busway	PM			275	0.172	A			0	275	0.344	A
B	Victory Boulevard	AM	6	4,800	4,279	0.891	D	6	4,800	38	4,317	0.899	D
	Between Woodley Avenue & I-405	PM			4,381	0.913	**E**			41	4,422	0.921	**E**
C	Arleta Avenue	AM	4	2,800	1,832	0.654	B	2	1,600	11	1,843	1.152	**F**
	Between Devonshire Street & Van Nuys Boulevard	PM			1,592	0.569	A			14	1,606	1.004	**F**
D	Arleta Avenue	AM	4	2,800	1,647	0.588	A	2	1,200	11	1,658	1.382	**F**
	Van Nuys Boulevard & Terra Bella Street	PM			1,395	0.498	A			8	1,403	1.169	**F**
E	Arleta Avenue	AM	4	2,800	1,805	0.645	B	2	1,200	11	1,816	1.513	**F**
	Between Terra Bella Street and Osborne Street	PM			1,670	0.596	A			8	1,678	1.398	**F**
F	Arleta Avenue	AM	4	2,800	2,036	0.727	C	2	1,200	19	2,055	1.713	**F**
	Between Osborne Street and Branford Street	PM			2,175	0.777	C			19	2,194	1.828	**F**

Given the lane reduction and traffic issues associated with single-lane operations, traffic conditions would need to be monitored and adequate mitigation measures must be implemented during construction. Section 10 of this report outlines general mitigation recommendations.

6. Future without-Project Conditions

This section provides an analysis of Future "without-Project" Conditions in the study area with ambient growth and area project trips. The without-Project analysis was defined and analyzed through an application of an annual ambient growth rate to the existing traffic volumes, plus addition of volumes generated by area projects.

6.1 Ambient Growth

In order to forecast baseline traffic volumes for the analysis year of 2022, analyzed year-2015 peak-hour existing volumes from the existing conditions scenario were increased by a compounded annual ambient growth rate of 2 percent. This rate was applied as a compounded factor of 1.149.

The application of this annual growth rate is consistent with sub-regional traffic growth data defined by the County of Los Angeles Congestion Management Program (CMP) document.

This higher growth ambient growth rate was applied in order to account for additional traffic from area projects, as described below.

6.2 Area Projects

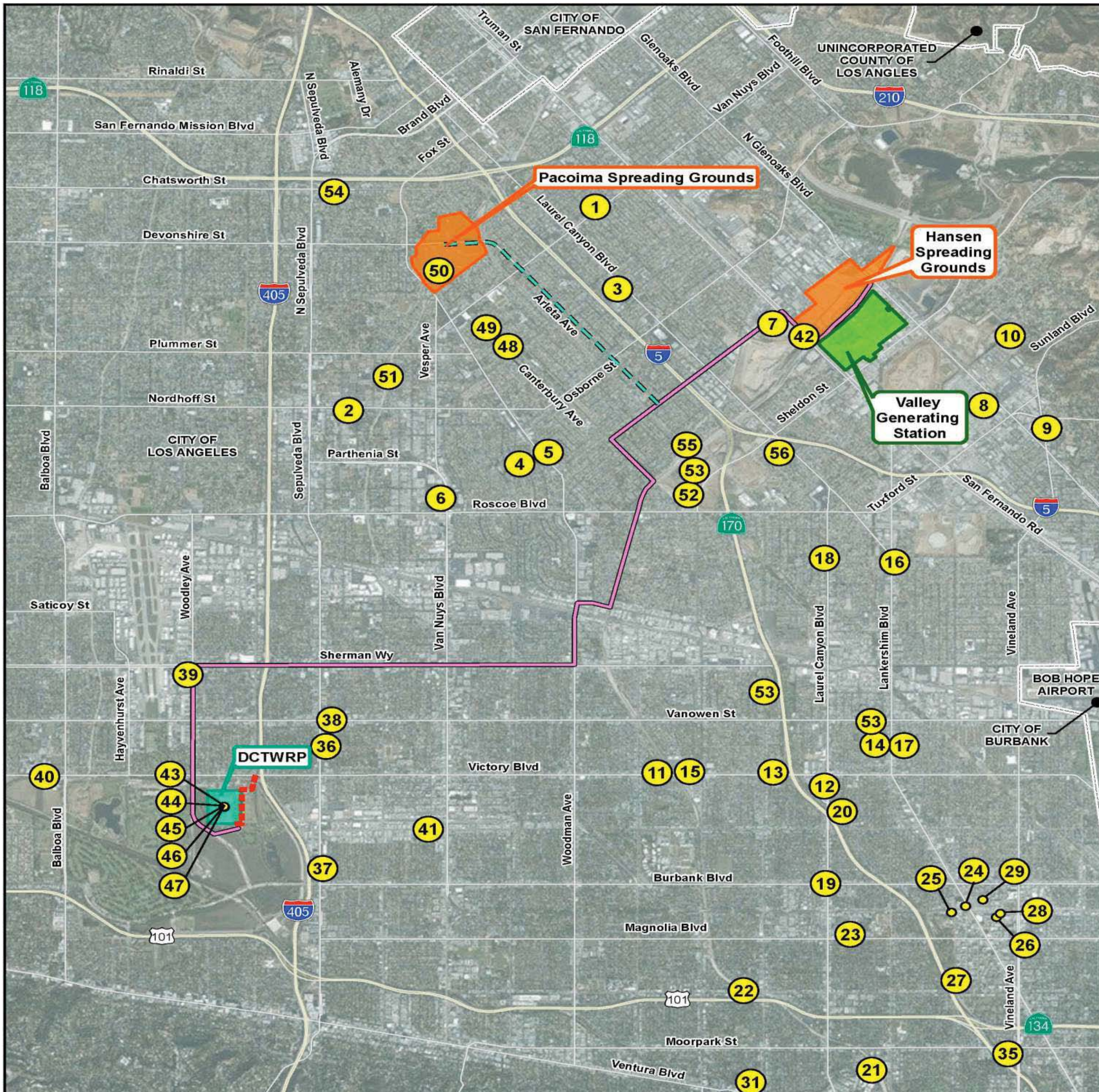
A 1.5-mile radius from the Project corridor was used to define a capture area for area approved and pending (cumulative) projects. The list of area projects was compiled for informational purposes based on information provided by LADOT Development Review staff.

The projects included in the list would potentially contribute measurable traffic volumes to the study area during the future analysis period. The LADOT project database provides total peak-hour trips, compiled from environmental documentation or traffic studies. The in/out trip generation ratios applied to the area projects were based on rates within *Trip Generation*, published by the Institute of Transportation Engineers.

Area projects are included in this report for informational purposes and were not analyzed individually for the traffic analysis.

The area projects included in this study for the future period analysis, and the trip generation of each, are provided in Appendix D.

Figure 9 illustrates the locations of the included area projects.



Planned and Proposed Projects

1, 13535 Van Nuys Boulevard, Hotel 44 rooms
2, 15136 Nordhoff StreetCharter School, 600 students
3, 9989 Laurel Canyon Boulevard, Charter School, 400 students
4, 8605 Colbath Avenue, School, 175 students
5, 8755 Woodman Avenue, Charter School, 480 students
6, 8401 Van Nuys Boulevard, Panorama Mall
7, 12450 Branford Street, Industrial
8, 9189 De Garmo Avenue, Industrial
9, 9000 Sunland Boulevard, Mixed Use
10, 11038 Peoria Street, TV/Commercial
11, 13103 Victory Boulevard, Mixed Use
12, 6301 Laurel Canyon Boulevard, Mixed Use
13, 12425 Victory Boulevard, Mixed Use
14, 6605 Lankershim Boulevard, Mixed Use
15, 13007 Victory Boulevard, Mixed Use
16, 7934 Lankershim Boulevard, Commercial
17, 6601 Lankershim Boulevard, Commercial
18, 7955 Laurel Canyon Boulevard, Commercial
19, 12106 Burbank Boulevard, Retail, 2,500 s.f.
20, 6150 Laurel Canyon Boulevard, Mixed Use
21, 4200 Radford Avenue, Studio, 161,885 s.f.
22, 12629 Riverside Drive, Condominiums, 270 d.u.
23, 11933 Magnolia Boulevard, Condominiums, 107 d.u.
24, 5401 Lankershim Boulevard, Mixed Use
25, 11405 Chandler Boulevard, Mixed Use
26, 11126 Chandler Boulevard, Mixed Use
27, 4832 Tujunga Avenue, School
28, 11120 Chandler Avenue, Mixed Use
29, 5500 Klump Avenue, Apartments, 84 d.u.
30, 11331 Ventura Avenue, Condominiums, 62 d.u.
31, 4141 Whitsett Avenue, Senior Apartments, 200 d.u.
32, 11000 Ventura Boulevard, Pharmacy, 12,079 s.f.
33, 11617 Ventura Boulevard, Mixed Use
34, 12548 Ventura Boulevard, Mixed Use
35, 11036 Moorpark Street, Apartments, 96 d.u.
36, 6640 Sepulveda Boulevard, Apartments, 72 d.u.
37, 5700 Sepulveda Boulevard, Mixed Use
38, 15225Vanowen Street, Medical Office, 80,200 s.f.
39, 7121 Woodley Avenue, Apartments, 126 d.u.
40, 17100 Victory Boulevard, Apartments, 200 d.u.
41, 14615 Oxnard Street, Fire station, 18,533 s.f.
42, San Fernando Bike Bridge/Tujunga Wash 1309, Phase 3, Bicycle Bridge
43, DCT – Backup Power, Wastewater Treatment Plants
44, DCT – Electricity Usage Monitoring and Optimization, Wastewater Treatment Plants
45, DCT – Channel 1 Air Spargers Improvements, Wastewater Treatment Plants
46, DCT – Secondary Clarifiers Improvements, Wastewater Treatment Plants
47, DCT – Sodium Bi Sulfite Facility Improvements, Wastewater Treatment Plants
48, City Trunk Line North Replacement
49, Canterbury Power Line Easement Stormwater Capture Project
50, Pacoima Spreading Grounds Improvement Project
51, Old Pacoima Wash Stormwater Capture Project
52, Tujunga Spreading Grounds Enhancement Project
53, Groundwater Remediation Project
54, Bull Creek Stormwater Capture Project
55, Branford Spreading Basin Project
56, Femangeles Park Stormwater Capture Project

Legend

Project Location and Number
Proposed Brine Line
Proposed 42" Recycled Water Pipeline
East Valley Recycled Water Pipeline
Municipal Boundary

Source: AECOM, 2016

KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 9

Location of Area Projects

6.3 Future Intersection Levels of Service

To analyze future conditions in the year 2022 without the proposed Project, intersection turn volumes with ambient growth were analyzed using the same methodology applied to the existing conditions analysis.

Table 11 provides the a.m. and p.m. peak-hour results of this analysis for the study intersections.

Table 11 – Level of Service Calculations – Future Without-Project Construction Conditions

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Woodley Avenue & Victory Boulevard	1.272	**F**	1.132	**F**
2	Densmore Avenue & Victory Boulevard	0.747	C	0.648	B
3	Haskell Avenue & Victory Boulevard	1.231	**F**	1.199	**F**
4	I-405 NB Ramps & Victory Boulevard	0.843	D	0.873	D
5	I-5 SB Ramps & Osborne Street	0.733	C	0.879	D
6	I-5 NB Ramps & Osborne Street	0.722	C	0.866	D
7	San Fernando Road & Osborne Street	0.746	C	0.814	D
8	Glenoaks Boulevard & Osborne Street	1.147	**F**	1.098	**F**
9	Glenoaks Boulevard & Sheldon Street	0.854	D	0.842	D
10	Glenoaks Boulevard & Penrose Street	0.499	A	0.483	A
11	Arleta Avenue & Devonshire Street	0.680	B	0.861	D
12	Arleta Avenue & Branford Street	0.980	**E**	0.990	**E**
13	Arleta Avenue & Van Nuys Boulevard	1.021	**F**	1.040	**F**
14	Arleta Avenue & Terra Bella Street	0.894	D	0.771	C
15	Arleta Avenue & Osborne Street	1.044	**F**	1.079	**F**

LOS = Level of Service; V/C = Volume-to-Capacity Ratio

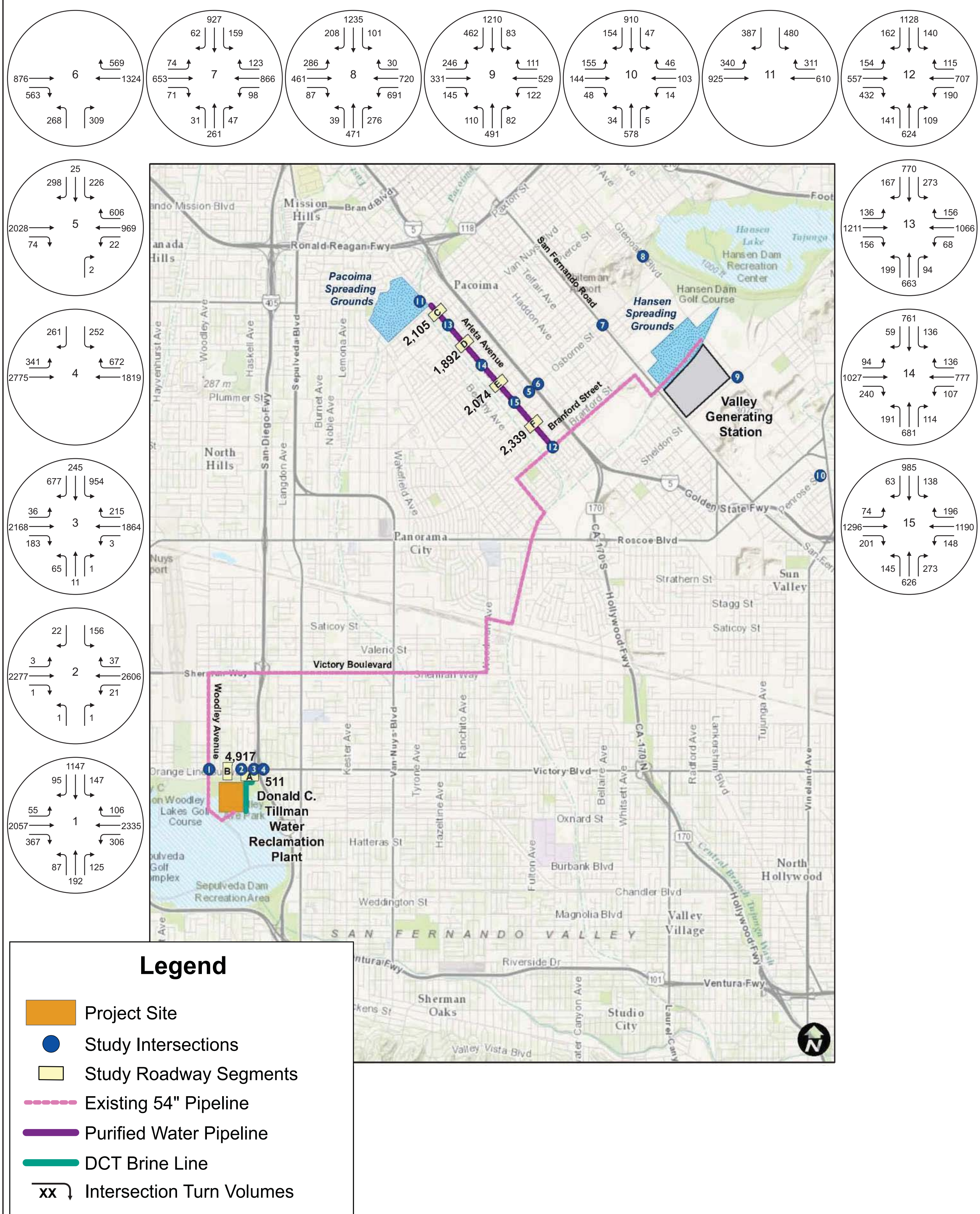
** Unsignalized Intersection*

Under this scenario, all intersections would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours, except for the following:

- Woodley Avenue / Victory Boulevard– Operations would worsen within LOS F during the a.m. peak hour and to LOS F during the p.m. peak hour.
- Haskell Avenue / Victory Boulevard– Operations would worsen within LOS F during the a.m. and p.m. peak hours.
- Glenoaks Boulevard / Osborne Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue / Branford Street – Operations would worsen to LOS E during the a.m. and p.m. peak hours.

- Arleta Avenue / Van Nuys Boulevard – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue / Osborne Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.

The study intersection analysis worksheets for this scenario are provided in Appendix E of this report. The analyzed peak-hour traffic volumes at the study intersections and roadways for this scenario are provided on Figure 10 (a.m. peak) and Figure 11 (pm. peak).

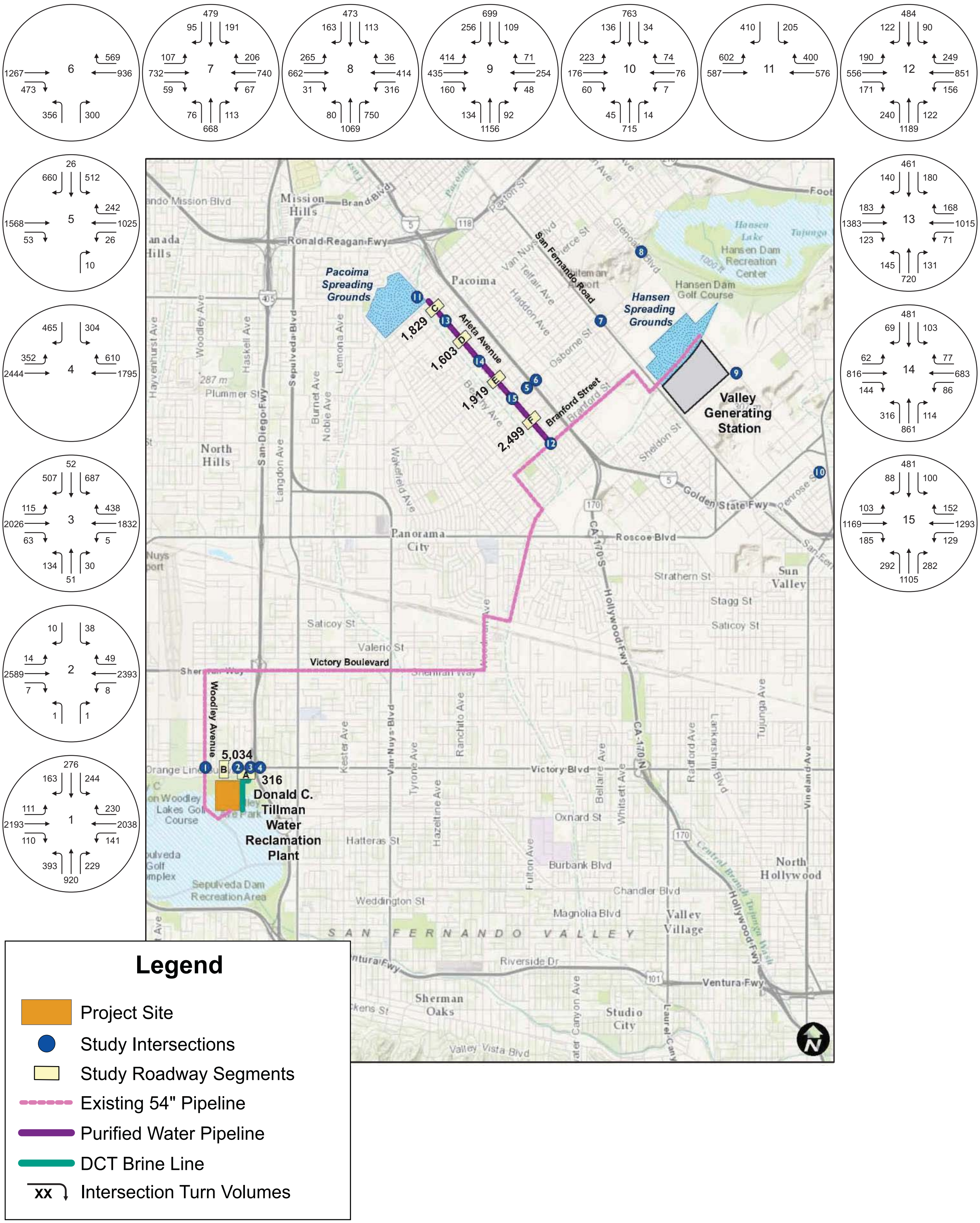


KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 10

Future without Project Construction - AM Peak Hour Intersection Volumes



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 11

Future without Project Construction - PM Peak Hour Intersection Volumes

6.4 Future Study Roadway Segment Volumes

Table 12 provides the average daily traffic volumes for year-2022 conditions at the study roadway segments, based on the application of ambient growth.

Table 12 – Study Roadway Segments – Future Without-Project Daily Vehicle Volumes

	Street Segments	Future Pre-Project ADT
A	Haskell Avenue Between Victory Boulevard & Orange Line Busway	3,036
B	Victory Boulevard Between Woodley Avenue & I-405	59,469
C	Arleta Avenue Between Devonshire Street & Van Nuys Boulevard	19,638
D	Arleta Avenue Van Nuys Boulevard & Terra Bella Street	16,127
E	Arleta Avenue Between Terra Bella Street and Osborne Street	18,683
F	Arleta Avenue Between Osborne Street and Branford Street	23,766

The highest daily vehicle volume, under this scenario, would continue to be at the roadway segment of Victory Boulevard between Woodley Avenue and I-405.

As shown in Table 13, all of the roadway segments would operate at LOS D or better during the pre-Project conditions, except for the following segment:

- Victory Boulevard, between Woodley Avenue and I-405 – Operations would worsen to LOS F during the a.m. and p.m. peak hours.

Table 13 – Study Roadway Segments – Future Without-Project Daily Vehicle Volumes

	Street Segments	Peak Period	# of Lanes	Capacity	Base Volumes: Existing Volumes	Existing V/C	Existing LOS	Ambient Growth + Area Projects	Future Pre-Project Volumes	Future Pre-Project V/C	Future Pre-Project LOS
A	Haskell Avenue	AM	2	1,600	445	0.278	A	14.9%	511	0.319	A
	Between Victory Boulevard & Orange Line Busway	PM			275	0.172	A	14.9%	316	0.198	A
B	Victory Boulevard	AM	6	4,800	4,279	0.891	D	14.9%	4,917	1.024	**F**
	Between Woodley Avenue & I-405	PM			4,381	0.913	**E**	14.9%	5,034	1.049	**F**
C	Arleta Avenue	AM	4	2,800	1,832	0.654	B	14.9%	2,105	0.752	C
	Between Devonshire Street & Van Nuys Boulevard	PM			1,592	0.569	A	14.9%	1,829	0.653	B
D	Arleta Avenue	AM	4	2,800	1,647	0.588	A	14.9%	1,892	0.676	B
	Van Nuys Boulevard & Terra Bella Street	PM			1,395	0.498	A	14.9%	1,603	0.573	A
E	Arleta Avenue	AM	4	2,800	1,805	0.645	B	14.9%	2,074	0.741	C
	Between Terra Bella Street and Osborne Street	PM			1,670	0.596	A	14.9%	1,919	0.685	B
F	Arleta Avenue	AM	4	2,800	2,036	0.727	C	14.9%	2,339	0.835	D
	Between Osborne Street and Branford Street	PM			2,175	0.777	C	14.9%	2,499	0.893	D

7. Project Construction-Period Conditions and Impacts

7.1 Significant Impact Guidelines

Traffic impacts are identified if a proposed development will result in a significant change in traffic conditions at a study intersection or roadway segment. A significant impact is typically identified if project-related traffic will cause service levels to deteriorate beyond a threshold limit specified by the overseeing agency.

The City of Los Angeles Department of Transportation has established specific thresholds for project related increases in the volume-to-capacity ratio (V/C) of signalized study intersections. The following increases in peak-hour V/C ratios are considered significant impacts:

Level of Service	**Final V/C***	**Project Related v/c increase**
C	> 0.700 – 0.800	Equal to or greater than 0.040
D	> 0.800 – 0.900	Equal to or greater than 0.020
E and F	0.901 or more	Equal to or greater than 0.010

Note: Final V/C is the V/C ratio at an intersection, considering impacts from the project, ambient and related project growth, and without proposed traffic impact mitigations.

However, these traditional incremental thresholds were not applied for this analysis, as those are developed for and only useful for the analysis of development projects. Instead, the threshold of significance for Project construction is the causing or worsening of level of service to LOS E or F, which represents at-capacity or over-capacity conditions. Significant roadway segment impacts were defined based on worsening in peak-hour LOS values within or to E or F due to Project construction.

Study area traffic operations for the construction period are discussed below, along with significant impact determinations.

7.2 Project Construction Period Study Intersection Analysis

In addition to the construction-period trip generation, the thru capacity of the roadway through lanes would be effectively reduced by 50 percent where work areas would be established.

The study intersection operations across all analyzed scenarios, for the proposed Project, are summarized in Table 14. Construction of the proposed Project would worsen operations to or within LOS E or F, triggering significant impacts at the following intersections:

- Woodley Avenue / Victory Boulevard – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Haskell Avenue / Victory Boulevard – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Glenoaks Boulevard / Osborne Street – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Arleta Avenue / Branford Street – Operations would worsen within LOS E in both the a.m. and p.m. peak hours.

- Arleta Avenue / Van Nuys Boulevard – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Arleta Avenue / Osborne Street – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.

Recommended mitigation measures are provided in Section 10 of this report.

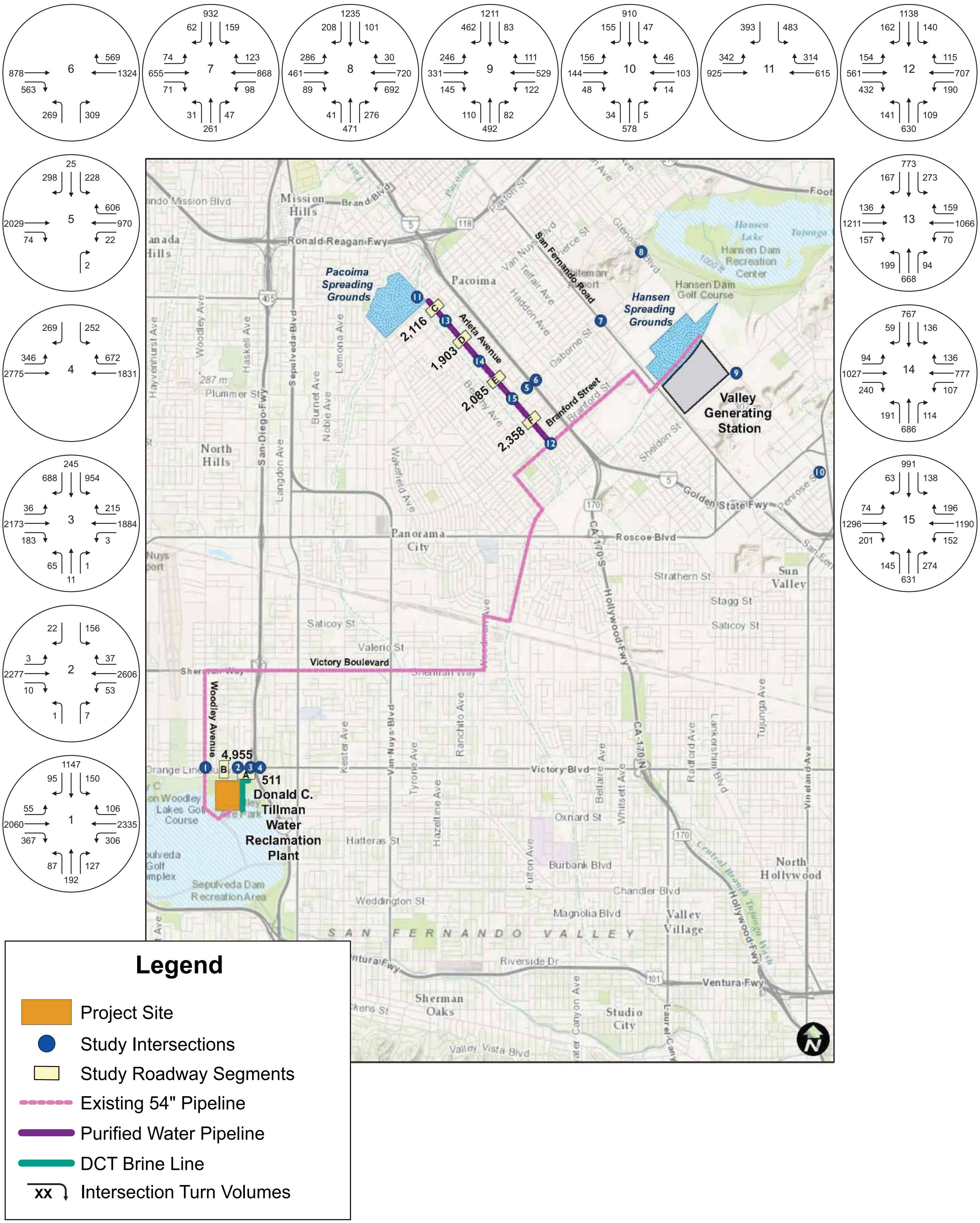
Table 14 – Study Intersection Impacts
Future plus-Project Construction Conditions

	Study Intersections	Peak Hour	Future (2022) No Project		Future (2022) With Project	
			V/C	LOS	V/C	LOS
1	Woodley Avenue & Victory Boulevard	AM	1.272	**F**	1.274	**F**
		PM	1.132	**F**	1.133	**F**
2	Densmore Avenue & Victory Boulevard	AM	0.747	C	0.751	C
		PM	0.648	B	0.681	B
3	Haskell Avenue & Victory Boulevard	AM	1.231	**F**	1.238	**F**
		PM	1.199	**F**	1.200	**F**
4	I-405 NB Ramps & Victory Boulevard	AM	0.843	D	0.849	D
		PM	0.873	D	0.881	D
5	I-5 SB Ramps & Osborne Street	AM	0.733	C	0.736	C
		PM	0.879	D	0.881	D
6	I-5 NB Ramps & Osborne Street	AM	0.722	C	0.724	C
		PM	0.866	D	0.868	D
7	San Fernando Road & Osborne Street	AM	0.746	C	0.748	C
		PM	0.814	D	0.817	D
8	Glenoaks Boulevard & Osborne Street	AM	1.147	**F**	1.150	**F**
		PM	1.098	**F**	1.099	**F**
9	Glenoaks Boulevard & Sheldon Street	AM	0.854	D	0.854	D
		PM	0.842	D	0.843	D
10	Glenoaks Boulevard & Penrose Street	AM	0.499	A	0.499	A
		PM	0.483	A	0.484	A
11	Arleta Avenue & Devonshire Street	AM	0.680	B	0.686	B
		PM	0.861	D	0.869	D
12	Arleta Avenue & Branford Street	AM	0.980	**E**	0.985	**E**
		PM	0.990	**E**	0.995	**E**
13	Arleta Avenue & Van Nuys Boulevard	AM	1.021	**F**	1.024	**F**
		PM	1.040	**F**	1.045	**F**
14	Arleta Avenue & Terra Bella Street	AM	0.894	D	0.896	D
		PM	0.771	C	0.774	C
15	Arleta Avenue & Osborne Street	AM	1.044	**F**	1.048	**F**
		PM	1.079	**F**	1.083	**F**

LOS = Level of Service, V/C = Volume-to-Capacity Ratio

** Unsignalized Intersections*

The construction period analyzed traffic volumes at the study intersections and roadways are provided on Figure 12 (a.m. peak) and Figure 13 (p.m. peak). The level of service calculation worksheets for this analysis scenario are provided in Appendix F.

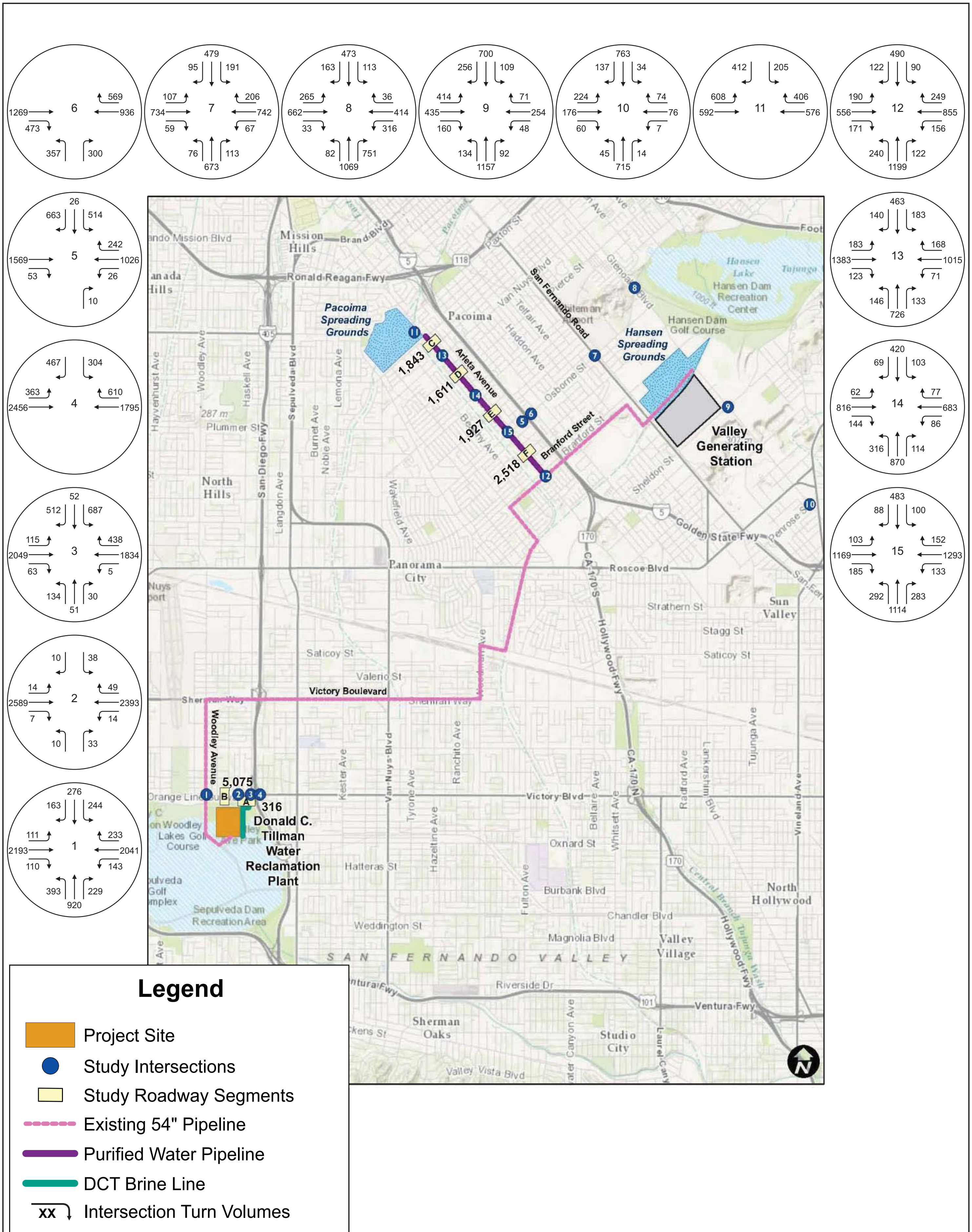


KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 12

Future with Project Construction - AM Peak Hour Intersection Volumes



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 13

Future with Project Construction - PM Peak Hour Intersection Volumes

7.3 Project Construction Period Roadway Segment Analysis

The daily volumes on the study roadway segments, for conditions with construction of the proposed Project, are provided in Table 15. Impacts to these roadway segments are evaluated after this informational table.

Table 15 – Roadway Segment Daily Volumes

	Street Segments	Future with Project ADT
A	Haskell Avenue Between Victory Boulevard & Orange Line Busway	3,036
B	Victory Boulevard Between Woodley Avenue & I-405	59,695
C	Arleta Avenue Between Devonshire Street & Van Nuys Boulevard	19,707
D	Arleta Avenue Van Nuys Boulevard & Terra Bella Street	16,181
E	Arleta Avenue Between Terra Bella Street and Osborne Street	18,737
F	Arleta Avenue Between Osborne Street and Branford Street	23,860

Peak hour traffic impacts were analyzed at the study roadway segments to determine potential significant impacts at these locations. Table 16 summarizes the analysis of peak-hour volumes for this scenario, based on the existing daily traffic counts, ambient growth, and the project construction trips.

Table 16 – Peak-Hour Study Roadway Segment Impacts

			Base Volumes									Proposed Project					
					Existing				Future Pre-Project						Future with Project		
	Street Segments	Peak Period	# of Lanes	Capacity	Volumes	V/C	LOS	Ambient Growth + Area Projects	Volumes	V/C	LOS	# of Lanes	Capacity	Project Only	Volumes	V/C	LOS
A	Haskell Avenue	AM	2	1,600	445	0.278	A	14.9%	511	0.319	A	1	800	0	511	0.639	B
	Between Victory Boulevard & Orange Line Busway	PM			275	0.172	A	14.9%	316	0.198	A			0	316	0.395	A
B	Victory Boulevard	AM	6	4,800	4,279	0.891	D	14.9%	4,917	1.024	**F**	6	4,800	38	4,955	1.032	**F**
	Between Woodley Avenue & I-405	PM			4,381	0.913	**E**	14.9%	5,034	1.049	**F**			41	5,075	1.057	**F**
C	Arleta Avenue	AM	4	2,800	1,832	0.654	B	14.9%	2,105	0.752	C	2	1,600	11	2,116	1.323	**F**
	Between Devonshire Street & Van Nuys Boulevard	PM			1,592	0.569	A	14.9%	1,829	0.653	B			14	1,843	1.152	**F**
D	Arleta Avenue	AM	4	2,800	1,647	0.588	A	14.9%	1,892	0.676	B	2	1,200	11	1,903	1.586	**F**
	Van Nuys Boulevard & Terra Bella Street	PM			1,395	0.498	A	14.9%	1,603	0.573	A			8	1,611	1.343	**F**
E	Arleta Avenue	AM	4	2,800	1,805	0.645	B	14.9%	2,074	0.741	C	2	1,200	11	2,085	1.738	**F**
	Between Terra Bella Street and Osborne Street	PM			1,670	0.596	A	14.9%	1,919	0.685	B			8	1,927	1.606	**F**
F	Arleta Avenue	AM	4	2,800	2,036	0.727	C	14.9%	2,339	0.835	D	2	1,200	19	2,358	1.965	**F**
	Between Osborne Street and Branford Street	PM			2,175	0.777	C	14.9%	2,499	0.893	D			19	2,518	2.098	**F**

The project is expected to create significant roadway impacts along the following segment:

- Victory Boulevard, between Woodley Avenue and I-405 – Operations would worsen within LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Devonshire Street and Van Nuys Boulevard – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Van Nuys Boulevard and Terra Bella Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Terra Bella Street and Osborne Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Osborne Street and Branford Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.

Even though the Level of Service on the Haskell Avenue segment (A) does not reach LOS E or F, the total number of lanes will be reduced from two to one (to one-way flow). Such conditions can create bottlenecks, and vehicle queuing at intersections and roadways.

Given the lane reduction and traffic issues associated with one-way single-lane operations, a significant traffic impact may be triggered based on the likely secondary impact that would be created, even though the LOS does not reach E or F. As such, traffic conditions would need to be monitored and adequate mitigation measures must be implemented during construction.

Recommended mitigation measures are provided in Section 10 of this report.

8. Valley Generating Station (VGS) Alternative – Traffic Analysis

This section of the report summarizes the project alternative at the Valley Generating Station (VGS) in the Sun Valley and Pacoima neighborhoods of the San Fernando Valley in the City of Los Angeles.

Like the proposed Project, the VGS alternative would construct a new AWPF facility that would treat recycled water and pump purified water from the VGS site to the adjacent Hansen Spreading Grounds (HSG) and the Pacoima Spreading Grounds (PSG). New connecting pipelines on Arleta Avenue between the PSG and Branford Street, on Branford Street between Arleta Avenue and San Fernando Road, and on San Fernando Road to the VGS, would be required. Minor construction activities would still take place at the DCT site. Also, a brine line would be constructed from VGS along San Fernando Road, Sheldon Street, Laurel Canyon Boulevard, Erwin Street, and Colfax Avenue to the Additional Valley Outfall Relief Sewer near the Hollywood Hills.

Figure 14 shows the VGS alternative study area and analysis locations.

8.1 Study Intersections and Roadway Segments

For the traffic impact analysis, 17 locations were defined as study intersections. Existing intersection traffic volumes were collected on Wednesday, May 27, 2015 and on Thursday, September 3, 2015. The following are the 17 signalized study intersections:

1. Woodley Avenue & Victory Boulevard
2. Densmore Avenue & Victory Boulevard
3. Haskell Avenue & Victory Boulevard
4. I-405 NB Ramps & Victory Boulevard
5. I-5 SB Ramps & Osborne Street
6. I-5 NB Ramps & Osborne Street
7. San Fernando Road & Osborne Street
8. Glenoaks Boulevard & Osborne Street
9. Glenoaks Boulevard & Sheldon Street
10. Glenoaks Boulevard & Penrose Street
11. Arleta Avenue & Devonshire Street
12. Arleta Avenue & Branford Street
13. Arleta Avenue & Van Nuys Boulevard
14. Arleta Avenue & Terra Bella Street
15. Arleta Avenue & Osborne Street
16. Laurel Canyon Boulevard & Branford Street
17. San Fernando Road & Branford Street

The following 20 roadway segments were also included in the study area:

B. Victory Boulevard, between Woodley Avenue and I-405
C. Arleta Avenue, between Devonshire Street and Van Nuys Boulevard
D. Arleta Avenue, between Van Nuys Boulevard and Terra Bella Street
E. Arleta Avenue, between Terra Bella Street and Osborne Street
F. Arleta Avenue, between Osborne Street and Branford Street
G. Branford Street, between Canterbury Avenue and I-405
H. Branford Street, between I-405 and San Fernando Road

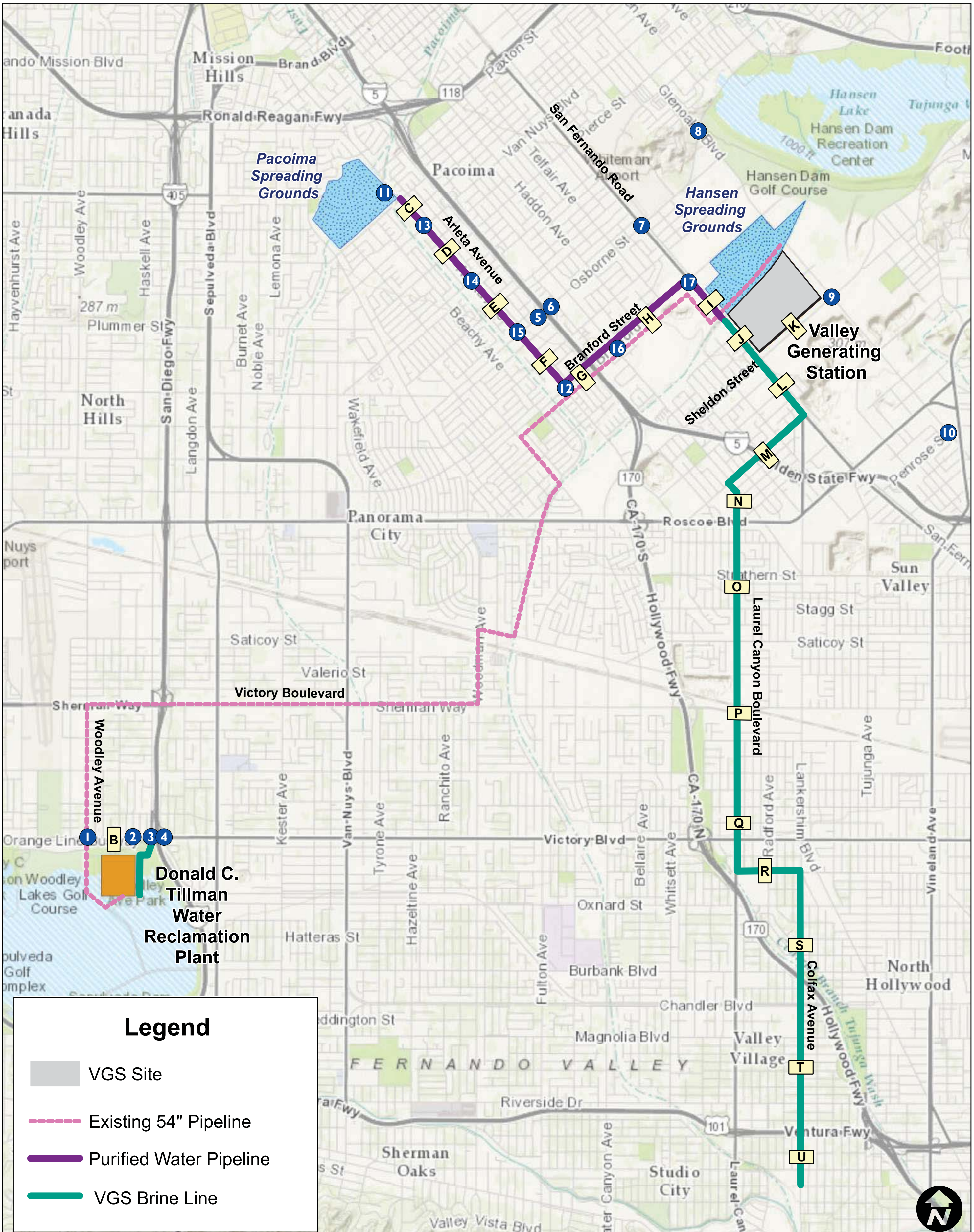
I. San Fernando Road, between Branford Street and Tujunga Wash
J. San Fernando Road, between Tujunga Wash and Sheldon Street
K. Sheldon Street, between Glenoaks Boulevard and San Fernando Road
L. San Fernando Road, between Sheldon Street and Peoria Street
M. Peoria Street, between San Fernando Road and Laurel Canyon Boulevard
N. Laurel Canyon Boulevard, between Webb Avenue and Roscoe Boulevard
O. Laurel Canyon Boulevard, between Roscoe Boulevard and Saticoy Street
P. Laurel Canyon Boulevard, between Saticoy Street and Vanowen Street
Q. Laurel Canyon Boulevard, between Vanowen Street and Erwin Street
R. Erwin Street, between Laurel Canyon Boulevard and Colfax Avenue
S. Colfax Avenue, between Erwin Street and Orange Line Busway
T. Colfax Avenue, between Orange Line Busway and US-101
U. Colfax Avenue, between US-101 and Woodbridge Street

Some of the VGS Alternative study intersections and segments overlap with those analyzed for the proposed Project. The counts for the additional intersections and segments were counted on the same day as those for the proposed Project.

Figure 15 illustrates the study intersection approach lanes and control configurations.

Table 17 summarizes the characteristics of key roadway segments along the project corridor of construction.

The intersection traffic count summaries are also provided in Appendix A1 of this report, and roadway segment count summaries are provided in Appendix A2.

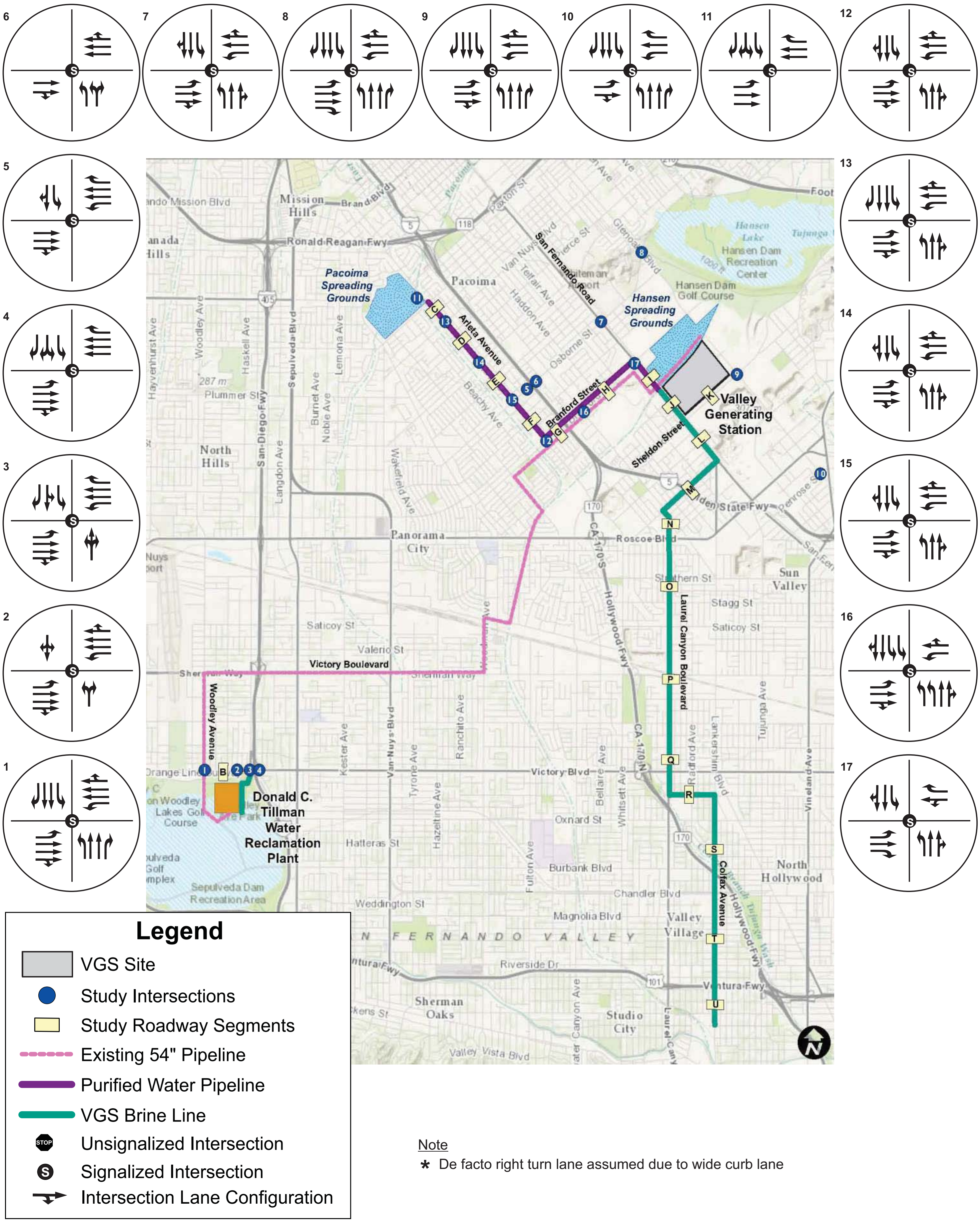


KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 14

VGS - Project Study Area



Note

* De facto right turn lane assumed due to wide curb lane

KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 15

VGS Alternative - Intersection Lane Configuration

Table 17 – VGS Alternative Corridor Roadway Characteristics

Street	From	To	Functional Classification	Lane		Median Type	Parking Restrictions		Land Use	Speed Limit	Roadway Width (feet)
				NB / EB	SB / WB		NB / EB	SB / WB			
Victory Boulevard	Woodley Avenue	I-405	Major Hwy Class II	3	2	CLTL	NSAT	NS 4pm – 7pm	Residential	35	80'
Arleta Avenue	Van Nuys Boulevard	Branford Street	Avenue II	2	2	CLTL / DY	NL	NL	Residential	40	60'
Branford Street	Canterbury Avenue	I-5	Secondary Highway	2	2	CLTL	NL	NL	Residential	35	60' to 70'
Branford Street	I-5	San Fernando Road	Secondary Highway	2	1	DY	NL	NL	Residential / Commercial	35	60' to 70'
San Fernando Road	Branford Street	Sheldon Street	Major Highway Class II	2	2	CLTL	NSAT	NSAT	Industrial	35	50' to 60'
Sheldon Street	Glenoaks Boulevard	San Fernando Road	Secondary Highway	2	2	CLTL	NL	NL	Industrial	40	60' to 70'
San Fernando Road	Sheldon Street	Peoria Street	Major Highway Class II	2	2	DY	NSAT	NL	Industrial	35	50' to 60'
Glenoaks Boulevard	Osborne Street	Penrose Street	Boulevard II	2	2	CLTL / Median	NL / NSAT	NL / NSAT	Industrial	45	70' to 80'
Peoria Street	San Fernando Road	Laurel Canyon Boulevard	Collector Street	1	1	N/A	NL	NL	Residential	25	30'

Street	From	To	Functional Classification	Lane		Median Type	Parking Restrictions		Land Use	Speed Limit	Roadway Width (feet)
				NB / EB	SB / WB		NB / EB	SB / WB			
Laurel Canyon Boulevard	Webb Avenue	Roscoe Boulevard	Major Highway Class II	2	2	CLTL	NL	NL / NSAT	Residential	35	70' to 80'
Laurel Canyon Boulevard	Roscoe Boulevard	Saticoy Street	Major Highway Class II	2	2	CLTL	NL	NL	Residential	35	70' to 80'
Laurel Canyon Boulevard	Saticoy Street	Vanowen Street	Major Highway Class II	2	2	CLTL	NL / 2HR	NL / 2 HR	Industrial / Commercial	40	80' to 90'
Laurel Canyon Boulevard	Vanowen Street	Erwin Street	Major Highway Class II	2	2	CLTL / RM	NL / 2HR	NL / 2HR	Residential / Commercial	40	80' to 90'
Erwin Street	Laurel Canyon Boulevard	Colfax Avenue	Collector Street	1	1	RM / N/A	NL	NL	Residential	25	30' to 40'
Colfax Avenue	Erwin Street	Woodbridge Street	Secondary Highway	1	1	CLTL	NL	NL	Residential	25	50'

DY - Double Yellow   2LT - Dual Left Turn   PA - Parking Anytime   NSAT - No Stopping Anytime   NPAT - No Parking Anytime

8.2 VGS Alternative - Existing Intersection and Roadways Levels of Service

Table 18 provides the V/C and LOS values under existing conditions, for the a.m. and p.m. peak hours.

Table 18 – VGS - Intersection Level of Service Calculations – Existing Conditions

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Woodley Avenue & Victory Boulevard	1.107	**F**	0.985	**E**
2	Densmore Avenue & Victory Boulevard	0.650	B	0.564	A
3	Haskell Avenue & Victory Boulevard	1.071	**F**	1.044	**F**
4	I-405 NB Ramps & Victory Boulevard	0.734	C	0.760	C
5	I-5 SB Ramps & Osborne Street	0.638	B	0.765	C
6	I-5 NB Ramps & Osborne Street	0.628	B	0.753	C
7	San Fernando Road & Osborne Street	0.649	B	0.709	C
8	Glenoaks Boulevard & Osborne Street	0.999	**E**	0.956	**E**
9	Glenoaks Boulevard & Sheldon Street	0.743	C	0.733	C
10	Glenoaks Boulevard & Penrose Street	0.434	A	0.421	A
11	Arleta Avenue & Devonshire Street	0.592	A	0.749	C
12	Arleta Avenue & Branford Street	0.853	D	0.862	D
13	Arleta Avenue & Van Nuys Boulevard	0.885	D	0.905	**E**
14	Arleta Avenue & Terra Bella Street	0.778	C	0.671	B
15	Arleta Avenue & Osborne Street	0.908	**E**	0.939	**E**
16	Laurel Canyon Boulevard & Branford Street	0.863	D	0.929	**E**
17	San Fernando Road & Branford Street	0.682	B	0.784	C

LOS = Level of Service; V/C = Volume-to-Capacity Ratio

** Unsignalized Intersection*

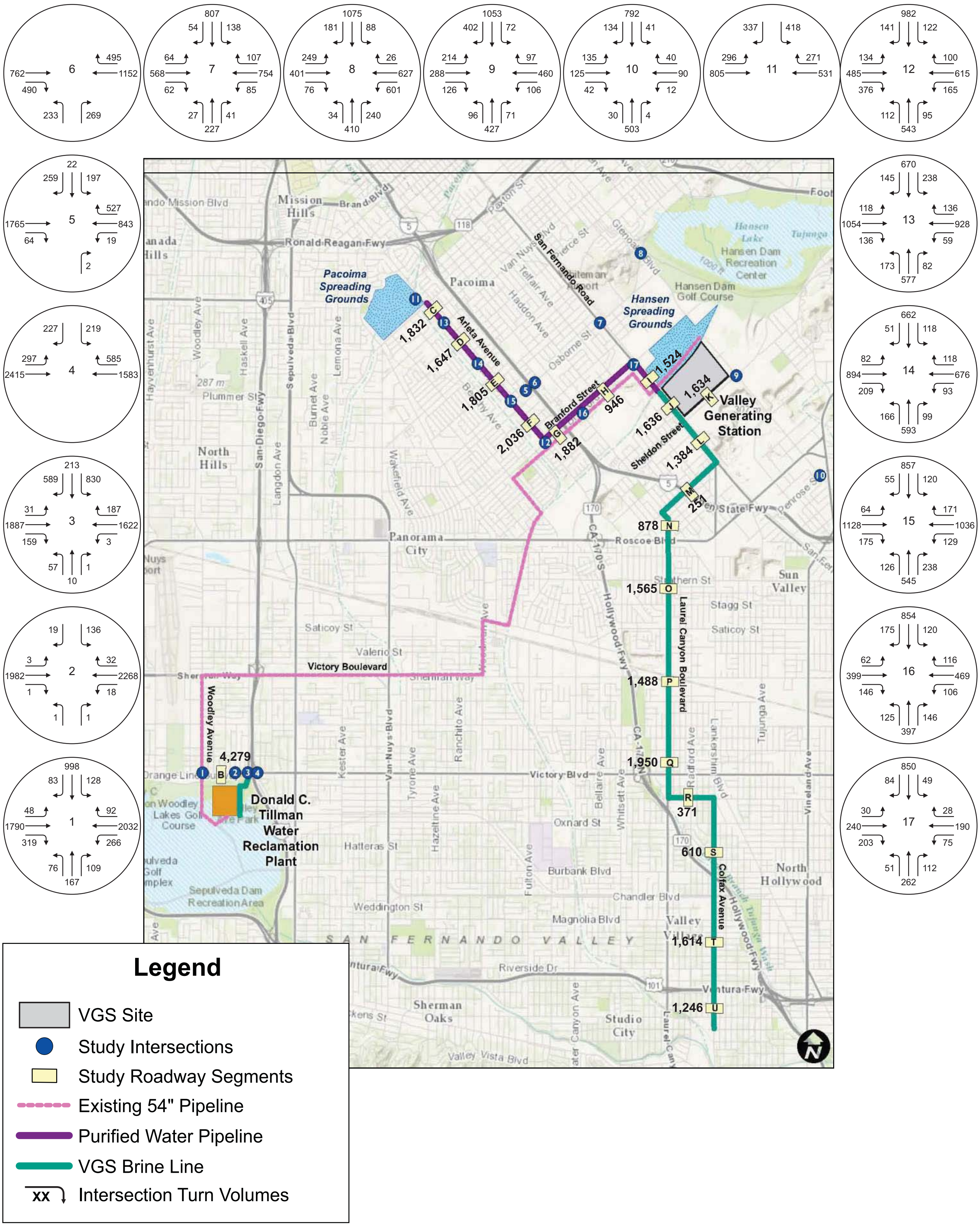
The data in Table 18 indicates that 11 of the 17 study intersections are currently operating at LOS D or better during the a.m. and p.m. peak hours. The following intersections are operating at LOS E (poor operating conditions, nearing capacity) or LOS F (at / overcapacity):

- Woodley Avenue / Victory Boulevard – Operating at LOS F in the a.m. peak hour and E in the p.m. peak hour.
- Haskell Avenue / Victory Boulevard – Operating at LOS F in the a.m. and p.m. peak hours.
- Glenoaks Boulevard / Osborne Street – Operating at LOS E in the a.m. and p.m. peak hours.
- Arleta Avenue / Van Nuys Boulevard – Operating at LOS E in the p.m. peak hour.
- Arleta Avenue / Osborne Street – Operating at LOS E in the a.m. and p.m. peak hours.
- Laurel Canyon Boulevard / Branford Street – Operating at LOS E in the p.m. peak hour.

The existing peak-hour turn movement volumes at the study intersections are provided on Figure 16 (a.m. peak) and Figure 17 (p.m. peak).

The intersection level of service worksheets for the existing conditions scenario are also provided in Appendix B of this report

For the study roadway segments under the VGS alternative, Table 19 provides a summary of the average daily traffic (ADT) volumes at the segment locations. Table 20 provides a summary of the existing peak-hour conditions. As Table 20 shows, of the 20 roadway segments, 17 are operating at LOS D or better.

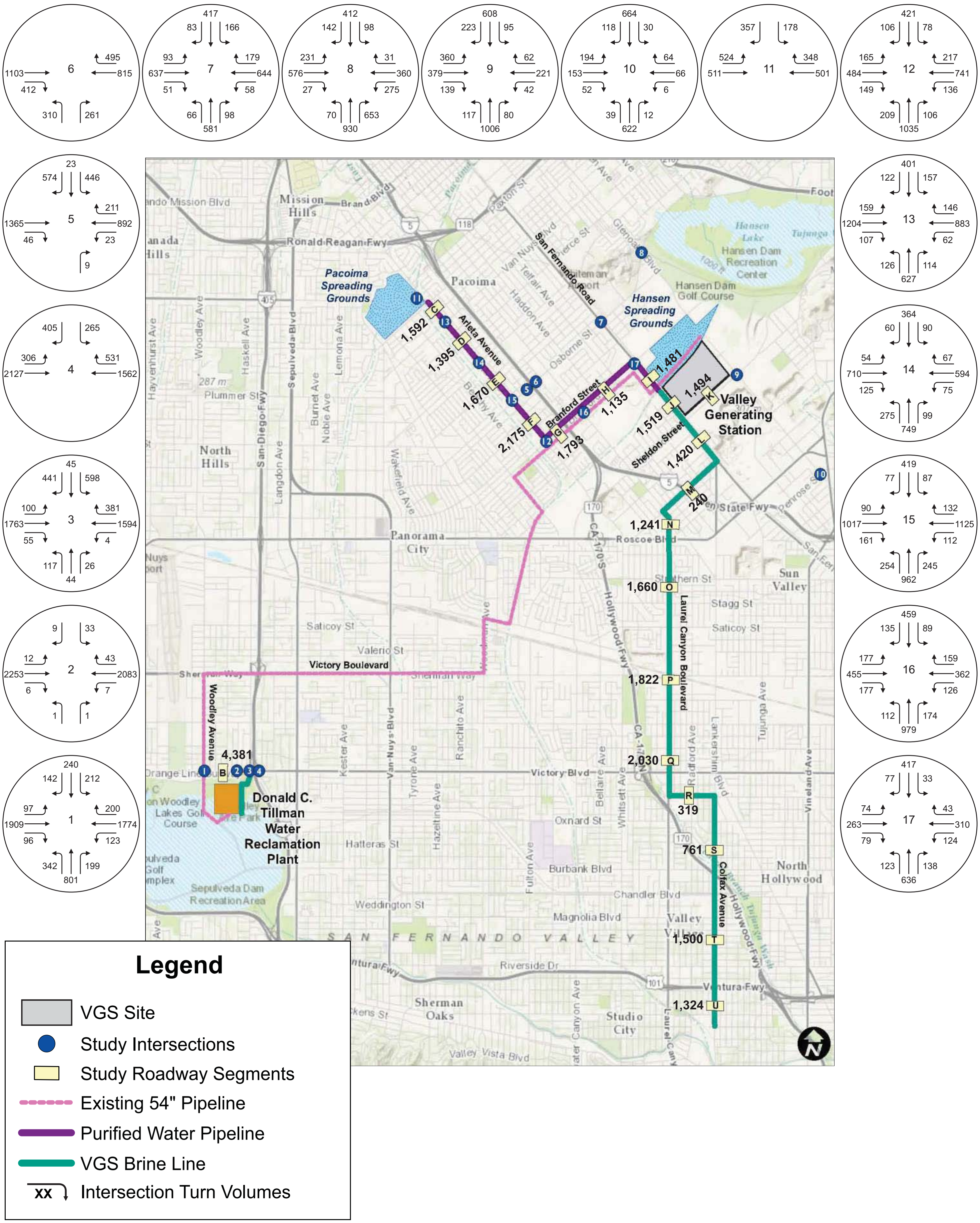


KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 16

VGS - Existing AM Peak Hour Traffic Volumes



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 17

VGS - Existing PM Peak Hour Traffic Volumes

Table 19 – VGS - Study Roadway Segments – Existing Weekday Daily Vehicle Volumes

	Street Segments	Existing ADT
B	Victory Boulevard Between Woodley Avenue & I-405	51,757
C	Arleta Avenue Between Devonshire Street & Van Nuys Boulevard	17,091
D	Arleta Avenue Van Nuys Boulevard & Terra Bella Street	14,036
E	Arleta Avenue Between Terra Bella Street and Osborne Street	16,260
F	Arleta Avenue Between Osborne Street and Branford Street	20,684
G	Branford Street Between Canterbury Avenue and I-5	19,154
H	Branford Street Between I-5 and San Fernando Road	12,504
I	San Fernando Road Branford Street and Tujunga Wash	17,984
J	San Fernando Road Between Tujunga Wash and Sheldon Street	20,184
K	Sheldon Street Between Glenoaks Boulevard and San Fernando Road	18,279
L	San Fernando Road Between Sheldon Street and Peoria Street	17,691
M	Peoria Street Between San Fernando Road and Laurel Canyon Boulevard	2,849
N	Laurel Canyon Boulevard Between Webb Avenue and Roscoe Boulevard	14,487
O	Laurel Canyon Boulevard Between Roscoe Boulevard and Saticoy Street	18,931
P	Laurel Canyon Boulevard Between Saticoy Street and Vanowen Street	20,391
Q	Laurel Canyon Boulevard Between Vanowen Street and Erwin Street	27,464
R	Erwin Street Between Laurel Canyon Boulevard and Colfax Avenue	3,670
S	Colfax Avenue Between Erwin Street and Orange Line Busway	8,875
T	Colfax Avenue Between Orange Line Busway and US-101	16,823
U	Colfax Avenue Between US-101 and Woodbridge Street	16,403

Table 20 – VGS - Study Roadway Segments – Existing Peak-Hour Weekday Level of Service

	Street Segments	Peak Period	Existing Volumes				
			# of Lanes	Capacity	Existing		
					Volumes	V/C	LOS
B	Victory Boulevard	AM	6	4,800	4,279	0.891	D
	Between Woodley Avenue & I-405	PM			4,381	0.913	**E**
C	Arleta Avenue	AM	4	2,800	1,832	0.654	B
	Between Devonshire Street & Van Nuys Boulevard	PM			1,592	0.569	A
D	Arleta Avenue	AM	4	2,800	1,647	0.588	A
	Van Nuys Boulevard & Terra Bella Street	PM			1,395	0.498	A
E	Arleta Avenue	AM	4	2,800	1,805	0.645	B
	Between Terra Bella Street and Osborne Street	PM			1,670	0.596	A
F	Arleta Avenue	AM	4	2,800	2,036	0.727	C
	Between Osborne Street and Branford Street	PM			2,175	0.777	C
G	Branford Street	AM	4	2,800	1,882	0.672	B
	Between Canterbury Avenue and I-5	PM			1,793	0.640	B
H	Branford Street	AM	3	2,100	946	0.450	A
	Between I-5 and San Fernando Road	PM			1,135	0.540	A
I	San Fernando Road	AM	4	3,200	1,524	0.476	A
	Branford Street and Tujunga Wash	PM			1,481	0.463	A
J	San Fernando Road	AM	4	3,200	1,636	0.511	A
	Between Tujunga Wash and Sheldon Street	PM			1,519	0.475	A
K	Sheldon Street	AM	4	2,800	1,634	0.584	A
	Between Glenoaks Boulevard and San Fernando Road	PM			1,494	0.534	A
L	San Fernando Road	AM	4	3,200	1,384	0.433	A
	Between Sheldon Street and Peoria Street	PM			1,420	0.444	A
M	Peoria Street	AM	2	1,200	251	0.209	A
	Between San Fernando Road and Laurel Canyon Boulevard	PM			240	0.200	A
N	Laurel Canyon Boulevard	AM	4	3,200	878	0.274	A
	Between Webb Avenue and Roscoe Boulevard	PM			1,241	0.388	A
O	Laurel Canyon Boulevard	AM	4	3,200	1,565	0.489	A
	Between Roscoe Boulevard and Saticoy Street	PM			1,660	0.519	A
P	Laurel Canyon Boulevard	AM	4	3,200	1,488	0.465	A
	Between Saticoy Street and Vanowen Street	PM			1,822	0.569	A
Q	Laurel Canyon Boulevard	AM	4	3,200	1,950	0.609	B
	Between Vanowen Street and Erwin Street	PM			2,030	0.634	B
R	Erwin Street	AM	2	1,200	371	0.309	A
	Between Laurel Canyon Boulevard and Colfax Avenue	PM			319	0.266	A
S	Colfax Avenue	AM	2	1,400	610	0.436	A
	Between Erwin Street and Orange Line Busway	PM			761	0.544	A
T	Colfax Avenue	AM	2	1,400	1,614	1.153	**F**
	Between Orange Line Busway and US-101	PM			1,500	1.071	**F**
U	Colfax Avenue	AM	2	1,400	1,246	0.890	D
	Between US-101 and Woodbridge Street	PM			1,324	0.946	**E**

8.3 VGS Alternative - Construction Project Trip Generation

In calculating peak-hour trips for the project, it is assumed that a majority of the construction employees will arrive and depart the construction work areas by personal vehicles. The morning arrival by employees is assumed to overlap the a.m. peak hour by 50 percent, with the remaining 50 percent of employees assumed to be at the sites before 7:00 a.m. The same would occur during the p.m. peak hour, with 50 percent of employees assumed to depart the site before 4:00 p.m. Therefore, the same reduction was taken for both peak periods.

During construction activity, daily truck haul activities will occur over an eight-hour period that begins during the a.m. peak period, and is complete during the p.m. peak period.

The VGS alternative construction efforts would require approximately 172 total daily workers throughout the various construction areas; 50 workers at VGS, 18 workers would be at the Donald C. Tillman Plant, 20 will be working on the purified recycled water pipeline along Arleta Avenue and Branford Street, 27 will be working in the Pacoima Spreading Grounds, 27 at the Hansen Spreading Grounds, and 30 workers will be working on the brine line along Laurel Canyon Boulevard.

As indicated in Table 21, the VGS alternative construction would generate a daily total of 724 passenger car equivalent trips, with 137 (112 inbound and 25 outbound) trips occurring during the a.m. peak hour and 137 (25 inbound and 112 outbound) trips occurring during the p.m. peak hour. However, these trips are widely distributed between various sites, as discussed below.

VGS construction trip assignment is shown in Figure 18 (a.m. peak hour) and Figure 19 (p.m. peak hour).

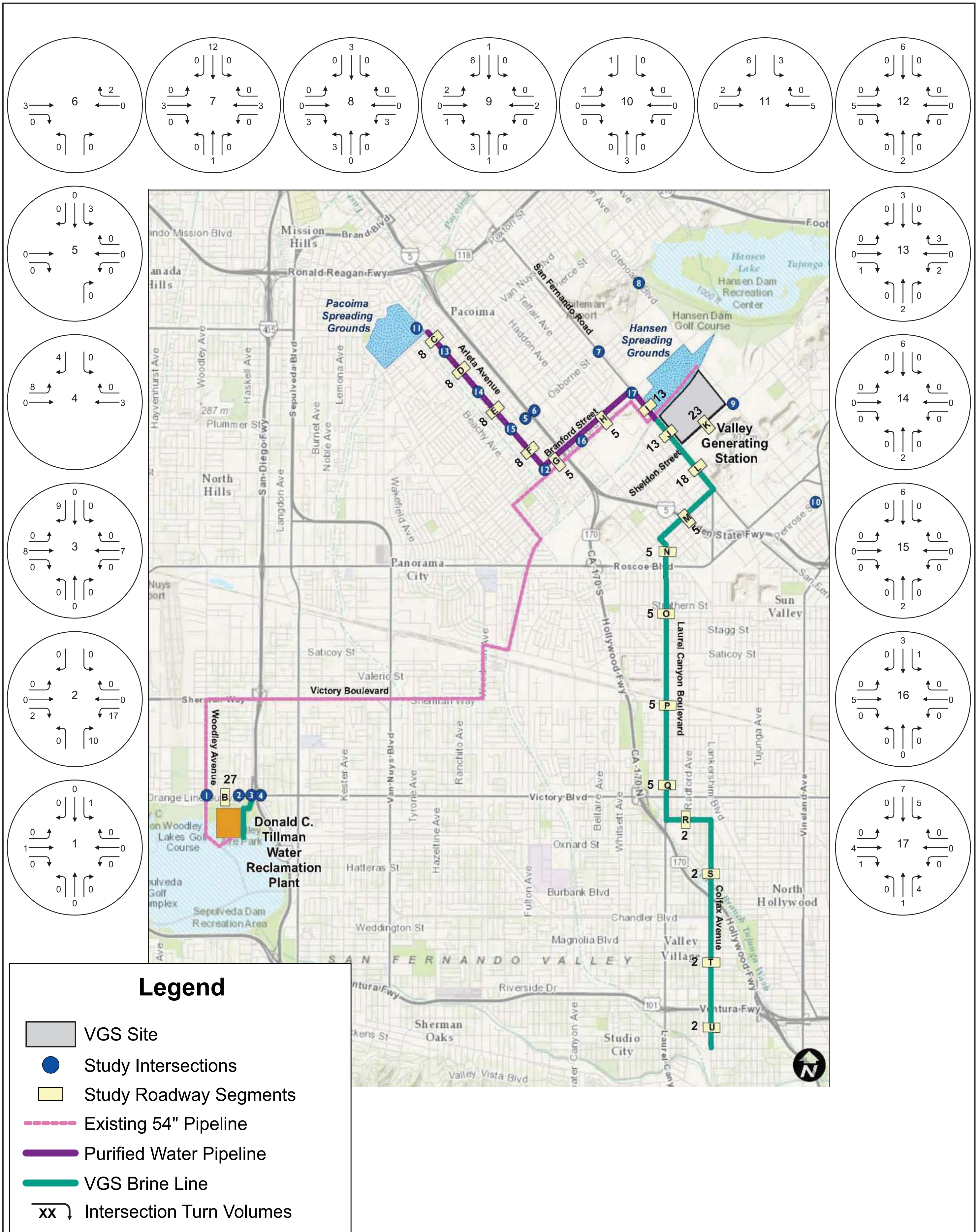
Table 21 – VGS Alternative Trip Generation

TRIP GENERATION SOURCE	AVERAGE DAILY TRIPS			AM PEAK HOUR						PM PEAK HOUR					
				Truck Trips*		Employee Trips		Total Trips		Truck Trips*		Employee Trips		Total Trips	
	Trucks*	Employee	Total	In	Out	In	Out	In	Out	In	Out	In	Out	In	Out
VGS - Trip Generation															
Field Personnel	0	100	100	0	0	25	0	25	0	0	0	0	25	0	25
Trucks	50	0	50	3	3	0	0	3	3	3	3	0	0	3	3
VGS Trips	**50**	**100**	**150**	**3**	**3**	**25**	**0**	**28**	**3**	**3**	**3**	**0**	**25**	**3**	**28**
DCT - Trip Generation															
Field Personnel	0	36	36	0	0	9	0	9	0	0	0	0	9	0	9
Trucks	150	0	150	10	10	0	0	10	10	10	10	0	0	10	10
Pipeline Trips	**150**	**36**	**186**	**10**	**10**	**9**	**0**	**19**	**10**	**10**	**10**	**0**	**9**	**10**	**19**
Purified Recycled Water Pipeline - Trip Generation															
Field Personnel	0	40	40	0	0	10	0	10	0	0	0	0	10	0	10
Trucks	60	0	60	4	4	0	0	4	4	4	4	0	0	4	4
Pipeline Trips	**60**	**40**	**100**	**4**	**4**	**10**	**0**	**14**	**4**	**4**	**4**	**0**	**10**	**4**	**14**
Pacoima Spreading Grounds - Trip Generation															
Field Personnel	0	54	54	0	0	14	0	14	0	0	0	0	14	0	14
Trucks	30	0	30	2	2	0	0	2	2	2	2	0	0	2	2
Pacoima Trips	**30**	**54**	**84**	**2**	**2**	**14**	**0**	**16**	**2**	**2**	**2**	**0**	**14**	**2**	**16**
Hansen Spreading Grounds - Trip Generation															
Field Personnel	0	54	54	0	0	14	0	14	0	0	0	0	14	0	14
Trucks	30	0	30	2	2	0	0	2	2	2	2	0	0	2	2
Hansen Trips	**30**	**54**	**84**	**2**	**2**	**14**	**0**	**16**	**2**	**2**	**2**	**0**	**14**	**2**	**16**
Brine Line - Trip Generation															
Field Personnel	0	60	60	0	0	15	0	15	0	0	0	0	15	0	15
Trucks	60	0	60	4	4	0	0	4	4	4	4	0	0	4	4
Hansen Trips	**60**	**60**	**120**	**4**	**4**	**15**	**0**	**19**	**4**	**4**	**4**	**0**	**15**	**4**	**19**
Grand Total Trips	**380**	**344**	**724**	**25**	**25**	**86**	**0**	**112**	**25**	**25**	**25**	**0**	**86**	**25**	**112**

** Truck trips include a Passenger Car Equivalency (PCE) factor of 2.5.*

Trucks - VGS includes 50 daily trucks, DCT includes 150 daily trucks, Pipeline includes 60 daily trucks, Pacoima includes 30 daily trucks, Hansen includes 30 daily trucks, and Brine Line includes 60 daily trucks, all assumed to all take place on a peak day of construction activity. Assuming 8 hour work day.

Field Personnel – A maximum of 50 workers (VGS), 18 workers (DCT), 20 workers (Pipeline), 27 workers (Pacoima), 27 workers (Hansen), and 30 workers (Brine Line) on an average day of construction. Assume 50% of Field Personnel arrive/depart during peak periods.

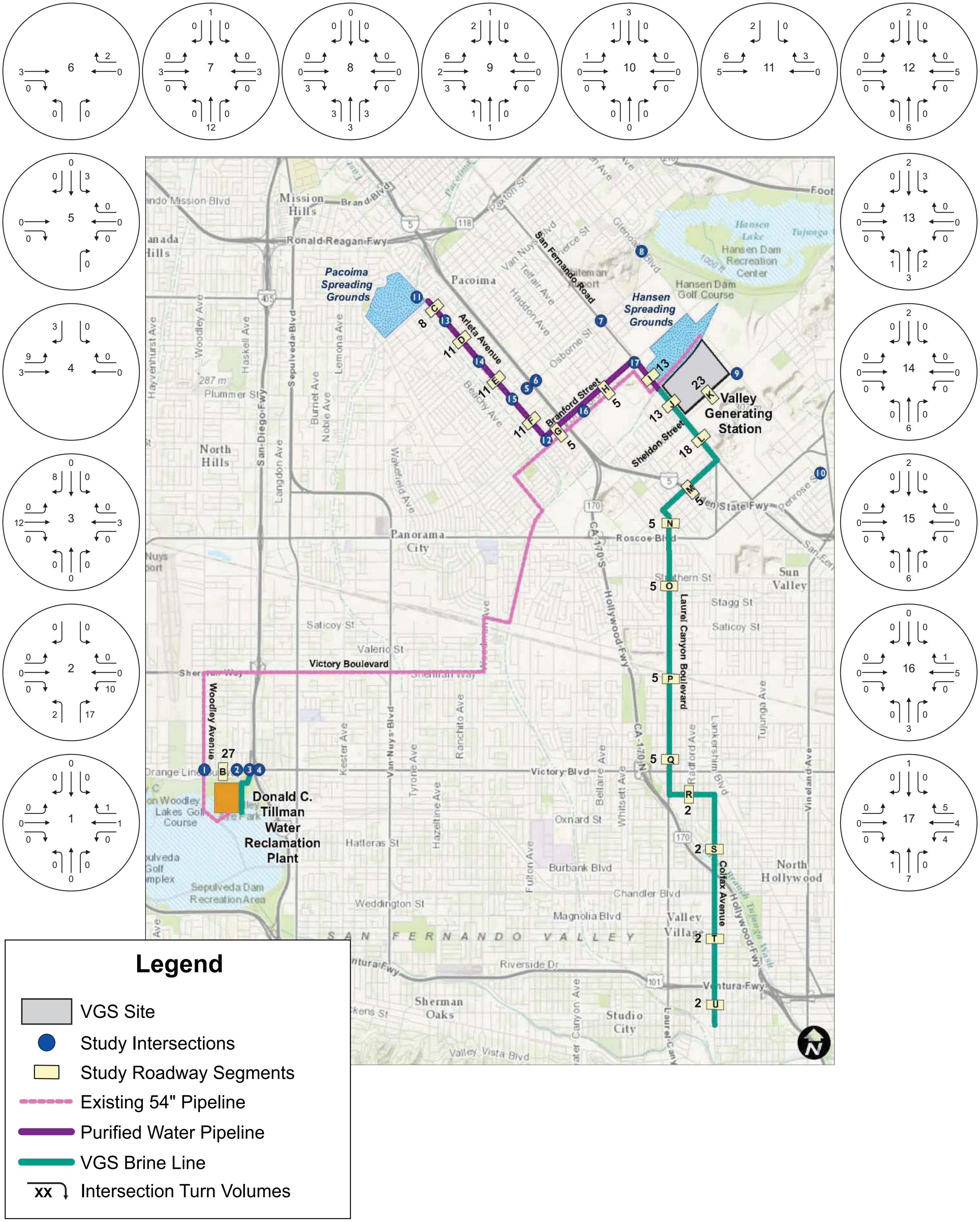


KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 18

VGS Construction Trip Assignment - AM Peak Hour Intersection Volumes



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 19

VGS Construction Trip Assignment - PM Peak Hour Intersection Volumes

8.4 VGS Alternative - Existing + Project Intersection and Roadway Analysis

The study intersection operations for the existing and existing plus-Project scenarios are summarized in Table 22.

At the study intersections, the following significant level of service and operational changes would occur:

- Glenoaks Boulevard / Osborne Street – Operations would worsen to LOS F during the a.m. peak hour.

Construction of the proposed Project would worsen operations to or within LOS E or F, triggering significant impacts at the following intersections:

- Haskell Avenue / Victory Boulevard – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Glenoaks Boulevard / Osborne Street – Operations would worsen to LOS F during the a.m. peak hour and within LOS E during the p.m. peak hour.
- Arleta Avenue / Van Nuys Boulevard – Operations would worsen within LOS E during the p.m. peak hour.
- Arleta Avenue / Osborne Street – Operations would worsen within LOS E in both the a.m. and p.m. peak hours.
- Laurel Canyon Boulevard / Branford Street – Operations would worsen within LOS E during the p.m. peak hour.

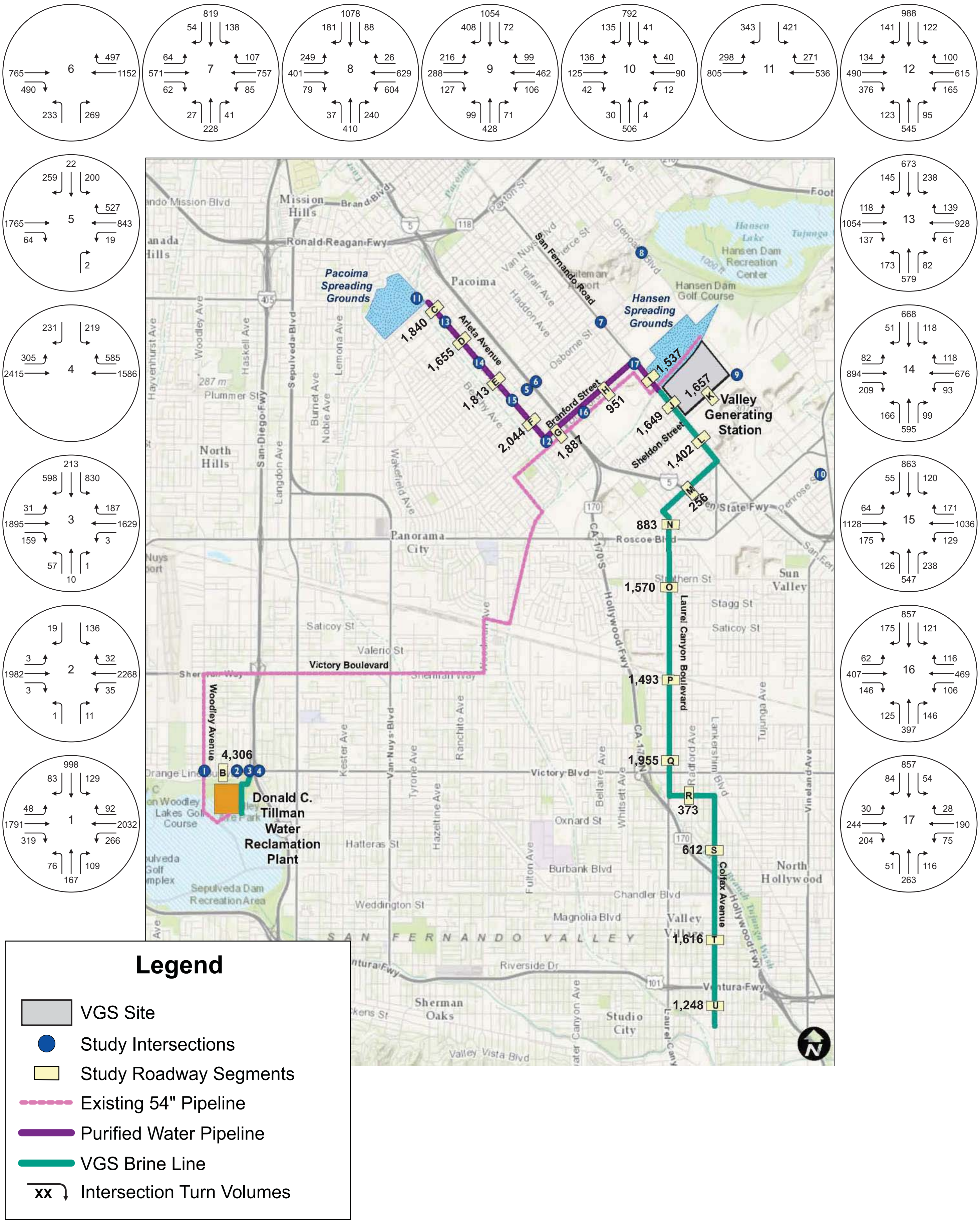
Intersection capacity is not expected to be reduced as construction operations would primarily occur on short segments along the study roadways with minimal impacts on intersection operations. The thru capacity of the roadway through lanes would be effectively reduced by 50 percent where work areas would be established.

The construction period analyzed traffic volumes for the existing plus-Project scenario at the study intersections and roadways are provided on Figure 20 (a.m. peak) and Figure 21 (p.m. peak). The level of service calculation worksheets for this analysis scenario are provided in Appendix G.

Table 22 – VGS - Study Intersection Conditions -
Existing plus-Project Conditions

Study Intersections		AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Woodley Avenue & Victory Boulevard	1.107	**F**	0.985	**E**
2	Densmore Avenue & Victory Boulevard	0.657	B	0.585	A
3	Haskell Avenue & Victory Boulevard	1.074	**F**	1.045	**F**
4	I-405 NB Ramps & Victory Boulevard	0.740	C	0.767	C
5	I-5 SB Ramps & Osborne Street	0.638	B	0.765	C
6	I-5 NB Ramps & Osborne Street	0.631	B	0.756	C
7	San Fernando Road & Osborne Street	0.654	B	0.714	C
8	Glenoaks Boulevard & Osborne Street	1.004	**F**	0.958	**E**
9	Glenoaks Boulevard & Sheldon Street	0.748	C	0.737	C
10	Glenoaks Boulevard & Penrose Street	0.435	A	0.422	A
11	Arleta Avenue & Devonshire Street	0.596	A	0.756	C
12	Arleta Avenue & Branford Street	0.857	D	0.865	D
13	Arleta Avenue & Van Nuys Boulevard	0.887	D	0.909	**E**
14	Arleta Avenue & Terra Bella Street	0.780	C	0.673	B
15	Arleta Avenue & Osborne Street	0.910	**E**	0.941	**E**
16	Laurel Canyon Boulevard & Branford Street	0.864	D	0.934	**E**
17	San Fernando Road & Branford Street	0.687	B	0.792	C

LOS = Level of Service; V/C = Volume-to-Capacity Ratio

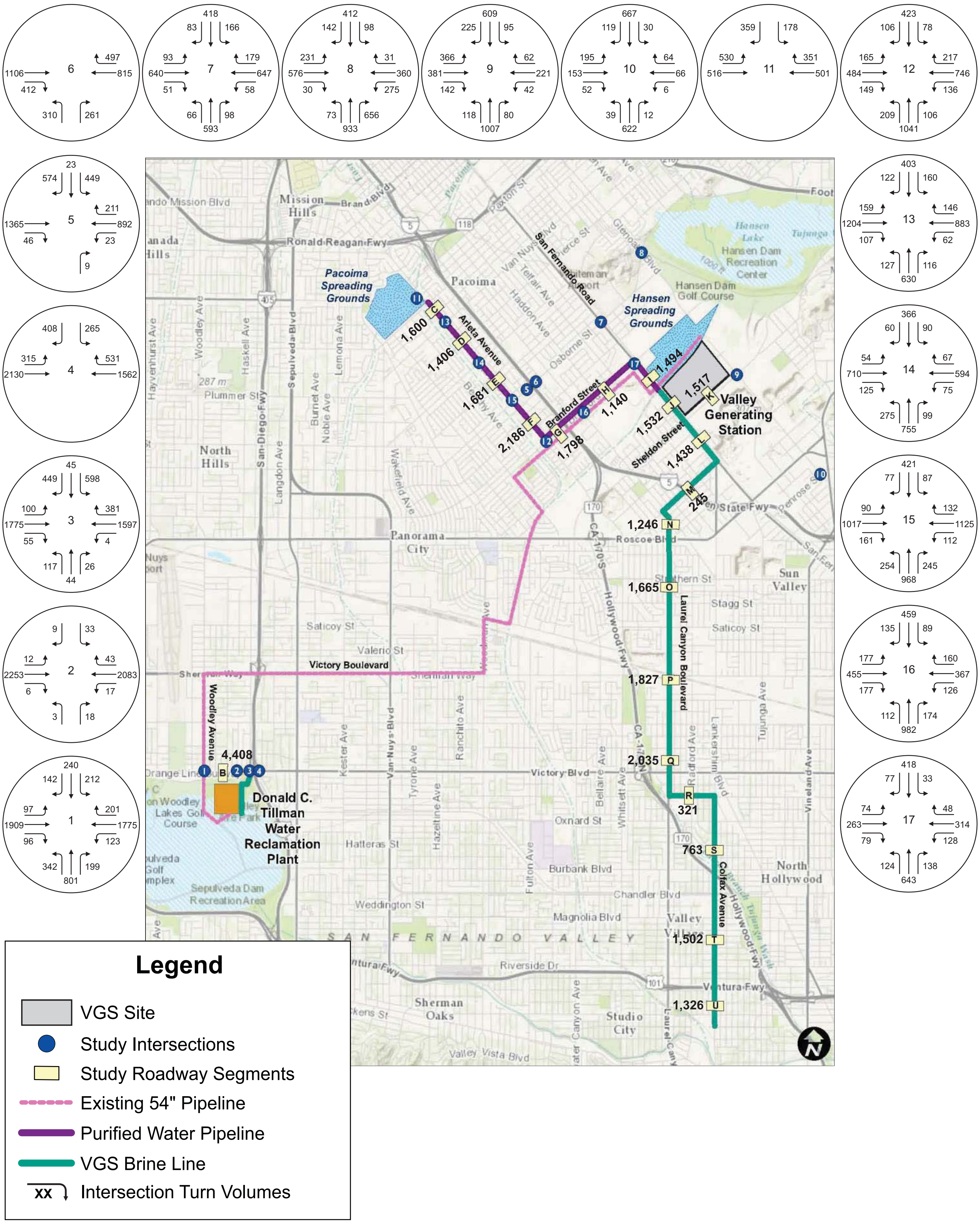


KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 20

VGS - Existing with Project Construction - AM Peak Hour Intersection Volumes



Legend
VGS Site
Study Intersections
Study Roadway Segments
Existing 54" Pipeline
Purified Water Pipeline
VGS Brine Line
XX Intersection Turn Volumes
Pacoima Spreading Grounds
Hansen Spreading Grounds
Valley Generating Station
Donald C. Tillman Water Reclamation Plant
Arleta Avenue
Branford Street
San Fernando Road
Sheldon Street
Laurel Canyon Boulevard
Colfax Avenue
Victory Boulevard
Woodley Avenue
1,600 C
1,406 D
1,681 E
2,186 F
1,798 G
1,140 H
1,494 I
1,532 J
1,517 K
1,438 L
245 M
1,246 N
1,665 O
1,827 P
2,035 Q
321 R
763 S
1,502 T
1,326 U
4,408 B

For the roadway segments, the daily volumes for conditions with construction of the proposed Project under the existing baseline are provided in Table 23.

Table 23 – VGS - Study Roadway Segments –
Existing Plus-Project Weekday Daily Vehicle Volumes

Street Segments		Existing + Project ADT
B	Victory Boulevard Between Woodley Avenue & I-405	51,927
C	Arleta Avenue Between Devonshire Street & Van Nuys Boulevard	17,141
D	Arleta Avenue Van Nuys Boulevard & Terra Bella Street	14,086
E	Arleta Avenue Between Terra Bella Street and Osborne Street	16,310
F	Arleta Avenue Between Osborne Street and Branford Street	20,734
G	Branford Street Between Canterbury Avenue and I-5	19,186
H	Branford Street Between I-5 and San Fernando Road	12,536
I	San Fernando Road Branford Street and Tujunga Wash	18,066
J	San Fernando Road Between Tujunga Wash and Sheldon Street	20,266
K	Sheldon Street Between Glenoaks Boulevard and San Fernando Road	18,424
L	San Fernando Road Between Sheldon Street and Peoria Street	17,804
M	Peoria Street Between San Fernando Road and Laurel Canyon Boulevard	2,881
N	Laurel Canyon Boulevard Between Webb Avenue and Roscoe Boulevard	14,519
O	Laurel Canyon Boulevard Between Roscoe Boulevard and Saticoy Street	18,963
P	Laurel Canyon Boulevard Between Saticoy Street and Vanowen Street	20,423
Q	Laurel Canyon Boulevard Between Vanowen Street and Erwin Street	27,496
R	Erwin Street Between Laurel Canyon Boulevard and Colfax Avenue	3,683
S	Colfax Avenue Between Erwin Street and Orange Line Busway	8,888
T	Colfax Avenue Between Orange Line Busway and US-101	16,836
U	Colfax Avenue Between US-101 and Woodbridge Street	16,416

The Victory Boulevard segment between Woodley Avenue and I-405 has the highest volume in the project construction corridor under this scenario.

Peak hour traffic conditions were analyzed at the study roadway segments to determine potential traffic problems at these locations. Table 24 summarizes the peak-hour volumes from the daily counts.

Most of the analyzed roadway segment's LOS would worsen with Project construction activities and reduced roadway capacity, as indicated below:

- Victory Boulevard, between Woodley Avenue and I-405 – Operations would worsen within LOS E during the p.m. peak hour.
- Arleta Avenue, between Devonshire Street and Van Nuys Boulevard – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Van Nuys Boulevard and Terra Bella Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Terra Bella Street and Osborne Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Osborne Street and Branford Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Branford Street, between Canterbury Avenue and I-5 – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- San Fernando Road, between Branford Street and Tujunga Wash – Operations would worsen to LOS E during the a.m. and p.m. peak hours.
- San Fernando Road, between Tujunga Wash and Sheldon Street – Operations would worsen to LOS F during the a.m. peak hour and LOS E during the p.m. peak hour.
- Sheldon Street, between Glenoaks Boulevard and San Fernando Road – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Laurel Canyon Boulevard, between Roscoe Boulevard and Saticoy Street – Operations would worsen to LOS E during the a.m. peak hour and LOS F during the p.m. peak hour.
- Laurel Canyon Boulevard, between Saticoy Street and Vanowen Street – Operations would worsen to LOS E during the a.m. peak hour and LOS F during the p.m. peak hour.
- Laurel Canyon Boulevard, between Vanowen Street and Erwin Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Colfax Avenue, between Erwin Street and Orange Line Busway – Operations would worsen to LOS F during the p.m. peak hour.
- Colfax Avenue, between Orange Line Busway and US-101 – Operations would worsen within LOS F during the a.m. and p.m. peak hours.
- Colfax Avenue, between US-101 and Woodbridge Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.

Table 24 – VGS – Existing plus-Project Peak-Hour Study Roadway Segment Impacts

	Street Segments	Peak Period	Existing Volumes					VGS Alternative					
					Existing						Existing with Project		
			# of Lanes	Capacity	Volumes	V/C	LOS	# of Lanes	Capacity	Project Only	Volumes	V/C	LOS
B	Victory Boulevard	AM	6	4,800	4,279	0.891	D	6	4,800	27	4,306	0.897	D
	Between Woodley Avenue & I-405	PM			4,381	0.913	**E**			27	4,408	0.918	**E**
C	Arleta Avenue	AM	4	2,800	1,832	0.654	B	2	1,400	8	1,840	1.314	**F**
	Between Devonshire Street & Van Nuys Boulevard	PM			1,592	0.569	A			8	1,600	1.143	**F**
D	Arleta Avenue	AM	4	2,800	1,647	0.588	A	2	1,400	8	1,655	1.182	**F**
	Van Nuys Boulevard & Terra Bella Street	PM			1,395	0.498	A			11	1,406	1.004	**F**
E	Arleta Avenue	AM	4	2,800	1,805	0.645	B	2	1,400	8	1,813	1.295	**F**
	Between Terra Bella Street and Osborne Street	PM			1,670	0.596	A			11	1,681	1.201	**F**
F	Arleta Avenue	AM	4	2,800	2,036	0.727	C	2	1,400	8	2,044	1.460	**F**
	Between Osborne Street and Branford Street	PM			2,175	0.777	C			11	2,186	1.561	**F**
G	Branford Street	AM	4	2,800	1,882	0.672	B	2	1,400	5	1,887	1.348	**F**
	Between Canterbury Avenue and I-5	PM			1,793	0.640	B			5	1,798	1.284	**F**
H	Branford Street	AM	3	2,100	946	0.450	A	2	1,400	5	951	0.679	B
	Between I-5 and San Fernando Road	PM			1,135	0.540	A			5	1,140	0.814	D
I	San Fernando Road	AM	4	3,200	1,524	0.476	A	2	1,600	13	1,537	0.961	**E**
	Branford Street and Tujunga Wash	PM			1,481	0.463	A			13	1,494	0.934	**E**
J	San Fernando Road	AM	4	3,200	1,636	0.511	A	2	1,600	13	1,649	1.031	**F**
	Between Tujunga Wash and Sheldon Street	PM			1,519	0.475	A			13	1,532	0.958	**E**
K	Sheldon Street	AM	4	2,800	1,634	0.584	A	2	1,400	23	1,657	1.184	**F**
	Between Glenoaks Boulevard and San Fernando Road	PM			1,494	0.534	A			23	1,517	1.084	**F**
L	San Fernando Road	AM	4	3,200	1,384	0.433	A	2	1,600	18	1,402	0.876	D
	Between Sheldon Street and Peoria Street	PM			1,420	0.444	A			18	1,438	0.899	D
M	Peoria Street	AM	2	1,200	251	0.209	A	1	600	5	256	0.427	A
	Between San Fernando Road and Laurel Canyon Boulevard	PM			240	0.200	A			5	245	0.408	A
N	Laurel Canyon Boulevard	AM	4	3,200	878	0.274	A	2	1,600	5	883	0.552	A
	Between Webb Avenue and Roscoe Boulevard	PM			1,241	0.388	A			5	1,246	0.779	C
O	Laurel Canyon Boulevard	AM	4	3,200	1,565	0.489	A	2	1,600	5	1,570	0.981	**E**
	Between Roscoe Boulevard and Saticoy Street	PM			1,660	0.519	A			5	1,665	1.041	**F**
P	Laurel Canyon Boulevard	AM	4	3,200	1,488	0.465	A	2	1,600	5	1,493	0.933	**E**
	Between Saticoy Street and Vanowen Street	PM			1,822	0.569	A			5	1,827	1.142	**F**
Q	Laurel Canyon Boulevard	AM	4	3,200	1,950	0.609	B	2	1,600	5	1,955	1.222	**F**
	Between Vanowen Street and Erwin Street	PM			2,030	0.634	B			5	2,035	1.272	**F**
R	Erwin Street	AM	2	1,200	371	0.309	A	1	600	2	373	0.622	B
	Between Laurel Canyon Boulevard and Colfax Avenue	PM			319	0.266	A			2	321	0.535	A
S	Colfax Avenue	AM	2	1,400	610	0.436	A	1	700	2	612	0.874	D
	Between Erwin Street and Orange Line Busway	PM			761	0.544	A			2	763	1.090	**F**
T	Colfax Avenue	AM	2	1,400	1,614	1.153	**F**	1	700	2	1,616	2.309	**F**
	Between Orange Line Busway and US-101	PM			1,500	1.071	**F**			2	1,502	2.146	**F**
U	Colfax Avenue	AM	2	1,400	1,246	0.890	D	1	700	2	1,248	1.783	**F**
	Between US-101 and Woodbridge Street	PM			1,324	0.946	**E**			2	1,326	1.894	**F**

8.5 VGS Alternative - Future Without Project

To analyze future conditions in the year 2022 without the VGS alternative project, intersection turn volumes with ambient growth were analyzed using the same methodology applied to the proposed Project analysis.

Table 25 provides the a.m. and p.m. peak-hour results of this analysis for the study intersections.

Table 25 – VGS - Level of Service Calculations –- Future Without-Project Construction Conditions

	Study Intersections	AM Peak		PM Peak	
		V/C	LOS	V/C	LOS
1	Woodley Avenue & Victory Boulevard	1.272	**F**	1.132	**F**
2	Densmore Avenue & Victory Boulevard	0.747	C	0.648	B
3	Haskell Avenue & Victory Boulevard	1.231	**F**	1.199	**F**
4	I-405 NB Ramps & Victory Boulevard	0.843	D	0.873	D
5	I-5 SB Ramps & Osborne Street	0.733	C	0.879	D
6	I-5 NB Ramps & Osborne Street	0.722	C	0.866	D
7	San Fernando Road & Osborne Street	0.746	C	0.814	D
8	Glenoaks Boulevard & Osborne Street	1.147	**F**	1.098	**F**
9	Glenoaks Boulevard & Sheldon Street	0.854	D	0.842	D
10	Glenoaks Boulevard & Penrose Street	0.499	A	0.483	A
11	Arleta Avenue & Devonshire Street	0.680	B	0.861	D
12	Arleta Avenue & Branford Street	0.980	**E**	0.990	**E**
13	Arleta Avenue & Van Nuys Boulevard	1.021	**F**	1.040	**F**
14	Arleta Avenue & Terra Bella Street	0.894	D	0.771	C
15	Arleta Avenue & Osborne Street	1.044	**F**	1.079	**F**
16	Laurel Canyon Boulevard & Branford Street	0.992	**E**	1.067	**F**
17	San Fernando Road & Branford Street	0.784	C	0.901	**E**

LOS = Level of Service; V/C = Volume-to-Capacity Ratio

Under this scenario, all intersections would continue to operate at LOS D or better during the weekday a.m. and p.m. peak hours, except for the following:

- Woodley Avenue / Victory Boulevard– Operations would worsen within F during the a.m. peak hour and to LOS F during the p.m. peak hour.
- Haskell Avenue / Victory Boulevard– Operations would worsen within LOS F during the a.m. and p.m. peak hours.

- Glenoaks Boulevard / Osborne Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue / Branford Street – Operations would worsen to LOS E during the a.m. and p.m. peak hours.
- Arleta Avenue / Van Nuys Boulevard – Operations would worsen to LOS F in the a.m. and p.m. peak hours.
- Arleta Avenue / Osborne Street – Operations would worsen to LOS F in the a.m. and p.m. peak hours.
- Laurel Canyon Boulevard / Branford Street – Operations would worsen to LOS E during the a.m. peak hour and within LOS F during the p.m. peak hour.
- San Fernando Road / Branford Street – Operations would worsen to LOS E during the p.m. peak hour.

The study intersection analysis worksheets for this scenario are also provided in Appendix E of this report.

For the study roadway segments, Table 26 provides the average daily traffic volumes for year-2022 conditions at the segments, based on the application of ambient growth.

The highest daily vehicle volume, under this scenario, would continue to be at the roadway segment of Victory Boulevard between Woodley Avenue and I-405.

Table 26 – VGS - Study Roadway Segments – Future Without-Project Daily Vehicle Volumes

	Street Segments	Future Pre-Project ADT
B	Victory Boulevard Between Woodley Avenue & I-405	59,469
C	Arleta Avenue Between Devonshire Street & Van Nuys Boulevard	19,638
D	Arleta Avenue Van Nuys Boulevard & Terra Bella Street	16,127
E	Arleta Avenue Between Terra Bella Street and Osborne Street	18,683
F	Arleta Avenue Between Osborne Street and Branford Street	23,766
G	Branford Street Between Canterbury Avenue and I-5	22,008
H	Branford Street Between I-5 and San Fernando Road	14,367
I	San Fernando Road Branford Street and Tujunga Wash	20,664
J	San Fernando Road Between Tujunga Wash and Sheldon Street	23,191
K	Sheldon Street Between Glenoaks Boulevard and San Fernando Road	21,003
L	San Fernando Road Between Sheldon Street and Peoria Street	20,327
M	Peoria Street Between San Fernando Road and Laurel Canyon Boulevard	3,274
N	Laurel Canyon Boulevard Between Webb Avenue and Roscoe Boulevard	16,646
O	Laurel Canyon Boulevard Between Roscoe Boulevard and Saticoy Street	21,752
P	Laurel Canyon Boulevard Between Saticoy Street and Vanowen Street	23,429
Q	Laurel Canyon Boulevard Between Vanowen Street and Erwin Street	31,556
R	Erwin Street Between Laurel Canyon Boulevard and Colfax Avenue	4,217
S	Colfax Avenue Between Erwin Street and Orange Line Busway	10,197
T	Colfax Avenue Between Orange Line Busway and US-101	19,330
U	Colfax Avenue Between US-101 and Woodbridge Street	18,847

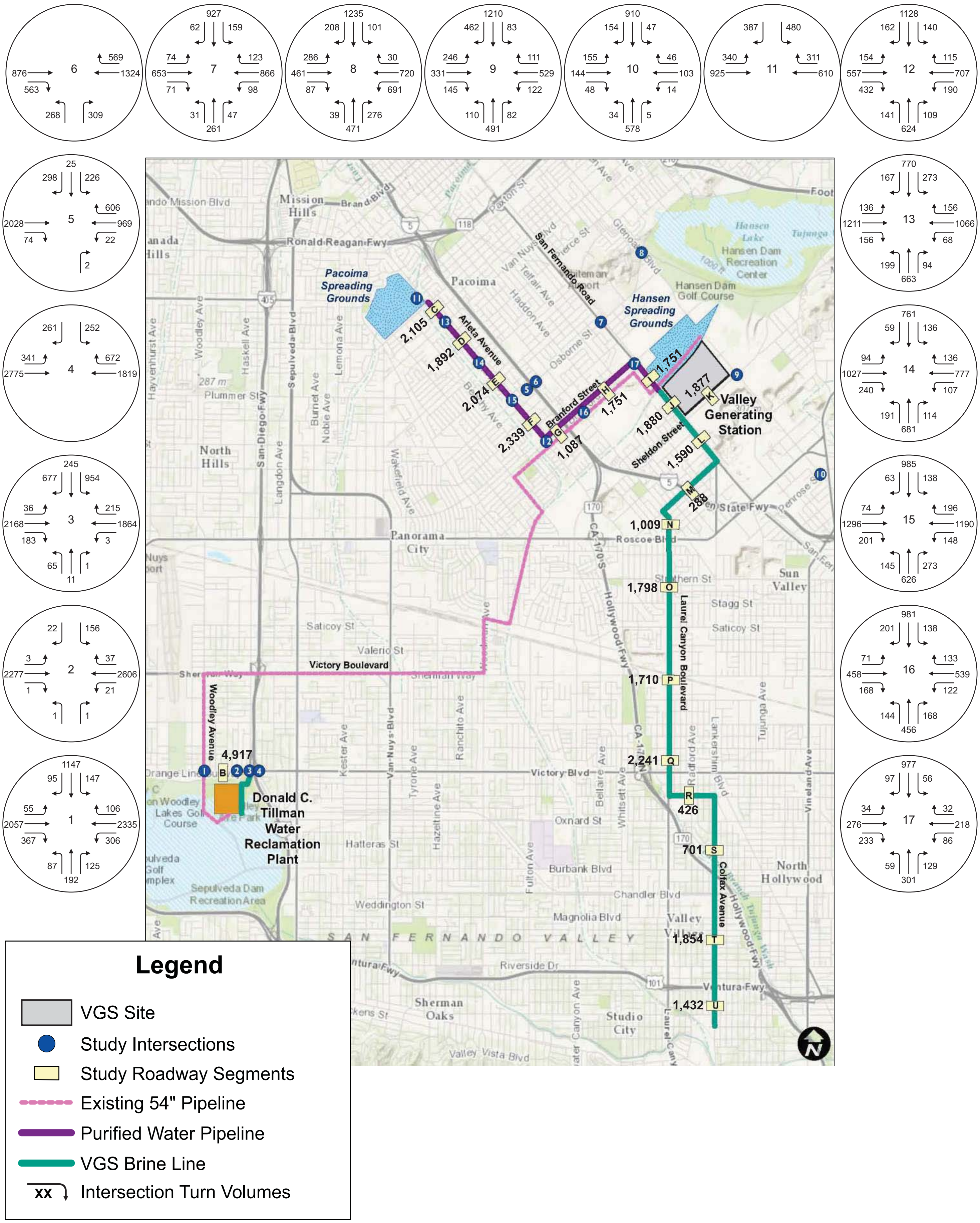
For peak hour conditions, Table 27 shows that all of the segments would operate at LOS D or better during the pre-Project conditions, except for the following segments:

- Victory Boulevard, between Woodley Avenue and I-405 – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Colfax Avenue, between Orange Line Busway and US-101 – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Colfax Avenue, between US-101 and Woodbridge Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.

Table 27 – Study Roadway Segments – Future Without-Project Daily Vehicle Volumes

					Base Volumes						
					Existing			Ambient Growth + Area Projects	Future Pre-Project		
	Street Segments	Peak Period	# of Lanes	Capacity	Volumes	V/C	LOS		Volumes	V/C	LOS
B	Victory Boulevard	AM	6	4,800	4,279	0.891	D	14.9%	4,917	1.024	**F**
	Between Woodley Avenue & I-405	PM			4,381	0.913	**E**	14.9%	5,034	1.049	**F**
C	Arleta Avenue	AM	4	2,800	1,832	0.654	B	14.9%	2,105	0.752	C
	Between Devonshire Street & Van Nuys Boulevard	PM			1,592	0.569	A	14.9%	1,829	0.653	B
D	Arleta Avenue	AM	4	2,800	1,647	0.588	A	14.9%	1,892	0.676	B
	Van Nuys Boulevard & Terra Bella Street	PM			1,395	0.498	A	14.9%	1,603	0.573	A
E	Arleta Avenue	AM	4	2,800	1,805	0.645	B	14.9%	2,074	0.741	C
	Between Terra Bella Street and Osborne Street	PM			1,670	0.596	A	14.9%	1,919	0.685	B
F	Arleta Avenue	AM	4	2,800	2,036	0.727	C	14.9%	2,339	0.835	D
	Between Osborne Street and Branford Street	PM			2,175	0.777	C	14.9%	2,499	0.893	D
G	Branford Street	AM	4	2,800	1,882	0.672	B	14.9%	2,162	0.772	C
	Between Canterbury Avenue and I-5	PM			1,793	0.640	B	14.9%	2,060	0.736	C
H	Branford Street	AM	3	2,100	946	0.450	A	14.9%	1,087	0.518	A
	Between I-5 and San Fernando Road	PM			1,135	0.540	A	14.9%	1,304	0.621	B
I	San Fernando Road	AM	4	3,200	1,524	0.476	A	14.9%	1,751	0.547	A
	Branford Street and Tujunga Wash	PM			1,481	0.463	A	14.9%	1,702	0.532	A
J	San Fernando Road	AM	4	3,200	1,636	0.511	A	14.9%	1,880	0.588	A
	Between Tujunga Wash and Sheldon Street	PM			1,519	0.475	A	14.9%	1,745	0.545	A
K	Sheldon Street	AM	4	2,800	1,634	0.584	A	14.9%	1,877	0.670	B
	Between Glenoaks Boulevard and San Fernando Road	PM			1,494	0.534	A	14.9%	1,717	0.613	B
L	San Fernando Road	AM	4	3,200	1,384	0.433	A	14.9%	1,590	0.497	A
	Between Sheldon Street and Peoria Street	PM			1,420	0.444	A	14.9%	1,632	0.510	A
M	Peoria Street	AM	2	1,200	251	0.209	A	14.9%	288	0.240	A
	Between San Fernando Road and Laurel Canyon Boulevard	PM			240	0.200	A	14.9%	276	0.230	A
N	Laurel Canyon Boulevard	AM	4	3,200	878	0.274	A	14.9%	1,009	0.315	A
	Between Webb Avenue and Roscoe Boulevard	PM			1,241	0.388	A	14.9%	1,426	0.446	A
O	Laurel Canyon Boulevard	AM	4	3,200	1,565	0.489	A	14.9%	1,798	0.562	A
	Between Roscoe Boulevard and Saticoy Street	PM			1,660	0.519	A	14.9%	1,907	0.596	A
P	Laurel Canyon Boulevard	AM	4	3,200	1,488	0.465	A	14.9%	1,710	0.534	A
	Between Saticoy Street and Vanowen Street	PM			1,822	0.569	A	14.9%	2,093	0.654	B
Q	Laurel Canyon Boulevard	AM	4	3,200	1,950	0.609	B	14.9%	2,241	0.700	C
	Between Vanowen Street and Erwin Street	PM			2,030	0.634	B	14.9%	2,332	0.729	C
R	Erwin Street	AM	2	1,200	371	0.309	A	14.9%	426	0.355	A
	Between Laurel Canyon Boulevard and Colfax Avenue	PM			319	0.266	A	14.9%	367	0.306	A
S	Colfax Avenue	AM	2	1,400	610	0.436	A	14.9%	701	0.501	A
	Between Erwin Street and Orange Line Busway	PM			761	0.544	A	14.9%	874	0.624	B
T	Colfax Avenue	AM	2	1,400	1,614	1.153	**F**	14.9%	1,854	1.324	**F**
	Between Orange Line Busway and US-101	PM			1,500	1.071	**F**	14.9%	1,724	1.231	**F**
U	Colfax Avenue	AM	2	1,400	1,246	0.890	D	14.9%	1,432	1.023	**F**
	Between US-101 and Woodbridge Street	PM			1,324	0.946	**E**	14.9%	1,521	1.086	**F**

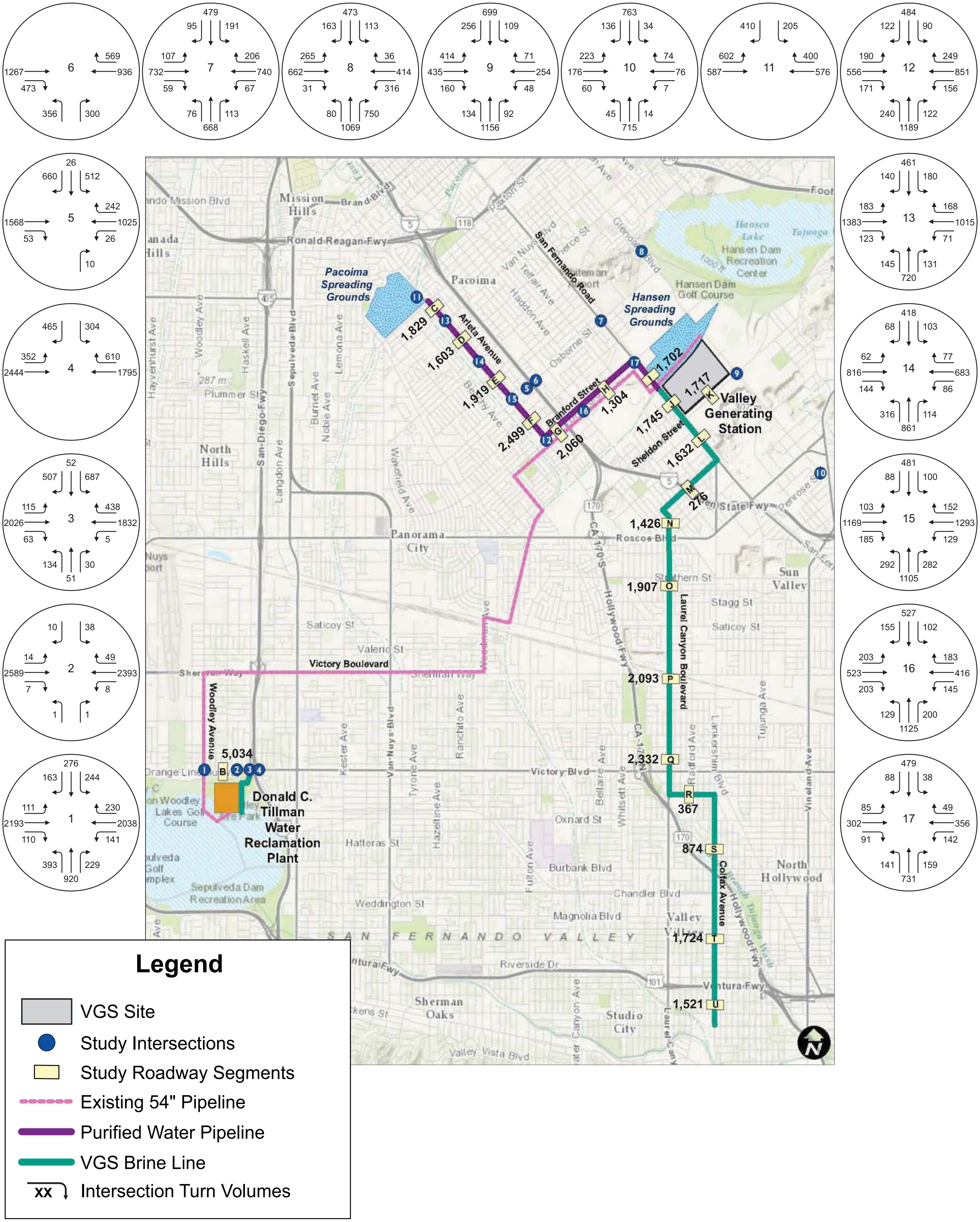
The analyzed peak-hour traffic volumes at the study intersections and roadways for this scenario are provided on Figure 22 (a.m. peak) and Figure 23 (pm. peak).



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project | Figure 22

VGS - Future without Project Construction - AM Peak Hour Intersection Volumes



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project | Figure 23

VGS - Future without Project Construction - PM Peak Hour Intersection Volumes

8.6 VGS Alternative - Future With Project Study Intersection and Roadway Analysis

The study intersection operations across all analyzed scenarios, for the VGS construction alternative are summarized in Table 28. Construction of the proposed Project would worsen operations to or within LOS E or F, triggering significant impacts at the following intersections:

- Haskell Avenue / Victory Boulevard – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Glenoaks Boulevard / Osborne Street – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Arleta Avenue / Branford Street – Operations would worsen within LOS E in both the a.m. and p.m. peak hours.
- Arleta Avenue / Van Nuys Boulevard – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Arleta Avenue / Osborne Street – Operations would worsen within LOS F in both the a.m. and p.m. peak hours.
- Laurel Canyon Boulevard / Branford Street – Operations would worsen within LOS E in the a.m. peak hour and within LOS F in the p.m. peak hour.
- San Fernando Road / Branford Street – Operations would worsen within LOS E in the p.m. peak hour.

The intersection of Woodley Avenue and Victory Boulevard is not listed as the V/C ratio does not change due to VGS alternative construction activities at the DCT site.

Recommended mitigation measures are provided in Section 10 of this report.

Table 28 – VGS Study Intersection Impacts
Future With Project Conditions

	Study Intersections	Peak Hour	Future (2022) No Project		Future (2022) With Project	
			V/C	LOS	V/C	LOS
1	Woodley Avenue & Victory Boulevard	AM	1.272	**F**	1.272	**F**
		PM	1.132	**F**	1.132	**F**
2	Densmore Avenue & Victory Boulevard	AM	0.747	C	0.754	C
		PM	0.648	B	0.669	B
3	Haskell Avenue & Victory Boulevard	AM	1.231	**F**	1.233	**F**
		PM	1.199	**F**	1.201	**F**
4	I-405 NB Ramps & Victory Boulevard	AM	0.843	D	0.850	D
		PM	0.873	D	0.880	D
5	I-5 SB Ramps & Osborne Street	AM	0.733	C	0.733	C
		PM	0.879	D	0.879	D
6	I-5 NB Ramps & Osborne Street	AM	0.722	C	0.724	C
		PM	0.866	D	0.868	D
7	San Fernando Road & Osborne Street	AM	0.746	C	0.751	C
		PM	0.814	D	0.820	D
8	Glenoaks Boulevard & Osborne Street	AM	1.147	**F**	1.153	**F**
		PM	1.098	**F**	1.100	**F**
9	Glenoaks Boulevard & Sheldon Street	AM	0.854	D	0.858	D
		PM	0.842	D	0.847	D
10	Glenoaks Boulevard & Penrose Street	AM	0.499	A	0.499	A
		PM	0.483	A	0.485	A
11	Arleta Avenue & Devonshire Street	AM	0.680	B	0.684	B
		PM	0.861	D	0.867	D
12	Arleta Avenue & Branford Street	AM	0.980	**E**	0.984	**E**
		PM	0.990	**E**	0.994	**E**
13	Arleta Avenue & Van Nuys Boulevard	AM	1.021	**F**	1.023	**F**
		PM	1.040	**F**	1.044	**F**
14	Arleta Avenue & Terra Bella Street	AM	0.894	D	0.896	D
		PM	0.771	C	0.773	C
15	Arleta Avenue & Osborne Street	AM	1.044	**F**	1.046	**F**
		PM	1.079	**F**	1.081	**F**
16	Laurel Canyon Boulevard & Branford Street	AM	0.992	**E**	0.993	**E**
		PM	1.067	**F**	1.072	**F**
17	San Fernando Road & Branford Street	AM	0.784	C	0.789	C
		PM	0.901	**E**	0.909	**E**

The daily volumes on the study roadway segments, for conditions with construction of the proposed Project, are provided in Table 29. Impacts to these roadway segments are evaluated after this informational table.

Table 29 – VGS - Future With Project - Roadway Segment Daily Volumes

	Street Segments	Future with Project ADT
B	Victory Boulevard Between Woodley Avenue & I-405	59,639
C	Arleta Avenue Between Devonshire Street & Van Nuys Boulevard	19,688
D	Arleta Avenue Van Nuys Boulevard & Terra Bella Street	16,177
E	Arleta Avenue Between Terra Bella Street and Osborne Street	18,733
F	Arleta Avenue Between Osborne Street and Branford Street	23,816
G	Branford Street Between Canterbury Avenue and I-5	22,040
H	Branford Street Between I-5 and San Fernando Road	14,399
I	San Fernando Road Branford Street and Tujunga Wash	20,746
J	San Fernando Road Between Tujunga Wash and Sheldon Street	23,273
K	Sheldon Street Between Glenoaks Boulevard and San Fernando Road	21,148
L	San Fernando Road Between Sheldon Street and Peoria Street	20,440
M	Peoria Street Between San Fernando Road and Laurel Canyon Boulevard	3,306
N	Laurel Canyon Boulevard Between Webb Avenue and Roscoe Boulevard	16,678
O	Laurel Canyon Boulevard Between Roscoe Boulevard and Saticoy Street	21,784
P	Laurel Canyon Boulevard Between Saticoy Street and Vanowen Street	23,461
Q	Laurel Canyon Boulevard Between Vanowen Street and Erwin Street	31,588
R	Erwin Street Between Laurel Canyon Boulevard and Colfax Avenue	4,230
S	Colfax Avenue Between Erwin Street and Orange Line Busway	10,210
T	Colfax Avenue Between Orange Line Busway and US-101	19,343
U	Colfax Avenue Between US-101 and Woodbridge Street	18,860

Peak hour traffic impacts were analyzed at the study roadway segments to determine potential significant impacts at these locations. Table 30 summarizes the analysis of peak-hour volumes for this scenario, based on the existing daily traffic counts, ambient growth, and the project construction trips.

Table 30 – VGS – Future With Project - Peak-Hour Study Roadway Segment Impacts

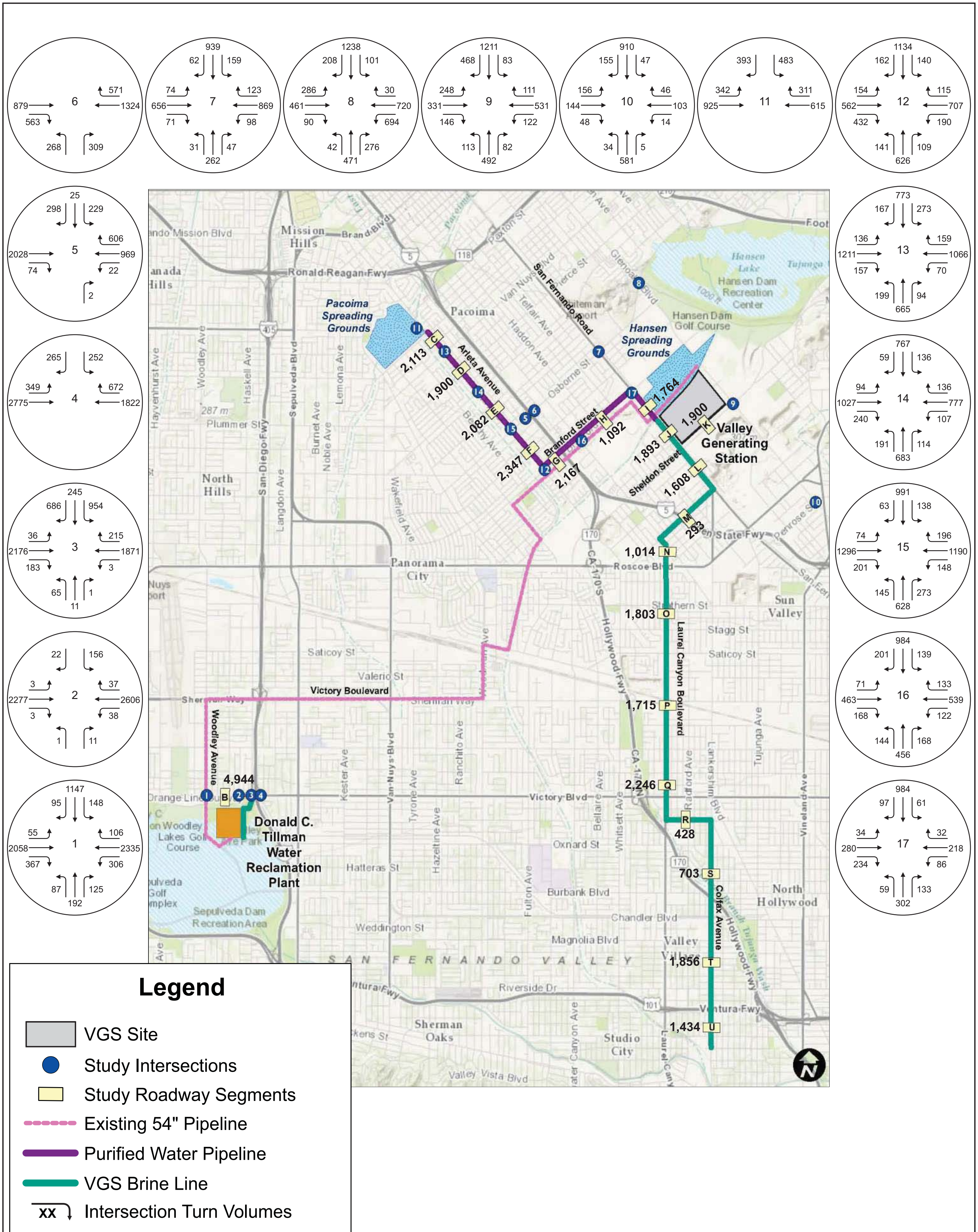
	Street Segments	Peak Period	Base Volumes # of Lanes	Base Volumes Capacity	Existing Volumes	Existing V/C	Existing LOS	Ambient Growth + Area Projects	Future Pre-Project Volumes	Future Pre-Project V/C	Future Pre-Project LOS	VGS Alternative # of Lanes	VGS Alternative Capacity	Project Only	Future with Project Volumes	Future with Project V/C	Future with Project LOS
B	Victory Boulevard	AM	6	4,800	4,279	0.891	D	14.9%	4,917	1.024	**F**	6	4,800	27	4,944	1.030	**F**
	Between Woodley Avenue & I-405	PM			4,381	0.913	**E**	14.9%	5,034	1.049	**F**			27	5,061	1.054	**F**
C	Arleta Avenue	AM	4	2,800	1,832	0.654	B	14.9%	2,105	0.752	C	2	1,400	8	2,113	1.509	**F**
	Between Devonshire Street & Van Nuys Boulevard	PM			1,592	0.569	A	14.9%	1,829	0.653	B			8	1,837	1.312	**F**
D	Arleta Avenue	AM	4	2,800	1,647	0.588	A	14.9%	1,892	0.676	B	2	1,400	8	1,900	1.357	**F**
	Van Nuys Boulevard & Terra Bella Street	PM			1,395	0.498	A	14.9%	1,603	0.573	A			11	1,614	1.153	**F**
E	Arleta Avenue	AM	4	2,800	1,805	0.645	B	14.9%	2,074	0.741	C	2	1,400	8	2,082	1.487	**F**
	Between Terra Bella Street and Osborne Street	PM			1,670	0.596	A	14.9%	1,919	0.685	B			11	1,930	1.379	**F**
F	Arleta Avenue	AM	4	2,800	2,036	0.727	C	14.9%	2,339	0.835	D	2	1,400	8	2,347	1.676	**F**
	Between Osborne Street and Branford Street	PM			2,175	0.777	C	14.9%	2,499	0.893	D			11	2,510	1.793	**F**
G	Branford Street	AM	4	2,800	1,882	0.672	B	14.9%	2,162	0.772	C	2	1,400	5	2,167	1.548	**F**
	Between Canterbury Avenue and I-5	PM			1,793	0.640	B	14.9%	2,060	0.736	C			5	2,065	1.475	**F**
H	Branford Street	AM	3	2,100	946	0.450	A	14.9%	1,087	0.518	A	2	1,400	5	1,092	0.780	C
	Between I-5 and San Fernando Road	PM			1,135	0.540	A	14.9%	1,304	0.621	B			5	1,309	0.935	**E**
I	San Fernando Road	AM	4	3,200	1,524	0.476	A	14.9%	1,751	0.547	A	2	1,600	13	1,764	1.103	**F**
	Branford Street and Tujunga Wash	PM			1,481	0.463	A	14.9%	1,702	0.532	A			13	1,715	1.072	**F**
J	San Fernando Road	AM	4	3,200	1,636	0.511	A	14.9%	1,880	0.588	A	2	1,600	13	1,893	1.183	**F**
	Between Tujunga Wash and Sheldon Street	PM			1,519	0.475	A	14.9%	1,745	0.545	A			13	1,758	1.099	**F**
K	Sheldon Street	AM	4	2,800	1,634	0.584	A	14.9%	1,877	0.670	B	2	1,400	23	1,900	1.357	**F**
	Between Glenoaks Boulevard and San Fernando Road	PM			1,494	0.534	A	14.9%	1,717	0.613	B			23	1,740	1.243	**F**
L	San Fernando Road	AM	4	3,200	1,384	0.433	A	14.9%	1,590	0.497	A	2	1,600	18	1,608	1.005	**F**
	Between Sheldon Street and Peoria Street	PM			1,420	0.444	A	14.9%	1,632	0.510	A			18	1,650	1.031	**F**
M	Peoria Street	AM	2	1,200	251	0.209	A	14.9%	288	0.240	A	1	600	5	293	0.488	A
	Between San Fernando Road and Laurel Canyon Boulevard	PM			240	0.200	A	14.9%	276	0.230	A			5	281	0.468	A
N	Laurel Canyon Boulevard	AM	4	3,200	878	0.274	A	14.9%	1,009	0.315	A	2	1,600	5	1,014	0.634	B
	Between Webb Avenue and Roscoe Boulevard	PM			1,241	0.388	A	14.9%	1,426	0.446	A			5	1,431	0.894	D
O	Laurel Canyon Boulevard	AM	4	3,200	1,565	0.489	A	14.9%	1,798	0.562	A	2	1,600	5	1,803	1.127	**F**
	Between Roscoe Boulevard and Saticoy Street	PM			1,660	0.519	A	14.9%	1,907	0.596	A			5	1,912	1.195	**F**
P	Laurel Canyon Boulevard	AM	4	3,200	1,488	0.465	A	14.9%	1,710	0.534	A	2	1,600	5	1,715	1.072	**F**
	Between Saticoy Street and Vanowen Street	PM			1,822	0.569	A	14.9%	2,093	0.654	B			5	2,098	1.311	**F**
Q	Laurel Canyon Boulevard	AM	4	3,200	1,950	0.609	B	14.9%	2,241	0.700	C	2	1,600	5	2,246	1.404	**F**
	Between Vanowen Street and Erwin Street	PM			2,030	0.634	B	14.9%	2,332	0.729	C			5	2,337	1.461	**F**
R	Erwin Street	AM	2	1,200	371	0.309	A	14.9%	426	0.355	A	1	600	2	428	0.713	C
	Between Laurel Canyon Boulevard and Colfax Avenue	PM			319	0.266	A	14.9%	367	0.306	A			2	369	0.615	B
S	Colfax Avenue	AM	2	1,400	610	0.436	A	14.9%	701	0.501	A	1	700	2	703	1.004	**F**
	Between Erwin Street and Orange Line Busway	PM			761	0.544	A	14.9%	874	0.624	B			2	876	1.251	**F**
T	Colfax Avenue	AM	2	1,400	1,614	1.153	**F**	14.9%	1,854	1.324	**F**	1	700	2	1,856	2.651	**F**
	Between Orange Line Busway and US-101	PM			1,500	1.071	**F**	14.9%	1,724	1.231	**F**			2	1,726	2.466	**F**
U	Colfax Avenue	AM	2	1,400	1,246	0.890	D	14.9%	1,432	1.023	**F**	1	700	2	1,434	2.049	**F**
	Between US-101 and Woodbridge Street	PM			1,324	0.946	**E**	14.9%	1,521	1.086	**F**			2	1,523	2.176	**F**

The project is expected to create significant roadway impacts along the following segments:

- Victory Boulevard, between Woodley Avenue and I-405 – Operations would worsen within LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Devonshire Street and Van Nuys Boulevard – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Van Nuys Boulevard and Terra Bella Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Terra Bella Street and Osborne Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Arleta Avenue, between Osborne Street and Branford Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Branford Street, between Canterbury Avenue and I-5 – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Branford Street, between I-5 and San Fernando Road – Operations would worsen to LOS E during the p.m. peak hour.
- San Fernando Road, between Branford Street and Tujunga Wash – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- San Fernando Road, between Tujunga Wash and Sheldon Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Sheldon Street, between Glenoaks Boulevard and San Fernando Road – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- San Fernando Road, between Sheldon Street and Peoria Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Laurel Canyon Boulevard, between Roscoe Boulevard and Saticoy Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Laurel Canyon Boulevard, between Saticoy Street and Vanowen Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Laurel Canyon Boulevard, between Vanowen Street and Erwin Street – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Colfax Avenue, between Erwin Street and Orange Line Busway – Operations would worsen to LOS F during the a.m. and p.m. peak hours.
- Colfax Avenue, between Orange Line Busway and US-101 – Operations would worsen within LOS F during the a.m. and p.m. peak hours.
- Colfax Avenue, between US-101 and Woodbridge Street – Operations would worsen within LOS F during the a.m. and p.m. peak hours.

The construction period analyzed traffic volumes at the study intersections and roadways are provided on Figure 24 (a.m. peak) and Figure 25 (p.m. peak). The level of service calculation worksheets for this analysis scenario are provided in Appendix H.

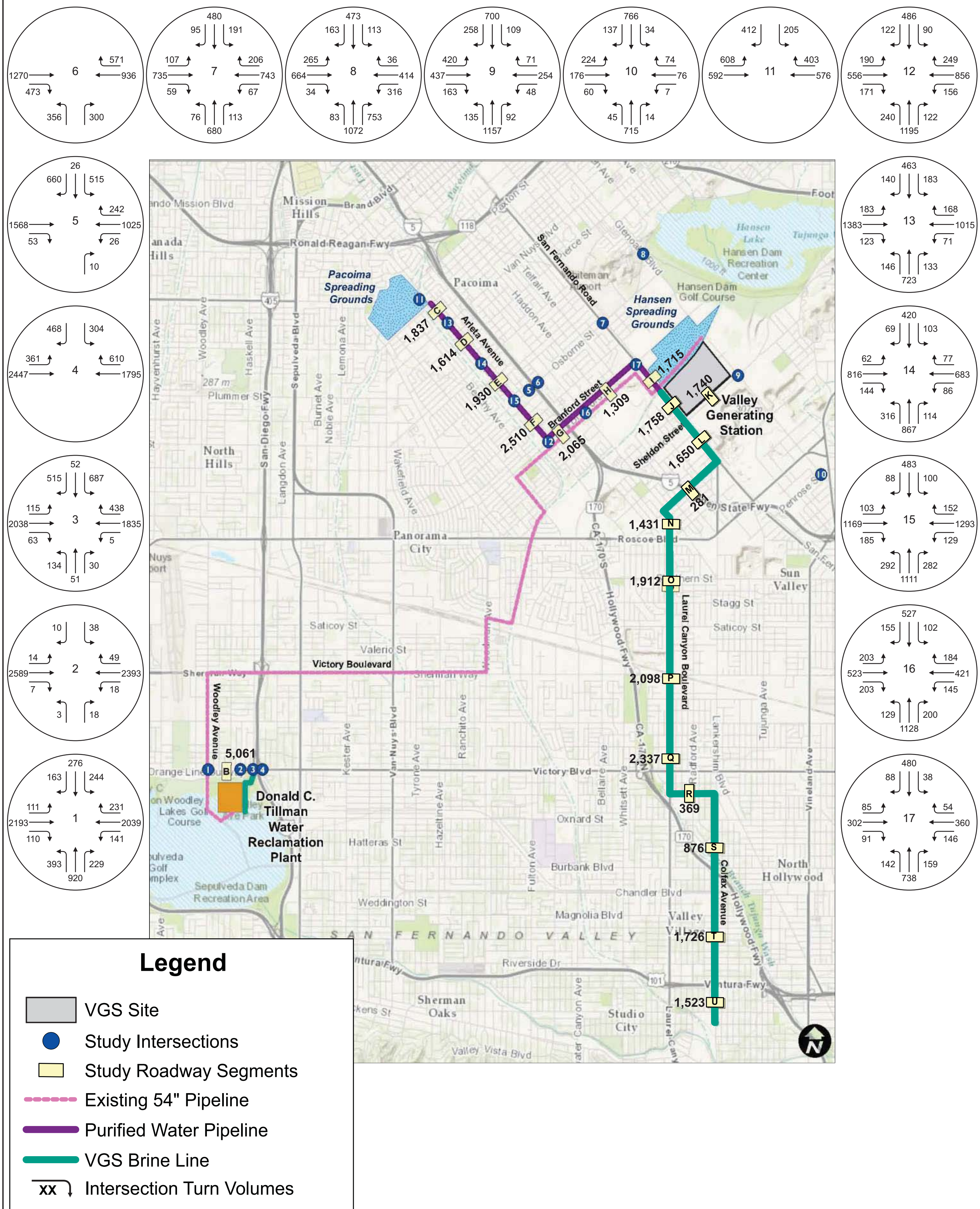
Recommended mitigation measures are provided in Section 10 of this report.



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project — Figure 24

VGS - Future with Project Construction - AM Peak Hour Intersection Volumes



KOA CORPORATION
PLANNING & ENGINEERING

LADWP Groundwater Replenishment Project

Figure 25

VGS - Future with Project Construction - PM Peak Hour Intersection Volumes

9. Congestion Management Program (CMP) Analysis

This section demonstrates the ways in which this traffic study was prepared to be in conformance with the procedures mandated by the County of Los Angeles Congestion Management Program. The CMP program is intended to analyze the cumulative impact of new development as it occurs, and allow for improvements to the roadway system as level of service values on monitored facilities are reduced to poor levels. The CMP guidelines are analyzed here in order to illustrate project compliance.

The Congestion Management Program (CMP) was created statewide because of Proposition 111 and has been implemented locally by the Los Angeles County Metropolitan Transportation Authority (LACMTA). The CMP for Los Angeles County requires the analysis of the traffic impacts of individual development projects with potentially regional significance. A specific system of arterial roadways plus all freeways comprises the CMP system. In conformance with CMP Transportation Impact Analysis (TIA) Guidelines, a traffic impact analysis is conducted at:

- CMP arterial monitoring intersections, including freeway on-ramps or off-ramps, where the proposed project would add 50 or more vehicle trips during either morning or afternoon weekday peak hours.

- CMP mainline freeway-monitoring locations, where the project would add 150 or more trips, in either direction, during the either the morning or afternoon weekday peak hours.

Truck trips within the totals below have been adjusted by a passenger-car equivalent (PCE) factor of 2.5, as explained within the analysis. Construction employee vehicle trips have also been included.

<u>Impacts to CMP Arterials</u>

The nearest CMP monitoring location to the project study corridor is Victory Boulevard and Sepulveda Boulevard, which is located approximately 0.4 miles to the east of the DCT site and is the nearest CMP arterial location to either the preferred alternative or the VGS alternative. Based on the trip generation, distribution, and anticipated detour routes of the project, it is not expected that 50 or more construction project trips would be added to this nearby CMP intersection. Therefore, no further analysis of potential CMP impacts is required.

<u>Impacts to CMP Freeways</u>

The nearest CMP mainline freeway-monitoring locations to the project site are on the I-405 freeway, to the north of Roscoe Boulevard. This location is located approximately 2.66-miles to the north of the northern end of the DCT site. The nearest CMP mainline freeway monitoring location to the VGS site is on I-5, north of the junction with SR-170 at Osborne Street. This location is approximately 1.20-miles to the west of the VGS site. The proposed project and the VGS alternative are expected to add less than 150 new trips per hour, in either direction, to any freeway segment based on the project trip generation. Therefore, no further analysis of CMP freeway monitoring stations is required.

10. Conclusions and Recommended Measures

This section provides major conclusions of the Project traffic impact analysis and recommendations to alleviate localized but insignificant traffic impacts.

Major analysis assumptions and conclusions are as follows:

10.1 Proposed Project Assumptions and Conclusions

- Under existing analyzed conditions, 10 of the 15 study intersections are operating at LOS D or better during the a.m. and p.m. peak hours. For the analyzed roadway segments, five of the six study segments are operating at LOS D or better during the peak hours.

- Construction of the project is scheduled to commence in 2018 and end in 2022. Typical construction hours would be Monday through Friday from 7:00 a.m. to 3:30 p.m. Construction would take place at four separate sites.

- Project construction for the proposed Project would generate a daily total of 494 passenger car equivalent trips, with 100 (86 inbound and 14 outbound) trips occurring during the a.m. peak hour and 100 (14 inbound and 86 outbound) trips occurring during the p.m. peak hour. However, these trips are widely distributed between various sites.

- Under the existing plus-Project analysis, five of the 15 study intersections would worsen within or to LOS E or F, triggering a significant impact.

- Under the existing plus-Project analysis, five of the six study roadway segments would worsen within or to LOS E or F, triggering a significant impact.

- Under the future with-Project analysis, six of the 15 study intersections would worsen within LOS F, triggering significant impacts.

- Under the future with-Project analysis, five of the six study segments would worsen within or to LOS F, triggering significant impacts.

  Since the roadway capacity will be reduced from two lanes to one-lane (and to one-way flow) along Haskell Avenue, a significant impact will occur on that roadway as well due to the reasons outlined at the end of subsection 7.3.

  As such, under the Proposed Project, all six analyzed study roadway segments would experience significant impacts during construction.

10.2 Valley Generating Station Alternative - Assumptions and Conclusions

- Under existing analyzed conditions, 11 of the 17 study intersections are operating at LOS D or better during the a.m. and p.m. peak hours. For the analyzed roadway segments, 17 of the 20 study segments are operating at LOS D or better during the peak hours.

- Project construction for the VGS alternative would generate a daily total of 724 passenger car equivalent trips, with 137 (112 inbound and 25 outbound) trips occurring during the a.m. peak hour and 137 (25 inbound and 112 outbound) trips occurring during the p.m. peak hour. However, these trips are widely distributed between various sites.

- Construction of the project is also scheduled to commence in 2018 and end in 2022. Typical construction hours would be Monday through Friday from 7:00 a.m. to 3:30 p.m. Construction would take place at six separate sites.

- Under the existing plus-Project analysis for the VGS alternative, six of the 17 study intersections would worsen within or to LOS E or F, triggering significant impacts.

- Under the existing plus-Project analysis for the VGS alternative, 15 of the 20 study roadway segments would worsen within or to LOS E or F, triggering significant impacts.

- Under the future with-Project analysis, seven of the 17 study intersections would worsen within LOS E or F, triggering significant impacts.

- Under the future with-Project analysis, 17 of the 20 study segments would worsen within or to LOS E or F, triggering significant impacts.

10.3 General Recommended Measures

Specific work zone extents will be established by LADWP as Project construction progresses along the study intersections and corridors. Not all of the significant impacts will occur at the same time, and once segments are completed and work zones are removed and established in other areas, the designed roadway capacity within that segment will be restored and there will not be any long-term impacts.

Many of the study intersections and segments would worsen in operations within or to LOS E or F in the analyzed peak hours. In addition, one roadway segment would be narrowed to a single lane of travel. These identified impacts, however, would be temporary and would only occur when work areas are active. Once those areas are restored to existing conditions and construction is completed in that area, the impacts created would be removed.

The following general measures are recommended for implementation as part of project construction planning and mobilization, in order to provide safe movement of traffic within the areas of reduced capacity once construction activities are underway:

- Prior to construction, a construction traffic control plan shall be prepared by the Los Angeles Department of Water and Power for review and approval by the Los Angeles Department of Transportation.

- The plan shall include signage within the construction corridors for traffic, in advance of the first encountered work area, warning of potential delays ahead on the route.

- The plan shall also outline specific traffic management strategies to mitigate traffic impacts at roadway locations where one-way-only traffic flow is created due to the number of travel lanes being reduced from two to one.

- Temporary traffic controls for left-turn movements should be provided where they do not exist, and/or signal timing adjustments should be provided to better facilitate turn movements and traffic flow.

- The plan should include signage to alert motorists to temporary or limited access points to adjacent properties; appropriate barricades for road closures; construction speed limit signage along the haul route; and parking restrictions during construction.

- Traffic shall be controlled during construction by adhering to the guidelines contained in Standard Specifications for Public Works Construction used by many municipalities in California and Caltrans' Traffic Manual, Chapter 5, "Manual of Traffic Controls for Construction and Maintenance Work Zones" and applicable City requirements. These guidelines provide methods to minimize construction effects on traffic flow.

Project construction activities will create significant but temporary impacts at many of the analyzed study intersections and roadway segments. Application of the general measures listed above will mitigate potential impacts along these segments, to the extent feasible with reduced capacity provisions.

10.4 Consideration of CEQA Thresholds

The following criteria from the City of Los Angeles *CEQA Thresholds Guide* are relevant to screening of impacts of the proposed Project:

- Would construction activities to take place within a major or secondary highway ROW which would necessitate temporary lane, alley, or street closures for more than one day (including day and evening hours, and including overnight closures if on a residential street)?

- Would in-street construction activities result in the loss of regular vehicular or pedestrian access to an existing land use for more than one day, including day and evening hours and overnight closures if access is lost to residential units?

- Would in-street construction activities result in the temporary loss for more than one day of an existing bus stop or rerouting of a bus route that serves the project site?

The proposed Project would result in closures of roadway and intersection approach lanes for more than one day. All of the defined construction work areas, however, would not be in use simultaneously. Therefore, the Project corridors and intersections will not be affected by construction activities at once. In addition, as construction progresses, work areas will be closed as other are established. Impacts will therefore be temporary in nature.

Most of the Project construction work areas will be centered on the roadway, therefore, access will be restricted to land uses along the study roadway segments, but right-in/right-out vehicle movements will remain open at each driveway within most segments. Full access will be restored as construction is completed within each work area.

Bus stops will be relocated along the Project corridor according to the construction work area plans that would be approved by LADOT. Where bus stops cannot remain due to their presence within the remaining travel lane, those bus stops will need to be relocated as part the work area plan, and some passengers will need to walk longer distances to reach relocated transit stops or to travel from relocated transit stops. These impacts will be temporary in nature, however, and bus stops will be restored when construction within each work area is completed.

10.5 Overall Conclusions

There are no measures that can be implemented to make all Project impacts less than significant. These impacts will be temporary in nature and will not have a lasting impact on the study roadways or the adjacent roadway systems, including monitoring stations of the Los Angeles County Congestion Management Program on area arterials and freeways. Daily roadway and peak-hour volumes have been analyzed to achieve an understanding of the magnitude of potential roadway lane closures during construction.

Once completed, the proposed Project will not create any significant impacts on the area traffic circulation system. Construction worksite traffic control and detour plans to reduce the temporary Project construction impacts will be required that incorporate the recommended mitigation measures.

The Project will not generate any new measurable and regular vehicle trips during the operations period, and long-term mitigation measures are therefore not required.

KOA CORPORATION
PLANNING & ENGINEERING

APPENDIX A1
Existing Intersection Traffic Count Data

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Woodley Ave

East/West Victory Blvd

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	120	125	176	168
BIKES	49	34	76	79
BUSES	19	22	96	92

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	103	9.45	341	7.15	566	7.00	631	7.30
PM PK 15 MIN	371	17.15	162	17.00	550	17.00	556	17.30
AM PK HOUR	354	9.00	1254	7.15	2159	7.00	2390	7.30
PM PK HOUR	1342	17.00	594	17.00	2115	16.45	2097	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	63	137	89	289
8-9	72	143	104	319
9-10	73	197	84	354
15-16	241	563	160	964
16-17	295	770	208	1273
17-18	342	801	199	1342
TOTAL	1086	2611	844	4541

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	108	1066	76	1250
8-9	152	897	94	1143
9-10	124	504	74	702
15-16	167	266	103	536
16-17	195	262	97	554
17-18	212	240	142	594
TOTAL	958	3235	586	4779

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	1539	19	0	45	2
8-9	1462	28	0	49	0
9-10	1056	30	0	31	0
15-16	1500	26	0	43	0
16-17	1827	27	0	36	0
17-18	1936	31	0	54	1
TOTAL	9320	161	0	258	3

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	53	1711	395	2159
8-9	53	1772	271	2096
9-10	75	1471	224	1770
15-16	89	1661	95	1845
16-17	93	1771	103	1967
17-18	97	1909	96	2102
TOTAL	460	10295	1184	11939

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	298	1908	78	2284
8-9	263	1830	116	2209
9-10	268	1352	117	1737
15-16	107	1483	176	1766
16-17	85	1638	181	1904
17-18	123	1774	200	2097
TOTAL	1144	9985	868	11997

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	4443	61	1	56	0
8-9	4305	53	1	76	0
9-10	3507	34	0	34	0
15-16	3611	47	0	54	1
16-17	3871	56	2	50	0
17-18	4199	59	0	68	0
TOTAL	23936	310	4	338	1

ITM Peak Hour Summary

Prepared by:

NDS

Woodley Ave and Victory Blvd , San Fernando Valley

Date:	5/27/2015
Day:	Wednesday

Project #:	15-5336-002
City:	San Fernando Valley

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Southbound Approach (Woodley Ave)

	Lanes 0	Lanes 3	Lanes 1	Departing
AM	83	998	128	307
NOON	0	0	0	0
PM	142	240	212	1098

Eastbound Approach (Victory Blvd)

	Lanes	AM	NOON	PM
Departing		2191	0	2258
Left	1	48	0	97
Through	3	1790	0	1909
Right	0	319	0	96

Westbound Approach

	AM	NOON	PM	Lanes
Right	92	0	200	0
Through	2032	0	1774	3
Left	266	0	123	1
Departing	2027	0	2320	

CONTROL

Signalized

Northbound Approach

	Departing			
AM	1583	76	167	109
NOON	0	0	0	0
PM	459	342	801	199
Lanes		1	2	1

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	1209	307
NOON	0	0
PM	594	1098

East Leg

	AM	NOON	PM
	2390	0	2097
	2027	0	2320

West Leg

	AM	NOON	PM
	2191	0	2258
	2157	0	2102

South Leg

AM	1583	352
NOON	0	0
PM	459	1342

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1516	0	1692
East Leg	4417	0	4417
West Leg	4348	0	4360
South Leg	1935	0	1801

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
7:00 AM	12	22	13	23	242	18	13	437	116	78	424	23	1421
7:15 AM	10	28	22	24	302	15	10	409	105	81	453	20	1479
7:30 AM	19	33	29	23	254	15	14	446	99	78	541	12	1563
7:45 AM	22	54	25	38	268	28	16	419	75	61	490	23	1519
8:00 AM	18	31	26	36	230	21	6	469	74	62	527	26	1526
8:15 AM	17	49	29	31	246	19	12	456	71	65	474	31	1500
8:30 AM	15	31	21	33	223	22	15	445	73	73	415	29	1395
8:45 AM	22	32	28	52	198	32	20	402	53	63	414	30	1346
9:00 AM	12	37	20	31	134	16	11	387	58	79	420	31	1236
9:15 AM	15	56	20	40	149	21	23	351	59	66	304	26	1130
9:30 AM	20	46	25	22	94	14	23	388	64	66	348	26	1136
9:45 AM	26	58	19	31	127	23	18	345	43	57	280	34	1061

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	208	477	277	384	2467	244	181	4954	890	829	5090	311	16312
APPROACH %'s :	21.62%	49.58%	28.79%	12.41%	79.71%	7.88%	3.00%	82.22%	14.77%	13.31%	81.70%	4.99%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	76	167	109	128	998	83	48	1790	319	266	2032	92	6108
PEAK HR FACTOR :		0.871			0.905			0.965			0.947		0.977

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	49	112	37	37	71	22	22	375	18	36	361	31	1171
3:15 PM	58	144	37	36	64	28	25	410	18	25	348	50	1243
3:30 PM	66	135	44	48	56	28	24	467	30	20	405	41	1364
3:45 PM	68	172	42	46	75	25	18	409	29	26	369	54	1333
4:00 PM	75	168	50	55	70	26	26	481	35	22	382	53	1443
4:15 PM	65	206	56	56	67	25	25	371	21	17	417	38	1364
4:30 PM	77	189	49	46	63	21	17	475	30	23	461	36	1487
4:45 PM	78	207	53	38	62	25	25	444	17	23	378	54	1404
5:00 PM	76	180	47	58	63	41	21	509	20	29	451	57	1552
5:15 PM	96	216	59	51	69	40	28	476	26	24	420	45	1550
5:30 PM	75	188	48	50	54	30	23	506	20	37	474	45	1550
5:45 PM	95	217	45	53	54	31	25	418	30	33	429	53	1483

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	878	2134	567	574	768	342	279	5341	294	315	4895	557	16944
APPROACH %'s :	24.53%	59.63%	15.84%	34.09%	45.61%	20.31%	4.72%	90.31%	4.97%	5.46%	84.88%	9.66%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	342	801	199	212	240	142	97	1909	96	123	1774	200	6135
PEAK HR FACTOR :		0.904			0.917			0.955			0.943		0.988

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
7:00 AM	11	21	9	22	237	18	13	433	113	74	416	21	1388
7:15 AM	10	26	18	22	287	15	9	402	101	79	433	20	1422
7:30 AM	17	31	24	22	251	15	14	435	99	78	527	11	1524
7:45 AM	22	54	24	37	261	27	16	414	73	60	482	22	1492
8:00 AM	17	30	26	36	224	21	5	460	73	62	519	24	1497
8:15 AM	16	47	29	28	240	19	12	446	69	61	464	30	1461
8:30 AM	15	30	21	33	221	19	12	432	71	73	408	26	1361
8:45 AM	22	29	28	51	194	32	19	386	53	60	409	28	1311
9:00 AM	12	36	17	30	125	13	11	375	56	76	411	30	1192
9:15 AM	15	54	20	38	132	20	22	342	59	64	297	25	1088
9:30 AM	20	46	24	21	90	13	22	381	64	64	340	26	1111
9:45 AM	26	57	19	30	121	22	18	333	42	56	272	32	1028

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	203	461	259	370	2383	234	173	4839	873	807	4978	295	15875
APPROACH %'s :	21.99%	49.95%	28.06%	12.39%	79.78%	7.83%	2.94%	82.23%	14.83%	13.27%	81.88%	4.85%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	72	162	103	123	976	82	47	1755	314	261	1992	87	5974
PEAK HR FACTOR :		0.843			0.908			0.965			0.950		0.980

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	47	109	37	34	70	22	19	366	17	36	350	30	1137
3:15 PM	56	139	37	33	61	26	23	392	18	24	343	49	1201
3:30 PM	63	129	42	44	53	27	24	452	28	19	397	40	1318
3:45 PM	66	166	41	44	74	25	16	396	28	26	364	52	1298
4:00 PM	72	165	50	54	69	26	24	474	33	22	374	53	1416
4:15 PM	64	197	56	53	67	25	23	366	21	17	411	37	1337
4:30 PM	75	179	48	45	62	21	17	463	30	23	449	34	1446
4:45 PM	78	199	52	37	62	24	25	438	17	23	372	50	1377
5:00 PM	75	175	47	57	62	41	19	500	20	29	446	52	1523
5:15 PM	94	206	59	49	69	40	26	474	26	24	417	43	1527
5:30 PM	75	182	48	49	54	30	22	502	20	37	469	43	1531
5:45 PM	95	211	45	51	54	31	24	409	30	33	417	52	1452

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	860	2057	562	550	757	338	262	5232	288	313	4809	535	16563
APPROACH %'s :	24.72%	59.13%	16.15%	33.43%	46.02%	20.55%	4.53%	90.49%	4.98%	5.53%	85.01%	9.46%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	339	774	199	206	239	142	91	1885	96	123	1749	190	6033
PEAK HR FACTOR :		0.914			0.917			0.952			0.939		0.985

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-002
N/S Street: Woodley Ave
E/W Street: Victory Blvd
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	3	5	3	0	9	2	5	3
7:15 AM	8	4	0	4	11	5	14	6
7:30 AM	6	5	8	1	14	2	8	4
7:45 AM	8	6	1	2	11	2	18	3
8:00 AM	6	8	13	2	19	2	4	4
8:15 AM	5	4	4	1	22	4	8	1
8:30 AM	4	6	6	0	9	3	8	7
8:45 AM	7	9	1	1	10	7	14	7
9:00 AM	2	7	7	4	7	3	8	2
9:15 AM	6	1	4	1	3	6	8	2
9:30 AM	9	3	3	5	0	3	6	2
9:45 AM	1	2	6	0	7	5	0	6
TOTALS	**65**	**60**	**56**	**21**	**122**	**44**	**101**	**47**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	1	0
7:30 AM	0	2	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	1	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**2**	**0**	**0**	**0**	**0**	**2**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	5	2	9	0	5	5	2	4
3:15 PM	4	10	2	3	12	9	4	8
3:30 PM	8	7	4	3	7	10	8	9
3:45 PM	2	5	2	3	3	3	2	10
4:00 PM	4	8	3	4	8	6	10	10
4:15 PM	0	5	3	3	6	2	1	11
4:30 PM	3	13	6	2	10	4	3	3
4:45 PM	2	1	2	4	4	10	13	5
5:00 PM	2	8	3	2	10	5	8	5
5:15 PM	6	6	2	2	7	7	7	5
5:30 PM	9	11	7	5	11	10	7	10
5:45 PM	4	8	8	2	7	11	8	9
TOTALS	**49**	**84**	**51**	**33**	**90**	**82**	**73**	**89**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	1	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	1
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	1	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**1**	**0**	**0**	**0**	**0**	**1**	**0**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
7:00 AM	0	0	0	0	0	0	1	2	0	0	3	0	6
7:15 AM	0	1	0	0	1	0	0	4	0	0	2	0	8
7:30 AM	0	1	0	0	1	0	0	3	0	0	3	0	8
7:45 AM	1	2	0	0	1	0	0	1	0	0	4	0	9
8:00 AM	0	2	0	0	1	0	0	3	0	0	2	0	8
8:15 AM	0	2	0	0	1	0	0	2	0	0	4	0	9
8:30 AM	0	4	0	0	2	0	0	1	0	0	1	0	8
8:45 AM	0	1	0	0	0	0	0	5	0	0	3	0	9
9:00 AM	0	0	0	0	4	0	0	3	0	0	5	0	12
9:15 AM	0	1	0	0	0	0	0	3	0	0	1	0	5
9:30 AM	0	1	0	0	2	0	0	3	0	0	5	0	11
9:45 AM	0	0	0	1	3	0	0	4	0	0	2	0	10
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	15	0	1	16	0	1	34	0	0	35	0	103
APPROACH %'s :	6.25%	93.75%	0.00%	5.88%	94.12%	0.00%	2.86%	97.14%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	7	0	0	4	0	0	9	0	0	13	0	34
PEAK HR FACTOR :	0.667			1.000			0.750			0.813			0.944

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	0	4	0	0	3	0	0	2	1	0	4	0	14
3:15 PM	0	1	0	0	1	0	0	3	0	0	5	0	10
3:30 PM	0	3	0	0	0	0	0	2	0	0	3	0	8
3:45 PM	0	2	0	0	1	0	0	2	0	0	1	0	6
4:00 PM	0	0	0	0	0	0	0	2	0	0	5	0	7
4:15 PM	0	2	0	0	4	0	0	4	0	0	4	0	14
4:30 PM	0	4	0	0	1	0	0	6	0	0	2	0	13
4:45 PM	0	3	0	0	1	0	0	3	0	0	1	0	8
5:00 PM	0	3	0	0	2	0	0	2	0	0	11	0	18
5:15 PM	0	1	0	0	2	0	0	3	0	0	3	0	9
5:30 PM	0	1	0	0	2	0	0	6	0	0	3	0	12
5:45 PM	1	8	0	0	0	0	0	5	0	0	2	0	16

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	32	0	0	17	0	0	40	1	0	44	0	135
APPROACH %'s :	3.03%	96.97%	0.00%	0.00%	100.00%	0.00%	0.00%	97.56%	2.44%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	13	0	0	6	0	0	16	0	0	19	0	55
PEAK HR FACTOR :	0.389			0.750			0.667			0.432			0.764

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
7:00 AM	1	0	0	0	2	0	0	2	1	0	3	2	11
7:15 AM	0	0	1	1	1	0	0	0	1	0	10	0	14
7:30 AM	1	0	0	0	0	0	0	2	0	0	6	0	9
7:45 AM	0	0	0	0	0	0	0	2	0	0	4	0	6
8:00 AM	0	0	0	0	0	0	1	1	0	0	2	2	6
8:15 AM	0	1	0	1	1	0	0	2	0	1	2	1	9
8:30 AM	0	0	0	0	0	1	1	2	1	0	2	0	7
8:45 AM	0	1	0	0	0	0	0	7	0	0	2	1	11
9:00 AM	0	1	0	0	2	0	0	5	0	0	2	0	10
9:15 AM	0	1	0	1	0	0	0	1	0	1	1	1	6
9:30 AM	0	0	0	0	0	1	1	2	0	0	1	0	5
9:45 AM	0	0	0	0	0	1	0	1	0	0	2	0	4
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	4	1	3	6	3	3	27	3	2	37	7	98
APPROACH %'s :	28.57%	57.14%	14.29%	25.00%	50.00%	25.00%	9.09%	81.82%	9.09%	4.35%	80.43%	15.22%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	1	0	1	1	0	1	7	0	1	14	3	30
PEAK HR FACTOR :	0.500			0.250			1.000			0.750			0.833

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	0	0	0	1	0	0	0	4	1	0	6	0	12
3:15 PM	0	1	0	1	1	0	1	10	0	0	1	0	15
3:30 PM	0	0	0	1	2	0	0	9	2	0	2	1	17
3:45 PM	0	0	0	1	1	0	2	7	1	0	3	1	16
4:00 PM	1	1	0	0	0	0	0	3	0	0	4	0	9
4:15 PM	0	2	0	1	0	0	2	1	0	0	2	0	8
4:30 PM	0	2	0	0	0	0	0	7	0	0	3	0	12
4:45 PM	0	1	0	0	0	0	0	3	0	0	2	3	9
5:00 PM	0	1	0	0	0	0	2	4	0	0	3	1	11
5:15 PM	0	0	0	1	0	0	0	1	0	0	2	2	6
5:30 PM	0	3	0	0	0	0	0	0	0	0	1	0	4
5:45 PM	0	0	0	0	0	0	1	2	0	0	9	0	12
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	11	0	6	4	0	8	51	4	0	38	8	131
APPROACH %'s :	8.33%	91.67%	0.00%	60.00%	40.00%	0.00%	12.70%	80.95%	6.35%	0.00%	82.61%	17.39%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	4	0	1	0	0	3	7	0	0	15	3	33
PEAK HR FACTOR :	0.333			0.250			0.417			0.500			0.688

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002

Day: Wednesday

HEAVY TRUCKS

City: San Fernando Valley

Date: 5/27/2015

AM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
7:00 AM	0	1	4	1	3	0	0	2	2	4	5	0	22
7:15 AM	0	2	3	1	14	0	1	7	3	2	10	0	43
7:30 AM	1	2	5	1	3	0	0	9	0	0	8	1	30
7:45 AM	0	0	1	1	7	1	0	3	2	1	4	1	21
8:00 AM	1	1	0	0	6	0	0	8	1	0	6	0	23
8:15 AM	1	1	0	2	5	0	0	8	2	3	8	0	30
8:30 AM	0	1	0	0	2	2	2	11	1	0	5	3	27
8:45 AM	0	2	0	1	4	0	1	9	0	3	3	1	24
9:00 AM	0	0	3	1	7	3	0	7	2	3	7	1	34
9:15 AM	0	1	0	1	17	1	1	8	0	1	6	0	36
9:30 AM	0	0	1	1	4	0	0	5	0	2	7	0	20
9:45 AM	0	1	0	1	6	0	0	11	1	1	6	2	29

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	12	17	11	78	7	5	88	14	20	75	9	339
APPROACH %'s :	9.38%	37.50%	53.13%	11.46%	81.25%	7.29%	4.67%	82.24%	13.08%	19.23%	72.12%	8.65%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	4	6	4	21	1	0	28	5	4	26	2	104
PEAK HR FACTOR :	0.406			0.722			0.825			0.727			0.867

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-002 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Woodley Ave			Woodley Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	1	1	3	0	1	3	0	1	3	0	
3:00 PM	2	3	0	2	1	0	3	5	0	0	5	1	22
3:15 PM	2	4	0	2	2	2	1	8	0	1	4	1	27
3:30 PM	3	6	2	3	1	1	0	6	0	1	6	0	29
3:45 PM	2	6	1	1	0	0	0	6	0	0	2	1	19
4:00 PM	2	2	0	1	1	0	2	4	2	0	4	0	18
4:15 PM	1	7	0	2	0	0	0	4	0	0	4	1	19
4:30 PM	2	8	1	1	1	0	0	5	0	0	9	2	29
4:45 PM	0	7	1	1	0	1	0	3	0	0	4	1	18
5:00 PM	1	4	0	1	1	0	0	5	0	0	2	4	18
5:15 PM	2	10	0	1	0	0	2	1	0	0	1	0	17
5:30 PM	0	3	0	1	0	0	1	4	0	0	4	2	15
5:45 PM	0	6	0	2	0	0	0	7	0	0	3	1	19

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	17	66	5	18	7	4	9	58	2	2	48	14	250
APPROACH %'s :	19.32%	75.00%	5.68%	62.07%	24.14%	13.79%	13.04%	84.06%	2.90%	3.13%	75.00%	21.88%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	23	0	5	1	0	3	17	0	0	10	7	69
PEAK HR FACTOR :	0.542			0.750			0.714			0.708			0.908

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Densmore Ave

East/West Victory Blvd

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	10	4	187	176
BIKES	4	1	101	89
BUSES	0	1	86	94

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	3	7.15	43	7.45	505	8.00	607	7.30
PM PK 15 MIN	3	15.45	17	17.15	597	17.15	551	17.45
AM PK HOUR	5	7.00	155	7.15	1986	7.30	2347	7.15
PM PK HOUR	5	15.00	45	16.45	2285	16.45	2133	17.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	3	0	2	5	*7-8*	122	0	24	146	151	8	0	4	0
8-9	0	0	3	3	*8-9*	96	0	14	110	113	7	0	5	0
9-10	1	0	4	5	*9-10*	20	0	11	31	36	6	0	5	0
15-16	2	0	3	5	*15-16*	12	0	7	19	24	4	0	3	0
16-17	1	0	1	2	*16-17*	21	1	7	29	31	1	2	9	1
17-18	1	0	1	2	*17-18*	33	0	9	42	44	9	1	12	0
TOTAL	8	0	14	22	TOTAL	304	1	72	377	399	35	3	38	1

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	4	1869	1	1874	*7-8*	22	2213	20	2255	4129	0	0	0	0
8-9	5	1965	3	1973	*8-9*	21	2085	23	2129	4102	2	0	1	0
9-10	1	1702	6	1709	*9-10*	13	1702	13	1728	3437	0	0	0	0
15-16	10	1945	2	1957	*15-16*	13	1747	32	1792	3749	1	0	0	0
16-17	13	2094	1	2108	*16-17*	17	1916	33	1966	4074	2	2	0	0
17-18	12	2253	6	2271	*17-18*	7	2083	43	2133	4404	2	2	1	0
TOTAL	45	11828	19	11892	TOTAL	93	11746	164	12003	23895	7	4	2	0

ITM Peak Hour Summary

Prepared by:

NDS

Densmore Ave and Victory Blvd , San Fernando Valley

Date: 5/27/2015
Day: Wednesday

Project #: 15-5336-003
City: San Fernando Valley

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

CONTROL: Signalized

Densmore Ave / Victory Blvd

Southbound Approach

	Right	Through	Left	Outbound
Lanes	0	1	0	
AM	19	0	136	35
NOON	0	0	0	0
PM	9	0	33	55

Eastbound Approach

	Lanes	AM	NOON	PM
Outbound		2288	0	2093
Left	1	3	0	12
Through	3	1982	0	2253
Right	0	1	0	6

Westbound Approach

	AM	NOON	PM	Lanes
Right	32	0	43	0
Through	2268	0	2083	3
Left	18	0	7	1
Outbound	2119	0	2287	

Northbound Approach

	Outbound	Left	Through	Right
AM	19	1	0	1
NOON	0	0	0	0
PM	13	1	0	1
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	155	35
North Leg	NOON	0	0
North Leg	PM	42	55
South Leg	AM	19	2
South Leg	NOON	0	0
South Leg	PM	13	2

West Leg	AM	NOON	PM
Out	2288	0	2093
In	1986	0	2271

East Leg	AM	NOON	PM
In	2318	0	2133
Out	2119	0	2287

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	190	0	97
West Leg	4274	0	4364
East Leg	4437	0	4420
South Leg	21	0	15

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	1	0	0	22	0	5	1	458	1	10	480	4	982
7:15 AM	1	0	2	26	0	9	1	432	0	3	556	1	1031
7:30 AM	1	0	0	36	0	5	1	498	0	5	595	7	1148
7:45 AM	0	0	0	38	0	5	1	481	0	4	582	8	1119
8:00 AM	0	0	0	32	0	4	0	504	1	4	574	8	1127
8:15 AM	0	0	1	30	0	5	1	499	0	5	517	9	1067
8:30 AM	0	0	1	21	0	2	3	469	2	5	501	4	1008
8:45 AM	0	0	1	13	0	3	1	493	0	7	493	2	1013
9:00 AM	0	0	0	4	0	4	0	452	2	4	501	3	970
9:15 AM	1	0	1	5	0	1	0	424	1	3	405	2	843
9:30 AM	0	0	2	8	0	4	0	419	1	3	410	3	850
9:45 AM	0	0	1	3	0	2	1	407	2	3	386	5	810

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	9	238	0	49	10	5536	10	56	6000	56	11968
APPROACH %'s :	30.77%	0.00%	69.23%	82.93%	0.00%	17.07%	0.18%	99.64%	0.18%	0.92%	98.17%	0.92%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	0	1	136	0	19	3	1982	1	18	2268	32	4461
PEAK HR FACTOR :	0.500			0.901			0.983			0.955			0.971

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	1	0	1	4	0	4	3	423	0	2	410	11	859
3:15 PM	0	0	0	4	0	1	4	495	0	3	421	9	937
3:30 PM	0	0	0	0	0	1	1	524	0	3	455	7	991
3:45 PM	1	0	2	4	0	1	2	503	2	5	461	5	986
4:00 PM	0	0	0	8	0	1	2	536	0	6	457	6	1016
4:15 PM	0	0	1	3	0	1	3	492	1	2	481	8	992
4:30 PM	0	0	0	4	0	1	6	549	0	3	508	9	1080
4:45 PM	1	0	0	6	1	4	2	517	0	6	470	10	1017
5:00 PM	1	0	0	11	0	0	4	586	0	4	518	14	1138
5:15 PM	0	0	0	12	0	5	4	593	0	3	501	8	1126
5:30 PM	0	0	0	4	0	2	1	575	3	0	524	10	1119
5:45 PM	0	0	1	6	0	2	3	499	3	0	540	11	1065
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	5	66	1	23	35	6292	9	37	5746	108	12326
APPROACH %'s :	44.44%	0.00%	55.56%	73.33%	1.11%	25.56%	0.55%	99.31%	0.14%	0.63%	97.54%	1.83%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	0	1	33	0	9	12	2253	6	7	2083	43	4448
PEAK HR FACTOR :	0.500			0.618			0.951			0.968			0.977

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	0	0	0	22	0	5	1	449	1	8	467	4	957
7:15 AM	0	0	0	26	0	8	1	419	0	2	534	1	991
7:30 AM	0	0	0	35	0	5	1	484	0	5	582	7	1119
7:45 AM	0	0	0	37	0	5	1	473	0	3	571	7	1097
8:00 AM	0	0	0	32	0	4	0	497	1	4	564	8	1110
8:15 AM	0	0	1	30	0	4	1	487	0	5	504	9	1041
8:30 AM	0	0	0	21	0	2	3	458	2	5	491	4	986
8:45 AM	0	0	1	13	0	3	1	481	0	7	481	2	989
9:00 AM	0	0	0	4	0	4	0	439	1	3	490	3	944
9:15 AM	0	0	1	5	0	1	0	407	0	2	396	2	814
9:30 AM	0	0	0	8	0	4	0	410	0	2	400	3	827
9:45 AM	0	0	0	3	0	2	1	393	2	3	374	5	783

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	3	236	0	47	10	5397	7	49	5854	55	11658
APPROACH %'s :	0.00%	0.00%	100.00%	83.39%	0.00%	16.61%	0.18%	99.69%	0.13%	0.82%	98.25%	0.92%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	1	134	0	18	3	1941	1	17	2221	31	4367
PEAK HR FACTOR :	0.250			0.905			0.976			0.955			0.976

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	1	0	1	4	0	4	3	412	0	2	397	11	835
3:15 PM	0	0	0	4	0	1	4	475	0	3	414	8	909
3:30 PM	0	0	0	0	0	0	1	506	0	3	448	7	965
3:45 PM	1	0	2	4	0	1	2	485	2	5	452	5	959
4:00 PM	0	0	0	8	0	1	2	530	0	6	446	5	998
4:15 PM	0	0	1	3	0	1	3	482	1	2	473	8	974
4:30 PM	0	0	0	4	0	1	6	538	0	3	495	9	1056
4:45 PM	1	0	0	6	1	4	2	508	0	6	459	10	997
5:00 PM	1	0	0	11	0	0	4	577	0	4	509	14	1120
5:15 PM	0	0	0	12	0	5	4	588	0	3	496	8	1116
5:30 PM	0	0	0	4	0	2	1	571	3	0	519	10	1110
5:45 PM	0	0	1	6	0	2	2	490	3	0	524	11	1039

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	5	66	1	22	34	6162	9	37	5632	106	12078
APPROACH %'s :	44.44%	0.00%	55.56%	74.16%	1.12%	24.72%	0.55%	99.31%	0.15%	0.64%	97.52%	1.84%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	0	1	33	0	9	11	2226	6	7	2048	43	4385
PEAK HR FACTOR :		0.500			0.618			0.947			0.980		0.979

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-003
N/S Street: Densmore Ave
E/W Street: Victory Blvd
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	1	0	0	0	0	0	0
7:15 AM	1	0	0	1	0	0	0	0
7:30 AM	0	0	1	5	0	0	0	0
7:45 AM	0	2	1	0	0	0	0	0
8:00 AM	0	1	0	1	0	1	0	1
8:15 AM	0	1	3	2	0	0	0	0
8:30 AM	1	1	0	0	0	0	1	0
8:45 AM	0	1	1	0	0	0	0	0
9:00 AM	0	0	2	2	0	0	0	0
9:15 AM	1	2	2	0	0	0	0	0
9:30 AM	0	2	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**3**	**11**	**10**	**11**	**0**	**1**	**1**	**1**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	1	0	1	0	0	0	1
3:15 PM	0	0	1	0	0	0	0	0
3:30 PM	2	0	0	0	0	0	0	0
3:45 PM	0	0	1	1	0	0	0	0
4:00 PM	0	4	0	0	0	0	1	0
4:15 PM	0	0	0	1	0	0	0	0
4:30 PM	1	0	0	0	0	0	0	0
4:45 PM	1	3	0	0	0	0	0	1
5:00 PM	1	2	0	1	1	0	0	1
5:15 PM	1	2	2	3	0	0	0	1
5:30 PM	1	1	1	1	0	0	0	0
5:45 PM	2	2	0	1	0	0	0	0
TOTALS	**9**	**15**	**5**	**9**	**1**	**0**	**1**	**4**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	1	0	0	2	0	0	1	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	1	0	0	1	0
TOTALS	**1**	**0**	**0**	**3**	**0**	**0**	**2**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	0	0	0	0	0	0	0	5	0	0	3	0	8
7:15 AM	0	0	0	0	0	0	0	3	0	0	5	0	8
7:30 AM	0	0	0	0	0	0	0	2	0	0	5	0	7
7:45 AM	0	0	0	0	0	0	0	6	0	0	1	0	7
8:00 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
8:15 AM	0	0	0	0	0	0	0	5	0	0	3	0	8
8:30 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
8:45 AM	0	0	0	0	0	0	0	3	0	0	6	0	9
9:00 AM	0	0	0	0	0	0	0	3	0	0	6	0	9
9:15 AM	1	0	0	0	0	0	0	3	0	0	5	0	9
9:30 AM	0	0	0	0	0	0	0	6	0	0	3	0	9
9:45 AM	0	0	0	0	0	0	0	5	0	0	3	0	8

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	0	0	0	0	0	0	45	0	0	44	0	90
APPROACH %'s :	100.00%	0.00%	0.00%				0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	15	0	0	11	0	26
PEAK HR FACTOR :	0.000			0.000			0.625			0.550			0.813

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	0	0	0	0	0	0	0	6	0	0	4	0	10
3:15 PM	0	0	0	0	0	0	0	8	0	0	2	0	10
3:30 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
3:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
4:00 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
4:15 PM	0	0	0	0	0	0	0	3	0	0	4	0	7
4:30 PM	0	0	0	0	0	0	0	4	0	0	8	0	12
4:45 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
5:00 PM	0	0	0	0	0	1	0	11	0	0	7	0	19
5:15 PM	0	0	0	0	0	0	0	4	0	0	3	0	7
5:30 PM	2	1	0	0	0	0	0	5	0	0	6	0	14
5:45 PM	0	0	0	0	0	0	0	6	0	0	4	0	10

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	1	0	0	0	1	0	56	0	0	45	0	105
APPROACH %'s :	66.67%	33.33%	0.00%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	2	1	0	0	0	1	0	26	0	0	20	0	50
PEAK HR FACTOR :	0.250			0.250			0.591			0.714			0.658

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	0	0	0	0	0	0	0	3	0	0	6	0	9
7:15 AM	0	0	0	0	0	0	0	1	0	0	11	0	12
7:30 AM	0	0	0	1	0	0	0	1	0	0	6	0	8
7:45 AM	0	0	0	0	0	0	0	3	0	0	4	0	7
8:00 AM	0	0	0	0	0	0	0	1	0	0	5	0	6
8:15 AM	0	0	0	0	0	0	0	2	0	0	3	0	5
8:30 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
8:45 AM	0	0	0	0	0	0	0	6	0	0	3	0	9
9:00 AM	0	0	0	0	0	0	0	4	0	0	2	0	6
9:15 AM	0	0	0	0	0	0	0	5	0	0	2	0	7
9:30 AM	0	0	0	0	0	0	0	2	0	0	1	0	3
9:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	0	0	31	0	0	47	0	79
APPROACH %'s :				100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	7	0	0	18	0	26
PEAK HR FACTOR :	0.000			0.250			0.583			0.750			0.813

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	0	0	0	0	0	0	0	4	0	0	5	0	9
3:15 PM	0	0	0	0	0	0	0	12	0	0	1	0	13
3:30 PM	0	0	0	0	0	0	0	8	0	0	3	0	11
3:45 PM	0	0	0	0	0	0	0	10	0	0	4	0	14
4:00 PM	0	0	0	0	0	0	0	2	0	0	5	0	7
4:15 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
4:30 PM	0	0	0	0	0	0	0	6	0	0	3	0	9
4:45 PM	0	0	0	0	0	0	0	3	0	0	6	0	9
5:00 PM	0	0	0	0	0	0	0	3	0	0	4	0	7
5:15 PM	0	0	0	0	0	0	0	2	0	0	4	0	6
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	2	0	0	10	0	12

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	55	0	0	47	0	102
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	7	0	0	19	0	26
PEAK HR FACTOR :	0.000			0.000			0.583			0.475			0.542

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
7:00 AM	1	0	0	0	0	0	0	6	0	2	7	0	16
7:15 AM	1	0	2	0	0	1	0	12	0	1	11	0	28
7:30 AM	1	0	0	0	0	0	0	13	0	0	7	0	21
7:45 AM	0	0	0	1	0	0	0	5	0	1	7	1	15
8:00 AM	0	0	0	0	0	0	0	6	0	0	5	0	11
8:15 AM	0	0	0	0	0	1	0	10	0	0	10	0	21
8:30 AM	0	0	1	0	0	0	0	9	0	0	8	0	18
8:45 AM	0	0	0	0	0	0	0	6	0	0	9	0	15
9:00 AM	0	0	0	0	0	0	0	9	1	1	9	0	20
9:15 AM	1	0	0	0	0	0	0	12	1	1	7	0	22
9:30 AM	0	0	2	0	0	0	0	7	1	1	9	0	20
9:45 AM	0	0	1	0	0	0	0	13	0	0	10	0	24
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	6	1	0	2	0	108	3	7	99	1	231
APPROACH %'s :	40.00%	0.00%	60.00%	33.33%	0.00%	66.67%	0.00%	97.30%	2.70%	6.54%	92.52%	0.93%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	1	0	0	1	0	1	0	34	0	1	29	1	68
PEAK HR FACTOR :	0.250			0.500			0.654			0.775			0.810

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-003 | **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Densmore Ave			Densmore Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	0	1	0	1	3	0	1	3	0	
3:00 PM	0	0	0	0	0	0	0	7	0	0	8	0	15
3:15 PM	0	0	0	0	0	0	0	8	0	0	6	1	15
3:30 PM	0	0	0	0	0	1	0	10	0	0	4	0	15
3:45 PM	0	0	0	0	0	0	0	8	0	0	5	0	13
4:00 PM	0	0	0	0	0	0	0	4	0	0	6	1	11
4:15 PM	0	0	0	0	0	0	0	7	0	0	7	0	14
4:30 PM	0	0	0	0	0	0	0	5	0	0	10	0	15
4:45 PM	0	0	0	0	0	0	0	6	0	0	5	0	11
5:00 PM	0	0	0	0	0	0	0	6	0	0	5	0	11
5:15 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
5:30 PM	0	0	0	0	0	0	0	4	0	0	4	0	8
5:45 PM	0	0	0	0	0	0	1	7	0	0	6	0	14

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	1	1	75	0	0	67	2	146
APPROACH %'s :				0.00%	0.00%	100.00%	1.32%	98.68%	0.00%	0.00%	97.10%	2.90%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	1	20	0	0	16	0	37
PEAK HR FACTOR :		0.000			0.000			0.656			0.667		0.661

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Haskell Ave

East/West Victory Blvd

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	2	123	146	138
BIKES	6	12	7	12
BUSES	0	31	81	93

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	26	8.00	463	7.30	555	8.15	511	7.45
PM PK 15 MIN	52	17.30	286	17.30	543	17.15	513	17.45
AM PK HOUR	70	7.15	1632	7.30	2077	7.30	1883	7.15
PM PK HOUR	187	17.00	1084	17.00	1949	16.30	1979	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	44	7	2	53
8-9	40	9	1	50
9-10	16	5	5	26
15-16	56	17	8	81
16-17	86	37	10	133
17-18	117	44	26	187
TOTAL	359	119	52	530

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	816	201	605	1622
8-9	802	196	579	1577
9-10	824	95	654	1573
15-16	527	31	300	858
16-17	580	34	357	971
17-18	598	45	441	1084
TOTAL	4147	602	2936	7685

Hours	**TOTAL** N-S	**XING S/L** Ped	XING S/L Sch	**XING N/L** Ped	XING N/L Sch
7-8	1675	1	0	4	0
8-9	1627	6	0	1	0
9-10	1599	1	0	3	0
15-16	939	0	0	5	0
16-17	1104	0	0	13	0
17-18	1271	0	0	11	0
TOTAL	8215	8	0	37	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	20	1779	121	1920
8-9	35	1851	132	2018
9-10	38	1526	55	1619
15-16	72	1548	48	1668
16-17	76	1683	42	1801
17-18	100	1763	55	1918
TOTAL	341	10150	453	10944

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	1	1587	179	1767
8-9	6	1468	161	1635
9-10	3	1002	150	1155
15-16	3	1458	389	1850
16-17	1	1564	348	1913
17-18	4	1594	381	1979
TOTAL	18	8673	1608	10299

Hours	**TOTAL** E-W	**XING W/L** Ped	XING W/L Sch	**XING E/L** Ped	XING E/L Sch
7-8	3687	7	0	0	0
8-9	3653	4	0	0	0
9-10	2774	1	0	0	0
15-16	3518	11	0	0	0
16-17	3714	5	0	0	0
17-18	3897	6	0	0	0
TOTAL	21243	34	0	0	0

ITM Peak Hour Summary

Prepared by:

NDS

Haskell Ave and Victory Blvd , San Fernando Valley

Date: 5/27/2015
Day: Wednesday

Project #: 15-5336-004
City: San Fernando Valley

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

CONTROL: Signalized

Haskell Ave
Victory Blvd

Southbound Approach

	Right	Through	Left	Northbound departure
Lanes	1	0.5	1.5	
AM	589	213	830	228
NOON	0	0	0	0
PM	441	45	598	525

Westbound Approach

	AM	NOON	PM	Lanes
Right	187	0	381	1
Through	1622	0	1594	3
Left	3	0	4	1
Departure (eastbound)	2718	0	2387	

Eastbound Approach

	Lanes	AM	NOON	PM
Departure (westbound)		2268	0	2152
Left	1	31	0	100
Through	3	1887	0	1763
Right	0	159	0	55

Northbound Approach

	Southbound departure	Left	Through	Right
AM	375	57	10	1
NOON	0	0	0	0
PM	104	117	44	26
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg	In	Out
AM	1632	228
NOON	0	0
PM	1084	525

West Leg	AM	NOON	PM
Out	2268	0	2152
In	2077	0	1918

East Leg	AM	NOON	PM
In	1812	0	1979
Out	2718	0	2387

South Leg	Out	In
AM	375	68
NOON	0	0
PM	104	187

Total Volume Per Leg

	North Leg	South Leg
AM	1860	443
NOON	0	0
PM	1609	291

	AM	NOON	PM
West Leg	4345	0	4070
East Leg	4530	0	4366

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
7:00 AM	8	1	0	225	43	162	10	394	14	1	300	44	1202
7:15 AM	9	2	1	175	42	128	2	446	27	0	443	39	1314
7:30 AM	16	3	1	228	67	168	3	461	26	0	391	38	1402
7:45 AM	11	1	0	188	49	147	5	478	54	0	453	58	1444
8:00 AM	22	4	0	214	59	138	16	452	27	1	409	51	1393
8:15 AM	8	2	0	200	38	136	7	496	52	2	369	40	1350
8:30 AM	7	1	1	218	53	154	7	436	28	1	335	37	1278
8:45 AM	3	2	0	170	46	151	5	467	25	2	355	33	1259
9:00 AM	6	1	2	211	26	169	12	377	20	2	291	39	1156
9:15 AM	2	1	0	178	24	163	8	378	18	0	255	32	1059
9:30 AM	5	3	0	237	27	166	10	389	9	0	231	41	1118
9:45 AM	3	0	3	198	18	156	8	382	8	1	225	38	1040

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	100	21	8	2442	492	1838	93	5156	308	10	4057	490	15015
APPROACH %'s :	77.52%	16.28%	6.20%	51.17%	10.31%	38.52%	1.67%	92.78%	5.54%	0.22%	89.03%	10.75%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	57	10	1	830	213	589	31	1887	159	3	1622	187	5589
PEAK HR FACTOR :		0.654			0.881			0.936			0.886		0.968

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
3:00 PM	13	5	3	105	9	62	15	305	16	1	351	114	999
3:15 PM	12	3	2	137	9	80	22	419	10	0	357	96	1147
3:30 PM	22	5	2	148	10	79	20	378	11	2	354	85	1116
3:45 PM	9	4	1	137	3	79	15	446	11	0	396	94	1195
4:00 PM	22	8	1	151	9	78	18	385	8	0	357	89	1126
4:15 PM	26	11	1	133	13	95	14	414	14	1	398	82	1202
4:30 PM	18	9	5	143	7	102	19	409	10	0	390	95	1207
4:45 PM	20	9	3	153	5	82	25	475	10	0	419	82	1283
5:00 PM	26	6	9	162	13	85	24	421	13	1	392	104	1256
5:15 PM	33	9	4	157	7	102	29	493	21	1	405	86	1347
5:30 PM	29	13	10	142	14	130	24	405	8	2	385	90	1252
5:45 PM	29	16	3	137	11	124	23	444	13	0	412	101	1313

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	259	98	44	1705	110	1098	248	4994	145	8	4616	1118	14443
APPROACH %'s :	64.59%	24.44%	10.97%	58.53%	3.78%	37.69%	4.60%	92.70%	2.69%	0.14%	80.39%	19.47%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	117	44	26	598	45	441	100	1763	55	4	1594	381	5168
PEAK HR FACTOR :		0.899			0.948			0.883			0.964		0.959

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
7:00 AM	8	1	0	221	43	155	8	388	14	1	294	43	1176
7:15 AM	9	2	1	171	42	116	2	434	27	0	432	36	1272
7:30 AM	16	3	1	228	67	167	3	451	26	0	380	37	1379
7:45 AM	11	1	0	185	49	144	4	472	54	0	444	56	1420
8:00 AM	22	4	0	210	59	137	16	447	27	1	401	49	1373
8:15 AM	8	2	0	195	37	133	7	485	52	2	359	39	1319
8:30 AM	7	1	1	213	53	152	7	428	28	1	326	36	1253
8:45 AM	3	2	0	166	46	147	5	454	25	2	347	30	1227
9:00 AM	6	1	2	203	26	163	11	368	20	2	286	39	1127
9:15 AM	2	1	0	176	24	158	7	366	18	0	251	31	1034
9:30 AM	5	3	0	232	27	159	10	380	9	0	227	38	1090
9:45 AM	3	0	3	193	18	152	8	370	8	1	218	37	1011

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	100	21	8	2393	491	1783	88	5043	308	10	3965	471	14681
APPROACH %'s :	77.52%	16.28%	6.20%	51.27%	10.52%	38.20%	1.62%	92.72%	5.66%	0.22%	89.18%	10.59%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	57	10	1	818	212	581	30	1855	159	3	1584	181	5491
PEAK HR FACTOR :		0.654			0.872			0.939			0.884		0.967

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
3:00 PM	13	5	3	103	9	60	15	296	16	1	340	113	974
3:15 PM	12	3	2	131	9	79	22	401	10	0	349	96	1114
3:30 PM	22	5	2	145	10	76	20	363	11	2	346	81	1083
3:45 PM	9	4	1	134	3	77	13	432	11	0	389	92	1165
4:00 PM	22	7	1	149	9	76	18	380	8	0	350	84	1104
4:15 PM	26	11	1	131	13	95	14	405	14	1	390	80	1181
4:30 PM	18	9	5	140	7	101	19	401	10	0	381	93	1184
4:45 PM	20	9	3	152	5	82	22	470	10	0	408	78	1259
5:00 PM	26	6	9	159	13	84	24	416	13	1	385	101	1237
5:15 PM	33	9	4	157	7	102	29	489	21	1	400	86	1338
5:30 PM	29	13	10	141	14	130	24	402	8	2	379	89	1241
5:45 PM	28	16	3	136	11	114	23	435	13	0	407	97	1283

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	258	97	44	1678	110	1076	243	4890	145	8	4524	1090	14163
APPROACH %'s :	64.66%	24.31%	11.03%	58.59%	3.84%	37.57%	4.60%	92.65%	2.75%	0.14%	80.47%	19.39%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	116	44	26	593	45	430	100	1742	55	4	1571	373	5099
PEAK HR FACTOR :		0.894			0.937			0.880			0.966		0.953

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-004
N/S Street: Haskell Ave
E/W Street: Victory Blvd
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	3
7:15 AM	0	1	0	0	0	0	0	3
7:30 AM	1	0	0	0	0	0	1	0
7:45 AM	1	1	1	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0
8:30 AM	0	0	3	0	0	0	0	1
8:45 AM	0	0	2	1	0	0	0	3
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	1	0	0	0	0	1
9:30 AM	0	2	0	0	0	0	0	0
9:45 AM	1	0	0	0	0	0	0	0
TOTALS	**3**	**5**	**7**	**1**	**0**	**0**	**1**	**11**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	1	1
3:30 PM	1	0	0	0	0	0	3	1
3:45 PM	3	1	0	0	0	0	3	1
4:00 PM	2	6	0	0	0	0	1	1
4:15 PM	1	1	0	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	1	2	0	0	0	0	0	2
5:00 PM	1	2	0	0	0	0	0	0
5:15 PM	1	3	0	0	0	0	4	1
5:30 PM	1	0	0	0	0	0	1	0
5:45 PM	2	1	0	0	0	0	0	0
TOTALS	**13**	**16**	**0**	**0**	**0**	**0**	**13**	**9**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
7:00 AM	0	0	0	1	1	0	0	0	0	0	1	0	3
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
9:45 AM	0	0	1	0	1	0	0	0	0	0	0	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	1	1	5	0	0	1	0	0	6	0	14
APPROACH %'s :	0.00%	0.00%	100.00%	16.67%	83.33%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	
PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	2	0	0	0	0	0	1	0	3
PEAK HR FACTOR :	0.000			0.500			0.000			0.250			0.375

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
3:00 PM	0	0	0	0	0	0	0	1	0	1	0	0	2
3:15 PM	0	0	0	0	1	0	0	1	0	0	1	0	3
3:30 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
3:45 PM	0	1	0	0	0	0	0	1	0	0	2	1	5
4:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
4:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
4:30 PM	0	0	0	0	1	0	0	1	0	0	1	0	3
4:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1
5:00 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	2	0	0	0	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	4	0	0	6	0	1	5	0	1	4	1	23
APPROACH %'s :	20.00%	80.00%	0.00%	0.00%	100.00%	0.00%	16.67%	83.33%	0.00%	16.67%	66.67%	16.67%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	2	0	0	3	0	0	0	0	0	0	0	5
PEAK HR FACTOR :	0.250			0.375			0.000			0.000			0.625

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
7:00 AM	0	0	0	1	0	1	2	3	0	0	5	1	13
7:15 AM	0	0	0	0	0	1	0	2	0	0	10	1	14
7:30 AM	0	0	0	0	0	1	0	3	0	0	5	1	10
7:45 AM	0	0	0	0	0	1	0	2	0	0	3	1	7
8:00 AM	0	0	0	0	0	0	0	1	0	0	5	1	7
8:15 AM	0	0	0	1	1	0	0	3	0	0	3	1	9
8:30 AM	0	0	0	0	0	2	0	1	0	0	1	1	5
8:45 AM	0	0	0	2	0	0	0	6	0	0	2	0	10
9:00 AM	0	0	0	0	0	0	0	3	0	0	2	0	5
9:15 AM	0	0	0	0	0	0	0	4	0	0	2	1	7
9:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
9:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	4	1	6	2	30	0	0	41	8	92
APPROACH %'s :				36.36%	9.09%	54.55%	6.25%	93.75%	0.00%	0.00%	83.67%	16.33%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	1	1	2	0	9	0	0	16	4	33
PEAK HR FACTOR :	0.000			0.500			0.750			0.833			0.825

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
3:00 PM	0	0	0	0	0	2	0	4	0	0	1	1	8
3:15 PM	0	0	0	1	0	0	0	11	0	0	1	0	13
3:30 PM	0	0	0	2	0	0	0	6	0	0	3	3	14
3:45 PM	0	0	0	0	0	1	0	9	0	0	3	0	13
4:00 PM	0	0	0	0	0	1	0	2	0	0	4	3	10
4:15 PM	0	0	0	0	0	0	0	4	0	0	1	0	5
4:30 PM	0	0	0	0	0	1	0	4	0	0	2	2	9
4:45 PM	0	0	0	0	0	0	2	2	0	0	6	0	10
5:00 PM	0	0	0	0	0	1	0	1	0	0	3	2	7
5:15 PM	0	0	0	0	0	0	0	3	0	0	4	0	7
5:30 PM	0	0	0	1	0	0	0	0	0	0	1	1	3
5:45 PM	0	0	0	0	0	10	0	1	0	0	1	2	14

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	4	0	16	2	47	0	0	30	14	113
APPROACH %'s :				20.00%	0.00%	80.00%	4.08%	95.92%	0.00%	0.00%	68.18%	31.82%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	1	0	11	0	5	0	0	9	5	31
PEAK HR FACTOR :	0.000			0.300			0.417			0.700			0.554

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
7:00 AM	0	0	0	3	0	6	0	3	0	0	1	0	13
7:15 AM	0	0	0	4	0	11	0	10	0	0	1	2	28
7:30 AM	0	0	0	0	0	0	0	7	0	0	6	0	13
7:45 AM	0	0	0	3	0	2	1	4	0	0	6	1	17
8:00 AM	0	0	0	4	0	1	0	4	0	0	3	1	13
8:15 AM	0	0	0	4	0	3	0	8	0	0	7	0	22
8:30 AM	0	0	0	5	0	0	0	7	0	0	8	0	20
8:45 AM	0	0	0	2	0	4	0	7	0	0	6	3	22
9:00 AM	0	0	0	8	0	6	1	6	0	0	3	0	24
9:15 AM	0	0	0	2	0	5	1	8	0	0	2	0	18
9:30 AM	0	0	0	5	0	7	0	8	0	0	2	3	25
9:45 AM	0	0	0	5	0	4	0	11	0	0	6	1	27

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	45	0	49	3	83	0	0	51	11	242
APPROACH %'s :				47.87%	0.00%	52.13%	3.49%	96.51%	0.00%	0.00%	82.26%	17.74%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	11	0	6	1	23	0	0	22	2	65
PEAK HR FACTOR :	0.000			0.607			0.750			0.857			0.739

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-004 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Haskell Ave			Haskell Ave			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1.5	0.5	1	1	3	0	1	3	1	
3:00 PM	0	0	0	2	0	0	0	5	0	0	10	0	17
3:15 PM	0	0	0	5	0	1	0	7	0	0	7	0	20
3:30 PM	0	0	0	1	0	3	0	9	0	0	5	1	19
3:45 PM	0	0	0	3	0	1	2	5	0	0	4	2	17
4:00 PM	0	1	0	2	0	1	0	3	0	0	3	2	12
4:15 PM	0	0	0	2	0	0	0	5	0	0	7	2	16
4:30 PM	0	0	0	3	0	0	0	4	0	0	7	0	14
4:45 PM	0	0	0	1	0	0	1	3	0	0	5	4	14
5:00 PM	0	0	0	3	0	0	0	4	0	0	4	1	12
5:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:30 PM	0	0	0	0	0	0	0	3	0	0	5	0	8
5:45 PM	1	0	0	1	0	0	0	8	0	0	4	2	16
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	1	0	23	0	6	3	57	0	0	62	14	167
APPROACH %'s :	50.00%	50.00%	0.00%	79.31%	0.00%	20.69%	5.00%	95.00%	0.00%	0.00%	81.58%	18.42%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	0	0	4	0	0	0	16	0	0	14	3	38
PEAK HR FACTOR :	0.250			0.333			0.500			0.708			0.594

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South I-405 NB Ramps

East/West Victory Blvd

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	76	208	156
BIKES	0	0	9	10
BUSES	0	29	85	83

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	0	0.00	120	9.00	702	8.15	600	7.45
PM PK 15 MIN	0	0.00	202	15.30	645	17.15	549	17.15
AM PK HOUR	0	0.00	464	9.00	2712	7.30	2262	7.15
PM PK HOUR	0	0.00	748	15.15	2433	16.45	2098	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	0	0	0
8-9	0	0	0	0
9-10	0	0	0	0
15-16	0	0	0	0
16-17	0	0	0	0
17-18	0	0	0	0
TOTAL	0	0	0	0

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	184	0	206	390
8-9	212	0	234	446
9-10	260	0	204	464
15-16	315	0	424	739
16-17	293	0	398	691
17-18	256	0	385	641
TOTAL	1520	0	1851	3371

Hours	**TOTAL** N-S	**XING S/L** Ped	Sch	**XING N/L** Ped	Sch
7-8	390	0	0	5	0
8-9	446	0	0	1	0
9-10	464	0	0	3	0
15-16	739	0	0	7	0
16-17	691	0	0	13	0
17-18	641	0	0	15	0
TOTAL	3371	0	0	44	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	309	2282	0	2591
8-9	250	2399	0	2649
9-10	314	2040	0	2354
15-16	251	1831	0	2082
16-17	276	1982	0	2258
17-18	294	2091	0	2385
TOTAL	1694	12625	0	14319

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	0	1555	553	2108
8-9	0	1405	528	1933
9-10	0	946	348	1294
15-16	0	1426	501	1927
16-17	0	1511	492	2003
17-18	0	1590	508	2098
TOTAL	0	8433	2930	11363

Hours	**TOTAL** E-W	**XING W/L** Ped	Sch	**XING E/L** Ped	Sch
7-8	4699	0	0	0	0
8-9	4582	0	0	0	0
9-10	3648	0	0	0	0
15-16	4009	0	0	0	0
16-17	4261	0	0	0	0
17-18	4483	0	0	0	0
TOTAL	25682	0	0	0	0

ITM Peak Hour Summary

Prepared by:

NDS

I-405 NB Ramps and Victory Blvd , San Fernando Valley

Date:	5/27/2015
Day:	Wednesday

Project #:	15-5336-005
City:	San Fernando Valley

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	445 PM

N

Total Peak Hour Summary

Southbound Approach

I-405 NB Ramps

	Right	Through	Left	Out (North Leg)
Lanes	1.5	0	1.5	
AM	227	0	219	882
NOON	0	0	0	0
PM	405	0	265	837

Eastbound Approach

Victory Blvd

	Lanes	AM	NOON	PM
Out (West Leg)		1810	0	1967
Left	1	297	0	306
Through	3	2415	0	2127
Right	0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	585	0	531	1
Through	1583	0	1562	3
Left	0	0	0	0
Out (East Leg)	2634	0	2392	

CONTROL
Signalized

Northbound Approach

	Out (South Leg)	Left	Through	Right
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	0	0
Lanes		0	0	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

	In	Out
AM	446	882
NOON	0	0
PM	670	837

East Leg

	AM	NOON	PM
In	2168	0	2093
Out	2634	0	2392

West Leg

	AM	NOON	PM
Out	1810	0	1967
In	2712	0	2433

South Leg

	Out	In
AM	0	0
NOON	0	0
PM	0	0

Total Volume Per Leg

	AM	NOON	PM
North Leg	1328	0	1507
East Leg	4802	0	4485
West Leg	4522	0	4400
South Leg	0	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
7:00 AM	0	0	0	31	0	44	84	527	0	0	293	99	1078
7:15 AM	0	0	0	42	0	44	63	562	0	0	446	151	1308
7:30 AM	0	0	0	61	0	58	97	585	0	0	364	155	1320
7:45 AM	0	0	0	50	0	60	65	608	0	0	452	148	1383
8:00 AM	0	0	0	50	0	62	63	592	0	0	391	155	1313
8:15 AM	0	0	0	58	0	47	72	630	0	0	376	127	1310
8:30 AM	0	0	0	48	0	71	62	590	0	0	295	130	1196
8:45 AM	0	0	0	56	0	54	53	587	0	0	343	116	1209
9:00 AM	0	0	0	66	0	54	88	493	0	0	268	67	1036
9:15 AM	0	0	0	64	0	44	73	492	0	0	248	84	1005
9:30 AM	0	0	0	69	0	50	77	538	0	0	220	88	1042
9:45 AM	0	0	0	61	0	56	76	517	0	0	210	109	1029

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	656	0	644	873	6721	0	0	3906	1429	14229
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	50.46%	0.00%	49.54%	11.50%	88.50%	0.00%	0.00%	73.21%	26.79%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	219	0	227	297	2415	0	0	1583	585	5326
PEAK HR FACTOR :		0.000			0.937			0.966			0.903		0.963

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
3:00 PM	0	0	0	69	0	115	59	350	0	0	344	149	1086
3:15 PM	0	0	0	78	0	93	65	496	0	0	366	93	1191
3:30 PM	0	0	0	94	0	108	64	460	0	0	326	141	1193
3:45 PM	0	0	0	74	0	108	63	525	0	0	390	118	1278
4:00 PM	0	0	0	88	0	105	66	465	0	0	341	139	1204
4:15 PM	0	0	0	66	0	83	69	485	0	0	399	108	1210
4:30 PM	0	0	0	77	0	105	63	488	0	0	380	115	1228
4:45 PM	0	0	0	62	0	105	78	544	0	0	391	130	1310
5:00 PM	0	0	0	74	0	119	83	517	0	0	383	131	1307
5:15 PM	0	0	0	59	0	88	89	556	0	0	401	148	1341
5:30 PM	0	0	0	70	0	93	56	510	0	0	387	122	1238
5:45 PM	0	0	0	53	0	85	66	508	0	0	419	107	1238

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	864	0	1207	821	5904	0	0	4527	1501	14824
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	41.72%	0.00%	58.28%	12.21%	87.79%	0.00%	0.00%	75.10%	24.90%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	265	0	405	306	2127	0	0	1562	531	5196
PEAK HR FACTOR :		0.000			0.868			0.943			0.953		0.969

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
7:00 AM	0	0	0	28	0	44	81	520	0	0	286	97	1056
7:15 AM	0	0	0	41	0	44	57	553	0	0	432	147	1274
7:30 AM	0	0	0	61	0	57	92	580	0	0	353	151	1294
7:45 AM	0	0	0	48	0	57	61	602	0	0	444	147	1359
8:00 AM	0	0	0	45	0	60	61	585	0	0	383	154	1288
8:15 AM	0	0	0	57	0	46	68	620	0	0	366	122	1279
8:30 AM	0	0	0	46	0	69	59	578	0	0	287	129	1168
8:45 AM	0	0	0	55	0	52	52	572	0	0	334	114	1179
9:00 AM	0	0	0	64	0	53	84	479	0	0	262	63	1005
9:15 AM	0	0	0	62	0	44	71	480	0	0	243	78	978
9:30 AM	0	0	0	65	0	49	73	529	0	0	216	84	1016
9:45 AM	0	0	0	58	0	54	70	505	0	0	204	103	994

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	630	0	629	829	6603	0	0	3810	1389	13890
APPROACH %'s :				50.04%	0.00%	49.96%	11.15%	88.85%	0.00%	0.00%	73.28%	26.72%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	211	0	220	282	2387	0	0	1546	574	5220
PEAK HR FACTOR :		0.000			0.913			0.970			0.897		0.960

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
3:00 PM	0	0	0	65	0	114	58	341	0	0	333	147	1058
3:15 PM	0	0	0	78	0	91	62	474	0	0	360	90	1155
3:30 PM	0	0	0	92	0	103	61	446	0	0	319	138	1159
3:45 PM	0	0	0	71	0	106	61	510	0	0	383	117	1248
4:00 PM	0	0	0	86	0	102	65	459	0	0	331	136	1179
4:15 PM	0	0	0	62	0	78	68	474	0	0	392	107	1181
4:30 PM	0	0	0	75	0	100	60	480	0	0	374	113	1202
4:45 PM	0	0	0	59	0	100	77	539	0	0	382	129	1286
5:00 PM	0	0	0	72	0	115	83	511	0	0	379	130	1290
5:15 PM	0	0	0	58	0	85	89	552	0	0	399	146	1329
5:30 PM	0	0	0	69	0	91	56	504	0	0	382	121	1223
5:45 PM	0	0	0	51	0	84	63	501	0	0	411	106	1216

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	838	0	1169	803	5791	0	0	4445	1480	14526
APPROACH %'s :				41.75%	0.00%	58.25%	12.18%	87.82%	0.00%	0.00%	75.02%	24.98%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	258	0	391	305	2106	0	0	1542	526	5128
PEAK HR FACTOR :		0.000			0.868			0.940			0.949		0.965

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-005
N/S Street: I-405 NB Ramps
E/W Street: Victory Blvd
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	2	0	0	0	0	0	0
7:30 AM	1	0	0	0	0	0	0	0
7:45 AM	1	1	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	1	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	2	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	1	0	0	0	0	0	0	0
TOTALS	**3**	**6**	**0**	**0**	**0**	**0**	**0**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	1	1	0	0	0	0	0	0
3:30 PM	1	0	0	0	0	0	0	0
3:45 PM	3	1	0	0	0	0	0	0
4:00 PM	1	7	0	0	0	0	0	0
4:15 PM	1	1	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0
4:45 PM	1	1	0	0	0	0	0	0
5:00 PM	1	3	0	0	0	0	0	0
5:15 PM	1	3	0	0	0	0	0	0
5:30 PM	1	1	0	0	0	0	0	0
5:45 PM	4	1	0	0	0	0	0	0
TOTALS	**15**	**20**	**0**	**0**	**0**	**0**	**0**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
7:00 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	2	0	0	4	0	6
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	1	0	1
PEAK HR FACTOR :	0.000			0.000			0.000			0.250			0.250

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
3:00 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
3:15 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	7	0	0	6	0	13
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	1	0	0	0	0	1
PEAK HR FACTOR :	0.000			0.000			0.250			0.000			0.250

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
7:00 AM	0	0	0	1	0	0	0	4	0	0	6	0	11
7:15 AM	0	0	0	1	0	0	1	1	0	0	11	0	14
7:30 AM	0	0	0	0	0	0	0	2	0	0	6	0	8
7:45 AM	0	0	0	1	0	2	0	3	0	0	2	0	8
8:00 AM	0	0	0	1	0	1	1	0	0	0	5	0	8
8:15 AM	0	0	0	0	0	0	0	3	0	0	4	0	7
8:30 AM	0	0	0	2	0	0	0	2	0	0	2	0	6
8:45 AM	0	0	0	1	0	0	0	8	0	0	2	0	11
9:00 AM	0	0	0	0	0	0	1	2	0	0	2	0	5
9:15 AM	0	0	0	0	0	0	0	4	0	0	3	0	7
9:30 AM	0	0	0	2	0	0	0	1	0	0	2	0	5
9:45 AM	0	0	0	0	0	0	0	1	0	0	1	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	9	0	3	3	31	0	0	46	0	92
APPROACH %'s :				75.00%	0.00%	25.00%	8.82%	91.18%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	2	0	3	1	8	0	0	17	0	31
PEAK HR FACTOR :	0.000			0.417			0.750			0.708			0.969

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
3:00 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
3:15 PM	0	0	0	0	0	0	1	12	0	0	1	1	15
3:30 PM	0	0	0	0	0	1	0	7	0	0	5	0	13
3:45 PM	0	0	0	1	0	0	1	9	0	0	3	1	15
4:00 PM	0	0	0	1	0	2	0	1	0	0	5	0	9
4:15 PM	0	0	0	0	0	0	0	5	0	0	1	0	6
4:30 PM	0	0	0	1	0	0	0	4	0	0	4	0	9
4:45 PM	0	0	0	1	0	2	0	2	0	0	4	0	9
5:00 PM	0	0	0	1	0	2	0	1	0	0	3	0	7
5:15 PM	0	0	0	1	0	2	0	2	0	0	2	0	7
5:30 PM	0	0	0	1	0	0	0	2	0	0	2	0	5
5:45 PM	0	0	0	1	0	0	0	1	0	0	3	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	8	0	9	2	49	0	0	35	2	105
APPROACH %'s :				47.06%	0.00%	52.94%	3.92%	96.08%	0.00%	0.00%	94.59%	5.41%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	4	0	6	0	7	0	0	11	0	28
PEAK HR FACTOR :	0.000			0.833			0.875			0.688			0.778

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
7:00 AM	0	0	0	2	0	0	3	3	0	0	1	2	11
7:15 AM	0	0	0	0	0	0	5	8	0	0	3	4	20
7:30 AM	0	0	0	0	0	1	5	3	0	0	5	4	18
7:45 AM	0	0	0	1	0	1	4	3	0	0	6	1	16
8:00 AM	0	0	0	4	0	1	1	7	0	0	3	1	17
8:15 AM	0	0	0	1	0	1	4	7	0	0	6	5	24
8:30 AM	0	0	0	0	0	2	3	10	0	0	6	1	22
8:45 AM	0	0	0	0	0	2	1	7	0	0	7	2	19
9:00 AM	0	0	0	2	0	1	3	12	0	0	4	4	26
9:15 AM	0	0	0	2	0	0	2	8	0	0	2	6	20
9:30 AM	0	0	0	2	0	1	4	8	0	0	2	4	21
9:45 AM	0	0	0	3	0	2	6	11	0	0	5	6	33

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	17	0	12	41	87	0	0	50	40	247
APPROACH %'s :				58.62%	0.00%	41.38%	32.03%	67.97%	0.00%	0.00%	55.56%	44.44%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	6	0	4	14	20	0	0	20	11	75
PEAK HR FACTOR :	0.000			0.500			0.773			0.705			0.781

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-005 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	I-405 NB Ramps			I-405 NB Ramps			Victory Blvd			Victory Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	3	0	0	3	1	
3:00 PM	0	0	0	4	0	1	1	6	0	0	9	2	23
3:15 PM	0	0	0	0	0	2	2	10	0	0	5	2	21
3:30 PM	0	0	0	2	0	4	3	7	0	0	2	3	21
3:45 PM	0	0	0	2	0	2	1	6	0	0	4	0	15
4:00 PM	0	0	0	1	0	1	1	5	0	0	5	3	16
4:15 PM	0	0	0	4	0	5	1	6	0	0	6	1	23
4:30 PM	0	0	0	1	0	5	3	4	0	0	2	2	17
4:45 PM	0	0	0	2	0	3	1	3	0	0	5	1	15
5:00 PM	0	0	0	1	0	2	0	5	0	0	1	1	10
5:15 PM	0	0	0	0	0	1	0	2	0	0	0	2	5
5:30 PM	0	0	0	0	0	2	0	4	0	0	3	1	10
5:45 PM	0	0	0	1	0	1	3	6	0	0	5	1	17

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	18	0	29	16	64	0	0	47	19	193
APPROACH %'s :				38.30%	0.00%	61.70%	20.00%	80.00%	0.00%	0.00%	71.21%	28.79%	

PEAK HR START TIME :	445 PM												TOTAL
PEAK HR VOL :	0	0	0	3	0	8	1	14	0	0	9	5	40
PEAK HR FACTOR :		0.000			0.550			0.750			0.583		0.667

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South I-5 SB Ramps

East/West Osborne St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	174	100	150
BIKES	2	3	6	11
BUSES	0	11	48	50

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	3	9.15	145	9.30	503	7.30	364	7.30
PM PK 15 MIN	4	16.15	283	17.00	375	17.45	309	15.45
AM PK HOUR	7	8.45	517	7.30	1829	7.00	1389	7.00
PM PK HOUR	9	16.45	1088	16.30	1411	17.00	1165	15.30

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	0	0	2	2	*7-8*	197	22	259	478	480	1	0	7	0
8-9	0	0	3	3	*8-9*	199	24	242	465	468	3	2	6	0
9-10	0	0	7	7	*9-10*	242	19	232	493	500	2	0	10	0
15-16	0	0	1	1	*15-16*	443	30	470	943	944	8	4	13	0
16-17	0	0	7	7	*16-17*	498	32	523	1053	1060	4	1	12	0
17-18	0	0	9	9	*17-18*	446	23	574	1043	1052	7	7	17	0
TOTAL	0	0	29	29	TOTAL	2025	150	2300	4475	4504	25	14	65	0

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	0	1765	64	1829	*7-8*	19	843	527	1389	3218	2	0	0	0
8-9	0	1182	49	1231	*8-9*	17	674	281	972	2203	2	0	0	0
9-10	0	842	39	881	*9-10*	17	544	237	798	1679	6	0	0	0
15-16	0	1180	40	1220	*15-16*	22	908	218	1148	2368	7	2	0	0
16-17	0	1181	33	1214	*16-17*	15	883	213	1111	2325	6	0	0	0
17-18	0	1365	46	1411	*17-18*	23	892	211	1126	2537	5	0	0	0
TOTAL	0	7515	271	7786	TOTAL	113	4744	1687	6544	14330	28	2	0	0

ITM Peak Hour Summary

Prepared by:

NDS

I-5 SB Ramps and Osborne St , San Fernando Valley

Date:	5/27/2015
Day:	Wednesday

Project #:	15-5336-006
City:	San Fernando Valley

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Total Peak Hour Summary

Southbound Approach

I-5 SB Ramps

Lanes	0.5	0.5	1	
AM	259	22	197	527
NOON	0	0	0	0
PM	574	23	446	211

Eastbound Approach

Osborne St

	AM	NOON	PM
	1102	0	1466

Lanes	AM	NOON	PM
1	0	0	0
2	1765	0	1365
1	64	0	46

Westbound Approach

AM	NOON	PM	Lanes
527	0	211	0
843	0	892	2
19	0	23	0

AM	NOON	PM
1964	0	1820

CONTROL

Signalized

Northbound Approach

AM	105	0	0	2
NOON	0	0	0	0
PM	92	0	0	9
Lanes		0	1	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

478	527	AM
0	0	NOON
1043	211	PM

West Leg

AM	NOON	PM
1102	0	1466
1829	0	1411

East Leg

1389	0	1126
1964	0	1820
AM	NOON	PM

South Leg

AM	105	2
NOON	0	0
PM	92	9

Total Volume Per Leg

North Leg

1005	AM
0	NOON
1254	PM

West Leg

AM	NOON	PM
2931	0	2877

East Leg

3353	0	2946
AM	NOON	PM

South Leg

AM	107
NOON	0
PM	101

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
7:00 AM	0	0	0	36	4	57	0	383	18	5	183	152	838
7:15 AM	0	0	0	48	7	50	0	465	16	4	188	138	916
7:30 AM	0	0	2	58	8	74	0	481	22	3	224	137	1009
7:45 AM	0	0	0	55	3	78	0	436	8	7	248	100	935
8:00 AM	0	0	1	50	12	68	0	348	18	5	186	79	767
8:15 AM	0	0	1	44	4	63	0	326	9	8	170	73	698
8:30 AM	0	0	0	55	5	49	0	261	13	2	169	55	609
8:45 AM	0	0	1	50	3	62	0	247	9	2	149	74	597
9:00 AM	0	0	1	50	3	56	0	218	5	4	128	59	524
9:15 AM	0	0	3	46	6	51	0	212	14	6	129	68	535
9:30 AM	0	0	2	71	5	69	0	206	6	3	134	59	555
9:45 AM	0	0	1	75	5	56	0	206	14	4	153	51	565

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	12	638	65	733	0	3789	152	53	2061	1045	8548
APPROACH %'s :	0.00%	0.00%	100.00%	44.43%	4.53%	51.04%	0.00%	96.14%	3.86%	1.68%	65.24%	33.08%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	2	197	22	259	0	1765	64	19	843	527	3698
PEAK HR FACTOR :	0.250			0.854			0.909			0.954			0.916

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
3:00 PM	0	0	0	94	9	105	0	331	6	6	229	51	831
3:15 PM	0	0	1	118	7	113	0	275	12	3	213	51	793
3:30 PM	0	0	0	103	6	132	0	300	12	6	228	52	839
3:45 PM	0	0	0	128	8	120	0	274	10	7	238	64	849
4:00 PM	0	0	1	108	10	132	0	296	10	1	215	59	832
4:15 PM	0	0	4	131	6	128	0	289	5	8	230	57	858
4:30 PM	0	0	0	129	8	124	0	281	12	3	224	53	834
4:45 PM	0	0	2	130	8	139	0	315	6	3	214	44	861
5:00 PM	0	0	2	117	1	165	0	329	14	4	237	52	921
5:15 PM	0	0	2	109	10	148	0	314	15	9	230	59	896
5:30 PM	0	0	3	109	6	124	0	354	10	5	209	42	862
5:45 PM	0	0	2	111	6	137	0	368	7	5	216	58	910

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	17	1387	85	1567	0	3726	119	60	2683	642	10286
APPROACH %'s :	0.00%	0.00%	100.00%	45.64%	2.80%	51.56%	0.00%	96.91%	3.09%	1.77%	79.26%	18.97%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	9	446	23	574	0	1365	46	23	892	211	3589
PEAK HR FACTOR :		0.750			0.921			0.941			0.945		0.974

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
7:00 AM	0	0	0	36	4	56	0	376	18	5	172	142	809
7:15 AM	0	0	0	48	7	49	0	462	16	4	174	136	896
7:30 AM	0	0	2	54	8	72	0	474	22	2	219	132	985
7:45 AM	0	0	0	51	3	78	0	430	8	7	242	94	913
8:00 AM	0	0	1	44	12	67	0	343	18	5	181	77	748
8:15 AM	0	0	1	44	3	63	0	320	9	7	166	69	682
8:30 AM	0	0	0	48	4	47	0	255	13	1	164	53	585
8:45 AM	0	0	1	48	3	60	0	245	8	2	144	70	581
9:00 AM	0	0	1	45	3	56	0	211	5	4	124	56	505
9:15 AM	0	0	3	42	6	48	0	208	14	5	124	65	515
9:30 AM	0	0	2	67	5	68	0	201	5	3	127	53	531
9:45 AM	0	0	1	71	5	54	0	200	14	3	147	44	539

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	12	598	63	718	0	3725	150	48	1984	991	8289
APPROACH %'s :	0.00%	0.00%	100.00%	43.36%	4.57%	52.07%	0.00%	96.13%	3.87%	1.59%	65.63%	32.78%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	2	189	22	255	0	1742	64	18	807	504	3603
PEAK HR FACTOR :	0.250			0.869			0.910			0.941			0.914

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
3:00 PM	0	0	0	91	9	103	0	322	6	6	224	50	811
3:15 PM	0	0	1	104	7	112	0	267	12	3	210	50	766
3:30 PM	0	0	0	90	6	130	0	293	12	6	223	47	807
3:45 PM	0	0	0	119	7	119	0	267	10	7	233	60	822
4:00 PM	0	0	1	98	10	131	0	286	10	1	213	58	808
4:15 PM	0	0	4	126	5	127	0	283	5	8	226	52	836
4:30 PM	0	0	0	120	8	121	0	275	12	3	219	51	809
4:45 PM	0	0	2	120	8	137	0	309	6	3	211	42	838
5:00 PM	0	0	2	107	1	164	0	323	14	4	236	51	902
5:15 PM	0	0	2	101	10	146	0	308	15	9	228	58	877
5:30 PM	0	0	3	99	6	123	0	351	10	5	206	42	845
5:45 PM	0	0	2	104	6	136	0	361	6	5	214	57	891
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	17	1279	83	1549	0	3645	118	60	2643	618	10012
APPROACH %'s :	0.00%	0.00%	100.00%	43.94%	2.85%	53.21%	0.00%	96.86%	3.14%	1.81%	79.58%	18.61%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	9	411	23	569	0	1343	45	23	884	208	3515
PEAK HR FACTOR :	0.750			0.922			0.946			0.945			0.974

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-006
N/S Street: I-5 SB Ramps
E/W Street: Osborne St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	2	0	0	0	0	0	1
7:15 AM	2	1	0	0	0	0	1	0
7:30 AM	1	0	0	0	0	0	0	0
7:45 AM	0	0	1	0	0	0	0	0
8:00 AM	1	2	2	0	0	0	0	2
8:15 AM	0	1	0	0	0	0	0	0
8:30 AM	0	0	0	1	0	0	0	0
8:45 AM	0	2	0	0	0	0	0	0
9:00 AM	1	1	0	1	0	0	0	1
9:15 AM	0	1	0	0	0	0	0	0
9:30 AM	2	5	0	0	0	0	2	1
9:45 AM	0	0	0	1	0	0	2	0
TOTALS	**8**	**15**	**3**	**3**	**0**	**0**	**5**	**5**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	1	1	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**1**	**1**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	1	0	2	0	0	2	0
3:15 PM	0	11	3	0	0	0	1	4
3:30 PM	1	0	0	1	0	0	0	0
3:45 PM	0	0	0	2	0	0	0	0
4:00 PM	5	1	1	2	0	0	1	1
4:15 PM	1	1	0	1	0	0	1	0
4:30 PM	0	2	0	0	0	0	0	1
4:45 PM	1	1	0	0	0	0	1	1
5:00 PM	1	0	0	0	0	0	0	0
5:15 PM	5	3	1	0	0	0	1	2
5:30 PM	3	1	4	1	0	0	0	2
5:45 PM	2	2	0	1	0	0	0	0
TOTALS	**19**	**23**	**9**	**10**	**0**	**0**	**7**	**11**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	2	0	0	0	0	2
3:30 PM	0	0	1	0	0	0	0	0
3:45 PM	0	0	0	1	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	1	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	4	0	0	0	0	0
5:30 PM	0	0	2	1	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**9**	**3**	**0**	**0**	**0**	**2**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
7:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	0	0	0	1	0	3	1	0	3	0	9
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	75.00%	25.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	1	0	3	0	0	1	0	5
PEAK HR FACTOR :	0.000			0.250			0.375			0.250			0.625

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	1	0	0	2	0	3
4:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	1	0	0	1	0	0	0	0	0	1	1	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	1	0	1	1	0	0	2	0	0	7	1	13
APPROACH %'s :	0.00%	100.00%	0.00%	50.00%	50.00%	0.00%	0.00%	100.00%	0.00%	0.00%	87.50%	12.50%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	0	0	2	0	2
PEAK HR FACTOR :	0.000			0.000			0.000			0.500			0.500

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
7:00 AM	0	0	0	0	0	0	0	3	0	0	6	2	11
7:15 AM	0	0	0	0	0	0	0	2	0	0	5	0	7
7:30 AM	0	0	0	1	0	0	0	2	0	0	2	1	6
7:45 AM	0	0	0	0	0	0	0	3	0	0	2	0	5
8:00 AM	0	0	0	2	0	0	0	1	0	0	2	1	6
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	1	2
8:30 AM	0	0	0	0	0	0	0	2	0	0	3	0	5
8:45 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
9:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
9:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
9:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
9:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	3	0	0	0	19	0	0	28	5	55
APPROACH %'s :				100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	84.85%	15.15%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	0	1	0	0	0	10	0	0	15	3	29
PEAK HR FACTOR :		0.000			0.250			0.833			0.563		0.659

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
3:00 PM	0	0	0	0	0	1	0	3	0	0	0	0	4
3:15 PM	0	0	0	2	0	1	0	3	0	0	1	0	7
3:30 PM	0	0	0	0	0	0	0	2	0	0	1	2	5
3:45 PM	0	0	0	1	0	0	0	0	0	0	2	0	3
4:00 PM	0	0	0	0	0	1	0	6	0	0	2	0	9
4:15 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
4:30 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
4:45 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:00 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
5:15 PM	0	0	0	0	0	1	0	1	0	0	1	0	3
5:30 PM	0	0	0	0	0	1	0	2	0	0	1	0	4
5:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	3	0	5	0	29	0	0	15	2	54
APPROACH %'s :				37.50%	0.00%	62.50%	0.00%	100.00%	0.00%	0.00%	88.24%	11.76%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	2	0	8	0	0	4	0	14
PEAK HR FACTOR :	0.000			0.500			0.667			1.000			0.875

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
7:00 AM	0	0	0	0	0	1	0	4	0	0	5	8	18
7:15 AM	0	0	0	0	0	1	0	1	0	0	9	2	13
7:30 AM	0	0	0	3	0	2	0	5	0	1	3	4	18
7:45 AM	0	0	0	4	0	0	0	3	0	0	4	6	17
8:00 AM	0	0	0	4	0	1	0	4	0	0	3	1	13
8:15 AM	0	0	0	0	1	0	0	6	0	1	3	3	14
8:30 AM	0	0	0	7	1	2	0	4	0	1	2	2	19
8:45 AM	0	0	0	2	0	2	0	0	1	0	3	4	12
9:00 AM	0	0	0	5	0	0	0	6	0	0	3	3	17
9:15 AM	0	0	0	4	0	3	0	3	0	1	4	3	18
9:30 AM	0	0	0	4	0	1	0	4	1	0	6	6	22
9:45 AM	0	0	0	4	0	2	0	5	0	1	4	7	23

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	37	2	15	0	45	2	5	49	49	204
APPROACH %'s :				68.52%	3.70%	27.78%	0.00%	95.74%	4.26%	4.85%	47.57%	47.57%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	0	7	0	4	0	13	0	1	21	20	66
PEAK HR FACTOR :		0.000			0.550			0.650			0.808		0.917

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-006 | **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 SB Ramps			I-5 SB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	1	0	1	0.5	0.5	1	2	1	0	2	0	
3:00 PM	0	0	0	3	0	1	0	6	0	0	5	1	16
3:15 PM	0	0	0	12	0	0	0	5	0	0	2	1	20
3:30 PM	0	0	0	13	0	2	0	5	0	0	4	3	27
3:45 PM	0	0	0	8	1	1	0	7	0	0	3	4	24
4:00 PM	0	0	0	10	0	0	0	4	0	0	0	1	15
4:15 PM	0	0	0	5	1	1	0	3	0	0	2	5	17
4:30 PM	0	0	0	9	0	3	0	3	0	0	3	2	20
4:45 PM	0	0	0	10	0	2	0	5	0	0	2	2	21
5:00 PM	0	0	0	10	0	1	0	3	0	0	0	1	15
5:15 PM	0	0	0	8	0	1	0	5	0	0	1	1	16
5:30 PM	0	0	0	10	0	0	0	1	0	0	2	0	13
5:45 PM	0	0	0	7	0	1	0	5	1	0	1	1	16

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	105	2	13	0	52	1	0	25	22	220
APPROACH %'s :				87.50%	1.67%	10.83%	0.00%	98.11%	1.89%	0.00%	53.19%	46.81%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	35	0	3	0	14	1	0	4	3	60
PEAK HR FACTOR :		0.000			0.864			0.625			0.875		0.938

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South I-5 NB Ramps

East/West Osborne St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	111	0	207	297
BIKES	0	0	12	12
BUSES	14	0	49	52

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	136	7.45	0	0.00	371	7.45	431	7.30
PM PK 15 MIN	173	15.15	0	0.00	414	17.45	348	15.45
AM PK HOUR	524	7.15	0	0.00	1329	7.15	1647	7.00
PM PK HOUR	645	15.15	0	0.00	1562	17.00	1334	15.30

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	233	0	269	502	*7-8*	0	0	0	0	502	3	0	6	0
8-9	196	0	224	420	*8-9*	0	0	0	0	420	9	0	6	0
9-10	170	0	173	343	*9-10*	0	0	0	0	343	1	2	8	0
15-16	309	0	334	643	*15-16*	0	0	0	0	643	7	2	9	6
16-17	293	0	286	579	*16-17*	0	0	0	0	579	6	7	6	2
17-18	295	0	219	514	*17-18*	0	0	0	0	514	14	1	12	5
TOTAL	1496	0	1505	3001	TOTAL	0	0	0	0	3001	40	12	47	13

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	0	762	490	1252	*7-8*	0	1152	495	1647	2899	0	0	1	0
8-9	0	661	350	1011	*8-9*	0	773	342	1115	2126	0	0	1	0
9-10	0	551	245	796	*9-10*	0	626	305	931	1727	0	0	1	0
15-16	0	1047	356	1403	*15-16*	0	829	474	1303	2706	0	0	2	1
16-17	0	1077	385	1462	*16-17*	0	816	474	1290	2752	0	0	1	0
17-18	0	1121	441	1562	*17-18*	0	825	437	1262	2824	0	0	4	1
TOTAL	0	5219	2267	7486	TOTAL	0	5021	2527	7548	15034	0	0	10	2

ITM Peak Hour Summary

Prepared by:

NDS

I-5 NB Ramps and Osborne St , San Fernando Valley

Date:	5/27/2015
Day:	Wednesday
Project #:	15-5336-007
City:	San Fernando Valley

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	415 PM

Total Peak Hour Summary

N

I-5 NB Ramps

Osborne St

Southbound Approach

	Lanes 0	Lanes 0	Lanes 0	Out
AM	0	0	0	495
NOON	0	0	0	0
PM	0	0	0	495

Eastbound Approach

Lanes		AM	NOON	PM
	Out	1385	0	1125
0	Left	0	0	0
2	Through	762	0	1103
0	Right	490	0	412

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
Right	495	0	495	0
Through	1152	0	815	3
Left	0	0	0	0
Out	1031	0	1364	

Northbound Approach

	Out	Left	Through	Right
AM	490	233	0	269
NOON	0	0	0	0
PM	412	310	0	261
Lanes		1.5	0	0.5

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

	In	Out
AM	0	495
NOON	0	0
PM	0	495

West Leg

	AM	NOON	PM
Out	1385	0	1125
In	1252	0	1515

East Leg

	AM	NOON	PM
In	1647	0	1310
Out	1031	0	1364

South Leg

	Out	In
AM	490	502
NOON	0	0
PM	412	571

Total Volume Per Leg

	North Leg	South Leg
AM	495	992
NOON	0	0
PM	495	983

	AM	NOON	PM
West Leg	2637	0	2640
East Leg	2678	0	2674

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
7:00 AM	49	0	52	0	0	0	0	115	113	0	293	124	746
7:15 AM	57	0	74	0	0	0	0	175	138	0	275	122	841
7:30 AM	61	0	73	0	0	0	0	208	132	0	299	132	905
7:45 AM	66	0	70	0	0	0	0	264	107	0	285	117	909
8:00 AM	63	0	60	0	0	0	0	202	103	0	215	85	728
8:15 AM	50	0	68	0	0	0	0	170	82	0	189	82	641
8:30 AM	51	0	42	0	0	0	0	143	93	0	185	88	602
8:45 AM	32	0	54	0	0	0	0	146	72	0	184	87	575
9:00 AM	40	0	41	0	0	0	0	130	52	0	154	80	497
9:15 AM	35	0	50	0	0	0	0	125	66	0	164	69	509
9:30 AM	48	0	43	0	0	0	0	142	63	0	150	77	523
9:45 AM	47	0	39	0	0	0	0	154	64	0	158	79	541

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	599	0	666	0	0	0	0	1974	1085	0	2551	1142	8017
APPROACH %'s :	47.35%	0.00%	52.65%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	64.53%	35.47%	0.00%	69.08%	30.92%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	233	0	269	0	0	0	0	762	490	0	1152	495	3401
PEAK HR FACTOR :		0.923			0.000			0.844			0.955		0.935

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
3:00 PM	63	0	85	0	0	0	0	274	108	0	212	109	851
3:15 PM	86	0	87	0	0	0	0	237	81	0	186	111	788
3:30 PM	81	0	90	0	0	0	0	257	90	0	211	126	855
3:45 PM	79	0	72	0	0	0	0	279	77	0	220	128	855
4:00 PM	67	0	83	0	0	0	0	248	84	0	212	116	810
4:15 PM	83	0	73	0	0	0	0	284	99	0	204	117	860
4:30 PM	77	0	64	0	0	0	0	255	96	0	218	117	827
4:45 PM	66	0	66	0	0	0	0	290	106	0	182	124	834
5:00 PM	84	0	58	0	0	0	0	274	111	0	211	137	875
5:15 PM	77	0	56	0	0	0	0	280	86	0	212	86	797
5:30 PM	66	0	52	0	0	0	0	285	112	0	200	114	829
5:45 PM	68	0	53	0	0	0	0	282	132	0	202	100	837

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	897	0	839	0	0	0	0	3245	1182	0	2470	1385	10018
APPROACH %'s :	51.67%	0.00%	48.33%	#DIV/0!	#DIV/0!	#DIV/0!	0.00%	73.30%	26.70%	0.00%	64.07%	35.93%	

PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	310	0	261	0	0	0	0	1103	412	0	815	495	3396
PEAK HR FACTOR :		0.915			0.000			0.956			0.941		0.970

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
7:00 AM	44	0	47	0	0	0	0	112	112	0	276	113	704
7:15 AM	53	0	72	0	0	0	0	172	138	0	264	109	808
7:30 AM	58	0	70	0	0	0	0	200	130	0	288	125	871
7:45 AM	62	0	68	0	0	0	0	258	105	0	280	109	882
8:00 AM	63	0	58	0	0	0	0	192	101	0	205	80	699
8:15 AM	49	0	64	0	0	0	0	166	82	0	184	70	615
8:30 AM	46	0	38	0	0	0	0	134	91	0	177	68	554
8:45 AM	32	0	51	0	0	0	0	143	72	0	180	66	544
9:00 AM	39	0	37	0	0	0	0	124	50	0	146	71	467
9:15 AM	35	0	45	0	0	0	0	117	65	0	157	59	478
9:30 AM	46	0	38	0	0	0	0	136	62	0	139	71	492
9:45 AM	46	0	36	0	0	0	0	150	61	0	145	68	506

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	573	0	624	0	0	0	0	1904	1069	0	2441	1009	7620
APPROACH %'s :	47.87%	0.00%	52.13%				0.00%	64.04%	35.96%	0.00%	70.75%	29.25%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	217	0	257	0	0	0	0	742	485	0	1108	456	3265
PEAK HR FACTOR :		0.912			0.000			0.845			0.947		0.925

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
3:00 PM	61	0	79	0	0	0	0	266	106	0	209	102	823
3:15 PM	85	0	81	0	0	0	0	222	79	0	181	104	752
3:30 PM	75	0	83	0	0	0	0	239	89	0	204	121	811
3:45 PM	78	0	65	0	0	0	0	264	76	0	216	124	823
4:00 PM	67	0	79	0	0	0	0	233	82	0	209	108	778
4:15 PM	82	0	71	0	0	0	0	275	97	0	195	112	832
4:30 PM	76	0	62	0	0	0	0	243	95	0	213	115	804
4:45 PM	64	0	65	0	0	0	0	279	103	0	179	119	809
5:00 PM	84	0	54	0	0	0	0	261	110	0	209	131	849
5:15 PM	75	0	56	0	0	0	0	270	85	0	211	84	781
5:30 PM	65	0	52	0	0	0	0	271	112	0	198	108	806
5:45 PM	68	0	52	0	0	0	0	270	130	0	199	98	817

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	880	0	799	0	0	0	0	3093	1164	0	2423	1326	9685
APPROACH %'s :	52.41%	0.00%	47.59%				0.00%	72.66%	27.34%	0.00%	64.63%	35.37%	

PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	306	0	252	0	0	0	0	1058	405	0	796	477	3294
PEAK HR FACTOR :		0.912			0.000			0.957			0.936		0.970

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-007
N/S Street: I-5 NB Ramps
E/W Street: Osborne St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	0	0	0	0	0	0
7:15 AM	2	1	0	0	0	0	0	0
7:30 AM	1	0	2	0	1	0	0	0
7:45 AM	0	0	1	0	0	0	0	0
8:00 AM	1	0	2	3	0	0	0	0
8:15 AM	0	1	1	0	1	0	0	0
8:30 AM	1	0	0	3	0	0	0	0
8:45 AM	0	3	0	0	0	0	0	0
9:00 AM	0	1	0	0	0	0	0	0
9:15 AM	1	1	0	0	0	0	0	0
9:30 AM	0	4	0	1	1	0	0	0
9:45 AM	1	0	0	0	0	0	0	0
TOTALS	**7**	**13**	**6**	**7**	**3**	**0**	**0**	**0**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	1	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	1	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**2**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	1	2	0	2	0	1	0	0
3:15 PM	0	4	2	0	0	0	0	0
3:30 PM	1	0	0	0	0	0	0	0
3:45 PM	0	1	0	3	0	1	0	0
4:00 PM	1	1	1	1	0	1	0	0
4:15 PM	0	0	0	2	0	0	0	0
4:30 PM	0	4	0	1	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0
5:00 PM	0	2	1	1	0	0	0	0
5:15 PM	4	1	5	0	1	0	0	0
5:30 PM	1	0	2	3	2	0	0	0
5:45 PM	3	1	0	2	0	1	0	0
TOTALS	**11**	**16**	**12**	**15**	**3**	**4**	**0**	**0**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	1	0	0
3:15 PM	0	6	0	0	0	0	0	0
3:30 PM	0	0	0	1	0	0	0	0
3:45 PM	0	0	0	1	0	0	0	0
4:00 PM	1	0	0	2	0	0	0	0
4:15 PM	1	0	1	2	0	0	0	0
4:30 PM	0	0	1	1	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	1	1	0	0	0	0	0	0
5:30 PM	1	0	1	0	0	0	0	0
5:45 PM	1	1	0	0	0	1	0	0
TOTALS	**5**	**8**	**3**	**7**	**0**	**2**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	2	0	0	2	0	4
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	2	0	0	0	0	2
PEAK HR FACTOR :	0.000			0.000			0.250			0.000			0.250

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
4:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:30 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	0	0	10	0	0	10	0	20
APPROACH %'s :							0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	4	0	0	4	0	8
PEAK HR FACTOR :	0.000			0.000			0.500			0.500			0.500

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
7:00 AM	0	0	3	0	0	0	0	2	1	0	8	3	17
7:15 AM	1	0	0	0	0	0	0	2	0	0	4	0	7
7:30 AM	0	0	1	0	0	0	0	3	0	0	3	1	8
7:45 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
8:00 AM	0	0	0	0	0	0	0	3	1	0	3	0	7
8:15 AM	0	0	2	0	0	0	0	0	0	0	2	1	5
8:30 AM	1	0	0	0	0	0	0	1	1	0	2	0	5
8:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
9:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
9:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
9:30 AM	1	0	0	0	0	0	0	0	0	0	0	0	1
9:45 AM	1	0	0	0	0	0	0	0	0	0	1	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	0	6	0	0	0	0	16	3	0	29	5	63
APPROACH %'s :	40.00%	0.00%	60.00%				0.00%	84.21%	15.79%	0.00%	85.29%	14.71%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	1	0	4	0	0	0	0	9	1	0	17	4	36
PEAK HR FACTOR :	0.417			0.000			0.833			0.477			0.529

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
3:00 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
3:15 PM	0	0	0	0	0	0	0	3	0	0	1	0	4
3:30 PM	0	0	3	0	0	0	0	2	0	0	3	0	8
3:45 PM	0	0	1	0	0	0	0	2	0	0	2	0	5
4:00 PM	0	0	0	0	0	0	0	4	0	0	2	0	6
4:15 PM	0	0	0	0	0	0	0	2	2	0	3	0	7
4:30 PM	0	0	0	0	0	0	0	3	0	0	1	1	5
4:45 PM	0	0	0	0	0	0	0	0	1	0	1	0	2
5:00 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:30 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
5:45 PM	0	0	0	0	0	0	0	2	0	0	1	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	4	0	0	0	0	27	3	0	17	1	52
APPROACH %'s :	0.00%	0.00%	100.00%				0.00%	90.00%	10.00%	0.00%	94.44%	5.56%	

PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	7	3	0	6	1	17
PEAK HR FACTOR :	0.000			0.000			0.625			0.583			0.607

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
7:00 AM	5	0	2	0	0	0	0	1	0	0	9	8	25
7:15 AM	3	0	2	0	0	0	0	1	0	0	7	13	26
7:30 AM	3	0	2	0	0	0	0	5	2	0	8	6	26
7:45 AM	4	0	2	0	0	0	0	4	2	0	3	8	23
8:00 AM	0	0	2	0	0	0	0	7	1	0	7	5	22
8:15 AM	1	0	2	0	0	0	0	4	0	0	3	11	21
8:30 AM	4	0	4	0	0	0	0	8	1	0	6	20	43
8:45 AM	0	0	3	0	0	0	0	2	0	0	2	21	28
9:00 AM	1	0	4	0	0	0	0	5	2	0	7	9	28
9:15 AM	0	0	5	0	0	0	0	7	1	0	6	10	29
9:30 AM	1	0	5	0	0	0	0	6	1	0	11	6	30
9:45 AM	0	0	3	0	0	0	0	4	3	0	12	11	33

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	22	0	36	0	0	0	0	54	13	0	81	128	334
APPROACH %'s :	37.93%	0.00%	62.07%				0.00%	80.60%	19.40%	0.00%	38.76%	61.24%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	15	0	8	0	0	0	0	11	4	0	27	35	100
PEAK HR FACTOR :	0.821			0.000			0.536			0.775			0.962

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-007 | **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	I-5 NB Ramps			I-5 NB Ramps			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1.5	0	0.5	0	0	0	0	2	0	0	3	0	
3:00 PM	2	0	6	0	0	0	0	5	2	0	3	7	25
3:15 PM	1	0	6	0	0	0	0	12	2	0	4	7	32
3:30 PM	6	0	4	0	0	0	0	16	1	0	4	5	36
3:45 PM	1	0	6	0	0	0	0	13	1	0	2	4	27
4:00 PM	0	0	4	0	0	0	0	11	2	0	1	8	26
4:15 PM	1	0	2	0	0	0	0	7	0	0	6	5	21
4:30 PM	1	0	2	0	0	0	0	9	1	0	4	1	18
4:45 PM	2	0	1	0	0	0	0	11	2	0	2	5	23
5:00 PM	0	0	4	0	0	0	0	11	1	0	1	6	23
5:15 PM	2	0	0	0	0	0	0	8	1	0	0	2	13
5:30 PM	1	0	0	0	0	0	0	12	0	0	1	6	20
5:45 PM	0	0	1	0	0	0	0	10	2	0	2	2	17

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	17	0	36	0	0	0	0	125	15	0	30	58	281
APPROACH %'s :	32.08%	0.00%	67.92%				0.00%	89.29%	10.71%	0.00%	34.09%	65.91%	

PEAK HR START TIME :	415 PM												TOTAL
PEAK HR VOL :	4	0	9	0	0	0	0	38	4	0	13	17	85
PEAK HR FACTOR :	0.813			0.000			0.808			0.682			0.924

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South San Fernando Rd

East/West Osborne St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	179	222	247	241
BIKES	32	33	16	24
BUSES	48	49	50	40

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	99	8.45	275	7.45	234	7.45	256	7.00
PM PK 15 MIN	206	17.15	181	15.15	206	16.30	244	17.00
AM PK HOUR	341	7.30	1011	7.15	728	7.30	946	7.00
PM PK HOUR	751	16.45	697	15.00	787	17.00	881	16.30

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	27	227	41	295	*7-8*	138	807	54	999	1294	33	0	27	0
8-9	28	254	52	334	*8-9*	176	571	45	792	1126	29	1	27	0
9-10	25	226	39	290	*9-10*	117	332	66	515	805	35	0	24	0
15-16	50	492	64	606	*15-16*	171	431	95	697	1303	31	2	18	0
16-17	62	549	94	705	*16-17*	162	411	82	655	1360	25	17	29	0
17-18	58	591	102	751	*17-18*	170	400	98	668	1419	27	10	18	0
TOTAL	250	2339	392	2981	TOTAL	934	2952	440	4326	7307	180	30	143	0

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	64	568	62	694	*7-8*	85	754	107	946	1640	43	0	35	0
8-9	38	488	49	575	*8-9*	57	564	89	710	1285	40	0	12	0
9-10	44	390	46	480	*9-10*	63	460	93	616	1096	40	0	20	0
15-16	74	629	48	751	*15-16*	48	584	143	775	1526	28	2	12	0
16-17	88	582	52	722	*16-17*	59	645	145	849	1571	33	29	23	1
17-18	92	649	46	787	*17-18*	60	627	171	858	1645	23	27	16	1
TOTAL	400	3306	303	4009	TOTAL	372	3634	748	4754	8763	207	58	118	2

ITM Peak Hour Summary

Prepared by:

NDS

San Fernando Rd and Osborne St , San Fernando Valley

Date:	5/27/2015
Day:	Wednesday
Project #:	15-5336-008
City:	San Fernando Valley

AM Peak Hour	700 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Total Peak Hour Summary

North-south street: San Fernando Rd. East-west street: Osborne St.

CONTROL: Signalized

Southbound Approach

	Left	Through	Right	Out (northbound departure)
Lanes	0	2	1	
AM	54	807	138	398
NOON	0	0	0	0
PM	83	417	166	853

Westbound Approach

	AM	NOON	PM	Lanes
Right	107	0	179	0
Through	754	0	644	2
Left	85	0	58	1
Out (eastbound departure)	747	0	901	

Eastbound Approach

	Lanes	AM	NOON	PM
Out (westbound departure)		835	0	793
Left	1	64	0	93
Through	2	568	0	637
Right	0	62	0	51

Northbound Approach

	Out (southbound departure)	Left	Through	Right
AM	954	27	227	41
NOON	0	0	0	0
PM	526	66	581	98
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg	In	Out
AM	999	398
NOON	0	0
PM	666	853

West Leg	AM	NOON	PM
Out	835	0	793
In	694	0	781

East Leg	AM	NOON	PM
In	946	0	881
Out	747	0	901

South Leg	Out	In
AM	954	295
NOON	0	0
PM	526	745

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1397	0	1519
West Leg	1529	0	1574
East Leg	1693	0	1782
South Leg	1249	0	1271

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	5	39	12	31	185	9	10	121	8	22	213	21	676
7:15 AM	3	61	6	32	211	12	13	122	18	24	199	29	730
7:30 AM	10	63	9	26	202	16	23	134	11	21	168	30	713
7:45 AM	9	64	14	49	209	17	18	191	25	18	174	27	815
8:00 AM	9	61	11	43	181	13	8	136	13	16	139	23	653
8:15 AM	5	71	15	48	135	10	10	145	14	9	155	24	641
8:30 AM	6	49	8	38	150	9	10	103	9	17	133	20	552
8:45 AM	8	73	18	47	105	13	10	104	13	15	137	22	565
9:00 AM	4	38	12	27	79	14	14	92	17	24	113	18	452
9:15 AM	8	61	12	29	84	10	9	96	8	17	116	26	476
9:30 AM	9	62	5	26	103	19	10	93	9	9	112	28	485
9:45 AM	4	65	10	35	66	23	11	109	12	13	119	21	488

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	80	707	132	431	1710	165	146	1446	157	205	1778	289	7246
APPROACH %'s :	8.71%	76.93%	14.36%	18.69%	74.15%	7.16%	8.35%	82.68%	8.98%	9.02%	78.26%	12.72%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	27	227	41	138	807	54	64	568	62	85	754	107	2934
PEAK HR FACTOR :		0.848			0.908			0.741			0.924		0.900

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	12	91	8	39	121	18	19	139	13	15	143	34	652
3:15 PM	11	124	16	49	105	27	18	172	13	9	125	28	697
3:30 PM	16	123	17	42	113	23	16	154	9	12	162	44	731
3:45 PM	11	154	23	41	92	27	21	164	13	12	154	37	749
4:00 PM	16	125	21	31	114	23	19	138	11	21	168	41	728
4:15 PM	11	128	26	53	94	19	18	132	16	16	148	26	687
4:30 PM	19	143	24	38	103	18	28	162	16	13	172	51	787
4:45 PM	16	153	23	40	100	22	23	150	9	9	157	27	729
5:00 PM	20	121	20	41	111	22	18	163	11	21	168	55	771
5:15 PM	11	164	31	47	103	21	24	162	15	15	147	46	786
5:30 PM	10	158	24	37	97	23	21	155	12	15	162	38	752
5:45 PM	17	148	27	45	89	32	29	169	8	9	150	32	755

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	170	1632	260	503	1242	275	254	1860	146	167	1856	459	8824
APPROACH %'s :	8.24%	79.15%	12.61%	24.90%	61.49%	13.61%	11.24%	82.30%	6.46%	6.73%	74.78%	18.49%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	66	581	98	166	417	83	93	637	51	58	644	179	3073
PEAK HR FACTOR :		0.904			0.957			0.948			0.903		0.976

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	4	34	10	29	170	9	9	118	8	21	197	21	630
7:15 AM	3	56	5	31	199	12	13	116	18	22	187	29	691
7:30 AM	8	59	8	24	192	16	23	128	10	21	158	29	676
7:45 AM	7	58	13	46	196	17	17	183	24	17	162	27	767
8:00 AM	7	52	11	40	169	13	7	126	10	12	129	23	599
8:15 AM	5	58	12	41	126	9	9	139	14	8	148	24	593
8:30 AM	6	43	8	35	138	8	10	88	9	17	120	17	499
8:45 AM	6	61	16	44	97	13	10	97	13	15	126	20	518
9:00 AM	4	34	11	25	69	14	14	85	15	23	103	18	415
9:15 AM	8	54	10	28	80	10	9	82	7	14	109	24	435
9:30 AM	8	56	4	25	92	17	10	83	9	9	94	27	434
9:45 AM	4	58	10	34	60	22	11	102	11	12	102	20	446

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	70	623	118	402	1588	160	142	1347	148	191	1635	279	6703
APPROACH %'s :	8.63%	76.82%	14.55%	18.70%	73.86%	7.44%	8.67%	82.28%	9.04%	9.07%	77.67%	13.25%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	22	207	36	130	757	54	62	545	60	81	704	106	2764
PEAK HR FACTOR :		0.849			0.908			0.744			0.932		0.901

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	9	85	8	37	108	18	17	124	11	14	133	31	595
3:15 PM	10	109	16	47	92	26	17	155	11	9	120	28	640
3:30 PM	16	116	16	37	105	23	13	135	9	12	154	38	674
3:45 PM	10	142	21	39	86	27	20	141	13	12	145	36	692
4:00 PM	13	111	20	29	105	23	18	118	11	17	156	40	661
4:15 PM	10	122	23	53	86	19	17	119	15	13	136	25	638
4:30 PM	19	140	24	37	93	18	26	153	16	12	166	50	754
4:45 PM	15	148	22	40	95	22	23	139	9	9	156	24	702
5:00 PM	19	114	20	40	105	20	17	149	11	20	166	54	735
5:15 PM	11	154	31	46	100	21	24	155	15	15	145	45	762
5:30 PM	10	152	23	36	89	23	19	148	12	14	155	35	716
5:45 PM	17	140	27	44	85	31	28	159	8	9	143	31	722

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	159	1533	251	485	1149	271	239	1695	141	156	1775	437	8291
APPROACH %'s :	8.18%	78.90%	12.92%	25.46%	60.31%	14.23%	11.52%	81.69%	6.80%	6.59%	74.96%	18.45%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	64	556	97	163	393	81	90	596	51	56	633	173	2953
PEAK HR FACTOR :		0.915			0.954			0.945			0.898		0.969

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-008
N/S Street: San Fernando Rd
E/W Street: Osborne St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	12	4	3	13	2	7	3
7:15 AM	3	4	2	6	7	7	15	4
7:30 AM	0	1	5	2	1	0	5	3
7:45 AM	1	5	10	1	5	0	3	3
8:00 AM	2	6	3	7	1	1	7	2
8:15 AM	1	4	6	4	3	1	8	8
8:30 AM	1	4	3	1	3	0	2	1
8:45 AM	3	6	4	1	3	0	8	4
9:00 AM	1	5	1	6	4	0	2	4
9:15 AM	4	2	4	5	0	4	9	3
9:30 AM	1	8	1	0	6	0	0	3
9:45 AM	1	2	4	14	6	0	16	3
TOTALS	**19**	**59**	**47**	**50**	**52**	**15**	**82**	**41**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	1	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	1	1	3	2	1	0	3	3
3:15 PM	2	1	8	6	7	0	6	1
3:30 PM	2	1	1	3	0	0	5	5
3:45 PM	6	4	2	6	4	0	5	0
4:00 PM	2	4	5	2	6	3	8	8
4:15 PM	2	2	2	1	3	1	3	3
4:30 PM	4	3	1	6	2	1	6	0
4:45 PM	5	7	3	5	6	1	3	2
5:00 PM	2	3	1	2	2	0	0	0
5:15 PM	4	1	2	3	5	0	5	1
5:30 PM	2	1	1	6	0	1	7	0
5:45 PM	2	3	1	11	5	3	9	1
TOTALS	**34**	**31**	**30**	**53**	**41**	**10**	**60**	**24**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	1	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	1	0	0	1	0
4:00 PM	0	0	5	0	0	0	4	2
4:15 PM	0	0	4	3	0	0	7	1
4:30 PM	0	0	3	1	1	0	6	4
4:45 PM	0	0	1	0	0	0	3	2
5:00 PM	0	0	0	1	0	0	5	2
5:15 PM	0	0	2	4	0	0	7	1
5:30 PM	0	0	2	1	1	0	10	2
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**18**	**11**	**2**	**0**	**43**	**15**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	0	0	0	1	0	0	3	0	0	0	0	4
7:15 AM	0	0	0	0	3	0	0	1	0	0	0	0	4
7:30 AM	0	0	0	0	3	0	0	1	0	0	0	0	4
7:45 AM	0	0	0	0	1	0	0	0	0	0	2	0	3
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:15 AM	0	1	0	0	0	0	0	0	0	0	1	0	2
8:30 AM	0	0	0	0	2	0	0	1	0	0	1	0	4
8:45 AM	0	0	0	0	3	0	0	0	0	0	2	0	5
9:00 AM	0	2	1	0	0	0	0	0	1	0	0	0	4
9:15 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
9:30 AM	0	0	0	0	2	0	0	0	0	0	0	0	2
9:45 AM	0	0	0	0	1	0	0	1	0	0	0	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	1	0	19	0	0	7	1	0	6	0	38
APPROACH %'s :	0.00%	80.00%	20.00%	0.00%	100.00%	0.00%	0.00%	87.50%	12.50%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	0	0	0	0	8	0	0	5	0	0	2	0	15
PEAK HR FACTOR :	0.000			0.667			0.417			0.250			0.938

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	1	0	0	3	0	0	1	0	0	0	0	5
3:15 PM	0	2	0	0	0	0	0	1	0	0	1	0	4
3:30 PM	0	0	0	0	2	0	0	0	0	0	2	0	4
3:45 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
4:00 PM	0	3	0	0	2	0	1	0	0	0	2	0	8
4:15 PM	0	5	0	0	1	0	0	0	0	0	0	0	6
4:30 PM	0	2	0	0	0	0	0	1	0	0	1	0	4
4:45 PM	0	1	0	0	2	0	0	1	0	0	1	0	5
5:00 PM	0	2	0	0	1	0	0	0	0	0	6	0	9
5:15 PM	0	7	0	0	0	0	0	3	0	0	4	0	14
5:30 PM	0	2	0	0	1	0	0	0	0	0	1	0	4
5:45 PM	0	0	0	0	2	0	0	0	0	0	0	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	27	0	0	14	0	1	7	0	0	18	0	67
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	12.50%	87.50%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	12	0	0	3	0	0	5	0	0	12	0	32
PEAK HR FACTOR :	0.429			0.375			0.417			0.500			0.571

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	2	0	1	10	0	0	0	0	0	5	0	18
7:15 AM	0	1	0	0	2	0	0	1	0	0	2	0	6
7:30 AM	2	2	0	0	4	0	0	1	1	0	2	1	13
7:45 AM	0	3	0	0	2	0	0	2	0	0	2	0	9
8:00 AM	0	2	0	1	3	0	1	2	0	0	1	0	10
8:15 AM	0	5	0	1	2	0	0	1	0	0	1	0	10
8:30 AM	0	2	0	0	3	0	0	3	0	0	3	0	11
8:45 AM	0	1	0	0	2	0	0	1	0	0	0	0	4
9:00 AM	0	2	1	0	1	0	0	0	0	0	1	0	5
9:15 AM	0	2	0	0	0	0	0	1	0	0	1	0	4
9:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
9:45 AM	0	3	0	0	1	0	0	1	0	0	2	0	7

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	25	1	3	31	0	1	13	1	0	20	1	98
APPROACH %'s :	7.14%	89.29%	3.57%	8.82%	91.18%	0.00%	6.67%	86.67%	6.67%	0.00%	95.24%	4.76%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	2	8	0	1	18	0	0	4	1	0	11	1	46
PEAK HR FACTOR :	0.625			0.432			0.625			0.600			0.639

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	0	0	0	1	0	0	3	0	0	0	0	4
3:15 PM	0	2	0	0	2	0	0	3	1	0	2	0	10
3:30 PM	0	1	0	0	2	0	2	3	0	0	2	0	10
3:45 PM	0	2	0	0	0	0	0	4	0	0	3	0	9
4:00 PM	0	3	0	0	2	0	0	3	0	0	3	0	11
4:15 PM	0	1	1	0	1	0	1	1	0	0	3	0	8
4:30 PM	0	1	0	0	1	0	0	2	0	0	3	0	7
4:45 PM	0	2	0	0	2	0	0	4	0	0	0	0	8
5:00 PM	0	1	0	0	2	0	0	2	0	0	0	0	5
5:15 PM	0	2	0	0	0	0	0	2	0	0	1	0	5
5:30 PM	0	3	0	0	2	0	0	2	0	0	1	0	8
5:45 PM	0	1	0	0	0	0	0	2	0	0	1	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	19	1	0	15	0	3	31	1	0	19	0	89
APPROACH %'s :	0.00%	95.00%	5.00%	0.00%	100.00%	0.00%	8.57%	88.57%	2.86%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	6	0	0	5	0	0	10	0	0	4	0	25
PEAK HR FACTOR :	0.750			0.625			0.625			0.333			0.781

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	1	3	2	1	5	0	1	3	0	1	11	0	28
7:15 AM	0	4	1	1	10	0	0	5	0	2	10	0	33
7:30 AM	0	2	1	2	6	0	0	5	0	0	8	0	24
7:45 AM	2	3	1	3	11	0	1	6	1	1	10	0	39
8:00 AM	2	7	0	2	9	0	0	8	3	4	9	0	44
8:15 AM	0	8	3	6	7	1	1	5	0	1	6	0	38
8:30 AM	0	4	0	3	9	1	0	12	0	0	10	3	42
8:45 AM	2	11	2	3	6	0	0	6	0	0	11	2	43
9:00 AM	0	2	0	2	9	0	0	7	2	1	9	0	32
9:15 AM	0	5	2	1	4	0	0	13	1	3	6	2	37
9:30 AM	1	6	1	1	10	2	0	10	0	0	18	1	50
9:45 AM	0	4	0	1	5	1	0	6	1	1	15	1	35

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	59	13	26	91	5	3	86	8	14	123	9	445
APPROACH %'s :	10.00%	73.75%	16.25%	21.31%	74.59%	4.10%	3.09%	88.66%	8.25%	9.59%	84.25%	6.16%	

PEAK HR START TIME :	700 AM												TOTAL
PEAK HR VOL :	3	12	5	7	32	0	2	19	1	4	39	0	124
PEAK HR FACTOR :	0.833			0.696			0.688			0.896			0.795

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-008 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	3	6	0	2	12	0	2	12	2	1	10	3	53
3:15 PM	1	13	0	2	11	1	1	14	1	0	3	0	47
3:30 PM	0	6	1	5	6	0	1	16	0	0	6	6	47
3:45 PM	1	10	2	2	6	0	1	19	0	0	6	1	48
4:00 PM	3	11	1	2	7	0	1	17	0	4	9	1	56
4:15 PM	1	5	2	0	7	0	0	12	1	3	9	1	41
4:30 PM	0	2	0	1	9	0	2	7	0	1	3	1	26
4:45 PM	1	3	1	0	3	0	0	7	0	0	1	3	19
5:00 PM	1	6	0	1	4	2	1	12	0	1	2	1	31
5:15 PM	0	8	0	1	3	0	0	5	0	0	1	1	19
5:30 PM	0	3	1	1	6	0	2	5	0	1	6	3	28
5:45 PM	0	7	0	1	4	1	1	8	0	0	6	1	29

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	11	80	8	18	78	4	12	134	4	11	62	22	444
APPROACH %'s :	11.11%	80.81%	8.08%	18.00%	78.00%	4.00%	8.00%	89.33%	2.67%	11.58%	65.26%	23.16%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	2	19	1	3	19	2	3	31	0	2	7	6	95
PEAK HR FACTOR :		0.688			0.600			0.654			0.750		0.766

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Glenoaks Blvd

East/West Osborne St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	277	221	121	183
BIKES	2	8	5	8
BUSES	78	104	51	20

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	183	7.45	364	7.45	215	7.45	338	7.45
PM PK 15 MIN	446	17.15	192	16.15	230	16.30	186	17.30
AM PK HOUR	684	7.15	1344	7.15	726	7.15	1254	7.15
PM PK HOUR	1653	17.00	730	16.15	834	17.00	666	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	33	372	212	617
8-9	23	324	197	544
9-10	31	245	171	447
15-16	57	626	436	1119
16-17	55	753	544	1352
17-18	70	930	653	1653
TOTAL	269	3250	2213	5732

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	79	1079	170	1328
8-9	58	709	145	912
9-10	43	424	97	564
15-16	75	424	167	666
16-17	73	476	167	716
17-18	98	412	142	652
TOTAL	426	3524	888	4838

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	1945	30	0	12	2
8-9	1456	10	0	5	0
9-10	1011	11	0	12	1
15-16	1785	34	0	6	0
16-17	2068	18	6	7	0
17-18	2305	45	5	8	0
TOTAL	10570	148	11	50	3

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	231	406	81	718
8-9	137	291	41	469
9-10	90	209	26	325
15-16	232	434	32	698
16-17	217	478	33	728
17-18	231	576	27	834
TOTAL	1138	2394	240	3772

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	563	640	26	1229
8-9	426	367	23	816
9-10	279	316	28	623
15-16	246	349	26	621
16-17	259	324	36	619
17-18	275	360	31	666
TOTAL	2048	2356	170	4574

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	1947	18	2	23	0
8-9	1285	6	0	9	0
9-10	948	7	0	11	0
15-16	1319	21	3	11	0
16-17	1347	19	4	11	1
17-18	1500	27	3	17	0
TOTAL	8346	98	12	82	1

ITM Peak Hour Summary

Prepared by:

NDS

Glenoaks Blvd and Osborne St , San Fernando Valley

Date: 5/27/2015

Day: Wednesday

Project #: 15-5336-009

City: San Fernando Valley

N

Glenoaks Blvd

Osborne St

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Southbound Approach

Lanes	0	2	1	
AM	181	1075	88	685
NOON	0	0	0	0
PM	142	412	98	1192

Eastbound Approach

	AM	NOON	PM
Out	842	0	572

Lanes	AM	NOON	PM
1	249	0	231
2	401	0	576
1	76	0	27

Westbound Approach

AM	NOON	PM	Lanes
26	0	31	0
627	0	360	2
601	0	275	1

	AM	NOON	PM
In	729	0	1327

CONTROL

Signalized

Northbound Approach

AM	1752	34	410	240
NOON	0	0	0	0
PM	714	70	930	653
Lanes		1	3	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg			
AM	1344	685	
NOON	0	0	
PM	652	1192	

West Leg	AM	NOON	PM
	842	0	572
	726	0	834

East Leg	AM	NOON	PM
	1254	0	666
	729	0	1327

South Leg		
AM	1752	684
NOON	0	0
PM	714	1653

Total Volume Per Leg

North Leg	
AM	2029
NOON	0
PM	1844

West Leg	AM	NOON	PM
	1568	0	1406

East Leg	AM	NOON	PM
	1983	0	1993

South Leg	
AM	2436
NOON	0
PM	2367

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
7:00 AM	6	71	36	14	233	37	26	81	15	108	143	6	776
7:15 AM	7	96	48	12	279	34	51	106	18	151	148	2	952
7:30 AM	13	100	57	21	294	40	73	98	35	147	180	6	1064
7:45 AM	7	105	71	32	273	59	81	121	13	157	169	12	1100
8:00 AM	7	109	64	23	229	48	44	76	10	146	130	6	892
8:15 AM	6	72	52	18	193	29	36	86	12	105	86	9	704
8:30 AM	6	72	41	8	153	38	27	68	13	86	83	6	601
8:45 AM	4	71	40	9	134	30	30	61	6	89	68	2	544
9:00 AM	6	44	46	14	104	32	29	50	9	76	93	7	510
9:15 AM	6	58	44	13	123	30	19	56	7	85	81	11	533
9:30 AM	8	73	33	5	92	19	22	45	6	73	87	3	466
9:45 AM	11	70	48	11	105	16	20	58	4	45	55	7	450

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	87	941	580	180	2212	412	458	906	148	1268	1323	77	8592
APPROACH %'s :	5.41%	58.52%	36.07%	6.42%	78.89%	14.69%	30.29%	59.92%	9.79%	47.53%	49.59%	2.89%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	34	410	240	88	1075	181	249	401	76	601	627	26	4008
PEAK HR FACTOR :		0.934			0.923			0.844			0.928		0.911

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
3:00 PM	17	127	89	21	92	28	64	101	7	52	95	5	698
3:15 PM	10	153	118	20	100	46	55	103	7	56	71	4	743
3:30 PM	12	172	118	13	119	52	60	124	5	79	90	8	852
3:45 PM	18	174	111	21	113	41	53	106	13	59	93	9	811
4:00 PM	13	157	123	21	101	48	48	123	7	61	81	13	796
4:15 PM	14	164	123	24	125	43	46	105	10	61	75	8	798
4:30 PM	11	198	133	14	125	34	74	148	8	70	87	9	911
4:45 PM	17	234	165	14	125	42	49	102	8	67	81	6	910
5:00 PM	21	208	156	23	122	39	52	170	7	77	86	9	970
5:15 PM	15	267	164	26	103	40	52	130	7	47	69	9	929
5:30 PM	15	205	172	22	94	30	55	155	7	71	108	7	941
5:45 PM	19	250	161	27	93	33	72	121	6	80	97	6	965

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	182	2309	1633	246	1312	476	680	1488	92	780	1033	93	10324
APPROACH %'s :	4.41%	55.99%	39.60%	12.09%	64.50%	23.40%	30.09%	65.84%	4.07%	40.92%	54.20%	4.88%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	70	930	653	98	412	142	231	576	27	275	360	31	3805
PEAK HR FACTOR :		0.927			0.886			0.910			0.895		0.981

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
7:00 AM	2	67	35	13	211	35	25	77	6	103	141	5	720
7:15 AM	4	91	46	12	251	32	51	100	15	141	145	2	890
7:30 AM	5	93	54	20	283	37	69	94	23	139	177	5	999
7:45 AM	5	97	70	31	259	59	81	119	12	152	166	12	1063
8:00 AM	6	99	60	23	217	48	42	70	10	141	129	6	851
8:15 AM	5	65	48	18	175	29	34	84	10	99	82	9	658
8:30 AM	4	57	38	8	140	36	27	61	10	80	81	6	548
8:45 AM	3	62	32	9	118	29	30	57	3	84	68	2	497
9:00 AM	6	40	41	14	94	31	26	49	8	68	92	7	476
9:15 AM	5	47	38	12	112	30	18	55	4	57	77	11	466
9:30 AM	8	65	29	5	80	17	20	44	5	57	85	3	418
9:45 AM	7	61	40	11	87	15	20	57	3	43	54	7	405

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	60	844	531	176	2027	398	443	867	109	1164	1297	75	7991
APPROACH %'s :	4.18%	58.82%	37.00%	6.77%	77.93%	15.30%	31.22%	61.10%	7.68%	45.90%	51.14%	2.96%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	20	380	230	86	1010	176	243	383	60	573	617	25	3803
PEAK HR FACTOR :		0.916			0.911			0.809			0.920		0.894

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
3:00 PM	15	120	82	21	86	28	61	98	4	50	91	5	661
3:15 PM	10	142	104	20	90	43	54	100	3	55	68	4	693
3:30 PM	11	164	112	13	110	50	57	123	4	77	88	7	816
3:45 PM	16	162	104	21	101	39	44	102	6	53	90	9	747
4:00 PM	13	153	118	20	91	46	44	122	6	59	77	12	761
4:15 PM	12	161	119	22	109	42	45	105	8	55	69	8	755
4:30 PM	10	196	127	14	116	33	73	148	7	69	81	9	883
4:45 PM	15	231	161	14	119	42	48	100	5	66	79	6	886
5:00 PM	18	201	148	23	115	39	51	169	4	73	86	9	936
5:15 PM	13	263	157	26	97	39	52	130	4	45	68	9	903
5:30 PM	12	195	165	22	86	30	55	151	2	67	106	7	898
5:45 PM	18	242	152	27	85	33	72	120	4	78	94	6	931

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	163	2230	1549	243	1205	464	656	1468	57	747	997	91	9870
APPROACH %'s :	4.13%	56.57%	39.29%	12.71%	63.02%	24.27%	30.08%	67.31%	2.61%	40.71%	54.33%	4.96%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	61	901	622	98	383	141	230	570	14	263	354	31	3668
PEAK HR FACTOR :		0.915			0.879			0.908			0.900		0.980

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-009
N/S Street: Glenoaks Blvd
E/W Street: Osborne St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	3	2	1	3	1	2	4	2
7:15 AM	0	0	3	3	4	0	4	3
7:30 AM	0	5	2	9	9	3	2	1
7:45 AM	2	0	4	5	1	3	1	1
8:00 AM	0	2	2	1	0	2	0	0
8:15 AM	0	0	1	0	0	2	0	2
8:30 AM	1	1	1	2	0	2	1	0
8:45 AM	1	0	0	3	1	2	1	2
9:00 AM	0	3	0	0	3	0	0	1
9:15 AM	0	2	3	4	2	0	0	4
9:30 AM	0	2	2	1	2	1	0	1
9:45 AM	2	3	0	1	2	1	0	1
TOTALS	**9**	**20**	**19**	**32**	**25**	**18**	**13**	**18**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	2	0	0	0	0	2	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	1	0	0	0	0	0	0
TOTALS	**0**	**3**	**0**	**0**	**0**	**0**	**2**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	2	2	0	1	1
3:15 PM	1	2	1	5	2	0	1	3
3:30 PM	0	2	2	6	3	0	1	2
3:45 PM	0	1	14	4	3	1	9	3
4:00 PM	0	0	2	2	0	1	3	4
4:15 PM	1	2	0	0	1	0	2	0
4:30 PM	2	1	3	1	3	2	2	1
4:45 PM	0	1	3	7	1	3	3	4
5:00 PM	0	2	1	12	6	2	5	1
5:15 PM	2	0	4	1	0	0	1	3
5:30 PM	0	2	10	10	4	2	6	4
5:45 PM	1	1	2	5	2	1	3	4
TOTALS	**7**	**14**	**42**	**55**	**27**	**12**	**37**	**30**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	3
4:00 PM	0	0	2	0	1	0	2	0
4:15 PM	0	0	2	0	0	0	0	2
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	1	1	0	0	0	0
5:00 PM	0	0	0	2	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	1	0	0	0	0
5:45 PM	0	0	2	0	0	0	0	2
TOTALS	**0**	**0**	**7**	**4**	**1**	**0**	**2**	**8**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	1	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	1	0	0	0	1	0	1	1	4
APPROACH %'s :				0.00%	100.00%	0.00%	0.00%	0.00%	100.00%	0.00%	50.00%	50.00%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	1	0	0	0	0	0	1	0	2
PEAK HR FACTOR :	0.000			0.250			0.000			0.250			0.250

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
3:00 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	1	0	0	0	1	0	0	0	2
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:30 PM	0	1	0	0	0	0	0	0	0	0	3	0	4
4:45 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:00 PM	0	0	0	2	0	0	0	0	0	0	0	2	4
5:15 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
5:30 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
5:45 PM	0	0	0	0	0	0	0	0	1	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	2	0	2	5	0	0	2	2	0	4	2	19
APPROACH %'s :	0.00%	100.00%	0.00%	28.57%	71.43%	0.00%	0.00%	50.00%	50.00%	0.00%	66.67%	33.33%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	2	2	0	0	1	1	0	1	2	9
PEAK HR FACTOR :	0.000			0.500			0.500			0.375			0.563

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
7:00 AM	3	1	0	1	8	2	0	0	1	0	0	1	17
7:15 AM	2	1	0	0	2	1	0	0	1	0	0	0	7
7:30 AM	1	0	0	1	3	2	0	0	2	1	0	1	11
7:45 AM	1	2	0	1	2	0	0	0	1	0	1	0	8
8:00 AM	1	1	0	0	5	0	1	2	0	0	0	0	10
8:15 AM	0	2	0	0	5	0	0	1	1	1	2	0	12
8:30 AM	1	3	0	0	9	1	0	2	1	1	0	0	18
8:45 AM	1	1	1	0	9	1	0	0	1	1	0	0	15
9:00 AM	0	0	0	0	8	0	0	0	0	0	0	0	8
9:15 AM	1	1	0	0	5	0	0	0	2	0	0	0	9
9:30 AM	0	1	0	0	6	0	1	0	0	1	0	0	9
9:45 AM	1	1	1	0	5	0	0	0	1	0	0	0	9

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	12	14	2	3	67	7	2	5	11	5	3	2	133
APPROACH %'s :	42.86%	50.00%	7.14%	3.90%	87.01%	9.09%	11.11%	27.78%	61.11%	50.00%	30.00%	20.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	5	4	0	2	12	3	1	2	4	1	1	1	36
PEAK HR FACTOR :	0.750			0.708			0.583			0.375			0.818

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
3:00 PM	1	5	0	0	0	0	2	0	1	0	1	0	10
3:15 PM	0	6	1	0	1	1	0	0	3	0	0	0	12
3:30 PM	0	3	1	0	0	1	2	0	0	0	0	0	7
3:45 PM	2	4	2	0	4	2	3	1	1	0	1	0	20
4:00 PM	0	4	3	0	1	1	3	0	1	0	0	1	14
4:15 PM	1	0	0	0	5	0	1	0	2	0	3	0	12
4:30 PM	1	1	2	0	3	0	0	0	1	0	0	0	8
4:45 PM	1	1	0	0	0	0	0	1	3	0	0	0	6
5:00 PM	0	1	1	0	2	0	0	0	2	0	0	0	6
5:15 PM	1	0	1	0	1	0	0	0	2	0	0	0	5
5:30 PM	1	2	1	0	2	0	0	0	2	3	0	0	11
5:45 PM	1	2	0	0	3	0	0	0	2	1	0	0	9

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	29	12	0	22	5	11	2	20	4	5	1	120
APPROACH %'s :	18.00%	58.00%	24.00%	0.00%	81.48%	18.52%	33.33%	6.06%	60.61%	40.00%	50.00%	10.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	5	3	0	8	0	0	0	8	4	0	0	31
PEAK HR FACTOR :	0.688			0.667			1.000			0.333			0.705

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
7:00 AM	1	3	1	0	14	0	1	4	8	5	2	0	39
7:15 AM	1	4	2	0	26	1	0	6	2	10	3	0	55
7:30 AM	7	7	3	0	8	1	4	4	10	7	3	0	54
7:45 AM	1	6	1	0	12	0	0	2	0	5	2	0	29
8:00 AM	0	9	4	0	7	0	1	4	0	5	1	0	31
8:15 AM	1	5	4	0	13	0	2	1	1	5	2	0	34
8:30 AM	1	12	3	0	4	1	0	5	2	5	2	0	35
8:45 AM	0	8	7	0	7	0	0	4	2	4	0	0	32
9:00 AM	0	4	5	0	2	1	3	1	1	8	1	0	26
9:15 AM	0	10	6	1	6	0	1	1	1	28	4	0	58
9:30 AM	0	7	4	0	6	2	1	1	1	15	2	0	39
9:45 AM	3	8	7	0	13	1	0	1	0	2	1	0	36

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	15	83	47	1	118	7	13	34	28	99	23	0	468
APPROACH %'s :	10.34%	57.24%	32.41%	0.79%	93.65%	5.56%	17.33%	45.33%	37.33%	81.15%	18.85%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	9	26	10	0	53	2	5	16	12	27	9	0	169
PEAK HR FACTOR :		0.662			0.509			0.458			0.692		0.768

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-009 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	3	0	1	2	0	1	2	1	1	2	0	
3:00 PM	1	2	7	0	6	0	1	3	2	2	3	0	27
3:15 PM	0	5	13	0	9	2	1	3	1	1	3	0	38
3:30 PM	1	5	5	0	9	1	1	1	1	2	2	1	29
3:45 PM	0	8	5	0	8	0	6	3	6	6	2	0	44
4:00 PM	0	0	2	1	9	1	1	1	0	2	4	0	21
4:15 PM	1	3	4	2	11	1	0	0	0	6	3	0	31
4:30 PM	0	1	4	0	6	1	1	0	0	1	6	0	20
4:45 PM	1	2	4	0	6	0	1	1	0	1	2	0	18
5:00 PM	3	6	7	0	5	0	1	1	1	4	0	0	28
5:15 PM	1	4	6	0	5	1	0	0	1	2	1	0	21
5:30 PM	2	8	6	0	6	0	0	4	3	1	2	0	32
5:45 PM	0	6	9	0	5	0	0	1	0	1	3	0	25

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	10	50	72	3	85	7	13	18	15	29	31	1	334
APPROACH %'s :	7.58%	37.88%	54.55%	3.16%	89.47%	7.37%	28.26%	39.13%	32.61%	47.54%	50.82%	1.64%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	6	24	28	0	21	1	1	6	5	8	6	0	106
PEAK HR FACTOR :	0.906			0.917			0.429			0.875			0.828

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Glenoaks Blvd

East/West Sheldon St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	454	402	257	88
BIKES	15	17	4	10
BUSES	47	55	41	12

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	180	7.45	426	7.30	177	7.45	194	7.30
PM PK 15 MIN	305	17.00	270	17.00	243	17.00	99	17.00
AM PK HOUR	626	7.45	1527	7.15	628	7.15	667	7.30
PM PK HOUR	1203	16.30	926	16.30	878	16.30	341	16.45

NORTHBOUND Approach | **SOUTHBOUND Approach** | **TOTAL** | **XING S/L** | **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	81	376	52	509	*7-8*	63	1030	383	1476	1985	4	0	2	0
8-9	100	407	65	572	*8-9*	45	791	230	1066	1638	2	0	5	0
9-10	96	343	47	486	*9-10*	48	519	130	697	1183	2	0	8	0
15-16	159	675	59	893	*15-16*	83	545	224	852	1745	1	0	10	0
16-17	128	905	69	1102	*16-17*	75	577	201	853	1955	1	0	1	0
17-18	148	964	74	1186	*17-18*	92	566	218	876	2062	2	0	7	0
TOTAL	712	3670	366	4748	TOTAL	406	4028	1386	5820	10568	12	0	33	0

EASTBOUND Approach | **WESTBOUND Approach** | **TOTAL** | **XING W/L** | **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	184	266	107	557	*7-8*	101	451	88	640	1197	4	0	3	0
8-9	160	187	126	473	*8-9*	65	345	74	484	957	5	0	7	0
9-10	150	177	113	440	*9-10*	61	223	52	336	776	5	0	8	0
15-16	261	298	141	700	*15-16*	44	209	65	318	1018	0	0	3	0
16-17	332	349	130	811	*16-17*	27	197	51	275	1086	0	0	2	0
17-18	359	407	108	874	*17-18*	45	212	79	336	1210	3	0	2	0
TOTAL	1446	1684	725	3855	TOTAL	343	1637	409	2389	6244	17	0	25	0

ITM Peak Hour Summary

Prepared by:

NDS

Glenoaks Blvd and Sheldon St , San Fernando Valley

Date:	5/27/2015
Day:	Wednesday

Project #:	15-5336-010
City:	San Fernando Valley

N

Total Peak Hour Summary

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

CONTROL

Signalized

Southbound Approach (Glenoaks Blvd)

	Right	Thru	Left	Exit
Lanes	0	3	1	
AM	402	1053	72	738
NOON	0	0	0	0
PM	223	608	95	1428

Eastbound Approach (Sheldon St)

	Lanes	AM	NOON	PM
Exit		958	0	561
Left	1	214	0	360
Thru	2	288	0	379
Right	0	126	0	139

Westbound Approach

	AM	NOON	PM	Lanes
Right	97	0	62	0
Thru	460	0	221	2
Left	106	0	42	1
Exit	431	0	554	

Northbound Approach

	Exit	Left	Thru	Right
AM	1285	96	427	71
NOON	0	0	0	0
PM	789	117	1006	80
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	1527	738
North Leg	NOON	0	0
North Leg	PM	926	1428
East Leg	AM	663	431
East Leg	NOON	0	0
East Leg	PM	325	554
West Leg	AM	958	628
West Leg	NOON	0	0
West Leg	PM	561	878
South Leg	AM	1285	594
South Leg	NOON	0	0
South Leg	PM	789	1203

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	2265	0	2354
East Leg	1094	0	879
West Leg	1586	0	1439
South Leg	1879	0	1992

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
7:00 AM	12	64	3	12	209	72	25	40	20	14	93	20	584
7:15 AM	20	84	10	16	274	90	47	63	20	21	95	18	758
7:30 AM	21	100	15	16	287	123	55	78	32	36	138	20	921
7:45 AM	28	128	24	19	260	98	57	85	35	30	125	30	919
8:00 AM	27	115	22	21	232	91	55	62	39	19	102	29	814
8:15 AM	24	104	17	5	213	48	38	44	34	17	104	17	665
8:30 AM	26	97	14	10	169	49	38	44	21	11	72	13	564
8:45 AM	23	91	12	9	177	42	29	37	32	18	67	15	552
9:00 AM	20	85	9	14	111	33	35	41	24	21	52	12	457
9:15 AM	29	86	10	8	147	31	36	46	30	9	70	12	514
9:30 AM	21	82	12	14	138	40	36	36	28	19	45	9	480
9:45 AM	26	90	16	12	123	26	43	54	31	12	56	19	508

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	277	1126	164	156	2340	743	494	630	346	227	1019	214	7736
APPROACH %'s :	17.68%	71.86%	10.47%	4.82%	72.24%	22.94%	33.61%	42.86%	23.54%	15.55%	69.79%	14.66%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	96	427	71	72	1053	402	214	288	126	106	460	97	3412
PEAK HR FACTOR :		0.825			0.896			0.887			0.854		0.926

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
3:00 PM	38	141	14	23	133	61	53	62	36	10	45	18	634
3:15 PM	36	160	18	15	136	40	69	78	33	16	43	16	660
3:30 PM	42	186	16	29	152	57	69	86	41	10	71	13	772
3:45 PM	43	188	11	16	124	66	70	72	31	8	50	18	697
4:00 PM	39	179	16	19	132	58	78	78	27	6	60	13	705
4:15 PM	37	216	16	13	144	45	80	94	36	7	37	15	740
4:30 PM	26	252	20	19	152	59	104	88	30	9	44	12	815
4:45 PM	26	258	17	24	149	39	70	89	37	5	56	11	781
5:00 PM	36	244	25	31	170	69	90	109	44	11	65	23	917
5:15 PM	29	252	18	21	137	56	96	93	28	17	56	16	819
5:30 PM	36	235	12	21	124	50	87	114	13	10	47	24	773
5:45 PM	47	233	19	19	135	43	86	91	23	7	44	16	763

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	435	2544	202	250	1688	643	952	1054	379	116	618	195	9076
APPROACH %'s :	13.67%	79.97%	6.35%	9.69%	65.40%	24.91%	39.92%	44.19%	15.89%	12.49%	66.52%	20.99%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	117	1006	80	95	608	223	360	379	139	42	221	62	3332
PEAK HR FACTOR :		0.986			0.857			0.903			0.821		0.908

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
7:00 AM	10	58	2	6	180	68	25	36	15	13	90	19	522
7:15 AM	14	77	8	14	249	83	45	61	17	21	94	17	700
7:30 AM	12	90	13	12	275	114	52	73	31	34	134	19	859
7:45 AM	19	115	23	17	251	93	50	75	31	30	123	30	857
8:00 AM	17	101	16	18	215	86	51	55	32	19	99	29	738
8:15 AM	17	97	12	5	201	43	37	40	29	16	102	16	615
8:30 AM	16	84	14	8	150	48	31	41	16	10	70	11	499
8:45 AM	15	84	9	7	162	41	25	33	28	17	66	15	502
9:00 AM	20	76	7	14	102	31	31	37	19	21	49	12	419
9:15 AM	19	71	7	6	128	25	30	38	29	7	66	10	436
9:30 AM	17	70	8	13	109	36	33	30	20	17	45	7	405
9:45 AM	20	80	11	8	107	23	39	44	28	11	53	16	440

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	196	1003	130	128	2129	691	449	563	295	216	991	201	6992
APPROACH %'s :	14.75%	75.47%	9.78%	4.34%	72.22%	23.44%	34.35%	43.08%	22.57%	15.34%	70.38%	14.28%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	62	383	60	61	990	376	198	264	111	104	450	95	3154
PEAK HR FACTOR :		0.804			0.890			0.918			0.868		0.918

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
3:00 PM	30	124	14	17	115	54	51	55	28	10	44	16	558
3:15 PM	30	146	14	14	129	37	63	74	26	13	40	16	602
3:30 PM	37	179	13	28	140	52	65	84	36	6	67	13	720
3:45 PM	37	174	7	14	113	63	68	71	26	7	48	16	644
4:00 PM	34	159	13	19	117	57	70	78	20	6	58	12	643
4:15 PM	34	203	16	12	132	43	74	90	30	6	35	15	690
4:30 PM	23	231	19	19	146	57	99	86	28	8	43	11	770
4:45 PM	22	246	17	24	140	36	68	89	34	4	52	11	743
5:00 PM	36	229	25	30	158	69	86	107	36	10	63	22	871
5:15 PM	27	232	18	21	133	51	94	93	26	15	52	15	777
5:30 PM	34	214	11	21	118	46	83	110	12	10	47	24	730
5:45 PM	43	209	18	19	128	43	82	90	18	7	43	16	716

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	387	2346	185	238	1569	608	903	1027	320	102	592	187	8464
APPROACH %'s :	13.26%	80.40%	6.34%	9.86%	64.97%	25.18%	40.13%	45.64%	14.22%	11.58%	67.20%	21.23%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	108	938	79	94	577	213	347	375	124	37	210	59	3161
PEAK HR FACTOR :		0.970			0.860			0.924			0.805		0.907

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-010
N/S Street: Glenoaks Blvd
E/W Street: Sheldon St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0
7:30 AM	0	1	0	0	0	0	0	0
7:45 AM	0	0	1	3	3	0	2	2
8:00 AM	2	3	0	0	1	1	2	0
8:15 AM	0	0	0	0	2	1	1	0
8:30 AM	0	0	0	1	0	0	1	0
8:45 AM	0	0	1	0	1	1	1	0
9:00 AM	1	1	0	1	1	2	0	0
9:15 AM	0	0	0	0	3	1	0	0
9:30 AM	2	0	0	0	0	0	1	0
9:45 AM	2	2	0	1	1	0	2	2
TOTALS	**8**	**7**	**2**	**6**	**12**	**6**	**10**	**4**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	1	0	0	0
3:15 PM	0	0	0	0	0	1	0	0
3:30 PM	4	4	0	1	0	1	0	0
3:45 PM	1	1	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	2	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	1	0	0	0	0	0	0	0
4:45 PM	0	0	1	0	0	0	0	0
5:00 PM	1	1	1	0	0	1	0	1
5:15 PM	1	1	0	0	0	0	0	0
5:30 PM	0	1	0	0	0	0	0	1
5:45 PM	1	1	1	0	1	0	1	0
TOTALS	**9**	**9**	**3**	**1**	**2**	**5**	**1**	**2**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
7:00 AM	0	0	1	1	2	1	0	0	0	0	0	0	5
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	1	1
8:45 AM	0	0	0	0	1	0	0	0	1	0	1	0	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:15 AM	0	1	0	0	1	0	0	0	1	0	0	0	3
9:30 AM	0	1	0	1	0	0	0	0	0	0	0	1	3
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	1	2	5	2	1	0	2	0	2	2	20
APPROACH %'s :	0.00%	75.00%	25.00%	22.22%	55.56%	22.22%	33.33%	0.00%	66.67%	0.00%	50.00%	50.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	1	1	1	0	0	0	0	0	3
PEAK HR FACTOR :	0.000			0.500			0.250			0.000			0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
3:00 PM	0	0	0	0	1	0	0	0	0	1	0	0	2
3:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	1	0	0	0	0	0	0	0	0	1	0	2
4:15 PM	0	0	1	0	1	0	0	0	0	0	0	0	2
4:30 PM	0	2	0	0	1	0	0	0	0	2	0	0	5
4:45 PM	1	1	1	0	0	0	1	0	0	0	0	0	4
5:00 PM	0	0	1	0	0	0	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	4
5:45 PM	0	1	0	0	2	0	0	0	0	1	1	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	7	3	0	8	0	1	0	0	4	2	0	26
APPROACH %'s :	9.09%	63.64%	27.27%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	66.67%	33.33%	0.00%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	1	3	2	0	1	0	1	0	0	2	0	0	10
PEAK HR FACTOR :	0.500			0.250			0.250			0.250			0.500

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
7:00 AM	0	1	0	0	4	1	0	1	1	0	0	0	8
7:15 AM	0	1	0	0	3	2	0	0	0	0	0	1	7
7:30 AM	0	0	0	0	0	2	0	1	0	0	0	0	3
7:45 AM	0	3	0	0	1	1	3	2	0	0	0	0	10
8:00 AM	0	1	0	0	0	0	1	1	0	0	1	0	4
8:15 AM	0	2	0	0	1	0	1	0	1	0	0	1	6
8:30 AM	0	2	0	0	2	0	2	0	0	0	0	1	7
8:45 AM	0	1	0	0	0	0	1	0	1	0	0	0	3
9:00 AM	0	2	0	0	0	0	3	0	0	0	0	0	5
9:15 AM	1	3	0	1	2	0	3	0	0	0	0	1	11
9:30 AM	0	1	0	0	1	0	3	0	0	0	0	1	6
9:45 AM	0	2	0	0	0	0	1	0	0	0	0	1	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	19	0	1	14	6	18	5	3	0	1	6	74
APPROACH %'s :	5.00%	95.00%	0.00%	4.76%	66.67%	28.57%	69.23%	19.23%	11.54%	0.00%	14.29%	85.71%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	5	0	0	4	5	4	4	0	0	1	1	24
PEAK HR FACTOR :	0.417			0.450			0.400			0.500			0.600

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
3:00 PM	0	2	0	3	4	3	0	0	0	0	0	0	12
3:15 PM	0	1	0	0	3	1	1	0	0	0	1	0	7
3:30 PM	0	2	0	0	2	1	1	0	0	0	1	0	7
3:45 PM	0	3	1	1	1	1	0	0	0	0	1	0	8
4:00 PM	0	3	0	0	1	0	2	0	0	0	0	0	6
4:15 PM	0	0	0	0	5	0	0	2	0	0	1	0	8
4:30 PM	0	6	0	0	1	0	1	0	0	0	0	0	8
4:45 PM	0	1	0	0	1	0	1	0	0	0	0	0	3
5:00 PM	0	2	0	0	4	0	1	0	0	0	0	0	7
5:15 PM	0	2	0	0	0	0	1	0	0	0	0	1	4
5:30 PM	0	2	0	0	1	0	1	0	0	0	0	0	4
5:45 PM	0	2	0	0	1	0	4	0	0	0	0	0	7

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	26	1	4	24	6	13	2	0	0	4	1	81
APPROACH %'s :	0.00%	96.30%	3.70%	11.76%	70.59%	17.65%	86.67%	13.33%	0.00%	0.00%	80.00%	20.00%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	11	0	0	6	0	4	0	0	0	0	1	22
PEAK HR FACTOR :	0.458			0.375			1.000			0.250			0.688

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
7:00 AM	2	5	1	6	25	3	0	3	4	1	3	1	54
7:15 AM	6	6	2	2	22	5	2	2	3	0	1	0	51
7:30 AM	9	10	2	4	12	7	3	4	1	2	4	1	59
7:45 AM	9	10	1	2	8	4	4	8	4	0	2	0	52
8:00 AM	10	13	6	3	17	5	3	6	7	0	2	0	72
8:15 AM	7	5	5	0	11	5	0	4	4	1	2	0	44
8:30 AM	10	11	0	2	17	1	5	3	5	1	2	1	58
8:45 AM	8	6	3	2	15	1	3	4	3	1	1	0	47
9:00 AM	0	7	2	0	9	2	1	4	5	0	3	0	33
9:15 AM	9	12	3	1	17	6	3	8	1	2	4	1	67
9:30 AM	4	11	4	1	28	4	0	6	8	2	0	1	69
9:45 AM	6	8	5	4	16	3	3	10	3	1	3	2	64

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	80	104	34	27	197	46	27	62	48	11	27	7	670
APPROACH %'s :	36.70%	47.71%	15.60%	10.00%	72.96%	17.04%	19.71%	45.26%	35.04%	24.44%	60.00%	15.56%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	34	39	11	11	59	21	12	20	15	2	9	1	234
PEAK HR FACTOR :		0.724			0.784			0.734			0.429		0.813

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-010 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Sheldon St			Sheldon St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	1	2	0	1	2	0	
3:00 PM	8	15	0	3	14	4	2	7	8	0	1	2	64
3:15 PM	6	13	4	1	4	2	5	4	7	3	2	0	51
3:30 PM	5	5	3	1	10	4	3	2	5	4	3	0	45
3:45 PM	6	11	3	1	10	2	2	1	5	1	1	2	45
4:00 PM	5	17	3	0	14	1	6	0	7	0	2	1	56
4:15 PM	3	13	0	1	7	2	6	2	6	1	1	0	42
4:30 PM	3	15	1	0	5	2	4	2	2	1	1	1	37
4:45 PM	4	11	0	0	8	3	1	0	3	1	4	0	35
5:00 PM	0	13	0	1	8	0	3	2	8	1	2	1	39
5:15 PM	2	18	0	0	4	5	1	0	2	2	4	0	38
5:30 PM	2	19	1	0	5	4	3	4	1	0	0	0	39
5:45 PM	4	22	1	0	6	0	0	1	5	0	1	0	40

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	48	172	16	8	95	29	36	25	59	14	22	7	531
APPROACH %'s :	20.34%	72.88%	6.78%	6.06%	71.97%	21.97%	30.00%	20.83%	49.17%	32.56%	51.16%	16.28%	
PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	9	57	1	1	25	10	9	4	15	5	11	2	149
PEAK HR FACTOR :		0.838			0.818			0.538			0.750		0.955

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Glenoaks Blvd

East/West Penrose St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	276	402	160	45
BIKES	18	16	3	2
BUSES	64	63	8	8

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	161	7.45	273	7.45	101	7.45	46	7.45
PM PK 15 MIN	195	16.15	229	17.00	108	16.30	39	16.45
AM PK HOUR	547	7.45	1004	7.15	310	7.15	142	7.30
PM PK HOUR	698	16.00	812	16.30	399	16.30	142	16.45

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	32	413	2	447
8-9	26	460	6	492
9-10	33	333	2	368
15-16	46	494	7	547
16-17	47	641	10	698
17-18	28	633	15	676
TOTAL	212	2974	42	3228

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	32	807	138	977
8-9	26	667	102	795
9-10	21	539	69	629
15-16	33	545	104	682
16-17	17	596	102	715
17-18	34	609	104	747
TOTAL	163	3763	619	4545

Hours	TOTAL N-S	XING S/L Ped	XING S/L Sch	XING N/L Ped	XING N/L Sch
7-8	1424	5	0	1	0
8-9	1287	2	0	8	0
9-10	997	2	0	3	0
15-16	1229	6	0	4	0
16-17	1413	9	0	6	0
17-18	1423	3	0	6	0
TOTAL	7773	27	0	28	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	122	142	34	298
8-9	92	71	35	198
9-10	91	71	37	199
15-16	174	102	60	336
16-17	171	123	49	343
17-18	171	168	49	388
TOTAL	821	677	264	1762

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	12	74	24	110
8-9	12	68	35	115
9-10	10	45	37	92
15-16	11	67	54	132
16-17	6	55	59	120
17-18	7	58	67	132
TOTAL	58	367	276	701

Hours	TOTAL E-W	XING W/L Ped	XING W/L Sch	XING E/L Ped	XING E/L Sch
7-8	408	4	0	6	0
8-9	313	5	0	6	0
9-10	291	2	0	7	0
15-16	468	5	0	6	0
16-17	463	7	0	3	0
17-18	520	9	0	3	0
TOTAL	2463	32	0	31	0

ITM Peak Hour Summary

Prepared by:

NDS

Glenoaks Blvd and Penrose St , San Fernando Valley

Date:	5/27/2015
Day:	Wednesday
Project #:	15-5336-011
City:	San Fernando Valley

AM Peak Hour	730 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Total Peak Hour Summary

Glenoaks Blvd

Penrose St

N

Southbound Approach

	Right	Through	Left	Exiting (northbound)
Lanes	0	3	1	
AM	134	792	41	678
NOON	0	0	0	0
PM	118	664	30	880

Eastbound Approach

	Lanes	AM	NOON	PM
Exiting (westbound)		254	0	223
Left	0	135	0	194
Through	2	125	0	153
Right	0	42	0	52

CONTROL

Signalized

Westbound Approach

	AM	NOON	PM	Lanes
Right	40	0	64	1
Through	90	0	66	1
Left	12	0	6	1
Exiting (eastbound)	170	0	195	

Northbound Approach

	Exiting (southbound)	Left	Through	Right
AM	846	30	503	4
NOON	0	0	0	0
PM	722	39	622	12
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

	In	Out
AM	967	678
NOON	0	0
PM	812	880

West Leg

	AM	NOON	PM
Out	254	0	223
In	302	0	399

East Leg

	AM	NOON	PM
In	142	0	136
Out	170	0	195

South Leg

	Out	In
AM	846	537
NOON	0	0
PM	722	673

Total Volume Per Leg

	North Leg	South Leg
AM	1645	1383
NOON	0	0
PM	1692	1395

	AM	NOON	PM
West Leg	556	0	622
East Leg	312	0	331

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
7:00 AM	6	79	0	2	176	26	19	23	5	3	10	1	350
7:15 AM	10	87	1	3	197	28	22	31	5	4	15	2	405
7:30 AM	7	96	0	11	221	40	35	45	12	2	18	9	496
7:45 AM	9	151	1	16	213	44	46	43	12	3	31	12	581
8:00 AM	7	127	0	8	197	26	32	24	3	4	23	8	459
8:15 AM	7	129	3	6	161	24	22	13	15	3	18	11	412
8:30 AM	5	107	1	6	164	25	19	12	8	1	12	6	366
8:45 AM	7	97	2	6	145	27	19	22	9	4	15	10	363
9:00 AM	10	85	1	5	114	19	22	17	9	1	8	9	300
9:15 AM	8	78	0	5	148	14	20	17	5	3	14	9	321
9:30 AM	5	87	0	4	150	19	28	17	12	0	10	9	341
9:45 AM	10	83	1	7	127	17	21	20	11	6	13	10	326

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	91	1206	10	79	2013	309	305	284	106	34	187	96	4720
APPROACH %'s :	6.96%	92.27%	0.77%	3.29%	83.84%	12.87%	43.88%	40.86%	15.25%	10.73%	58.99%	30.28%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	30	503	4	41	792	134	135	125	42	12	90	40	1948
PEAK HR FACTOR :		0.834			0.886			0.748			0.772		0.838

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
3:00 PM	9	116	1	7	116	18	27	20	14	3	13	15	359
3:15 PM	17	120	2	7	135	29	46	27	17	3	19	11	433
3:30 PM	12	141	1	8	160	38	43	27	10	2	16	13	471
3:45 PM	8	117	3	11	134	19	58	28	19	3	19	15	434
4:00 PM	14	152	2	2	150	16	32	24	10	0	9	17	428
4:15 PM	9	182	4	4	118	30	37	29	11	2	12	13	451
4:30 PM	11	159	2	6	173	34	57	36	15	3	18	7	521
4:45 PM	13	148	2	5	155	22	45	34	13	1	16	22	476
5:00 PM	4	145	4	11	185	33	46	33	16	1	16	18	512
5:15 PM	11	170	4	8	151	29	46	50	8	1	16	17	511
5:30 PM	8	167	4	7	133	24	42	45	15	1	16	17	479
5:45 PM	5	151	3	8	140	18	37	40	10	4	10	15	441

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	121	1768	32	84	1750	310	516	393	158	24	180	180	5516
APPROACH %'s :	6.30%	92.04%	1.67%	3.92%	81.62%	14.46%	48.36%	36.83%	14.81%	6.25%	46.88%	46.88%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	39	622	12	30	664	118	194	153	52	6	66	64	2020
PEAK HR FACTOR :		0.909			0.886			0.924			0.872		0.969

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
7:00 AM	5	73	0	2	157	20	18	21	5	2	10	1	314
7:15 AM	9	80	1	3	178	23	19	27	4	4	15	2	365
7:30 AM	7	88	0	11	203	38	33	45	10	2	18	8	463
7:45 AM	8	138	1	13	198	40	44	42	10	3	29	9	535
8:00 AM	5	104	0	7	184	23	32	24	2	3	22	6	412
8:15 AM	7	120	3	6	145	19	19	11	14	3	15	11	373
8:30 AM	5	95	1	6	137	19	15	9	8	1	11	6	313
8:45 AM	6	87	2	5	124	23	17	21	7	3	12	9	316
9:00 AM	9	65	1	3	95	15	17	14	9	0	8	9	245
9:15 AM	8	56	0	5	117	12	17	15	5	3	13	8	259
9:30 AM	3	75	0	4	108	11	23	16	11	0	8	6	265
9:45 AM	10	67	1	6	109	16	20	18	11	6	12	9	285

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	82	1048	10	71	1755	259	274	263	96	30	173	84	4145
APPROACH %'s :	7.19%	91.93%	0.88%	3.41%	84.17%	12.42%	43.29%	41.55%	15.17%	10.45%	60.28%	29.27%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	27	450	4	37	730	120	128	122	36	11	84	34	1783
PEAK HR FACTOR :		0.818			0.880			0.745			0.787		0.833

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
3:00 PM	8	100	1	7	102	14	22	18	13	3	13	15	316
3:15 PM	16	104	2	7	121	27	33	27	15	3	18	10	383
3:30 PM	11	133	1	8	150	31	39	27	10	2	14	12	438
3:45 PM	8	108	3	11	126	17	48	26	18	3	17	14	399
4:00 PM	13	139	2	2	137	14	24	24	10	0	8	16	389
4:15 PM	9	166	4	4	111	25	30	28	9	2	11	13	412
4:30 PM	11	141	2	5	161	33	51	35	15	3	18	7	482
4:45 PM	13	134	2	4	145	20	36	34	12	0	16	18	434
5:00 PM	4	128	4	11	177	29	41	32	15	1	15	17	474
5:15 PM	11	153	4	8	146	28	39	50	7	1	15	16	478
5:30 PM	8	156	4	7	124	24	36	44	15	1	16	17	452
5:45 PM	4	138	3	8	134	17	29	39	10	4	9	13	408

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	116	1600	32	82	1634	279	428	384	149	23	170	168	5065
APPROACH %'s :	6.64%	91.53%	1.83%	4.11%	81.90%	13.98%	44.54%	39.96%	15.50%	6.37%	47.09%	46.54%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	39	556	12	28	629	110	167	151	49	5	64	58	1868
PEAK HR FACTOR :		0.903			0.884			0.908			0.934		0.969

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-011
N/S Street: Glenoaks Blvd
E/W Street: Penrose St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	1	0	0	0	0	0
7:15 AM	0	0	1	1	0	0	0	2
7:30 AM	0	1	0	1	2	0	0	0
7:45 AM	0	0	1	0	3	1	2	0
8:00 AM	0	2	0	0	1	0	0	0
8:15 AM	2	2	1	1	2	1	2	1
8:30 AM	1	1	0	0	1	1	1	0
8:45 AM	0	0	0	0	0	0	0	1
9:00 AM	0	2	0	1	4	2	0	0
9:15 AM	0	0	0	0	1	0	0	0
9:30 AM	0	1	0	0	0	0	1	0
9:45 AM	0	0	1	0	0	0	1	0
TOTALS	**3**	**9**	**5**	**4**	**14**	**5**	**7**	**4**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	1	1	1	1	2	0	0	1
3:15 PM	0	0	0	0	0	0	0	2
3:30 PM	2	0	0	4	0	4	0	0
3:45 PM	0	0	0	0	0	0	0	2
4:00 PM	1	1	5	0	1	0	0	2
4:15 PM	0	0	2	0	0	0	0	0
4:30 PM	0	0	0	1	0	0	1	0
4:45 PM	2	2	0	1	1	1	2	2
5:00 PM	0	1	1	0	1	0	3	1
5:15 PM	0	2	0	0	0	1	1	2
5:30 PM	1	0	0	0	0	0	0	0
5:45 PM	1	1	2	0	0	1	1	1
TOTALS	**8**	**8**	**11**	**7**	**5**	**7**	**8**	**13**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
7:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
7:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	2	0	0	0	0	0	0	0	0	0	1	3
9:30 AM	0	1	0	0	0	1	0	0	0	0	0	0	2
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	0	0	2	1	0	0	1	0	0	1	9
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	66.67%	33.33%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	0	0	0	0	0	0	0	1	0	0	0	1
PEAK HR FACTOR :	0.000			0.000			0.250			0.000			0.250

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
3:00 PM	0	1	0	0	0	1	0	0	0	0	0	0	2
3:15 PM	0	0	0	0	2	0	0	0	1	0	0	0	3
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
4:00 PM	1	0	0	1	0	0	0	0	0	0	0	0	2
4:15 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
4:30 PM	1	4	0	0	2	0	0	0	0	0	0	0	7
4:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:00 PM	0	0	0	0	3	0	0	0	0	0	0	0	3
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:30 PM	0	3	0	0	1	0	0	0	1	0	0	0	5
5:45 PM	2	0	0	0	1	0	0	0	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	10	0	1	11	1	0	0	2	0	1	0	30
APPROACH %'s :	28.57%	71.43%	0.00%	7.69%	84.62%	7.69%	0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	1	5	0	0	6	0	0	0	0	0	0	0	12
PEAK HR FACTOR :	0.300			0.500			0.000			0.000			0.429

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
7:00 AM	0	2	0	0	3	0	0	1	0	0	0	0	6
7:15 AM	0	4	0	0	5	0	0	2	1	0	0	0	12
7:30 AM	0	2	0	0	2	0	0	0	0	0	0	0	4
7:45 AM	0	2	0	0	3	0	0	0	0	0	1	0	6
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	2	0	0	2	0	0	0	0	0	2	0	6
8:30 AM	0	4	0	0	1	0	0	0	0	0	0	0	5
8:45 AM	0	1	0	0	3	0	0	0	0	0	0	0	4
9:00 AM	0	3	0	0	1	0	0	1	0	0	0	0	5
9:15 AM	0	3	0	0	1	0	0	1	0	0	0	0	5
9:30 AM	1	2	0	0	2	0	0	0	0	0	1	0	6
9:45 AM	0	5	0	0	0	0	0	0	0	0	0	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	31	0	0	23	0	0	5	1	0	4	0	65
APPROACH %'s :	3.13%	96.88%	0.00%	0.00%	100.00%	0.00%	0.00%	83.33%	16.67%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	0	7	0	0	7	0	0	0	0	0	3	0	17
PEAK HR FACTOR :	0.875			0.583			0.000			0.375			0.708

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
3:00 PM	0	3	0	0	5	0	1	0	0	0	0	0	9
3:15 PM	0	2	0	0	8	0	0	0	0	0	1	0	11
3:30 PM	0	1	0	0	2	0	0	0	0	0	1	0	4
3:45 PM	0	1	0	0	1	0	0	1	0	0	1	1	5
4:00 PM	0	4	0	0	4	0	0	0	0	0	0	0	8
4:15 PM	0	2	0	0	3	1	0	0	0	0	0	0	6
4:30 PM	0	5	0	0	2	0	0	0	0	0	0	0	7
4:45 PM	0	4	0	0	4	0	0	0	0	0	0	0	8
5:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	4
5:15 PM	0	3	0	0	2	0	0	0	0	0	0	0	5
5:30 PM	0	2	0	0	2	0	0	0	0	0	0	0	4
5:45 PM	0	3	0	0	4	0	0	0	0	0	0	0	7

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	32	0	0	39	1	1	1	0	0	3	1	78
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	97.50%	2.50%	50.00%	50.00%	0.00%	0.00%	75.00%	25.00%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	14	0	0	10	0	0	0	0	0	0	0	24
PEAK HR FACTOR :	0.700			0.625			0.000			0.000			0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
7:00 AM	1	4	0	0	16	6	1	1	0	1	0	0	30
7:15 AM	1	3	0	0	14	5	3	2	0	0	0	0	28
7:30 AM	0	6	0	0	16	2	2	0	2	0	0	1	29
7:45 AM	1	11	0	3	12	4	2	1	2	0	1	3	40
8:00 AM	2	22	0	1	13	3	0	0	1	1	1	2	46
8:15 AM	0	7	0	0	14	5	3	2	1	0	1	0	33
8:30 AM	0	8	0	0	26	6	4	3	0	0	1	0	48
8:45 AM	1	9	0	1	18	4	2	1	2	1	3	1	43
9:00 AM	1	17	0	2	18	4	5	2	0	1	0	0	50
9:15 AM	0	19	0	0	30	2	3	1	0	0	1	1	57
9:30 AM	1	10	0	0	40	8	5	1	1	0	1	3	70
9:45 AM	0	11	0	1	18	1	1	2	0	0	1	1	36

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	127	0	8	235	50	31	16	9	4	10	12	510
APPROACH %'s :	5.93%	94.07%	0.00%	2.73%	80.20%	17.06%	55.36%	28.57%	16.07%	15.38%	38.46%	46.15%	

PEAK HR START TIME :	730 AM												TOTAL
PEAK HR VOL :	3	46	0	4	55	14	7	3	6	1	3	6	148
PEAK HR FACTOR :	0.510			0.961			0.667			0.625			0.804

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-011 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Glenoaks Blvd			Glenoaks Blvd			Penrose St			Penrose St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	3	0	0	2	0	1	1	1	
3:00 PM	1	13	0	0	9	4	4	2	1	0	0	0	34
3:15 PM	1	14	0	0	6	2	13	0	2	0	0	1	39
3:30 PM	1	7	0	0	8	7	4	0	0	0	1	1	29
3:45 PM	0	8	0	0	7	2	10	1	1	0	1	0	30
4:00 PM	1	9	0	0	9	2	8	0	0	0	1	1	31
4:15 PM	0	14	0	0	4	4	7	1	2	0	1	0	33
4:30 PM	0	13	0	1	10	1	6	1	0	0	0	0	32
4:45 PM	0	10	0	1	6	2	9	0	1	1	0	4	34
5:00 PM	0	15	0	0	6	4	5	1	1	0	1	1	34
5:15 PM	0	14	0	0	3	1	7	0	1	0	1	1	28
5:30 PM	0	9	0	0	7	0	6	1	0	0	0	0	23
5:45 PM	1	10	0	0	2	1	8	1	0	0	1	2	26

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	136	0	2	77	30	87	8	9	1	7	11	373
APPROACH %'s :	3.55%	96.45%	0.00%	1.83%	70.64%	27.52%	83.65%	7.69%	8.65%	5.26%	36.84%	57.89%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	52	0	2	25	8	27	2	3	1	2	6	128
PEAK HR FACTOR :		0.867			0.729			0.800			0.450		0.941

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Arleta Ave

East/West Devonshire St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	0	32	42	40
BIKES	0	6	4	2
BUSES	0	19	72	43

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	0	0.00	199	7.30	292	7.15	230	7.30
PM PK 15 MIN	0	0.00	154	15.45	277	17.30	226	17.30
AM PK HOUR	0	0.00	755	7.15	1101	7.15	802	7.15
PM PK HOUR	0	0.00	555	16.30	1035	17.00	849	17.00

NORTHBOUND Approach					**SOUTHBOUND Approach**					**TOTAL**	**XING S/L**		**XING N/L**	
Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	0	0	0	0	*7-8*	390	0	352	742	742	0	0	7	0
8-9	0	0	0	0	*8-9*	227	0	264	491	491	1	0	15	1
9-10	0	0	0	0	*9-10*	96	0	151	247	247	2	0	8	0
15-16	0	0	0	0	*15-16*	156	0	334	490	490	2	0	1	0
16-17	0	0	0	0	*16-17*	183	0	337	520	520	1	0	7	0
17-18	0	0	0	0	*17-18*	178	0	357	535	535	0	0	7	0
TOTAL	0	0	0	0	TOTAL	1230	0	1795	3025	3025	6	0	45	1

EASTBOUND Approach					**WESTBOUND Approach**					**TOTAL**	**XING W/L**		**XING E/L**	
Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	287	775	0	1062	*7-8*	0	526	242	768	1830	0	0	0	0
8-9	221	592	0	813	*8-9*	0	303	163	466	1279	8	1	0	0
9-10	151	242	0	393	*9-10*	0	183	94	277	670	3	0	0	0
15-16	338	424	0	762	*15-16*	0	328	269	597	1359	0	0	0	0
16-17	414	420	0	834	*16-17*	0	398	339	737	1571	3	0	0	0
17-18	524	511	0	1035	*17-18*	0	501	348	849	1884	2	0	0	0
TOTAL	1935	2964	0	4899	TOTAL	0	2239	1455	3694	8593	16	1	0	0

ITM Peak Hour Summary

Prepared by:

NDS

Arleta Ave and Devonshire St , San Fernando Valley

Date:	5/27/2015
Day:	Wednesday
Project #:	15-5336-012
City:	San Fernando Valley

N

Total Peak Hour Summary

CONTROL: Signalized

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Southbound Approach (Arleta Ave)

	Right	Thru	Left	Departing
Lanes	1.5	0	1.5	
AM	337	0	418	567
NOON	0	0	0	0
PM	357	0	178	872

Eastbound Approach (Devonshire St)

	Lanes	AM	NOON	PM
Departing		868	0	858
Left	1	296	0	524
Thru	2	805	0	511
Right	0	0	0	0

Westbound Approach

	AM	NOON	PM	Lanes
Right	271	0	348	1
Thru	531	0	501	2
Left	0	0	0	0
Departing	1223	0	689	

Northbound Approach

	Departing	Left	Thru	Right
AM	0	0	0	0
NOON	0	0	0	0
PM	0	0	0	0
Lanes		0	0	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

Leg	Period	In	Out
North Leg	AM	755	567
North Leg	NOON	0	0
North Leg	PM	535	872
East Leg	AM	802	1223
East Leg	NOON	0	0
East Leg	PM	849	689
West Leg	AM	1101	868
West Leg	NOON	0	0
West Leg	PM	1035	858
South Leg	AM	0	0
South Leg	NOON	0	0
South Leg	PM	0	0

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1322	0	1407
East Leg	2025	0	1538
West Leg	1969	0	1893
South Leg	0	0	0

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	75	0	95	61	155	0	0	92	32	510
7:15 AM	0	0	0	107	0	81	75	217	0	0	155	57	692
7:30 AM	0	0	0	112	0	87	82	199	0	0	146	84	710
7:45 AM	0	0	0	96	0	89	69	204	0	0	133	69	660
8:00 AM	0	0	0	103	0	80	70	185	0	0	97	61	596
8:15 AM	0	0	0	53	0	76	58	160	0	0	63	37	447
8:30 AM	0	0	0	41	0	57	44	143	0	0	79	32	396
8:45 AM	0	0	0	30	0	51	49	104	0	0	64	33	331
9:00 AM	0	0	0	19	0	39	29	70	0	0	54	27	238
9:15 AM	0	0	0	24	0	36	45	68	0	0	50	28	251
9:30 AM	0	0	0	24	0	37	34	49	0	0	31	22	197
9:45 AM	0	0	0	29	0	39	43	55	0	0	48	17	231

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	713	0	767	659	1609	0	0	1012	499	5259
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	48.18%	0.00%	51.82%	29.06%	70.94%	0.00%	0.00%	66.98%	33.02%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	418	0	337	296	805	0	0	531	271	2658
PEAK HR FACTOR :		0.000			0.948			0.943			0.872		0.936

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
3:00 PM	0	0	0	28	0	71	64	81	0	0	76	53	373
3:15 PM	0	0	0	32	0	82	95	126	0	0	92	72	499
3:30 PM	0	0	0	43	0	80	86	109	0	0	76	64	458
3:45 PM	0	0	0	53	0	101	93	108	0	0	84	80	519
4:00 PM	0	0	0	30	0	95	89	120	0	0	101	77	512
4:15 PM	0	0	0	38	0	83	98	94	0	0	99	85	497
4:30 PM	0	0	0	59	0	90	118	106	0	0	93	92	558
4:45 PM	0	0	0	56	0	69	109	100	0	0	105	85	524
5:00 PM	0	0	0	51	0	94	122	125	0	0	122	87	601
5:15 PM	0	0	0	41	0	95	133	117	0	0	132	79	597
5:30 PM	0	0	0	49	0	71	138	139	0	0	124	102	623
5:45 PM	0	0	0	37	0	97	131	130	0	0	123	80	598

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	517	0	1028	1276	1355	0	0	1227	956	6359
APPROACH %'s :	#DIV/0!	#DIV/0!	#DIV/0!	33.46%	0.00%	66.54%	48.50%	51.50%	0.00%	0.00%	56.21%	43.79%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	178	0	357	524	511	0	0	501	348	2419
PEAK HR FACTOR :		0.000			0.922			0.934			0.939		0.971

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	74	0	89	61	149	0	0	86	31	490
7:15 AM	0	0	0	106	0	80	74	217	0	0	150	55	682
7:30 AM	0	0	0	110	0	85	80	197	0	0	142	84	698
7:45 AM	0	0	0	96	0	88	67	201	0	0	129	67	648
8:00 AM	0	0	0	102	0	80	69	183	0	0	93	60	587
8:15 AM	0	0	0	53	0	76	53	156	0	0	62	36	436
8:30 AM	0	0	0	38	0	56	43	138	0	0	76	30	381
8:45 AM	0	0	0	30	0	50	44	102	0	0	63	31	320
9:00 AM	0	0	0	19	0	39	25	70	0	0	52	24	229
9:15 AM	0	0	0	24	0	32	42	67	0	0	49	28	242
9:30 AM	0	0	0	24	0	37	34	46	0	0	31	22	194
9:45 AM	0	0	0	28	0	39	41	53	0	0	47	15	223

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	704	0	751	633	1579	0	0	980	483	5130
APPROACH %'s :				48.38%	0.00%	51.62%	28.62%	71.38%	0.00%	0.00%	66.99%	33.01%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	414	0	333	290	798	0	0	514	266	2615
PEAK HR FACTOR :		0.000			0.958			0.935			0.863		0.937

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
3:00 PM	0	0	0	27	0	70	64	78	0	0	74	51	364
3:15 PM	0	0	0	32	0	80	92	122	0	0	89	69	484
3:30 PM	0	0	0	41	0	80	84	104	0	0	76	63	448
3:45 PM	0	0	0	50	0	100	89	105	0	0	82	78	504
4:00 PM	0	0	0	29	0	93	88	115	0	0	99	75	499
4:15 PM	0	0	0	38	0	83	94	91	0	0	98	84	488
4:30 PM	0	0	0	59	0	89	116	104	0	0	93	90	551
4:45 PM	0	0	0	55	0	64	103	100	0	0	104	83	509
5:00 PM	0	0	0	50	0	94	120	123	0	0	120	87	594
5:15 PM	0	0	0	41	0	95	131	117	0	0	132	78	594
5:30 PM	0	0	0	47	0	69	137	138	0	0	121	102	614
5:45 PM	0	0	0	37	0	96	129	129	0	0	120	80	591

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	506	0	1013	1247	1326	0	0	1208	940	6240
APPROACH %'s :				33.31%	0.00%	66.69%	48.46%	51.54%	0.00%	0.00%	56.24%	43.76%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	175	0	354	517	507	0	0	493	347	2393
PEAK HR FACTOR :		0.000			0.918			0.931			0.942		0.974

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-012
N/S Street: Arleta Ave
E/W Street: Devonshire St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	2	2	0	0	0	0	0	0
7:15 AM	1	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	1	1	0	0	0	0	0	0
8:00 AM	4	3	0	0	0	0	0	1
8:15 AM	0	1	0	0	0	0	1	2
8:30 AM	0	3	1	0	0	0	2	0
8:45 AM	2	2	0	0	0	0	1	1
9:00 AM	2	1	0	0	0	0	0	0
9:15 AM	1	2	1	1	0	0	1	2
9:30 AM	0	2	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**13**	**17**	**2**	**1**	**0**	**0**	**5**	**6**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	1	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**1**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	2	0	0	0	0
3:15 PM	0	1	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	1	0
4:15 PM	0	3	1	0	0	0	0	0
4:30 PM	3	1	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	2	2	0	0	0	0	1	0
5:15 PM	1	0	0	0	0	0	0	1
5:30 PM	1	1	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**7**	**8**	**1**	**2**	**0**	**0**	**2**	**3**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:15 AM	0	0	0	1	0	0	0	0	0	0	0	0	1
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	0	0	0	0	2	0	0	0	0	0	0	2
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	1	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	1	0	3	0	1	0	0	0	0	5
APPROACH %'s :				25.00%	0.00%	75.00%	0.00%	100.00%	0.00%				

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	1	0	2	0	0	0	0	0	0	3
PEAK HR FACTOR :		0.000			0.375			0.000			0.000		0.375

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
5:00 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	0	0	2	0	3	0	0	2	0	7
APPROACH %'s :				0.00%	0.00%	100.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	0	2	0	0	0	0	1	0	3
PEAK HR FACTOR :	0.000			0.500			0.000			0.250			0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	1	0	3	0	3	0	0	6	1	14
7:15 AM	0	0	0	0	0	0	0	0	0	0	3	1	4
7:30 AM	0	0	0	2	0	1	0	1	0	0	2	0	6
7:45 AM	0	0	0	0	0	0	2	1	0	0	2	0	5
8:00 AM	0	0	0	1	0	0	0	1	0	0	2	1	5
8:15 AM	0	0	0	0	0	0	4	3	0	0	1	1	9
8:30 AM	0	0	0	2	0	0	1	3	0	0	0	1	7
8:45 AM	0	0	0	0	0	0	5	1	0	0	0	1	7
9:00 AM	0	0	0	0	0	0	4	0	0	0	2	3	9
9:15 AM	0	0	0	0	0	1	3	1	0	0	0	0	5
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	0	0	1	2	0	0	1	1	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	6	0	5	20	16	0	0	19	10	76
APPROACH %'s :				54.55%	0.00%	45.45%	55.56%	44.44%	0.00%	0.00%	65.52%	34.48%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	3	0	1	2	3	0	0	9	2	20
PEAK HR FACTOR :		0.000			0.333			0.417			0.688		0.833

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
3:00 PM	0	0	0	0	0	0	0	2	0	0	2	2	6
3:15 PM	0	0	0	0	0	1	2	4	0	0	1	2	10
3:30 PM	0	0	0	1	0	0	2	4	0	0	0	0	7
3:45 PM	0	0	0	2	0	0	2	2	0	0	0	1	7
4:00 PM	0	0	0	0	0	1	1	1	0	0	2	0	5
4:15 PM	0	0	0	0	0	0	3	2	0	0	1	0	6
4:30 PM	0	0	0	0	0	0	1	2	0	0	0	1	4
4:45 PM	0	0	0	1	0	1	4	0	0	0	1	0	7
5:00 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:15 PM	0	0	0	0	0	0	2	0	0	0	0	0	2
5:30 PM	0	0	0	1	0	0	0	1	0	0	1	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	5	0	3	18	18	0	0	8	6	58
APPROACH %'s :				62.50%	0.00%	37.50%	50.00%	50.00%	0.00%	0.00%	57.14%	42.86%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	1	0	0	3	1	0	0	1	0	6
PEAK HR FACTOR :	0.000			0.250			0.500			0.250			0.500

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 | **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
7:00 AM	0	0	0	0	0	3	0	3	0	0	0	0	6
7:15 AM	0	0	0	1	0	1	1	0	0	0	2	1	6
7:30 AM	0	0	0	0	0	1	2	1	0	0	2	0	6
7:45 AM	0	0	0	0	0	1	0	2	0	0	2	2	7
8:00 AM	0	0	0	0	0	0	1	1	0	0	2	0	4
8:15 AM	0	0	0	0	0	0	1	1	0	0	0	0	2
8:30 AM	0	0	0	1	0	1	0	2	0	0	3	1	8
8:45 AM	0	0	0	0	0	1	0	1	0	0	1	1	4
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	3	0	0	0	0	1	0	4
9:30 AM	0	0	0	0	0	0	0	3	0	0	0	0	3
9:45 AM	0	0	0	1	0	0	1	0	0	0	0	1	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	3	0	11	6	14	0	0	13	6	53
APPROACH %'s :				21.43%	0.00%	78.57%	30.00%	70.00%	0.00%	0.00%	68.42%	31.58%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	1	0	3	4	4	0	0	8	3	23
PEAK HR FACTOR :	0.000			0.500			0.667			0.688			0.821

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-012 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Devonshire St			Devonshire St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	0	0	0	1.5	0	1.5	1	2	0	0	2	1	
3:00 PM	0	0	0	1	0	1	0	1	0	0	0	0	3
3:15 PM	0	0	0	0	0	1	1	0	0	0	2	1	5
3:30 PM	0	0	0	1	0	0	0	1	0	0	0	1	3
3:45 PM	0	0	0	1	0	1	2	1	0	0	2	1	8
4:00 PM	0	0	0	1	0	1	0	4	0	0	0	2	8
4:15 PM	0	0	0	0	0	0	1	1	0	0	0	1	3
4:30 PM	0	0	0	0	0	1	1	0	0	0	0	1	3
4:45 PM	0	0	0	0	0	4	2	0	0	0	0	2	8
5:00 PM	0	0	0	1	0	0	1	2	0	0	2	0	6
5:15 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
5:30 PM	0	0	0	1	0	2	1	0	0	0	2	0	6
5:45 PM	0	0	0	0	0	1	2	1	0	0	3	0	7

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	6	0	12	11	11	0	0	11	10	61
APPROACH %'s :				33.33%	0.00%	66.67%	50.00%	50.00%	0.00%	0.00%	52.38%	47.62%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	2	0	3	4	3	0	0	7	1	20
PEAK HR FACTOR :		0.000			0.417			0.583			0.667		0.714

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Arleta Ave

East/West Branford St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	63	40	67	137
BIKES	12	7	13	13
BUSES	20	46	32	17

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	221	7.30	350	7.15	300	7.30	279	7.45
PM PK 15 MIN	356	17.15	175	17.00	220	17.30	282	17.45
AM PK HOUR	761	7.15	1259	7.00	1001	7.00	911	7.00
PM PK HOUR	1350	17.00	605	17.00	798	17.00	1094	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	111	492	80	683
8-9	64	286	50	400
9-10	67	187	50	304
15-16	149	591	87	827
16-17	159	807	96	1062
17-18	209	1035	106	1350
TOTAL	759	3398	469	4626

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	116	1016	127	1259
8-9	98	614	115	827
9-10	38	256	67	361
15-16	74	372	91	537
16-17	51	380	89	520
17-18	78	421	106	605
TOTAL	455	3059	595	4109

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	1942	6	3	3	0
8-9	1227	11	1	5	0
9-10	665	41	24	13	0
15-16	1364	12	1	4	0
16-17	1582	4	0	1	0
17-18	1955	11	0	9	0
TOTAL	8735	85	29	35	0

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	125	491	385	1001
8-9	83	369	185	637
9-10	73	262	94	429
15-16	94	386	155	635
16-17	131	445	114	690
17-18	165	484	149	798
TOTAL	671	2437	1082	4190

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	190	613	108	911
8-9	126	408	51	585
9-10	80	321	37	438
15-16	116	540	98	754
16-17	105	706	190	1001
17-18	136	741	217	1094
TOTAL	753	3329	701	4783

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	1912	7	1	9	1
8-9	1222	8	0	7	2
9-10	867	15	0	5	1
15-16	1389	8	0	14	0
16-17	1691	2	0	7	0
17-18	1892	6	0	6	0
TOTAL	8973	46	1	48	4

ITM Peak Hour Summary

Prepared by:

NDS

Arleta Ave and Branford St , San Fernando Valley

Date: 5/27/2015

Day: Wednesday

Project #: 15-5336-016

City: San Fernando Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

N

Arleta Ave

Branford St

Total Peak Hour Summary

CONTROL: Signalized

Southbound Approach

	Right	Through	Left	Out
Lanes	0	2	1	
AM	141	982	122	777
NOON	0	0	0	0
PM	106	421	78	1417

Eastbound Approach

	Lanes	AM	NOON	PM
Out		879	0	1056
Left	1	134	0	165
Through	2	485	0	484
Right	0	376	0	149

Westbound Approach

	AM	NOON	PM	Lanes
Right	100	0	217	0
Through	615	0	741	2
Left	165	0	136	1
Out	702	0	668	

Northbound Approach

	Out	Left	Through	Right
AM	1523	123	543	95
NOON	0	0	0	0
PM	706	209	1035	106
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg		
AM	1245	777
NOON	0	0
PM	605	1417

West Leg	AM	NOON	PM
	879	0	1056
	995	0	798

East Leg	AM	NOON	PM
	880	0	1094
	702	0	668

South Leg		
AM	1523	761
NOON	0	0
PM	706	1350

Total Volume Per Leg

North Leg	
AM	2022
NOON	0
PM	2022

	AM	NOON	PM
West Leg	1874	0	1854
East Leg	1582	0	1762

South Leg	
AM	2284
NOON	0
PM	2056

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	17	61	12	30	228	27	21	111	68	55	114	21	765
7:15 AM	26	110	24	28	298	24	38	101	95	46	127	26	943
7:30 AM	35	158	28	25	241	40	37	148	115	49	166	28	1070
7:45 AM	33	163	16	33	249	36	29	131	107	40	206	33	1076
8:00 AM	29	112	27	36	194	41	30	105	59	30	116	13	792
8:15 AM	16	63	9	26	168	26	12	94	46	42	121	9	632
8:30 AM	11	51	10	24	137	28	28	76	38	31	95	13	542
8:45 AM	8	60	4	12	115	20	13	94	42	23	76	16	483
9:00 AM	17	48	4	9	83	25	14	67	29	16	97	6	415
9:15 AM	14	51	16	13	66	15	19	65	17	17	72	11	376
9:30 AM	15	47	13	11	55	15	14	73	30	26	78	11	388
9:45 AM	21	41	17	5	52	12	26	57	18	21	74	9	353

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	242	965	180	252	1886	309	281	1122	664	396	1342	196	7835
APPROACH %'s :	17.45%	69.57%	12.98%	10.30%	77.07%	12.63%	13.59%	54.28%	32.12%	20.48%	69.39%	10.13%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	123	543	95	122	982	141	134	485	376	165	615	100	3881
PEAK HR FACTOR :		0.861			0.889			0.829			0.789		0.902

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	40	144	24	11	82	14	26	96	58	28	115	17	655
3:15 PM	44	144	21	16	98	24	19	86	27	28	114	22	643
3:30 PM	33	131	21	24	97	27	26	109	32	27	144	20	691
3:45 PM	32	172	21	23	95	26	23	95	38	33	167	39	764
4:00 PM	40	184	27	13	101	29	29	100	23	25	163	41	775
4:15 PM	38	195	17	10	98	23	33	106	30	30	163	32	775
4:30 PM	43	208	28	16	93	16	31	121	27	27	183	66	859
4:45 PM	38	220	24	12	88	21	38	118	34	23	197	51	864
5:00 PM	46	225	27	24	114	37	33	111	29	28	183	52	909
5:15 PM	50	277	29	18	106	24	41	119	38	42	185	50	979
5:30 PM	55	267	30	17	112	15	46	129	45	30	187	55	988
5:45 PM	58	266	20	19	89	30	45	125	37	36	186	60	971

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	517	2433	289	203	1173	286	390	1315	418	357	1987	505	9873
APPROACH %'s :	15.96%	75.12%	8.92%	12.21%	70.58%	17.21%	18.37%	61.94%	19.69%	12.53%	69.74%	17.73%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	209	1035	106	78	421	106	165	484	149	136	741	217	3847
PEAK HR FACTOR :		0.948			0.864			0.907			0.970		0.973

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	17	59	12	30	226	25	21	109	67	55	114	21	756
7:15 AM	24	105	24	27	292	23	37	101	95	46	122	24	920
7:30 AM	35	153	28	25	236	40	36	147	113	48	164	27	1052
7:45 AM	33	162	15	33	247	35	29	127	105	37	201	33	1057
8:00 AM	29	112	27	35	190	41	29	102	59	29	116	13	782
8:15 AM	16	60	8	25	165	26	12	92	44	28	114	8	598
8:30 AM	10	49	10	23	133	27	28	73	37	21	88	12	511
8:45 AM	8	59	3	12	110	20	12	87	42	20	68	13	454
9:00 AM	15	47	4	9	81	25	14	66	29	13	90	5	398
9:15 AM	13	51	15	13	66	14	19	62	16	15	67	11	362
9:30 AM	15	47	11	10	53	14	14	73	30	22	75	10	374
9:45 AM	21	41	17	5	52	12	25	54	17	20	71	8	343
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	236	945	174	247	1851	302	276	1093	654	354	1290	185	7607
APPROACH %'s :	17.42%	69.74%	12.84%	10.29%	77.13%	12.58%	13.64%	54.03%	32.33%	19.35%	70.53%	10.11%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	121	532	94	120	965	139	131	477	372	160	603	97	3811
PEAK HR FACTOR :		0.865			0.895			0.828			0.793		0.901

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 | **Day:** Wednesday

CARS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	40	142	24	10	80	13	24	91	58	27	113	16	638
3:15 PM	43	141	21	14	95	23	19	86	26	25	108	20	621
3:30 PM	32	129	17	24	92	27	26	105	32	25	140	20	669
3:45 PM	32	170	19	22	92	25	20	93	38	33	165	39	748
4:00 PM	40	181	26	12	97	28	27	94	23	24	162	41	755
4:15 PM	38	194	13	10	94	23	33	103	30	30	159	32	759
4:30 PM	43	206	26	16	90	16	30	117	27	26	183	65	845
4:45 PM	38	217	22	12	88	20	37	117	34	22	196	49	852
5:00 PM	45	223	23	24	112	36	33	108	29	28	180	52	893
5:15 PM	50	276	29	18	106	24	39	116	37	42	180	49	966
5:30 PM	55	264	29	17	111	14	46	122	45	30	186	55	974
5:45 PM	56	264	20	19	89	30	45	121	37	35	185	58	959

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	512	2407	269	198	1146	279	379	1273	416	347	1957	496	9679
APPROACH %'s :	16.06%	75.50%	8.44%	12.20%	70.61%	17.19%	18.33%	61.56%	20.12%	12.39%	69.89%	17.71%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	206	1027	101	78	418	104	163	467	148	135	731	214	3792
PEAK HR FACTOR :		0.939			0.872			0.913			0.971		0.973

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-016
N/S Street: Arleta Ave
E/W Street: Branford St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	1	0	2	3	0	1
7:15 AM	0	1	0	1	0	2	0	1
7:30 AM	0	0	1	0	0	0	0	3
7:45 AM	0	0	3	0	1	1	1	1
8:00 AM	0	0	1	0	0	0	1	1
8:15 AM	0	0	3	1	3	4	0	1
8:30 AM	3	1	5	0	0	0	2	0
8:45 AM	0	1	1	0	0	0	0	3
9:00 AM	0	1	37	0	0	0	2	1
9:15 AM	1	9	0	1	0	2	1	7
9:30 AM	0	0	2	0	1	1	0	2
9:45 AM	0	2	0	1	0	1	0	2
TOTALS	**4**	**17**	**54**	**4**	**7**	**14**	**7**	**23**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	1	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	3	0	0	0	1
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	2	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	1	0	0	0	0	0
9:00 AM	0	0	24	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	1	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**25**	**3**	**1**	**3**	**0**	**1**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	1	1	0	0	3	0	1
3:15 PM	1	0	2	3	0	4	1	1
3:30 PM	0	0	2	1	1	2	0	1
3:45 PM	1	1	2	1	2	2	3	1
4:00 PM	0	0	1	0	1	1	0	0
4:15 PM	0	0	0	0	1	1	0	1
4:30 PM	0	0	0	0	1	0	1	0
4:45 PM	1	0	3	0	1	1	0	0
5:00 PM	1	2	2	0	0	0	0	2
5:15 PM	0	0	3	2	1	0	1	1
5:30 PM	2	1	0	3	0	3	2	0
5:45 PM	2	1	0	1	1	1	0	0
TOTALS	**8**	**6**	**16**	**11**	**9**	**18**	**8**	**8**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	1	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**1**	**0**	**0**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:15 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	1	0	0	0	0	0	1	0	0	2	0	4
8:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	2	0	0	0	0	1	0	0	0	0	0	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	3	0	0	1	0	0	0	0	0	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	6	0	0	1	0	1	3	0	0	4	0	15
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	25.00%	75.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	1	0	0	0	0	0	2	0	0	3	0	6
PEAK HR FACTOR :		0.250			0.000			0.500			0.375		0.375

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:15 PM	0	0	0	1	1	0	0	0	0	0	0	0	2
3:30 PM	0	0	0	0	1	0	0	3	0	0	0	0	4
3:45 PM	0	0	0	0	0	1	0	1	0	0	3	0	5
4:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:15 PM	0	2	0	0	0	0	0	0	0	0	1	0	3
4:30 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:45 PM	0	1	0	0	2	0	0	1	0	0	0	0	4
5:00 PM	0	2	0	0	0	0	0	0	0	0	2	0	4
5:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:45 PM	0	1	0	0	0	0	0	0	0	0	1	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	6	0	1	4	1	0	9	0	0	9	0	30
APPROACH %'s :	0.00%	100.00%	0.00%	16.67%	66.67%	16.67%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	3	0	0	0	0	0	2	0	0	5	0	10
PEAK HR FACTOR :	0.375			0.000			0.500			0.625			0.625

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	2	0	0	0	2	0	1	1	0	0	0	6
7:15 AM	0	3	0	1	0	1	1	0	0	0	2	1	9
7:30 AM	0	1	0	0	3	0	1	0	2	1	2	0	10
7:45 AM	0	0	0	0	1	1	0	2	2	0	1	0	7
8:00 AM	0	0	0	0	2	0	1	2	0	1	0	0	6
8:15 AM	0	3	0	0	3	0	0	0	1	1	0	0	8
8:30 AM	1	0	0	0	3	1	0	0	1	0	0	0	6
8:45 AM	0	1	1	0	4	0	1	0	0	0	0	0	7
9:00 AM	1	1	0	0	0	0	0	0	0	0	0	0	2
9:15 AM	1	0	0	0	0	0	0	3	0	0	1	0	5
9:30 AM	0	0	0	0	0	1	0	0	0	0	0	0	1
9:45 AM	0	0	0	0	0	0	1	1	0	0	0	1	3
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	11	1	1	16	6	5	9	7	3	6	2	70
APPROACH %'s :	20.00%	73.33%	6.67%	4.35%	69.57%	26.09%	23.81%	42.86%	33.33%	27.27%	54.55%	18.18%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	4	0	1	6	2	3	4	4	2	5	1	32
PEAK HR FACTOR :	0.333			0.750			0.688			0.667			0.800

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	0	0	0	0	1	1	2	0	0	0	1	5
3:15 PM	0	1	0	0	2	1	0	0	1	1	1	0	7
3:30 PM	0	0	0	0	4	0	0	1	0	1	0	0	6
3:45 PM	0	1	0	0	1	1	1	1	0	0	1	0	6
4:00 PM	0	1	0	0	3	1	0	1	0	0	0	0	6
4:15 PM	0	1	1	0	4	0	0	1	0	0	0	0	7
4:30 PM	0	0	0	0	1	0	1	0	0	0	0	0	2
4:45 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:00 PM	0	0	0	0	2	0	0	0	0	0	1	0	3
5:15 PM	0	0	0	0	0	0	1	0	0	0	0	0	1
5:30 PM	0	0	0	0	0	1	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	1	0	17	6	4	6	1	2	3	1	45
APPROACH %'s :	0.00%	80.00%	20.00%	0.00%	73.91%	26.09%	36.36%	54.55%	9.09%	33.33%	50.00%	16.67%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	0	2	1	1	0	0	0	1	0	5
PEAK HR FACTOR :	0.000			0.375			0.250			0.250			0.417

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	0	0	0	2	0	0	1	0	0	0	0	3
7:15 AM	2	2	0	0	6	0	0	0	0	0	3	1	14
7:30 AM	0	4	0	0	2	0	0	1	0	0	0	1	8
7:45 AM	0	1	1	0	1	0	0	2	0	3	4	0	12
8:00 AM	0	0	0	1	2	0	0	1	0	0	0	0	4
8:15 AM	0	0	1	1	0	0	0	2	1	13	7	1	26
8:30 AM	0	2	0	1	1	0	0	3	0	10	7	1	25
8:45 AM	0	0	0	0	1	0	0	7	0	3	8	3	22
9:00 AM	1	0	0	0	2	0	0	1	0	3	7	1	15
9:15 AM	0	0	1	0	0	1	0	0	1	2	4	0	9
9:30 AM	0	0	2	1	2	0	0	0	0	4	3	1	13
9:45 AM	0	0	0	0	0	0	0	2	1	1	3	0	7

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	9	5	4	19	1	0	20	3	39	46	9	158
APPROACH %'s :	17.65%	52.94%	29.41%	16.67%	79.17%	4.17%	0.00%	86.96%	13.04%	41.49%	48.94%	9.57%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	2	7	1	1	11	0	0	4	0	3	7	2	38
PEAK HR FACTOR :	0.625			0.500			0.500			0.429			0.679

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-016 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	2	0	1	2	0	1	3	0	1	2	0	12
3:15 PM	1	2	0	2	1	0	0	0	0	2	5	2	15
3:30 PM	1	2	4	0	1	0	0	3	0	1	4	0	16
3:45 PM	0	1	2	1	2	0	2	1	0	0	1	0	10
4:00 PM	0	2	1	1	1	0	2	5	0	1	1	0	14
4:15 PM	0	0	3	0	0	0	0	2	0	0	4	0	9
4:30 PM	0	2	2	0	2	0	0	4	0	1	0	1	12
4:45 PM	0	3	2	0	0	0	1	1	0	1	1	2	11
5:00 PM	1	2	4	0	0	1	0	3	0	0	2	0	13
5:15 PM	0	1	0	0	0	0	1	3	1	0	5	1	12
5:30 PM	0	3	1	0	1	0	0	7	0	0	1	0	13
5:45 PM	2	2	0	0	0	0	0	4	0	1	1	2	12
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	22	19	5	10	1	7	36	1	8	27	8	149
APPROACH %'s :	10.87%	47.83%	41.30%	31.25%	62.50%	6.25%	15.91%	81.82%	2.27%	18.60%	62.79%	18.60%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	3	8	5	0	1	1	1	17	1	1	9	3	50
PEAK HR FACTOR :	0.571			0.500			0.679			0.542			0.962

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Arleta Ave

East/West Van Nuys Blvd

Day: Thursday Date: September 3, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	57	77	115	116
BIKES	11	11	29	30
BUSES	10	10	56	53

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	224	7.45	277	7.45	359	8.15	293	8.00
PM PK 15 MIN	230	17.15	176	17.00	390	15.30	300	15.15
AM PK HOUR	832	7.15	1053	7.15	1377	7.30	1123	7.15
PM PK HOUR	867	17.00	680	17.00	1487	16.30	1115	15.15

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	139	535	72	746
8-9	114	268	71	453
9-10	54	185	50	289
15-16	113	455	76	644
16-17	120	539	98	757
17-18	126	627	114	867
TOTAL	666	2609	481	3756

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	250	644	141	1035
8-9	318	530	115	963
9-10	188	248	69	505
15-16	129	301	119	549
16-17	156	341	130	627
17-18	157	401	122	680
TOTAL	1198	2465	696	4359

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	1781	36	4	23	4
8-9	1416	41	3	35	3
9-10	794	18	0	24	1
15-16	1193	54	12	35	8
16-17	1384	42	3	27	3
17-18	1547	23	7	25	2
TOTAL	8115	214	29	169	21

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	111	987	123	1221
8-9	99	956	118	1173
9-10	53	694	45	792
15-16	150	1013	131	1294
16-17	156	1135	99	1390
17-18	159	1204	107	1470
TOTAL	728	5989	623	7340

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	65	899	143	1107
8-9	47	821	95	963
9-10	27	586	88	701
15-16	46	918	128	1092
16-17	53	892	124	1069
17-18	62	883	146	1091
TOTAL	300	4999	724	6023

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	2328	23	1	26	2
8-9	2136	27	2	20	1
9-10	1493	9	0	12	0
15-16	2386	21	8	25	2
16-17	2459	26	3	28	3
17-18	2561	17	1	21	3
TOTAL	13363	123	15	132	11

ITM Peak Hour Summary

Prepared by:

NDS

Arleta Ave and Van Nuys Blvd , San Fernando Valley

Date: 9/3/2015

Day: Thursday

Project #: 15-5547-001

City: San Fernando Valley

N

Total Peak Hour Summary

Arleta Ave

Van Nuys Blvd

Southbound Approach

	Lanes	1	2	1	
AM		145	670	238	831
NOON		0	0	0	0
PM		122	401	157	932

Eastbound Approach

	AM	NOON	PM
Exiting	1246	0	1131

Lanes	AM	NOON	PM
1	118	0	159
2	1054	0	1204
0	136	0	107

Westbound Approach

AM	NOON	PM	Lanes
136	0	146	0
928	0	883	2
59	0	62	1

	AM	NOON	PM
Exiting	1374	0	1475

CONTROL

Signalized

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Northbound Approach

AM	865	173	577	82	AM
NOON	0	0	0	0	NOON
PM	570	126	627	114	PM
		1	2	0	Lanes

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

1053	831	AM
0	0	NOON
680	932	PM

West Leg

AM	NOON	PM
1246	0	1131
1308	0	1470

East Leg

AM	NOON	PM
1123	0	1091
1374	0	1475

South Leg

AM	865	832
NOON	0	0
PM	570	867

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1884	0	1612
West Leg	2554	0	2601
East Leg	2497	0	2566
South Leg	1697	0	1437

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 — **Day:** Thursday

TOTALS

City: San Fernando Valley — **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
7:00 AM	17	77	10	77	130	31	25	198	25	18	226	33	867
7:15 AM	34	147	17	55	169	34	27	240	23	10	217	41	1014
7:30 AM	31	171	18	49	185	28	31	272	46	20	225	41	1117
7:45 AM	57	140	27	69	160	48	28	277	29	17	231	28	1111
8:00 AM	51	119	20	65	156	35	32	265	38	12	255	26	1074
8:15 AM	38	51	20	72	139	44	39	276	44	12	222	31	988
8:30 AM	11	51	11	93	126	25	16	213	26	12	173	24	781
8:45 AM	14	47	20	88	109	11	12	202	10	11	171	14	709
9:00 AM	14	45	8	66	93	24	14	196	17	8	157	25	667
9:15 AM	9	49	12	52	68	12	16	186	12	5	128	26	575
9:30 AM	19	43	14	40	48	16	9	151	5	8	135	16	504
9:45 AM	12	48	16	30	39	17	14	161	11	6	166	21	541

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	307	988	193	756	1422	325	263	2637	286	139	2306	326	9948
APPROACH %'s :	20.63%	66.40%	12.97%	30.20%	56.81%	12.98%	8.25%	82.77%	8.98%	5.02%	83.22%	11.76%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	173	577	82	238	670	145	118	1054	136	59	928	136	4316
PEAK HR FACTOR :		0.929			0.950			0.937			0.958		0.966

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 | **Day:** Thursday

TOTALS

City: San Fernando Valley | **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
3:00 PM	21	93	17	29	70	21	30	207	20	5	198	32	743
3:15 PM	24	113	17	31	76	38	33	231	20	20	242	38	883
3:30 PM	31	117	16	25	79	29	46	295	49	8	251	25	971
3:45 PM	37	132	26	44	76	31	41	280	42	13	227	33	982
4:00 PM	26	126	23	33	86	35	35	274	20	15	208	35	916
4:15 PM	27	133	15	45	93	32	41	249	31	10	234	30	940
4:30 PM	37	145	25	37	90	24	45	306	28	15	242	28	1022
4:45 PM	30	135	35	41	72	39	35	306	20	13	208	31	965
5:00 PM	29	129	28	42	102	32	42	301	31	19	215	32	1002
5:15 PM	39	151	40	37	92	41	38	312	23	15	203	33	1024
5:30 PM	30	175	16	42	103	19	37	289	31	16	240	38	1036
5:45 PM	28	172	30	36	104	30	42	302	22	12	225	43	1046

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	359	1621	288	442	1043	371	465	3352	337	161	2693	398	11530
APPROACH %'s :	15.83%	71.47%	12.70%	23.81%	56.20%	19.99%	11.19%	80.69%	8.11%	4.95%	82.81%	12.24%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	126	627	114	157	401	122	159	1204	107	62	883	146	4108
PEAK HR FACTOR :		0.942			0.966			0.983			0.928		0.982

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 | **Day:** Thursday

CARS

City: San Fernando Valley | **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
7:00 AM	16	75	10	77	127	29	24	194	23	18	213	29	835
7:15 AM	34	143	16	55	166	34	27	234	23	10	210	39	991
7:30 AM	31	169	18	49	183	26	31	267	46	18	221	41	1100
7:45 AM	57	136	27	67	157	46	28	271	28	16	227	28	1088
8:00 AM	50	116	19	64	154	35	32	263	38	12	248	26	1057
8:15 AM	37	51	20	72	134	43	39	269	44	12	217	29	967
8:30 AM	11	50	11	92	124	25	16	206	26	12	166	24	763
8:45 AM	14	47	19	87	109	11	10	198	10	10	165	13	693
9:00 AM	12	43	8	65	90	23	13	189	17	8	151	23	642
9:15 AM	7	46	12	48	64	12	16	177	11	5	124	24	546
9:30 AM	17	43	13	40	48	15	9	147	5	7	126	16	486
9:45 AM	10	48	16	28	39	16	12	153	11	6	155	21	515

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	296	967	189	744	1395	315	257	2568	282	134	2223	313	9683
APPROACH %'s :	20.39%	66.60%	13.02%	30.32%	56.85%	12.84%	8.27%	82.65%	9.08%	5.02%	83.26%	11.72%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	172	564	80	235	660	141	118	1035	135	56	906	134	4236
PEAK HR FACTOR :		0.927			0.959			0.936			0.958		0.963

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 | **Day:** Thursday

CARS

City: San Fernando Valley | **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
3:00 PM	20	92	15	28	67	20	30	203	20	5	192	32	724
3:15 PM	24	111	17	30	74	38	30	225	19	20	235	37	860
3:30 PM	31	116	15	24	75	28	46	294	47	7	241	25	949
3:45 PM	36	130	25	42	71	31	40	272	40	12	224	33	956
4:00 PM	26	122	21	33	84	35	32	269	20	13	204	35	894
4:15 PM	26	129	15	44	89	32	40	242	31	10	226	30	914
4:30 PM	37	144	24	37	89	24	43	299	26	15	234	28	1000
4:45 PM	30	134	35	41	69	39	34	299	20	13	204	31	949
5:00 PM	29	129	27	42	101	32	40	296	31	19	211	32	989
5:15 PM	38	149	40	36	91	41	37	302	23	15	202	33	1007
5:30 PM	30	174	16	42	101	19	37	280	31	16	237	37	1020
5:45 PM	28	172	30	36	103	30	42	300	22	12	221	43	1039
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	355	1602	280	435	1014	369	451	3281	330	157	2631	396	11301
APPROACH %'s :	15.87%	71.61%	12.52%	23.93%	55.78%	20.30%	11.10%	80.77%	8.12%	4.93%	82.63%	12.44%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	125	624	113	156	396	122	156	1178	107	62	871	145	4055
PEAK HR FACTOR :		0.937			0.963			0.982			0.929		0.976

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5547-001
N/S Street: Arleta Ave
E/W Street: Van Nuys Blvd
DATE: 9/3/2015 DAY: Thursday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	3	1	3	2	1	0	4	3
7:15 AM	5	2	1	4	5	4	7	1
7:30 AM	1	0	3	6	2	3	1	0
7:45 AM	1	10	2	15	7	4	1	6
8:00 AM	5	7	3	12	2	4	3	7
8:15 AM	3	7	2	11	2	7	1	7
8:30 AM	1	2	5	5	1	0	2	2
8:45 AM	6	4	1	2	4	0	5	0
9:00 AM	0	2	5	2	3	5	1	1
9:15 AM	6	2	3	1	1	1	1	0
9:30 AM	4	2	3	2	1	0	0	1
9:45 AM	3	5	0	2	1	0	3	2
TOTALS	**38**	**44**	**31**	**64**	**30**	**28**	**29**	**30**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	0	0	0	0	0	1
7:15 AM	1	1	0	0	0	1	0	0
7:30 AM	0	0	0	1	0	1	0	0
7:45 AM	1	0	0	3	0	0	0	0
8:00 AM	0	0	0	1	1	0	0	0
8:15 AM	0	1	0	0	0	0	0	0
8:30 AM	0	0	0	2	0	0	0	2
8:45 AM	1	1	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	1	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**5**	**3**	**0**	**7**	**1**	**2**	**0**	**3**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	4	1	1	3	2	0	1
3:15 PM	5	2	3	4	1	1	4	1
3:30 PM	10	1	25	1	4	3	7	2
3:45 PM	7	6	10	9	6	5	3	3
4:00 PM	8	1	10	10	2	7	5	6
4:15 PM	4	3	5	4	4	2	5	4
4:30 PM	1	1	3	5	1	4	3	0
4:45 PM	3	6	4	1	3	5	1	2
5:00 PM	2	1	2	1	2	3	1	0
5:15 PM	1	7	0	1	0	3	1	4
5:30 PM	6	2	8	4	2	7	3	3
5:45 PM	4	2	4	3	2	2	4	1
TOTALS	**51**	**36**	**75**	**44**	**30**	**44**	**37**	**27**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	1	0	0	0	0	0	2
3:15 PM	0	0	0	1	0	0	0	0
3:30 PM	4	0	7	0	2	0	4	0
3:45 PM	3	0	4	0	0	0	0	2
4:00 PM	1	0	1	1	1	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	2	0	1	0	2	0	0	3
5:00 PM	0	0	1	0	0	0	0	0
5:15 PM	0	1	1	0	1	0	0	0
5:30 PM	0	0	0	2	2	0	0	1
5:45 PM	0	1	0	3	0	0	0	0
TOTALS	**10**	**3**	**15**	**7**	**8**	**0**	**4**	**8**

Intersection Turning Movement
Prepared by:
National Data & Surveying Services

Project ID: 15-5547-001 **Day:** Thursday

BIKES

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
7:00 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
7:15 AM	0	0	0	0	1	0	0	1	0	0	1	0	3
7:30 AM	0	1	0	0	0	0	0	1	0	0	1	0	3
7:45 AM	0	0	0	0	1	0	0	0	0	0	1	0	2
8:00 AM	1	0	1	0	1	0	0	3	0	1	0	0	7
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:30 AM	0	0	0	0	0	0	0	2	0	0	0	0	2
8:45 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
9:45 AM	0	0	0	1	0	0	0	1	0	0	0	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	1	2	1	3	0	0	11	0	1	8	0	28
APPROACH %'s :	25.00%	25.00%	50.00%	25.00%	75.00%	0.00%	0.00%	100.00%	0.00%	11.11%	88.89%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	1	1	0	3	0	0	5	0	1	3	0	15
PEAK HR FACTOR :		0.375			0.750			0.417			1.000		0.536

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 **Day:** Thursday

BIKES

City: San Fernando Valley **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
3:00 PM	0	0	0	0	0	0	0	2	1	0	0	0	3
3:15 PM	0	0	0	0	0	0	0	2	0	0	1	0	3
3:30 PM	0	1	0	0	1	0	0	1	0	0	3	0	6
3:45 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
4:00 PM	0	0	1	0	1	0	0	1	0	1	0	0	4
4:15 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
4:30 PM	0	2	1	0	0	0	0	1	0	1	0	0	5
4:45 PM	0	1	0	0	1	1	0	1	0	0	2	0	6
5:00 PM	0	0	0	1	1	0	0	2	0	1	3	0	8
5:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
5:30 PM	1	0	0	0	0	0	0	4	0	1	2	0	8
5:45 PM	0	0	0	0	0	0	0	0	0	0	2	1	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	4	2	1	5	1	0	17	1	4	16	1	53
APPROACH %'s :	14.29%	57.14%	28.57%	14.29%	71.43%	14.29%	0.00%	94.44%	5.56%	19.05%	76.19%	4.76%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	0	0	1	1	0	0	6	0	2	8	1	20
PEAK HR FACTOR :		0.250			0.250			0.375			0.688		0.625

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 **Day:** Thursday

BUSES

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
7:00 AM	1	1	0	0	1	0	0	2	0	0	4	0	9
7:15 AM	0	1	0	0	1	0	0	3	0	0	2	0	7
7:30 AM	0	0	0	0	0	0	0	1	0	0	1	0	2
7:45 AM	0	1	0	0	1	0	0	3	0	0	2	0	7
8:00 AM	0	1	0	0	0	0	0	1	0	0	2	0	4
8:15 AM	0	0	0	0	1	0	0	4	0	0	2	0	7
8:30 AM	0	0	0	0	0	0	0	4	0	0	2	0	6
8:45 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
9:00 AM	0	1	0	0	0	0	0	3	0	0	2	0	6
9:15 AM	0	0	0	0	1	0	0	3	0	0	1	0	5
9:30 AM	0	0	0	0	0	0	0	2	0	0	2	0	4
9:45 AM	0	0	0	0	0	0	0	3	0	0	2	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	5	0	0	5	0	0	30	0	0	24	0	65
APPROACH %'s :	16.67%	83.33%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	3	0	0	2	0	0	8	0	0	7	0	20
PEAK HR FACTOR :	0.750			0.500			0.667			0.875			0.714

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 **Day:** Thursday

BUSES

City: San Fernando Valley **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
3:00 PM	0	1	0	0	1	0	0	1	0	0	2	0	5
3:15 PM	0	0	0	0	0	0	0	2	0	0	4	0	6
3:30 PM	0	0	0	0	0	0	0	0	0	0	3	0	3
3:45 PM	0	1	0	0	1	0	0	4	0	0	2	0	8
4:00 PM	0	0	0	0	1	0	0	1	0	0	1	0	3
4:15 PM	0	0	0	0	0	0	0	3	0	0	5	0	8
4:30 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
4:45 PM	0	1	0	0	1	0	0	3	0	0	2	0	7
5:00 PM	0	0	0	0	0	0	0	3	0	0	2	0	5
5:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
5:30 PM	0	1	0	0	1	0	0	4	0	0	2	0	8
5:45 PM	0	0	0	0	0	0	0	2	0	0	3	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	0	0	5	0	0	26	0	0	29	0	64
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	1	0	0	1	0	0	10	0	0	8	0	20
PEAK HR FACTOR :		0.250			0.250			0.625			0.667		0.625

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 **Day:** Thursday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
7:00 AM	0	1	0	0	2	2	1	2	2	0	9	4	23
7:15 AM	0	3	1	0	2	0	0	3	0	0	5	2	16
7:30 AM	0	2	0	0	2	2	0	4	0	2	3	0	15
7:45 AM	0	3	0	2	2	2	0	3	1	1	2	0	16
8:00 AM	1	2	1	1	2	0	0	1	0	0	5	0	13
8:15 AM	1	0	0	0	4	1	0	3	0	0	3	2	14
8:30 AM	0	1	0	1	2	0	0	3	0	0	5	0	12
8:45 AM	0	0	1	1	0	0	2	3	0	1	4	1	13
9:00 AM	2	1	0	1	3	1	1	4	0	0	4	2	19
9:15 AM	2	3	0	4	3	0	0	6	1	0	3	2	24
9:30 AM	2	0	1	0	0	1	0	2	0	1	7	0	14
9:45 AM	2	0	0	2	0	1	2	5	0	0	9	0	21

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	10	16	4	12	22	10	6	39	4	5	59	13	200
APPROACH %'s :	33.33%	53.33%	13.33%	27.27%	50.00%	22.73%	12.24%	79.59%	8.16%	6.49%	76.62%	16.88%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	10	2	3	8	4	0	11	1	3	15	2	60
PEAK HR FACTOR :		0.813			0.625			0.750			0.714		0.938

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-001 **Day:** Thursday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Van Nuys Blvd			Van Nuys Blvd			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	1	1	2	0	1	2	0	
3:00 PM	1	0	2	1	2	1	0	3	0	0	4	0	14
3:15 PM	0	2	0	1	2	0	3	4	1	0	3	1	17
3:30 PM	0	1	1	1	4	1	0	1	2	1	7	0	19
3:45 PM	1	1	1	2	4	0	1	4	2	1	1	0	18
4:00 PM	0	4	2	0	1	0	3	4	0	2	3	0	19
4:15 PM	1	4	0	1	4	0	1	4	0	0	3	0	18
4:30 PM	0	1	1	0	1	0	2	5	2	0	6	0	18
4:45 PM	0	0	0	0	2	0	1	4	0	0	2	0	9
5:00 PM	0	0	1	0	1	0	2	2	0	0	2	0	8
5:15 PM	1	2	0	1	1	0	1	9	0	0	0	0	15
5:30 PM	0	0	0	0	1	0	0	5	0	0	1	1	8
5:45 PM	0	0	0	0	1	0	0	0	0	0	1	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	15	8	7	24	2	14	45	7	4	33	2	165
APPROACH %'s :	14.81%	55.56%	29.63%	21.21%	72.73%	6.06%	21.21%	68.18%	10.61%	10.26%	84.62%	5.13%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	2	1	1	4	0	3	16	0	0	4	1	33
PEAK HR FACTOR :	0.333			0.625			0.475			0.625			0.550

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Arleta Ave

East/West Terra Bella St

Day: Thursday Date: September 3, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	67	61	64	47
BIKES	6	8	6	13
BUSES	10	10	1	0

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	234	7.45	237	7.30	352	7.30	257	7.45
PM PK 15 MIN	292	17.45	136	17.30	249	17.45	199	15.15
AM PK HOUR	858	7.15	831	7.15	1194	7.00	901	7.00
PM PK HOUR	1123	17.00	514	17.00	889	17.00	737	16.45

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	146	543	91	780	*7-8*	97	659	39	795	1575	30	2	22	0
8-9	144	305	53	502	*8-9*	93	561	43	697	1199	11	0	10	0
9-10	52	200	29	281	*9-10*	42	255	18	315	596	1	0	5	0
15-16	207	512	90	809	*15-16*	89	311	36	436	1245	20	0	47	0
16-17	216	625	111	952	*16-17*	67	355	42	464	1416	5	0	8	1
17-18	275	749	99	1123	*17-18*	90	364	60	514	1637	2	0	10	0
TOTAL	1040	2934	473	4447	TOTAL	478	2505	238	3221	7668	69	2	102	1

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	76	901	217	1194	*7-8*	110	678	113	901	2095	13	0	19	0
8-9	36	637	132	805	*8-9*	42	507	58	607	1412	16	0	7	0
9-10	21	436	69	526	*9-10*	26	255	33	314	840	5	0	2	0
15-16	49	571	105	725	*15-16*	70	569	69	708	1433	12	0	15	2
16-17	57	685	115	857	*16-17*	49	563	57	669	1526	3	0	9	0
17-18	54	710	125	889	*17-18*	75	594	67	736	1625	6	0	5	1
TOTAL	293	3940	763	4996	TOTAL	372	3166	397	3935	8931	55	0	57	3

ITM Peak Hour Summary

Prepared by:

NDS

Arleta Ave and Terra Bella St , San Fernando Valley

Date: 9/3/2015

Day: Thursday

Project #: 15-5547-002

City: San Fernando Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

N

Arleta Ave

Terra Bella St

CONTROL

Signalized

Southbound Approach

				Out
Lanes	0	2	1	
AM	51	662	118	793
NOON	0	0	0	0
PM	60	364	90	870

Eastbound Approach

	Lanes	AM	NOON	PM
Out		893	0	929
	1	82	0	54
	2	894	0	710
	0	209	0	125

Westbound Approach

	AM	NOON	PM	Lanes
	118	0	67	0
	676	0	594	2
	93	0	75	1
Out	1111	0	899	

Northbound Approach

	Out			
AM	964	166	593	99
NOON	0	0	0	0
PM	564	275	749	99
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg

AM	831	793
NOON	0	0
PM	514	870

East Leg

	AM	NOON	PM
	887	0	736
	1111	0	899

West Leg

	AM	NOON	PM
	893	0	929
	1185	0	889

South Leg

AM	964	858
NOON	0	0
PM	564	1123

Total Volume Per Leg

North Leg

AM	1624
NOON	0
PM	1384

East Leg

AM	NOON	PM
1998	0	1635

West Leg

AM	NOON	PM
2078	0	1818

South Leg

AM	1822
NOON	0
PM	1687

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 | **Day:** Thursday

TOTALS

City: San Fernando Valley | **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	32	87	15	11	163	4	10	187	50	26	156	14	755
7:15 AM	30	138	24	28	155	8	22	244	50	28	161	33	921
7:30 AM	40	143	37	28	195	14	32	266	54	26	170	30	1035
7:45 AM	44	175	15	30	146	13	12	204	63	30	191	36	959
8:00 AM	52	137	23	32	166	16	16	180	42	9	154	19	846
8:15 AM	54	67	13	28	142	15	5	175	35	14	145	17	710
8:30 AM	23	48	8	17	139	4	9	162	28	9	98	11	556
8:45 AM	15	53	9	16	114	8	6	120	27	10	110	11	499
9:00 AM	20	43	6	18	91	5	3	128	16	10	70	7	417
9:15 AM	15	50	5	8	76	5	5	121	27	5	63	7	387
9:30 AM	10	50	7	9	42	2	3	106	14	5	51	14	313
9:45 AM	7	57	11	7	46	6	10	81	12	6	71	5	319

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	342	1048	173	232	1475	100	133	1974	418	178	1440	204	7717
APPROACH %'s :	21.88%	67.05%	11.07%	12.84%	81.63%	5.53%	5.27%	78.18%	16.55%	9.77%	79.03%	11.20%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	166	593	99	118	662	51	82	894	209	93	676	118	3761
PEAK HR FACTOR :		0.917			0.877			0.842			0.863		0.908

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 **Day:** Thursday

TOTALS

City: San Fernando Valley **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	35	100	25	24	58	4	11	135	30	11	133	24	590
3:15 PM	59	116	22	21	76	5	9	129	21	25	150	24	657
3:30 PM	50	135	24	25	84	16	15	158	22	15	136	9	689
3:45 PM	63	161	19	19	93	11	14	149	32	19	150	12	742
4:00 PM	41	147	29	10	82	11	13	166	28	10	138	15	690
4:15 PM	52	163	21	19	99	14	13	149	30	13	149	14	736
4:30 PM	59	161	29	19	88	9	9	185	26	11	133	9	738
4:45 PM	64	154	32	19	86	8	22	185	31	15	143	19	778
5:00 PM	60	170	23	27	86	17	12	171	40	21	147	18	792
5:15 PM	71	186	33	19	93	11	10	163	28	21	156	19	810
5:30 PM	65	196	27	22	100	14	16	176	24	16	150	12	818
5:45 PM	79	197	16	22	85	18	16	200	33	17	141	18	842

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	698	1886	300	246	1030	138	160	1966	345	194	1726	193	8882
APPROACH %'s :	24.20%	65.40%	10.40%	17.40%	72.84%	9.76%	6.48%	79.56%	13.96%	9.18%	81.68%	9.13%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	275	749	99	90	364	60	54	710	125	75	594	67	3262
PEAK HR FACTOR :		0.961			0.945			0.893			0.939		0.969

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 **Day:** Thursday

CARS

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	31	85	15	11	158	4	10	186	48	26	151	14	739
7:15 AM	30	134	24	28	153	8	22	239	49	28	160	32	907
7:30 AM	39	142	36	28	191	14	32	266	53	25	169	30	1025
7:45 AM	43	172	14	30	142	13	11	202	63	30	190	35	945
8:00 AM	52	134	23	31	165	16	16	178	42	9	152	18	836
8:15 AM	53	65	12	28	138	14	5	174	35	14	145	17	700
8:30 AM	23	48	8	17	138	4	9	161	27	9	97	11	552
8:45 AM	15	52	8	16	113	8	5	117	27	10	108	11	490
9:00 AM	18	41	5	18	89	5	3	128	15	10	69	7	408
9:15 AM	15	45	5	7	73	4	5	120	26	5	63	7	375
9:30 AM	9	49	6	9	41	2	3	102	14	5	50	13	303
9:45 AM	7	53	10	7	46	6	10	78	12	6	71	5	311
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	335	1020	166	230	1447	98	131	1951	411	177	1425	200	7591
APPROACH %'s :	22.02%	67.06%	10.91%	12.96%	81.52%	5.52%	5.25%	78.26%	16.49%	9.82%	79.08%	11.10%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	164	582	97	117	651	51	81	885	207	92	671	115	3713
PEAK HR FACTOR :		0.920			0.879			0.835			0.861		0.906

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 | **Day:** Thursday

CARS

City: San Fernando Valley | **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	35	98	25	24	57	4	9	132	29	11	131	24	579
3:15 PM	58	115	22	21	73	5	7	128	21	25	147	24	646
3:30 PM	50	133	23	24	82	14	15	154	21	15	132	9	672
3:45 PM	61	155	19	18	87	10	14	148	32	15	149	12	720
4:00 PM	40	142	27	10	79	9	12	163	26	10	134	15	667
4:15 PM	52	158	20	19	96	14	13	148	30	13	148	14	725
4:30 PM	59	159	28	17	86	9	9	182	26	11	133	9	728
4:45 PM	63	153	32	18	84	8	21	185	31	15	143	19	772
5:00 PM	60	170	23	26	85	16	12	169	40	21	145	18	785
5:15 PM	71	185	33	19	92	11	10	162	28	21	155	19	806
5:30 PM	65	196	27	22	98	14	16	174	24	14	148	11	809
5:45 PM	79	197	16	22	84	18	16	198	33	17	141	18	839

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	693	1861	295	240	1003	132	154	1943	341	188	1706	192	8748
APPROACH %'s :	24.32%	65.32%	10.35%	17.45%	72.95%	9.60%	6.32%	79.70%	13.99%	9.01%	81.78%	9.20%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	275	748	99	89	359	59	54	703	125	73	589	66	3239
PEAK HR FACTOR :		0.961			0.946			0.893			0.933		0.965

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5547-002
N/S Street: Arleta Ave
E/W Street: Terra Bella St
DATE: 9/3/2015 DAY: Thursday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	2	6	0	2	2	0	0
7:15 AM	7	2	4	5	2	6	2	0
7:30 AM	3	3	6	7	1	2	4	2
7:45 AM	4	1	2	0	1	3	3	2
8:00 AM	6	1	7	1	0	5	1	6
8:15 AM	1	1	1	1	0	0	1	3
8:30 AM	0	1	0	0	1	1	2	3
8:45 AM	0	0	1	0	0	0	0	0
9:00 AM	1	0	0	0	0	1	0	1
9:15 AM	2	2	1	0	0	0	2	1
9:30 AM	0	0	0	0	1	0	0	1
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**24**	**13**	**28**	**14**	**8**	**20**	**15**	**19**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	1	0	0	0	0	0
7:15 AM	0	0	1	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**2**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	2	0	2	0	0	0	0
3:15 PM	19	1	10	0	2	2	0	3
3:30 PM	5	4	0	4	5	1	4	0
3:45 PM	2	14	1	3	3	2	2	3
4:00 PM	1	1	0	0	3	0	0	0
4:15 PM	1	2	0	0	4	0	1	0
4:30 PM	1	1	0	2	0	2	0	1
4:45 PM	1	0	0	3	0	0	0	1
5:00 PM	0	2	0	0	0	0	0	1
5:15 PM	3	1	2	0	0	0	3	1
5:30 PM	0	0	0	0	3	0	1	0
5:45 PM	0	4	0	0	2	0	0	0
TOTALS	**33**	**32**	**13**	**14**	**22**	**7**	**11**	**10**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	0	0	0	0	0
3:15 PM	0	0	0	0	1	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	1	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	1	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	1	0	0	0
TOTALS	**0**	**1**	**0**	**0**	**2**	**1**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 | **Day:** Thursday

BIKES

City: San Fernando Valley | **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	0	0	0	1	0	0	0	1	0	0	0	2
7:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:30 AM	0	2	0	0	1	0	0	0	0	0	0	0	3
7:45 AM	0	0	0	0	1	0	0	0	0	0	0	1	2
8:00 AM	0	0	0	0	0	0	0	0	1	0	0	0	1
8:15 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:30 AM	0	0	0	0	0	0	0	1	0	0	0	1	2
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	0	0	3	0	0	1	2	0	1	2	12
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	33.33%	66.67%	0.00%	33.33%	66.67%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	2	0	0	2	0	0	0	1	0	0	1	6
PEAK HR FACTOR :	0.250			0.500			0.250			0.250			0.500

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 **Day:** Thursday

BIKES

City: San Fernando Valley **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
3:15 PM	0	0	0	1	0	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
3:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
4:00 PM	0	0	0	1	0	0	0	1	0	0	0	0	2
4:15 PM	0	0	0	0	0	0	0	1	0	0	0	1	2
4:30 PM	0	0	0	0	0	0	0	0	0	0	4	1	5
4:45 PM	0	2	0	1	1	0	0	0	0	0	0	0	4
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	0	0	0	1	0	0	0	0	0	0	1	2
5:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:45 PM	1	0	0	0	0	0	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	2	0	3	2	0	0	3	0	0	7	3	21
APPROACH %'s :	33.33%	66.67%	0.00%	60.00%	40.00%	0.00%	0.00%	100.00%	0.00%	0.00%	70.00%	30.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	0	0	0	1	0	0	0	0	0	0	1	3
PEAK HR FACTOR :	0.250			0.250			0.000			0.250			0.375

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 **Day:** Thursday

BUSES

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
7:15 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
7:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
7:45 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	6	0	0	5	0	0	0	0	0	0	0	11
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%							

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	3	0	0	2	0	0	0	0	0	0	0	5
PEAK HR FACTOR :	0.750			0.500			0.000			0.000			0.625

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 **Day:** Thursday

BUSES

City: San Fernando Valley **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
3:15 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
3:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
3:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
4:00 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
4:15 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
5:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	0	0	5	0	0	1	0	0	0	0	10
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%				

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	1	0	0	1	0	0	1	0	0	0	0	3
PEAK HR FACTOR :	0.250			0.250			0.250			0.000			0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 **Day:** Thursday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	1	1	0	0	4	0	0	1	2	0	5	0	14
7:15 AM	0	3	0	0	1	0	0	5	1	0	1	1	12
7:30 AM	1	1	1	0	4	0	0	0	1	1	1	0	10
7:45 AM	1	2	1	0	3	0	1	2	0	0	1	1	12
8:00 AM	0	2	0	1	1	0	0	2	0	0	2	1	9
8:15 AM	1	2	1	0	3	1	0	1	0	0	0	0	9
8:30 AM	0	0	0	0	1	0	0	1	1	0	1	0	4
8:45 AM	0	0	1	0	1	0	1	3	0	0	2	0	8
9:00 AM	2	2	1	0	2	0	0	0	1	0	1	0	9
9:15 AM	0	5	0	1	2	1	0	1	1	0	0	0	11
9:30 AM	1	1	1	0	1	0	0	4	0	0	1	1	10
9:45 AM	0	3	1	0	0	0	0	3	0	0	0	0	7

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	7	22	7	2	23	2	2	23	7	1	15	4	115
APPROACH %'s :	19.44%	61.11%	19.44%	7.41%	85.19%	7.41%	6.25%	71.88%	21.88%	5.00%	75.00%	20.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	2	8	2	1	9	0	1	9	2	1	5	3	43
PEAK HR FACTOR :	0.750			0.625			0.500			0.750			0.896

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-002 | **Day:** Thursday

HEAVY TRUCKS

City: San Fernando Valley | **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Terra Bella St			Terra Bella St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	1	0	0	1	0	2	3	1	0	2	0	10
3:15 PM	1	1	0	0	2	0	2	1	0	0	3	0	10
3:30 PM	0	2	1	1	2	2	0	4	1	0	4	0	17
3:45 PM	2	5	0	1	5	1	0	1	0	4	1	0	20
4:00 PM	1	5	2	0	2	2	1	3	2	0	4	0	22
4:15 PM	0	5	1	0	3	0	0	1	0	0	1	0	11
4:30 PM	0	2	1	2	2	0	0	3	0	0	0	0	10
4:45 PM	1	0	0	1	1	0	1	0	0	0	0	0	4
5:00 PM	0	0	0	1	1	1	0	2	0	0	2	0	7
5:15 PM	0	0	0	0	1	0	0	1	0	0	1	0	3
5:30 PM	0	0	0	0	1	0	0	2	0	2	2	1	8
5:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	5	21	5	6	22	6	6	22	4	6	20	1	124
APPROACH %'s :	16.13%	67.74%	16.13%	17.65%	64.71%	17.65%	18.75%	68.75%	12.50%	22.22%	74.07%	3.70%	
PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	0	0	1	4	1	0	6	0	2	5	1	20
PEAK HR FACTOR :		0.000			0.500			0.750			0.400		0.625

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Arleta Ave

East/West Osborne St

Day: Thursday Date: September 3, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	87	66	147	149
BIKES	18	21	22	15
BUSES	9	10	26	29

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	245	7.30	285	7.30	390	7.30	397	7.45
PM PK 15 MIN	392	17.15	163	17.15	347	17.45	382	15.15
AM PK HOUR	909	7.15	1071	7.00	1458	7.00	1336	7.15
PM PK HOUR	1461	17.00	583	17.00	1268	17.00	1387	15.00

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	116	487	232	835	*7-8*	119	899	53	1071	1906	15	4	8	2
8-9	124	346	151	621	*8-9*	119	603	56	778	1399	13	1	4	3
9-10	87	173	125	385	*9-10*	67	304	35	406	791	14	1	10	1
15-16	192	619	215	1026	*15-16*	84	334	60	478	1504	7	7	6	1
16-17	218	803	229	1250	*16-17*	98	380	53	531	1781	18	5	11	1
17-18	254	962	245	1461	*17-18*	87	419	77	583	2044	16	0	10	0
TOTAL	991	3390	1197	5578	TOTAL	574	2939	334	3847	9425	83	18	49	8

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	63	1200	195	1458	*7-8*	123	949	144	1216	2674	14	2	22	4
8-9	41	913	117	1071	*8-9*	109	837	104	1050	2121	9	0	10	1
9-10	37	691	87	815	*9-10*	89	667	49	805	1620	11	0	18	4
15-16	64	913	136	1113	*15-16*	147	1107	133	1387	2500	5	1	12	0
16-17	83	972	122	1177	*16-17*	129	1060	123	1312	2489	6	0	16	6
17-18	90	1017	161	1268	*17-18*	112	1125	132	1369	2637	9	1	16	4
TOTAL	378	5706	818	6902	TOTAL	709	5745	685	7139	14041	54	4	94	19

ITM Peak Hour Summary

Prepared by:

NDS

Arleta Ave and Osborne St , San Fernando Valley

Date:	9/3/2015
Day:	Thursday

Project #:	15-5547-003
City:	San Fernando Valley

N

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Total Peak Hour Summary

Arleta Ave

Osborne St

CONTROL: Signalized

Southbound Approach

	Lanes 0	Lanes 2	Lanes 1	Out
AM	55	857	120	780
NOON	0	0	0	0
PM	77	419	87	1184

Westbound Approach

	AM	NOON	PM	Lanes
Right	171	0	132	0
Through	1036	0	1125	2
Left	129	0	112	1
Out	1486	0	1349	

Eastbound Approach

	Lanes	AM	NOON	PM
Out		1217	0	1456
Left	1	64	0	90
Through	2	1128	0	1017
Right	0	175	0	161

Northbound Approach

	Out	Left	Through	Right
AM	1161	126	545	238
NOON	0	0	0	0
PM	692	254	962	245
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg			
AM	1032	780	
NOON	0	0	
PM	583	1184	

West Leg	AM	NOON	PM
	1217	0	1456
	1367	0	1268

East Leg	AM	NOON	PM
	1336	0	1369
	1486	0	1349

South Leg		
AM	1161	909
NOON	0	0
PM	692	1461

Total Volume Per Leg

	North Leg	East Leg	South Leg	West Leg
AM	1812	2822	2070	2584
NOON	0	0	0	0
PM	1767	2718	2153	2724

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 **Day:** Thursday

TOTALS

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	29	82	45	27	217	14	16	303	43	30	176	23	1005
7:15 AM	23	119	59	27	228	7	12	319	50	31	195	25	1095
7:30 AM	28	146	71	30	245	10	20	310	60	31	274	34	1259
7:45 AM	36	140	57	35	209	22	15	268	42	31	304	62	1221
8:00 AM	39	140	51	28	175	16	17	231	23	36	263	50	1069
8:15 AM	33	88	35	35	160	19	13	235	30	31	183	29	891
8:30 AM	31	63	37	27	138	13	5	233	30	23	178	9	787
8:45 AM	21	55	28	29	130	8	6	214	34	19	213	16	773
9:00 AM	23	50	23	22	98	13	14	166	24	24	156	4	617
9:15 AM	25	43	38	21	97	13	3	200	25	20	168	15	668
9:30 AM	18	39	38	9	55	5	10	179	23	20	178	19	593
9:45 AM	21	41	26	15	54	4	10	146	15	25	165	11	533

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	327	1006	508	305	1806	144	141	2804	399	321	2453	297	10511
APPROACH %'s :	17.76%	54.64%	27.59%	13.53%	80.09%	6.39%	4.22%	83.85%	11.93%	10.45%	79.88%	9.67%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	126	545	238	120	857	55	64	1128	175	129	1036	171	4644
PEAK HR FACTOR :		0.928			0.905			0.876			0.841		0.922

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 | **Day:** Thursday

TOTALS

City: San Fernando Valley | **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	35	114	45	16	66	7	15	255	32	39	256	33	913
3:15 PM	57	142	46	23	89	12	13	203	28	38	299	45	995
3:30 PM	50	161	58	25	79	14	17	225	36	29	245	31	970
3:45 PM	50	202	66	20	100	27	19	230	40	41	307	24	1126
4:00 PM	51	179	61	27	75	16	20	201	26	35	251	41	983
4:15 PM	64	218	55	22	113	16	22	253	34	30	264	15	1106
4:30 PM	53	193	63	25	91	7	21	256	30	27	261	32	1059
4:45 PM	50	213	50	24	101	14	20	262	32	37	284	35	1122
5:00 PM	55	199	60	20	104	19	22	255	31	29	271	41	1106
5:15 PM	66	259	67	20	116	27	23	243	36	33	285	30	1205
5:30 PM	70	244	53	20	94	10	25	244	42	27	281	28	1138
5:45 PM	63	260	65	27	105	21	20	275	52	23	288	33	1232

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	664	2384	689	269	1133	190	237	2902	419	388	3292	388	12955
APPROACH %'s :	17.77%	63.79%	18.44%	16.90%	71.17%	11.93%	6.66%	81.56%	11.78%	9.54%	80.92%	9.54%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	254	962	245	87	419	77	90	1017	161	112	1125	132	4681
PEAK HR FACTOR :		0.932			0.894			0.914			0.983		0.950

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 | **Day:** Thursday

CARS

City: San Fernando Valley | **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	29	80	44	27	213	14	15	298	43	30	169	22	984
7:15 AM	23	115	58	26	225	5	12	314	48	31	186	25	1068
7:30 AM	28	145	70	30	240	10	19	303	60	30	271	34	1240
7:45 AM	36	139	57	35	207	22	15	266	41	30	297	60	1205
8:00 AM	39	137	51	28	172	15	17	227	22	36	258	49	1051
8:15 AM	32	86	34	34	158	18	13	233	30	28	180	28	874
8:30 AM	31	63	34	26	134	13	5	225	30	20	172	7	760
8:45 AM	20	54	27	29	129	8	6	201	33	15	207	16	745
9:00 AM	21	47	23	21	95	13	14	163	23	24	148	4	596
9:15 AM	24	37	38	21	95	13	3	191	22	17	160	15	636
9:30 AM	18	39	34	9	53	5	9	169	23	19	166	17	561
9:45 AM	18	38	25	15	54	4	10	139	15	25	161	10	514

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	319	980	495	301	1775	140	138	2729	390	305	2375	287	10234
APPROACH %'s :	17.78%	54.63%	27.59%	13.58%	80.10%	6.32%	4.24%	83.79%	11.97%	10.28%	80.05%	9.67%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	126	536	236	119	844	52	63	1110	171	127	1012	168	4564
PEAK HR FACTOR :		0.924			0.906			0.880			0.844		0.920

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 | **Day:** Thursday

CARS

City: San Fernando Valley | **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	35	112	44	16	64	7	15	244	32	37	248	33	887
3:15 PM	57	139	44	23	86	12	13	196	24	37	292	45	968
3:30 PM	50	160	56	25	77	14	17	218	34	27	237	29	944
3:45 PM	48	196	66	17	95	27	18	224	39	39	303	24	1096
4:00 PM	51	174	60	27	72	16	20	196	26	34	245	41	962
4:15 PM	64	213	54	20	110	16	22	248	34	30	259	15	1085
4:30 PM	52	189	61	25	89	7	21	249	30	27	259	31	1040
4:45 PM	49	212	50	24	100	14	20	252	30	34	280	35	1100
5:00 PM	54	199	59	20	102	19	22	249	29	29	271	41	1094
5:15 PM	66	254	66	19	115	26	22	239	36	32	283	30	1188
5:30 PM	70	244	53	20	90	10	25	240	41	27	271	28	1119
5:45 PM	62	260	65	27	103	21	20	275	52	23	285	33	1226

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	658	2352	678	263	1103	189	235	2830	407	376	3233	385	12709
APPROACH %'s :	17.84%	63.77%	18.38%	16.91%	70.93%	12.15%	6.77%	81.51%	11.72%	9.41%	80.95%	9.64%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	252	957	243	86	410	76	89	1003	158	111	1110	132	4627
PEAK HR FACTOR :		0.938			0.894			0.901			0.980		0.944

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5547-003
N/S Street: Arleta Ave
E/W Street: Osborne St
DATE: 9/3/2015 DAY: Thursday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	1	2	0	5	3	1	2
7:15 AM	1	1	2	4	2	3	3	1
7:30 AM	3	0	1	3	3	2	0	4
7:45 AM	0	1	2	1	1	3	1	2
8:00 AM	0	0	2	1	4	1	0	0
8:15 AM	0	1	1	3	2	1	4	1
8:30 AM	0	0	1	2	0	1	0	1
8:45 AM	2	1	2	1	1	0	3	0
9:00 AM	1	4	0	4	0	3	3	2
9:15 AM	0	0	5	1	1	2	0	0
9:30 AM	0	1	2	0	4	2	1	3
9:45 AM	2	2	1	1	3	3	0	2
TOTALS	**10**	**12**	**21**	**21**	**26**	**24**	**16**	**18**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	0	1	0	1	0	0	0
7:15 AM	0	0	1	0	2	0	0	0
7:30 AM	0	1	0	0	0	0	0	0
7:45 AM	0	0	1	1	0	1	1	1
8:00 AM	0	0	0	1	1	0	0	0
8:15 AM	0	2	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	1	0	0	0	0	0	0
9:00 AM	0	1	0	0	0	0	0	0
9:15 AM	0	0	1	0	2	2	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**1**	**5**	**4**	**2**	**6**	**3**	**1**	**1**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	2	5	1	0	0
3:15 PM	0	1	0	0	3	0	2	1
3:30 PM	0	2	1	0	0	1	0	0
3:45 PM	2	1	3	1	1	1	1	1
4:00 PM	1	3	2	0	5	1	1	0
4:15 PM	0	1	3	1	2	1	0	4
4:30 PM	2	1	2	5	1	2	1	0
4:45 PM	1	2	3	2	3	1	0	0
5:00 PM	0	2	0	2	3	0	0	0
5:15 PM	0	1	1	0	6	1	1	2
5:30 PM	1	2	2	6	0	0	1	3
5:45 PM	4	0	2	3	1	5	2	0
TOTALS	**11**	**16**	**19**	**22**	**30**	**14**	**9**	**11**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	1	0	0	0	0
3:15 PM	0	0	0	0	0	0	0	1
3:30 PM	0	1	0	0	0	0	0	0
3:45 PM	0	0	6	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	1	0	0	0	0	0
4:30 PM	0	0	3	0	3	0	0	0
4:45 PM	0	1	1	0	3	0	0	0
5:00 PM	0	0	0	0	0	3	0	0
5:15 PM	0	0	0	0	1	0	1	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**2**	**11**	**1**	**7**	**3**	**1**	**1**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 **Day:** Thursday

BIKES

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	0	0	0	0	0	1	0	0	0	1	0	2
7:15 AM	0	0	0	1	0	0	0	1	0	0	1	0	3
7:30 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:45 AM	0	2	0	0	1	0	0	0	0	0	0	0	3
8:00 AM	0	1	0	0	0	0	0	1	0	0	0	0	2
8:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:30 AM	0	0	1	0	0	1	0	0	0	0	0	0	2
8:45 AM	0	0	0	1	0	1	1	0	0	0	0	0	3
9:00 AM	0	0	0	0	1	0	1	0	0	0	0	1	3
9:15 AM	0	1	0	0	0	0	1	0	0	0	2	0	4
9:30 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:45 AM	0	0	0	0	0	0	0	0	0	0	0	0	
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	5	1	2	2	2	4	2	0	0	5	1	24
APPROACH %'s :	0.00%	83.33%	16.67%	33.33%	33.33%	33.33%	66.67%	33.33%	0.00%	0.00%	83.33%	16.67%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	4	0	1	1	0	0	2	0	0	1	0	9
PEAK HR FACTOR :	0.500			0.500			0.500			0.250			0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 **Day:** Thursday

BIKES

City: San Fernando Valley **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	1	0	0	0	0	0	0	3	0	0	1	0	5
3:15 PM	0	0	1	1	0	0	0	2	2	0	0	0	6
3:30 PM	0	0	0	0	1	1	0	1	0	1	0	0	4
3:45 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
4:00 PM	0	0	0	0	0	0	0	0	0	0	0	1	1
4:15 PM	0	2	0	1	1	0	0	0	0	0	2	1	7
4:30 PM	2	0	0	0	0	1	0	2	0	0	0	0	5
4:45 PM	0	4	0	0	3	0	1	0	0	0	0	0	8
5:00 PM	1	0	0	0	0	1	0	0	0	0	2	0	4
5:15 PM	0	0	0	0	3	0	1	0	0	0	1	0	5
5:30 PM	0	1	0	0	0	1	0	2	0	0	0	0	4
5:45 PM	0	0	0	0	1	0	0	1	0	0	0	0	2

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	4	7	1	2	9	4	2	12	2	1	6	2	52
APPROACH %'s :	33.33%	58.33%	8.33%	13.33%	60.00%	26.67%	12.50%	75.00%	12.50%	11.11%	66.67%	22.22%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	1	0	0	4	2	1	3	0	0	3	0	15
PEAK HR FACTOR :		0.500			0.500			0.500			0.375		0.750

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 | **Day:** Thursday

BUSES

City: San Fernando Valley | **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	0	0	0	1	0	0	0	0	0	3	1	5
7:15 AM	0	1	0	0	1	0	0	1	0	0	2	0	5
7:30 AM	0	0	0	0	0	0	0	1	0	0	2	0	3
7:45 AM	0	1	0	0	1	0	0	1	0	0	2	0	5
8:00 AM	0	1	0	0	0	0	0	1	0	0	2	0	4
8:15 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
8:30 AM	0	0	0	0	1	0	0	1	0	0	1	0	3
8:45 AM	0	1	0	0	0	0	0	1	0	0	1	0	3
9:00 AM	0	0	0	0	0	0	0	0	0	0	1	0	1
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	1	0	0	2	0	0	1	0	4
9:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	5	0	0	5	0	0	8	0	0	16	1	35
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	94.12%	5.88%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	3	0	0	2	0	0	4	0	0	8	0	17
PEAK HR FACTOR :	0.750			0.500			1.000			1.000			0.850

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 | **Day:** Thursday

BUSES

City: San Fernando Valley | **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	1	0	0	0	0	0	1	0	0	1	0	3
3:15 PM	0	0	0	0	1	0	0	1	0	0	0	0	2
3:30 PM	0	0	0	0	0	0	0	2	0	0	2	0	4
3:45 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
4:00 PM	0	0	0	0	1	0	0	1	0	0	1	0	3
4:15 PM	0	0	0	0	0	0	0	1	0	0	1	0	2
4:30 PM	0	1	0	0	0	0	0	3	0	0	1	0	5
4:45 PM	0	0	0	0	1	0	0	3	0	0	1	0	5
5:00 PM	0	0	0	0	0	0	0	3	0	0	0	0	3
5:15 PM	0	1	0	0	0	0	0	1	0	0	0	0	2
5:30 PM	0	0	0	0	1	0	0	2	0	0	4	0	7
5:45 PM	0	0	0	0	0	0	0	0	0	0	1	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	4	0	0	5	0	0	18	0	0	12	0	39
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	1	0	0	1	0	0	6	0	0	5	0	13
PEAK HR FACTOR :	0.250			0.250			0.500			0.313			0.464

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 **Day:** Thursday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 9/3/2015

AM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
7:00 AM	0	2	1	0	3	0	1	5	0	0	4	0	16
7:15 AM	0	3	1	1	2	2	0	4	2	0	7	0	22
7:30 AM	0	1	1	0	5	0	1	6	0	1	1	0	16
7:45 AM	0	0	0	0	1	0	0	1	1	1	5	2	11
8:00 AM	0	2	0	0	3	1	0	3	1	0	3	1	14
8:15 AM	1	2	1	1	2	1	0	2	0	3	2	1	16
8:30 AM	0	0	3	1	3	0	0	7	0	3	5	2	24
8:45 AM	1	0	1	0	1	0	0	12	1	4	5	0	25
9:00 AM	2	3	0	1	3	0	0	3	1	0	7	0	20
9:15 AM	1	6	0	0	2	0	0	9	3	3	8	0	32
9:30 AM	0	0	4	0	1	0	1	8	0	1	11	2	28
9:45 AM	3	2	1	0	0	0	0	7	0	0	4	1	18
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	8	21	13	4	26	4	3	67	9	16	62	9	242
APPROACH %'s :	19.05%	50.00%	30.95%	11.76%	76.47%	11.76%	3.80%	84.81%	11.39%	18.39%	71.26%	10.34%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	6	2	1	11	3	1	14	4	2	16	3	63
PEAK HR FACTOR :	0.500			0.750			0.679			0.656			0.716

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5547-003 **Day:** Thursday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 9/3/2015

PM

NS/EW Streets:	Arleta Ave			Arleta Ave			Osborne St			Osborne St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	2	0	1	2	0	
3:00 PM	0	1	1	0	2	0	0	10	0	2	7	0	23
3:15 PM	0	3	2	0	2	0	0	6	4	1	7	0	25
3:30 PM	0	1	2	0	2	0	0	5	2	2	6	2	22
3:45 PM	2	5	0	3	4	0	1	6	1	2	4	0	28
4:00 PM	0	5	1	0	2	0	0	4	0	1	5	0	18
4:15 PM	0	5	1	2	3	0	0	4	0	0	4	0	19
4:30 PM	1	3	2	0	2	0	0	4	0	0	1	1	14
4:45 PM	1	1	0	0	0	0	0	7	2	3	3	0	17
5:00 PM	1	0	1	0	2	0	0	3	2	0	0	0	9
5:15 PM	0	4	1	1	1	1	1	3	0	1	2	0	15
5:30 PM	0	0	0	0	3	0	0	2	1	0	6	0	12
5:45 PM	1	0	0	0	2	0	0	0	0	0	2	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	28	11	6	25	1	2	54	12	12	47	3	207
APPROACH %'s :	13.33%	62.22%	24.44%	18.75%	78.13%	3.13%	2.94%	79.41%	17.65%	19.35%	75.81%	4.84%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	2	4	2	1	8	1	1	8	3	1	10	0	41
PEAK HR FACTOR :	0.400			0.833			0.600			0.458			0.683

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation
MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South Laurel Cyn Bllvd

East/West Branford St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	106	122	181	248
BIKES	7	20	18	11
BUSES	47	35	15	8

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	193	7.30	336	7.45	156	7.30	210	7.45
PM PK 15 MIN	346	17.15	185	17.30	214	17.15	171	17.15
AM PK HOUR	668	7.15	1169	7.00	607	7.00	703	7.00
PM PK HOUR	1265	17.00	693	16.45	809	17.00	647	17.00

NORTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	127	364	122	613
8-9	58	312	105	475
9-10	54	287	56	397
15-16	100	598	128	826
16-17	97	838	128	1063
17-18	112	979	174	1265
TOTAL	548	3378	713	4639

SOUTHBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	117	870	182	1169
8-9	91	555	124	770
9-10	60	323	92	475
15-16	92	404	125	621
16-17	106	426	147	679
17-18	89	459	135	683
TOTAL	555	3037	805	4397

	TOTAL	**XING S/L**		**XING N/L**	
Hours	N-S	Ped	Sch	Ped	Sch
7-8	1782	7	0	32	0
8-9	1245	2	0	13	1
9-10	872	7	0	5	0
15-16	1447	19	0	13	1
16-17	1742	11	0	6	0
17-18	1948	11	0	10	1
TOTAL	9036	57	0	79	3

EASTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	69	378	160	607
8-9	65	320	152	537
9-10	76	210	124	410
15-16	131	353	170	654
16-17	153	413	148	714
17-18	177	455	177	809
TOTAL	671	2129	931	3731

WESTBOUND Approach

Hours	Lt	Th	Rt	Total
7-8	102	488	113	703
8-9	111	262	119	492
9-10	68	211	76	355
15-16	123	288	141	552
16-17	106	326	139	571
17-18	126	362	159	647
TOTAL	636	1937	747	3320

	TOTAL	**XING W/L**		**XING E/L**	
Hours	E-W	Ped	Sch	Ped	Sch
7-8	1310	19	0	12	0
8-9	1029	14	0	3	0
9-10	765	6	0	4	0
15-16	1206	16	0	8	2
16-17	1285	4	0	9	0
17-18	1456	9	0	8	0
TOTAL	7051	68	0	44	2

ITM Peak Hour Summary

Prepared by:

NDS

Laurel Cyn Bllvd and Branford St , San Fernando Valley

Date: 5/27/2015
Day: Wednesday

Project #: 15-5336-017
City: San Fernando Valley

N

Laurel Cyn Bllvd

Branford St

Total Peak Hour Summary

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	500 PM

Southbound Approach

	Right	Through	Left	Exiting (northbound)
Lanes	0	2	2	
AM	175	854	120	575
NOON	0	0	0	0
PM	135	459	89	1315

Eastbound Approach

	Lanes	AM	NOON	PM
Exiting (westbound)		769	0	609
Left	1	62	0	177
Through	2	399	0	455
Right	0	146	0	177

Westbound Approach

	AM	NOON	PM	Lanes
Right	116	0	159	0
Through	469	0	362	1
Left	106	0	126	1
Exiting (eastbound)	665	0	718	

Northbound Approach

	Exiting (southbound)	Left	Through	Right
AM	1106	125	397	146
NOON	0	0	0	0
PM	762	112	979	174
Lanes		2	2	0

CONTROL

Signalized

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg	In	Out
AM	1149	575
NOON	0	0
PM	683	1315

West Leg	AM	NOON	PM
Out	769	0	609
In	607	0	809

East Leg	AM	NOON	PM
In	691	0	647
Out	665	0	718

South Leg	Out	In
AM	1106	668
NOON	0	0
PM	762	1265

Total Volume Per Leg

Leg	AM	NOON	PM
North Leg	1724	0	1998
West Leg	1376	0	1418
East Leg	1356	0	1365
South Leg	1774	0	2027

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
7:00 AM	20	63	15	20	176	40	21	75	58	28	86	17	619
7:15 AM	30	81	30	32	214	40	18	98	36	18	118	22	737
7:30 AM	28	126	39	33	237	41	19	96	41	31	137	36	864
7:45 AM	49	94	38	32	243	61	11	109	25	25	147	38	872
8:00 AM	18	96	39	23	160	33	14	96	44	32	67	20	642
8:15 AM	18	78	21	17	177	39	20	81	39	27	73	25	615
8:30 AM	12	61	25	25	124	31	14	83	39	30	65	40	549
8:45 AM	10	77	20	26	94	21	17	60	30	22	57	34	468
9:00 AM	16	65	10	12	76	26	17	52	32	23	53	24	406
9:15 AM	11	68	15	11	82	26	17	62	31	21	42	20	406
9:30 AM	16	65	15	17	85	19	25	44	33	7	48	15	389
9:45 AM	11	89	16	20	80	21	17	52	28	17	68	17	436

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	239	963	283	268	1748	398	210	908	436	281	961	308	7003
APPROACH %'s :	16.09%	64.85%	19.06%	11.10%	72.41%	16.49%	13.51%	58.43%	28.06%	18.13%	62.00%	19.87%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	125	397	146	120	854	175	62	399	146	106	469	116	3115
PEAK HR FACTOR :		0.865			0.855			0.973			0.823		0.893

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
3:00 PM	23	152	50	21	99	27	28	82	44	36	64	34	660
3:15 PM	20	112	27	27	96	30	35	71	40	29	61	28	576
3:30 PM	29	157	28	22	109	40	32	100	43	29	81	42	712
3:45 PM	28	177	23	22	100	28	36	100	43	29	82	37	705
4:00 PM	24	203	30	17	114	40	32	93	37	26	88	31	735
4:15 PM	20	193	21	36	105	39	37	87	37	28	71	34	708
4:30 PM	24	217	31	19	100	40	45	124	28	35	90	42	795
4:45 PM	29	225	46	34	107	28	39	109	46	17	77	32	789
5:00 PM	26	217	42	13	115	34	45	102	43	33	95	42	807
5:15 PM	25	283	38	26	117	34	41	126	47	32	98	41	908
5:30 PM	35	229	52	29	119	37	44	105	50	30	84	51	865
5:45 PM	26	250	42	21	108	30	47	122	37	31	85	25	824

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	309	2415	430	287	1289	407	461	1221	495	355	976	439	9084
APPROACH %'s :	9.80%	76.57%	13.63%	14.47%	65.00%	20.52%	21.18%	56.09%	22.74%	20.06%	55.14%	24.80%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	112	979	174	89	459	135	177	455	177	126	362	159	3404
PEAK HR FACTOR :		0.914			0.923			0.945			0.946		0.937

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
7:00 AM	20	61	14	20	175	40	20	71	58	24	86	16	605
7:15 AM	30	76	30	32	212	40	18	95	36	14	114	18	715
7:30 AM	27	123	38	33	234	41	17	92	41	30	134	35	845
7:45 AM	49	87	37	31	239	60	11	103	25	25	142	36	845
8:00 AM	18	95	38	22	157	31	14	94	43	31	66	19	628
8:15 AM	16	77	17	17	173	39	20	77	36	19	51	15	557
8:30 AM	10	55	24	23	118	30	14	80	35	26	55	24	494
8:45 AM	8	72	19	25	89	20	16	54	26	18	45	20	412
9:00 AM	16	61	8	10	73	26	17	47	30	20	45	16	369
9:15 AM	10	61	14	7	77	26	16	58	28	20	36	14	367
9:30 AM	13	63	15	16	79	18	24	33	33	6	42	13	355
9:45 AM	11	87	14	16	79	21	17	42	27	13	62	12	401

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	228	918	268	252	1705	392	204	846	418	246	878	238	6593
APPROACH %'s :	16.12%	64.92%	18.95%	10.73%	72.58%	16.69%	13.90%	57.63%	28.47%	18.06%	64.46%	17.47%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	124	381	143	118	842	172	60	384	145	100	456	108	3033
PEAK HR FACTOR :		0.862			0.858			0.975			0.818		0.897

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
3:00 PM	23	147	48	20	95	24	27	78	41	32	62	32	629
3:15 PM	18	109	26	24	93	29	34	70	39	27	56	22	547
3:30 PM	29	155	25	16	105	39	32	93	40	28	78	41	681
3:45 PM	27	172	21	21	96	28	35	90	41	29	79	35	674
4:00 PM	24	199	29	10	109	40	31	85	35	25	88	29	704
4:15 PM	20	190	19	34	101	38	36	81	32	27	68	31	677
4:30 PM	24	214	25	16	97	40	42	113	27	35	88	42	763
4:45 PM	29	220	43	30	105	28	39	102	45	16	77	29	763
5:00 PM	26	209	38	9	112	34	44	98	43	30	95	40	778
5:15 PM	24	281	37	19	114	34	41	118	46	31	94	40	879
5:30 PM	35	224	50	22	116	37	44	94	49	29	83	47	830
5:45 PM	26	249	37	18	108	30	47	118	37	29	83	25	807

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	305	2369	398	239	1251	401	452	1140	475	338	951	413	8732
APPROACH %'s :	9.93%	77.12%	12.96%	12.64%	66.16%	21.21%	21.87%	55.15%	22.98%	19.86%	55.88%	24.27%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	111	963	162	68	450	135	176	428	175	119	355	152	3294
PEAK HR FACTOR :		0.904			0.933			0.950			0.948		0.937

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-017
N/S Street: Laurel Cyn Bllvd
E/W Street: Branford St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	8	1	1	1	2	1	1	5
7:15 AM	7	0	0	1	0	4	1	2
7:30 AM	6	6	1	1	1	3	2	5
7:45 AM	2	2	1	1	1	0	0	3
8:00 AM	0	3	1	0	0	1	1	3
8:15 AM	0	1	0	0	0	1	0	5
8:30 AM	5	2	0	0	1	0	2	2
8:45 AM	2	0	1	0	0	0	0	1
9:00 AM	0	1	2	2	1	0	0	1
9:15 AM	1	2	1	0	1	0	1	1
9:30 AM	0	0	0	1	0	0	2	1
9:45 AM	0	1	1	0	2	0	0	0
TOTALS	**31**	**19**	**9**	**7**	**9**	**10**	**10**	**29**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	0	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	1	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**1**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	4	2	2	1	2	0	3
3:15 PM	0	7	2	3	2	0	4	0
3:30 PM	2	0	1	2	2	0	7	0
3:45 PM	0	0	5	2	0	1	2	0
4:00 PM	1	0	0	2	2	0	0	0
4:15 PM	0	2	0	1	0	1	0	0
4:30 PM	1	1	3	3	0	3	2	1
4:45 PM	0	1	2	0	3	0	1	0
5:00 PM	0	1	1	1	2	1	2	1
5:15 PM	0	0	1	1	0	2	2	1
5:30 PM	0	7	3	0	1	0	0	2
5:45 PM	1	1	2	2	1	1	0	1
TOTALS	**5**	**24**	**22**	**19**	**14**	**11**	**20**	**9**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	1	0	0	1	0	0	0
3:15 PM	0	0	0	0	1	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	0	0	0	0	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	0	0	0
5:45 PM	1	0	0	0	0	0	0	0
TOTALS	**1**	**1**	**0**	**0**	**2**	**0**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
7:00 AM	0	0	0	0	0	0	1	1	0	0	0	0	2
7:15 AM	0	0	0	0	1	0	0	1	0	0	0	0	2
7:30 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
7:45 AM	0	0	0	0	1	0	0	4	0	0	0	0	5
8:00 AM	0	0	0	0	0	0	1	0	0	0	0	0	1
8:15 AM	0	0	0	0	1	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
8:45 AM	0	0	0	1	1	0	0	0	0	0	0	0	2
9:00 AM	0	0	0	2	0	0	0	0	0	0	0	0	2
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	1	0	0	0	0	0	0	0	1

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	0	0	3	6	0	2	6	0	0	0	0	17
APPROACH %'s :				33.33%	66.67%	0.00%	25.00%	75.00%	0.00%				

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	0	0	0	3	0	1	5	0	0	0	0	9
PEAK HR FACTOR :	0.000			0.750			0.375			0.000			0.450

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
3:00 PM	0	0	0	0	0	0	0	1	0	0	0	0	1
3:15 PM	0	0	0	0	0	0	0	0	0	0	1	0	1
3:30 PM	0	1	0	0	1	0	0	0	0	0	2	0	4
3:45 PM	0	2	0	0	0	0	0	1	0	0	0	0	3
4:00 PM	0	0	0	0	1	0	0	0	0	0	1	0	2
4:15 PM	0	0	0	0	2	0	0	2	0	0	2	0	6
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	0	0	0	0	1	0	0	0	0	0	2	0	3
5:00 PM	0	2	0	0	0	0	0	2	0	0	1	0	5
5:15 PM	0	1	0	0	1	0	0	0	0	0	0	0	2
5:30 PM	0	1	0	1	1	0	0	2	0	0	2	0	7
5:45 PM	0	0	0	0	1	2	0	2	0	0	0	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	7	0	1	8	2	0	10	0	0	11	0	39
APPROACH %'s :	0.00%	100.00%	0.00%	9.09%	72.73%	18.18%	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	4	0	1	3	2	0	6	0	0	3	0	19
PEAK HR FACTOR :	0.500			0.500			0.750			0.375			0.679

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
7:00 AM	0	2	0	0	1	0	0	0	0	2	0	0	5
7:15 AM	0	2	0	0	2	0	0	0	0	0	0	0	4
7:30 AM	1	2	0	0	2	0	0	0	0	0	1	0	6
7:45 AM	0	3	0	0	2	0	0	1	0	0	0	1	7
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:15 AM	0	0	1	0	3	0	0	1	0	0	1	0	6
8:30 AM	0	1	0	0	2	0	0	0	0	0	0	0	3
8:45 AM	0	1	0	0	1	0	0	1	0	0	0	0	3
9:00 AM	0	2	0	0	2	0	0	0	0	0	0	0	4
9:15 AM	1	4	0	0	1	0	1	0	1	0	0	0	8
9:30 AM	0	0	0	0	1	0	1	0	0	0	0	0	2
9:45 AM	0	1	0	0	1	0	0	1	1	0	1	0	5

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	2	19	1	0	19	0	2	4	2	2	3	1	55
APPROACH %'s :	9.09%	86.36%	4.55%	0.00%	100.00%	0.00%	25.00%	50.00%	25.00%	33.33%	50.00%	16.67%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	8	0	0	7	0	0	1	0	0	1	1	19
PEAK HR FACTOR :	0.750			0.875			0.250			0.500			0.679

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
3:00 PM	0	2	0	0	1	2	0	1	1	0	0	0	7
3:15 PM	0	1	0	0	1	0	0	0	0	0	1	0	3
3:30 PM	0	1	0	0	3	0	0	0	0	0	0	0	4
3:45 PM	1	4	0	0	2	0	0	1	1	0	0	0	9
4:00 PM	0	1	0	0	1	0	0	2	0	0	0	0	4
4:15 PM	0	3	0	0	2	0	1	0	0	0	0	1	7
4:30 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
4:45 PM	0	4	0	0	1	0	0	0	0	0	0	0	5
5:00 PM	0	3	0	0	1	0	0	0	0	0	0	0	4
5:15 PM	0	1	0	0	0	0	0	0	0	0	0	0	1
5:30 PM	0	2	0	0	1	0	0	0	0	0	0	0	3
5:45 PM	0	0	0	0	0	0	0	0	0	0	0	0	

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	24	0	0	14	2	1	4	2	0	1	1	50
APPROACH %'s :	4.00%	96.00%	0.00%	0.00%	87.50%	12.50%	14.29%	57.14%	28.57%	0.00%	50.00%	50.00%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	0	6	0	0	2	0	0	0	0	0	0	0	8
PEAK HR FACTOR :	0.500			0.500			0.000			0.000			0.500

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
7:00 AM	0	0	1	0	0	0	1	4	0	2	0	1	9
7:15 AM	0	3	0	0	0	0	0	3	0	4	4	4	18
7:30 AM	0	1	1	0	1	0	2	4	0	1	2	1	13
7:45 AM	0	4	1	1	2	1	0	5	0	0	5	1	20
8:00 AM	0	0	1	1	2	2	0	2	1	1	1	1	12
8:15 AM	2	1	3	0	1	0	0	3	3	8	21	10	52
8:30 AM	2	5	1	2	4	1	0	3	4	4	10	16	52
8:45 AM	2	4	1	1	4	1	1	5	4	4	12	14	53
9:00 AM	0	2	2	2	1	0	0	5	2	3	8	8	33
9:15 AM	0	3	1	4	4	0	0	4	2	1	6	6	31
9:30 AM	3	2	0	1	5	1	0	11	0	1	6	2	32
9:45 AM	0	1	2	4	0	0	0	9	0	4	5	5	30
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	26	14	16	24	6	4	58	16	33	80	69	355
APPROACH %'s :	18.37%	53.06%	28.57%	34.78%	52.17%	13.04%	5.13%	74.36%	20.51%	18.13%	43.96%	37.91%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	8	3	2	5	3	2	14	1	6	12	7	63
PEAK HR FACTOR :	0.550			0.500			0.708			0.521			0.788

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-017 **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	Laurel Cyn Bllvd			Laurel Cyn Bllvd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	2	2	0	2	2	0	1	2	0	1	1	0	
3:00 PM	0	3	2	1	3	1	1	3	2	4	2	2	24
3:15 PM	2	2	1	3	2	1	1	1	1	2	4	6	26
3:30 PM	0	1	3	6	1	1	0	7	3	1	3	1	27
3:45 PM	0	1	2	1	2	0	1	9	1	0	3	2	22
4:00 PM	0	3	1	7	4	0	1	6	2	1	0	2	27
4:15 PM	0	0	2	2	2	1	0	6	5	1	3	2	24
4:30 PM	0	1	6	3	2	0	3	11	1	0	2	0	29
4:45 PM	0	1	3	4	1	0	0	7	1	1	0	3	21
5:00 PM	0	5	4	4	2	0	1	4	0	3	0	2	25
5:15 PM	1	1	1	7	3	0	0	8	1	1	4	1	28
5:30 PM	0	3	2	7	2	0	0	11	1	1	1	4	32
5:45 PM	0	1	5	3	0	0	0	4	0	2	2	0	17

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	3	22	32	48	24	4	8	77	18	17	24	25	302
APPROACH %'s :	5.26%	38.60%	56.14%	63.16%	31.58%	5.26%	7.77%	74.76%	17.48%	25.76%	36.36%	37.88%	

PEAK HR START TIME :	500 PM												TOTAL
PEAK HR VOL :	1	10	12	21	7	0	1	27	2	7	7	7	102
PEAK HR FACTOR :	0.639			0.700			0.625			0.875			0.797

CONTROL : Signalized

City Of Los Angeles
Department Of Transportation

MANUAL TRAFFIC COUNT SUMMARY

STREET:
North/South San Fernando Rd

East/West Branford St

Day: Wednesday Date: May 27, 2015 Weather: SUNNY

Hours: 7-10 & 3-6 Chekrs: NDS

School Day: YES District: I/S CODE

	N/B	S/B	E/B	W/B
DUAL-WHEELED	172	146	192	137
BIKES	17	19	14	19
BUSES	48	50	8	8

	N/B	TIME	S/B	TIME	E/B	TIME	W/B	TIME
AM PK 15 MIN	130	7.45	269	7.15	139	7.45	93	7.45
PM PK 15 MIN	269	17.15	150	15.15	122	17.15	146	17.00
AM PK HOUR	448	7.30	983	7.15	483	7.30	302	7.30
PM PK HOUR	897	16.30	527	16.30	429	16.45	477	16.30

NORTHBOUND Approach / **SOUTHBOUND Approach** / **TOTAL** / **XING S/L** / **XING N/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	N-S	Ped	Sch	Ped	Sch
7-8	48	249	103	400	*7-8*	43	836	84	963	1363	10	0	2	0
8-9	50	239	96	385	*8-9*	47	555	76	678	1063	3	0	1	0
9-10	31	205	88	324	*9-10*	58	350	48	456	780	3	0	0	0
15-16	97	506	141	744	*15-16*	59	392	70	521	1265	6	2	0	1
16-17	97	577	142	816	*16-17*	40	404	59	503	1319	2	0	2	0
17-18	129	633	131	893	*17-18*	49	376	77	502	1395	0	1	0	0
TOTAL	452	2409	701	3562	TOTAL	296	2913	414	3623	7185	24	3	5	1

EASTBOUND Approach / **WESTBOUND Approach** / **TOTAL** / **XING W/L** / **XING E/L**

Hours	Lt	Th	Rt	Total	Hours	Lt	Th	Rt	Total	E-W	Ped	Sch	Ped	Sch
7-8	26	223	188	437	*7-8*	77	184	32	293	730	3	0	12	0
8-9	41	222	157	420	*8-9*	68	138	33	239	659	7	0	1	1
9-10	41	152	70	263	*9-10*	69	132	37	238	501	2	0	2	0
15-16	51	217	102	370	*15-16*	88	212	74	374	744	1	0	6	1
16-17	73	255	73	401	*16-17*	116	253	54	423	824	2	0	0	0
17-18	86	256	75	417	*17-18*	105	282	41	428	845	2	0	4	0
TOTAL	318	1325	665	2308	TOTAL	523	1201	271	1995	4303	17	0	25	2

ITM Peak Hour Summary

Prepared by:

San Fernando Rd and Branford St , San Fernando Valley

Date: 5/27/2015

Day: Wednesday

Project #: 15-5336-018

City: San Fernando Valley

AM Peak Hour	715 AM
NOON Peak Hour	
PM Peak Hour	430 PM

Total Peak Hour Summary

San Fernando Rd

Branford St

N

Southbound Approach

	Lanes 0	Lanes 2	Lanes 1	Departing
AM	84	850	49	320
NOON	0	0	0	0
PM	77	417	33	753

Eastbound Approach

	Lanes	AM	NOON	PM
Departing		325	0	510
Left	1	30	0	74
Through	1	240	0	263
Right	1	203	0	79

Westbound Approach

	AM	NOON	PM	Lanes
Right	28	0	43	0
Through	190	0	310	1
Left	75	0	124	0
Departing	401	0	434	

CONTROL

Signalized

Northbound Approach

	Departing	Left	Through	Right
AM	1128	51	262	112
NOON	0	0	0	0
PM	620	123	636	138
Lanes		1	2	0

Count Periods	Start	End
AM	7:00 AM	10:00 AM
NOON		
PM	3:00 PM	6:00 PM

Total Ins & Outs

North Leg			
AM	983	320	
NOON	0	0	
PM	527	753	

West Leg	AM	NOON	PM
	325	0	510
	473	0	416

East Leg	AM	NOON	PM
	293	0	477
	401	0	434

South Leg		
AM	1128	425
NOON	0	0
PM	620	897

Total Volume Per Leg

	North Leg	South Leg
AM	1303	1553
NOON	0	0
PM	1280	1517

	AM	NOON	PM
West Leg	798	0	926
East Leg	694	0	911

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 **Day:** Wednesday

TOTALS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
7:00 AM	16	48	19	8	174	25	6	48	27	19	28	9	427
7:15 AM	8	54	19	8	240	21	5	50	52	14	43	6	520
7:30 AM	7	75	24	12	222	20	3	53	54	23	52	6	551
7:45 AM	17	72	41	15	200	18	12	72	55	21	61	11	595
8:00 AM	19	61	28	14	188	25	10	65	42	17	34	5	508
8:15 AM	11	65	28	9	129	15	10	52	55	22	40	10	446
8:30 AM	12	44	15	18	128	24	11	57	36	14	29	7	395
8:45 AM	8	69	25	6	110	12	10	48	24	15	35	11	373
9:00 AM	3	40	20	16	100	10	7	31	19	16	44	2	308
9:15 AM	6	53	24	12	80	12	12	49	24	21	30	10	333
9:30 AM	14	53	26	22	98	12	9	37	9	9	25	16	330
9:45 AM	8	59	18	8	72	14	13	35	18	23	33	9	310

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	129	693	287	148	1741	208	108	597	415	214	454	102	5096
APPROACH %'s :	11.63%	62.49%	25.88%	7.06%	83.02%	9.92%	9.64%	53.30%	37.05%	27.79%	58.96%	13.25%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	51	262	112	49	850	84	30	240	203	75	190	28	2174
PEAK HR FACTOR :		0.817			0.914			0.851			0.788		0.913

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 | **Day:** Wednesday

TOTALS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
3:00 PM	21	93	34	15	100	19	9	56	27	22	55	21	472
3:15 PM	23	127	35	18	115	17	8	60	22	17	42	16	500
3:30 PM	24	133	30	14	99	19	15	50	29	23	74	16	526
3:45 PM	29	153	42	12	78	15	19	51	24	26	41	21	511
4:00 PM	17	145	54	10	100	14	17	64	18	32	56	15	542
4:15 PM	26	116	24	17	106	10	19	53	21	23	61	15	491
4:30 PM	31	151	27	7	95	19	22	60	14	35	86	14	561
4:45 PM	23	165	37	6	103	16	15	78	20	26	50	10	549
5:00 PM	24	138	32	12	107	16	9	56	20	38	95	13	560
5:15 PM	45	182	42	8	112	26	28	69	25	25	79	6	647
5:30 PM	30	138	23	17	80	16	24	67	18	23	58	13	507
5:45 PM	30	175	34	12	77	19	25	64	12	19	50	9	526

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	323	1716	414	148	1172	206	210	728	250	309	747	169	6392
APPROACH %'s :	13.17%	69.96%	16.88%	9.70%	76.80%	13.50%	17.68%	61.28%	21.04%	25.22%	60.98%	13.80%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	123	636	138	33	417	77	74	263	79	124	310	43	2317
PEAK HR FACTOR :		0.834			0.902			0.852			0.817		0.895

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
7:00 AM	15	43	18	7	162	25	5	47	27	17	24	7	397
7:15 AM	8	47	18	8	224	21	4	48	49	13	37	5	482
7:30 AM	7	70	22	11	214	20	3	50	51	20	48	6	522
7:45 AM	16	69	40	14	187	18	11	71	53	18	58	8	563
8:00 AM	19	57	28	12	181	25	9	62	40	16	34	4	487
8:15 AM	11	58	26	8	122	14	6	50	42	19	34	9	399
8:30 AM	11	40	12	17	120	23	11	50	25	13	26	7	355
8:45 AM	7	59	22	6	103	11	9	45	16	9	32	11	330
9:00 AM	3	37	19	16	93	9	7	29	17	16	39	2	287
9:15 AM	6	50	18	10	78	12	10	42	21	20	29	10	306
9:30 AM	9	50	22	21	92	12	8	29	6	7	20	14	290
9:45 AM	7	55	16	7	66	11	12	29	13	21	29	8	274

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	119	635	261	137	1642	201	95	552	360	189	410	91	4692
APPROACH %'s :	11.72%	62.56%	25.71%	6.92%	82.93%	10.15%	9.43%	54.82%	35.75%	27.39%	59.42%	13.19%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	50	243	108	45	806	84	27	231	193	67	177	23	2054
PEAK HR FACTOR :		0.802			0.924			0.835			0.795		0.912

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 **Day:** Wednesday

CARS

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
3:00 PM	19	88	24	12	95	17	9	51	26	20	51	19	431
3:15 PM	21	118	32	14	108	17	7	57	21	16	34	14	459
3:30 PM	24	127	28	13	95	18	15	45	27	22	74	16	504
3:45 PM	28	145	37	11	74	15	17	44	23	25	38	19	476
4:00 PM	16	136	52	9	94	14	16	54	16	29	53	13	502
4:15 PM	23	112	21	15	100	10	18	47	20	22	59	15	462
4:30 PM	29	149	24	7	88	18	22	53	13	33	84	14	534
4:45 PM	21	160	33	6	97	14	15	72	18	24	50	9	519
5:00 PM	19	134	30	11	102	16	9	51	20	37	92	13	534
5:15 PM	41	176	41	8	110	26	28	66	24	24	70	6	620
5:30 PM	30	135	21	16	78	16	24	61	17	21	55	13	487
5:45 PM	28	171	34	12	73	18	25	60	10	18	49	9	507

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	299	1651	377	134	1114	199	205	661	235	291	709	160	6035
APPROACH %'s :	12.85%	70.95%	16.20%	9.26%	76.99%	13.75%	18.62%	60.04%	21.34%	25.09%	61.12%	13.79%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	110	619	128	32	397	74	74	242	75	118	296	42	2207
PEAK HR FACTOR :		0.830			0.873			0.828			0.803		0.890

CONTROL : Signalized

PREPARED BY NATIONAL DATA & SURVEYING SERVICES

PROJECT#: 15-5336-018
N/S Street: San Fernando Rd
E/W Street: Branford St
DATE: 5/27/2015 DAY: Wednesday
CITY: San Fernando Valley

A M

Adult Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	1	1	0	1	1	1	1	0
7:15 AM	0	0	2	1	2	0	0	0
7:30 AM	0	0	0	1	2	2	0	0
7:45 AM	0	0	5	0	4	0	2	0
8:00 AM	0	0	0	0	1	0	2	0
8:15 AM	1	0	0	2	0	0	1	0
8:30 AM	0	0	0	0	0	0	0	2
8:45 AM	0	0	1	0	0	0	1	1
9:00 AM	0	0	0	0	0	0	0	1
9:15 AM	0	0	0	0	0	1	0	1
9:30 AM	0	0	1	0	1	0	0	0
9:45 AM	0	0	0	2	0	0	0	0
TOTALS	**2**	**1**	**9**	**7**	**11**	**4**	**7**	**5**

School-Aged Pedestrians

T I M E	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
7:00 AM	0	0	0	0	0	0	0	0
7:15 AM	0	0	0	0	0	0	0	0
7:30 AM	0	0	0	0	0	0	0	0
7:45 AM	0	0	0	0	0	0	0	0
8:00 AM	0	0	0	0	0	0	0	0
8:15 AM	0	0	0	0	0	1	0	0
8:30 AM	0	0	0	0	0	0	0	0
8:45 AM	0	0	0	0	0	0	0	0
9:00 AM	0	0	0	0	0	0	0	0
9:15 AM	0	0	0	0	0	0	0	0
9:30 AM	0	0	0	0	0	0	0	0
9:45 AM	0	0	0	0	0	0	0	0
TOTALS	**0**	**0**	**0**	**0**	**0**	**1**	**0**	**0**

P M

Adult Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	0	0	2	1	1	0	0
3:15 PM	0	0	1	3	0	1	0	0
3:30 PM	0	0	0	0	1	1	0	0
3:45 PM	0	0	0	0	0	1	0	1
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	1	0	1	0	0	0	0
4:30 PM	0	1	0	1	0	0	0	2
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	1	0	1
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	0	0	2	0	0
5:45 PM	0	0	0	0	0	1	0	1
TOTALS	**0**	**2**	**1**	**7**	**2**	**8**	**0**	**5**

School-Aged Pedestrians

TIME	NORTH LEG		SOUTH LEG		EAST LEG		WEST LEG	
	EB	WB	EB	WB	NB	SB	NB	SB
3:00 PM	0	1	0	0	0	0	0	0
3:15 PM	0	0	0	1	0	0	0	0
3:30 PM	0	0	0	0	0	0	0	0
3:45 PM	0	0	1	0	0	1	0	0
4:00 PM	0	0	0	0	0	0	0	0
4:15 PM	0	0	0	0	0	0	0	0
4:30 PM	0	0	0	0	0	0	0	0
4:45 PM	0	0	0	0	0	0	0	0
5:00 PM	0	0	0	0	0	0	0	0
5:15 PM	0	0	0	0	0	0	0	0
5:30 PM	0	0	0	1	0	0	0	0
5:45 PM	0	0	0	0	0	0	0	0
TOTALS	**0**	**1**	**1**	**2**	**0**	**1**	**0**	**0**

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 | **Day:** Wednesday

BIKES

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
7:00 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
7:15 AM	0	0	0	0	0	0	0	3	1	0	0	0	4
7:30 AM	0	0	0	0	0	0	0	1	1	0	0	0	2
7:45 AM	0	1	0	0	1	0	0	1	0	1	0	0	4
8:00 AM	0	0	0	0	1	0	0	1	0	0	1	0	3
8:15 AM	0	0	1	0	0	0	0	0	0	0	0	0	1
8:30 AM	0	0	0	0	1	0	0	1	0	0	0	0	2
8:45 AM	0	1	0	0	0	0	0	0	0	0	0	0	1
9:00 AM	0	0	0	0	0	0	0	0	0	0	2	0	2
9:15 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:30 AM	0	0	0	0	0	0	0	0	0	0	0	0	
9:45 AM	0	0	0	0	1	0	0	2	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	3	1	0	4	0	0	9	2	1	3	0	23
APPROACH %'s :	0.00%	75.00%	25.00%	0.00%	100.00%	0.00%	0.00%	81.82%	18.18%	25.00%	75.00%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	1	0	0	2	0	0	6	2	1	1	0	13
PEAK HR FACTOR :	0.250			0.500			0.500			0.500			0.813

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 **Day:** Wednesday

BIKES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
3:00 PM	0	1	0	0	1	0	0	0	0	1	1	0	4
3:15 PM	0	0	0	1	0	0	0	0	0	0	1	0	2
3:30 PM	0	0	0	0	1	0	0	0	0	0	0	0	1
3:45 PM	3	0	0	0	0	0	0	0	0	0	0	0	3
4:00 PM	0	0	1	0	1	0	0	0	0	0	4	0	6
4:15 PM	0	0	0	0	1	1	0	2	0	0	1	0	5
4:30 PM	0	0	0	0	0	0	0	0	0	0	0	0	
4:45 PM	1	0	0	0	0	0	0	0	0	0	1	0	2
5:00 PM	0	2	0	0	2	0	0	0	0	0	1	0	5
5:15 PM	1	1	0	0	2	0	0	1	0	0	3	0	8
5:30 PM	0	1	0	0	1	1	0	0	0	0	1	0	4
5:45 PM	1	0	1	0	3	0	0	0	0	0	1	0	6

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	6	5	2	1	12	2	0	3	0	1	14	0	46
APPROACH %'s :	46.15%	38.46%	15.38%	6.67%	80.00%	13.33%	0.00%	100.00%	0.00%	6.67%	93.33%	0.00%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	2	3	0	0	4	0	0	1	0	0	5	0	15
PEAK HR FACTOR :	0.625			0.500			0.250			0.417			0.469

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 | **Day:** Wednesday

BUSES

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
7:00 AM	0	2	0	0	8	0	1	0	0	0	2	0	13
7:15 AM	0	2	0	0	5	0	0	0	1	0	0	0	8
7:30 AM	0	1	0	0	4	0	0	0	0	0	2	0	7
7:45 AM	0	3	0	0	3	0	0	0	1	1	0	0	8
8:00 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
8:15 AM	0	4	0	0	2	0	1	0	0	0	1	0	8
8:30 AM	0	2	0	0	3	0	0	0	0	0	0	0	5
8:45 AM	0	3	0	0	2	0	0	0	0	0	0	0	5
9:00 AM	0	3	0	0	3	0	0	0	0	0	0	0	6
9:15 AM	0	3	0	0	0	0	0	0	0	0	0	0	3
9:30 AM	0	1	0	0	1	0	0	0	0	0	0	0	2
9:45 AM	1	2	0	0	0	0	0	0	1	0	0	0	4

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	1	27	0	0	32	0	2	0	3	1	5	0	71
APPROACH %'s :	3.57%	96.43%	0.00%	0.00%	100.00%	0.00%	40.00%	0.00%	60.00%	16.67%	83.33%	0.00%	

PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	0	7	0	0	13	0	0	0	2	1	2	0	25
PEAK HR FACTOR :	0.583			0.650			0.500			0.375			0.781

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 **Day:** Wednesday

BUSES

City: San Fernando Valley **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
3:00 PM	0	1	0	0	1	0	0	0	0	0	1	0	3
3:15 PM	0	2	0	0	3	0	0	0	0	0	0	0	5
3:30 PM	0	1	0	0	2	0	0	0	0	0	0	0	3
3:45 PM	0	2	0	0	0	0	0	0	1	0	0	0	3
4:00 PM	0	2	0	0	3	0	1	0	0	0	0	0	6
4:15 PM	0	1	0	0	1	0	1	0	0	0	0	0	3
4:30 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
4:45 PM	0	2	0	0	4	0	0	0	0	0	0	0	6
5:00 PM	0	2	0	0	2	0	0	0	0	0	0	0	4
5:15 PM	0	2	0	0	0	0	0	0	0	0	0	0	2
5:30 PM	0	1	0	0	1	0	0	0	0	0	1	0	3
5:45 PM	0	2	0	0	1	0	0	0	0	0	0	0	3

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	0	20	0	0	18	0	2	0	1	0	2	0	43
APPROACH %'s :	0.00%	100.00%	0.00%	0.00%	100.00%	0.00%	66.67%	0.00%	33.33%	0.00%	100.00%	0.00%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	0	8	0	0	6	0	0	0	0	0	0	0	14
PEAK HR FACTOR :	1.000			0.375			0.000			0.000			0.583

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 | **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley | **Date:** 5/27/2015

AM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
7:00 AM	1	3	1	1	4	0	0	1	0	2	2	2	17
7:15 AM	0	5	1	0	11	0	1	2	2	1	6	1	30
7:30 AM	0	4	2	1	4	0	0	3	3	3	2	0	22
7:45 AM	1	0	1	1	10	0	1	1	1	2	3	3	24
8:00 AM	0	3	0	2	6	0	1	3	2	1	0	1	19
8:15 AM	0	3	2	1	5	1	3	2	13	3	5	1	39
8:30 AM	1	2	3	1	5	1	0	7	11	1	3	0	35
8:45 AM	1	7	3	0	5	1	1	3	8	6	3	0	38
9:00 AM	0	0	1	0	4	1	0	2	2	0	5	0	15
9:15 AM	0	0	6	2	2	0	2	7	3	1	1	0	24
9:30 AM	5	2	4	1	5	0	1	8	3	2	5	2	38
9:45 AM	0	2	2	1	6	3	1	6	4	2	4	1	32
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	9	31	26	11	67	7	11	45	52	24	39	11	333
APPROACH %'s :	13.64%	46.97%	39.39%	12.94%	78.82%	8.24%	10.19%	41.67%	48.15%	32.43%	52.70%	14.86%	
PEAK HR START TIME :	715 AM												TOTAL
PEAK HR VOL :	1	12	4	4	31	0	3	9	8	7	11	5	95
PEAK HR FACTOR :	0.708			0.795			0.833			0.719			0.792

CONTROL : Signalized

Intersection Turning Movement

Prepared by:

National Data & Surveying Services

Project ID: 15-5336-018 | **Day:** Wednesday

HEAVY TRUCKS

City: San Fernando Valley | **Date:** 5/27/2015

PM

NS/EW Streets:	San Fernando Rd			San Fernando Rd			Branford St			Branford St			
	NORTHBOUND			SOUTHBOUND			EASTBOUND			WESTBOUND			
	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
LANES:	1	2	0	1	2	0	1	1	1	0	1	0	
3:00 PM	2	4	10	3	4	2	0	5	1	2	3	2	38
3:15 PM	2	7	3	4	4	0	1	3	1	1	8	2	36
3:30 PM	0	5	2	1	2	1	0	5	2	1	0	0	19
3:45 PM	1	6	5	1	4	0	2	7	0	1	3	2	32
4:00 PM	1	7	2	1	3	0	0	10	2	3	3	2	34
4:15 PM	3	3	3	2	5	0	0	6	1	1	2	0	26
4:30 PM	2	0	3	0	7	1	0	7	1	2	2	0	25
4:45 PM	2	3	4	0	2	2	0	6	2	2	0	1	24
5:00 PM	5	2	2	1	3	0	0	5	0	1	3	0	22
5:15 PM	4	4	1	0	2	0	0	3	1	1	9	0	25
5:30 PM	0	2	2	1	1	0	0	6	1	2	2	0	17
5:45 PM	2	2	0	0	3	1	0	4	2	1	1	0	16

	NL	NT	NR	SL	ST	SR	EL	ET	ER	WL	WT	WR	TOTAL
TOTAL VOLUMES :	24	45	37	14	40	7	3	67	14	18	36	9	314
APPROACH %'s :	22.64%	42.45%	34.91%	22.95%	65.57%	11.48%	3.57%	79.76%	16.67%	28.57%	57.14%	14.29%	

PEAK HR START TIME :	430 PM												TOTAL
PEAK HR VOL :	13	9	10	1	14	3	0	21	4	6	14	1	96
PEAK HR FACTOR :	0.889			0.563			0.781			0.525			0.960

CONTROL : Signalized

KOA CORPORATION
PLANNING & ENGINEERING

APPENDIX A2
Existing Roadway Segment Traffic Count Data

Prepared by NDS/ATD

VOLUME

Haskell Ave Bet. Victory Blvd & Orange Line Bus Wy

Day: Thursday
Date: 9/3/2015

City: Van Nuys
Project #: CA15_5548_001

DAILY TOTALS	NB	SB	EB	WB	Total
	981	1,661	0	0	2,642

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	1		1				2		12:00	12		15				27	
00:15	0		0				0		12:15	15		10				25	
00:30	0		1				1		12:30	11		10				21	
00:45	1	2	1	3			2	5	12:45	10	48	12	47			22	95
01:00	0		1				1		13:00	12		8				20	
01:15	0		0				0		13:15	7		10				17	
01:30	1		0				1		13:30	15		12				27	
01:45	0	1	0	1			0	2	13:45	11	45	12	42			23	87
02:00	0		0				0		14:00	14		13				27	
02:15	0		0				0		14:15	16		7				23	
02:30	0		0				0		14:30	16		19				35	
02:45	0		0				0		14:45	14	60	8	47			22	107
03:00	0		0				0		15:00	23		13				36	
03:15	0		1				1		15:15	18		19				37	
03:30	1		1				2		15:30	38		14				52	
03:45	0	1	0	2			0	3	15:45	31	110	26	72			57	182
04:00	1		0				1		16:00	33		28				61	
04:15	0		1				1		16:15	27		18				45	
04:30	1		1				2		16:30	31		24				55	
04:45	0	2	0	2			0	4	16:45	24	115	21	91			45	206
05:00	1		1				2		17:00	52		18				70	
05:15	0		0				0		17:15	49		22				71	
05:30	1		5				6		17:30	51		27				78	
05:45	4	6	10	16			14	22	17:45	24	176	32	99			56	275
06:00	2		13				15		18:00	36		20				56	
06:15	2		17				19		18:15	36		31				67	
06:30	1		32				33		18:30	22		18				40	
06:45	3	8	45	107			48	115	18:45	27	121	23	92			50	213
07:00	6		64				70		19:00	18		10				28	
07:15	9		61				70		19:15	18		14				32	
07:30	22		86				108		19:30	11		13				24	
07:45	15	52	93	304			108	356	19:45	7	54	4	41			11	95
08:00	30		91				121		20:00	5		13				18	
08:15	12		96				108		20:15	7		8				15	
08:30	16		79				95		20:30	3		5				8	
08:45	9	67	68	334			77	401	20:45	6	21	5	31			11	52
09:00	3		49				52		21:00	3		3				6	
09:15	5		36				41		21:15	1		5				6	
09:30	3		40				43		21:30	3		1				4	
09:45	3	14	34	159			37	173	21:45	4	11	5	14			9	25
10:00	5		22				27		22:00	2		5				7	
10:15	5		24				29		22:15	6		1				7	
10:30	5		19				24		22:30	3		3				6	
10:45	3	18	12	77			15	95	22:45	2	13	2	11			4	24
11:00	11		19				30		23:00	2		0				2	
11:15	8		22				30		23:15	0		2				2	
11:30	8		10				18		23:30	3		1				4	
11:45	3	30	13	64			16	94	23:45	1	6	2	5			3	11
TOTALS		201		1069				1270	TOTALS		780		592				1372
SPLIT %		15.8%		84.2%				48.1%	SPLIT %		56.9%		43.1%				51.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	981	1,661	0	0	2,642

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	07:30	07:30			07:30	PM Peak Hour	16:45	17:30			17:00
AM Pk Volume	79	366			445	PM Pk Volume	176	110			275
Pk Hr Factor	0.658	0.953			0.919	Pk Hr Factor	0.846	0.859			0.881
7 - 9 Volume	119	638	0	0	757	4 - 6 Volume	291	190	0	0	481
7 - 9 Peak Hour	07:30	07:30			07:30	4 - 6 Peak Hour	16:45	17:00			17:00
7 - 9 Pk Volume	79	366	0	0	445	4 - 6 Pk Volume	176	99	0	0	275
Pk Hr Factor	0.658	0.953	0.000	0.000	0.919	Pk Hr Factor	0.846	0.773	0.000	0.000	0.881

Prepared by NDS/ATD

VOLUME

Victory Blvd Bet. Woodley Ave & I-405

Day: Wednesday **City:** San Fernando Valley
Date: 5/27/2015 **Project #:** CA15_5337_002

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	25,827	25,930	51,757

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			64		50		114		12:00			318		299		617	
0:15			63		59		122		12:15			365		298		663	
0:30			39		50		89		12:30			341		292		633	
0:45			30	196	23	182	53	378	12:45			353	1377	343	1232	696	2609
1:00			29		29		58		13:00			363		285		648	
1:15			18		25		43		13:15			316		326		642	
1:30			23		22		45		13:30			336		289		625	
1:45			14	84	30	106	44	190	13:45			357	1372	350	1250	707	2622
2:00			22		20		42		14:00			350		326		676	
2:15			15		21		36		14:15			338		373		711	
2:30			14		22		36		14:30			382		386		768	
2:45			17	68	21	84	38	152	14:45			400	1470	401	1486	801	2956
3:00			23		13		36		15:00			430		423		853	
3:15			12		10		22		15:15			494		410		904	
3:30			19		30		49		15:30			540		454		994	
3:45			17	71	15	68	32	139	15:45			492	1956	467	1754	959	3710
4:00			18		33		51		16:00			554		447		1001	
4:15			30		27		57		16:15			503		464		967	
4:30			36		52		88		16:30			548		511		1059	
4:45			42	126	47	159	89	285	16:45			509	2114	471	1893	980	4007
5:00			49		53		102		17:00			596		522		1118	
5:15			77		68		145		17:15			590		502		1092	
5:30			100		132		232		17:30			592		541		1133	
5:45			116	342	180	433	296	775	17:45			509	2287	529	2094	1038	4381
6:00			123		193		316		18:00			461		496		957	
6:15			169		269		438		18:15			423		463		886	
6:30			226		303		529		18:30			440		454		894	
6:45			252	770	377	1142	629	1912	18:45			377	1701	447	1860	824	3561
7:00			447		496		943		19:00			355		395		750	
7:15			468		584		1052		19:15			306		370		676	
7:30			478		588		1066		19:30			269		303		572	
7:45			492	1885	553	2221	1045	4106	19:45			233	1163	333	1401	566	2564
8:00			521		595		1116		20:00			277		246		523	
8:15			489		535		1024		20:15			258		233		491	
8:30			488		502		990		20:30			241		239		480	
8:45			492	1990	499	2131	991	4121	20:45			187	963	204	922	391	1885
9:00			434		511		945		21:00			213		196		409	
9:15			409		415		824		21:15			193		188		381	
9:30			424		417		841		21:30			216		195		411	
9:45			401	1668	383	1726	784	3394	21:45			159	781	156	735	315	1516
10:00			289		282		571		22:00			141		156		297	
10:15			290		263		553		22:15			191		155		346	
10:30			336		240		576		22:30			136		146		282	
10:45			301	1216	240	1025	541	2241	22:45			116	584	153	610	269	1194
11:00			314		235		549		23:00			97		115		212	
11:15			314		243		557		23:15			100		101		201	
11:30			326		252		578		23:30			87		86		173	
11:45			338	1292	312	1042	650	2334	23:45			67	351	72	374	139	725
TOTALS				9708		10319		**20027**	**TOTALS**				16119		15611		**31730**
SPLIT %				48.5%		51.5%		**38.7%**	**SPLIT %**				50.8%		49.2%		**61.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	25,827	25,930	51,757

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour			7:45	7:15	**7:15**	**PM Peak Hour**			16:45	17:00	**17:00**
AM Pk Volume			1990	2320	**4279**	**PM Pk Volume**			2287	2094	**4381**
Pk Hr Factor			0.955	0.975	**0.959**	**Pk Hr Factor**			0.959	0.968	**0.967**
7 - 9 Volume	0	0	3875	4352	**8227**	**4 - 6 Volume**	0	0	4401	3987	**8388**
7 - 9 Peak Hour			7:45	7:15	**7:15**	**4 - 6 Peak Hour**			16:45	17:00	**17:00**
7 - 9 Pk Volume	0	0	1990	2320	**4279**	**4 - 6 Pk Volume**	0	0	2287	2094	**4381**
Pk Hr Factor	0.000	0.000	0.955	0.975	**0.959**	**Pk Hr Factor**	0.000	0.000	0.959	0.968	**0.967**

Prepared by NDS/ATD

VOLUME

Arleta Ave Bet. Devonshire St & Van Nuys Blvd

Day: Thursday
Date: 9/3/2015

City: Arleta
Project #: CA15_5548_002

DAILY TOTALS	NB	SB	EB	WB	Total
	8,493	8,598	0	0	17,091

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	10		13				23		12:00	95		64				159	
00:15	9		29				38		12:15	95		88				183	
00:30	6		7				13		12:30	76		106				182	
00:45	18	43	12	61			30	104	12:45	87	353	92	350			179	703
01:00	11		9				20		13:00	100		97				197	
01:15	11		6				17		13:15	121		89				210	
01:30	7		7				14		13:30	86		101				187	
01:45	6	35	6	28			12	63	13:45	114	421	88	375			202	796
02:00	5		2				7		14:00	104		101				205	
02:15	6		5				11		14:15	113		110				223	
02:30	3		9				12		14:30	123		102				225	
02:45	2	16	9	25			11	41	14:45	129	469	143	456			272	925
03:00	1		5				6		15:00	149		116				265	
03:15	4		7				11		15:15	178		142				320	
03:30	8		11				19		15:30	174		124				298	
03:45	3	16	4	27			7	43	15:45	198	699	154	536			352	1235
04:00	10		5				15		16:00	187		148				335	
04:15	13		10				23		16:15	192		177				369	
04:30	20		19				39		16:30	222		145				367	
04:45	25	68	12	46			37	114	16:45	191	792	153	623			344	1415
05:00	22		17				39		17:00	189		166				355	
05:15	38		23				61		17:15	226		169				395	
05:30	50		26				76		17:30	231		153				384	
05:45	40	150	40	106			80	256	17:45	244	890	169	657			413	1547
06:00	49		56				105		18:00	227		173				400	
06:15	64		83				147		18:15	185		178				363	
06:30	89		110				199		18:30	168		144				312	
06:45	137	339	128	377			265	716	18:45	170	750	113	608			283	1358
07:00	156		227				383		19:00	146		125				271	
07:15	205		267				472		19:15	137		132				269	
07:30	242		253				495		19:30	122		86				208	
07:45	201	804	270	1017			471	1821	19:45	97	502	120	463			217	965
08:00	160		234				394		20:00	82		74				156	
08:15	131		228				359		20:15	79		72				151	
08:30	87		233				320		20:30	65		82				147	
08:45	90	468	203	898			293	1366	20:45	64	290	73	301			137	591
09:00	76		166				242		21:00	73		74				147	
09:15	95		127				222		21:15	59		65				124	
09:30	64		109				173		21:30	55		63				118	
09:45	86	321	99	501			185	822	21:45	39	226	48	250			87	476
10:00	73		68				141		22:00	42		55				97	
10:15	71		83				154		22:15	37		42				79	
10:30	70		72				142		22:30	29		31				60	
10:45	80	294	64	287			144	581	22:45	33	141	35	163			68	304
11:00	71		95				166		23:00	28		28				56	
11:15	91		88				179		23:15	26		21				47	
11:30	82		79				161		23:30	14		21				35	
11:45	72	316	84	346			156	662	23:45	22	90	27	97			49	187
TOTALS		2870		3719				**6589**	**TOTALS**		5623		4879				**10502**
SPLIT %		43.6%		56.4%				**38.6%**	**SPLIT %**		53.5%		46.5%				**61.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	8,493	8,598	0	0	17,091

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	07:15	07:15			**07:15**	**PM Peak Hour**	17:15	17:30			**17:15**
AM Pk Volume	808	1024			**1832**	**PM Pk Volume**	928	673			**1592**
Pk Hr Factor	0.835	0.948			**0.925**	**Pk Hr Factor**	0.951	0.945			**0.964**
7 - 9 Volume	1272	1915	0	0	**3187**	**4 - 6 Volume**	1682	1280	0	0	**2962**
7 - 9 Peak Hour	07:15	07:15			**07:15**	**4 - 6 Peak Hour**	17:00	17:00			**17:00**
7 - 9 Pk Volume	808	1024	0	0	**1832**	**4 - 6 Pk Volume**	890	657	0	0	**1547**
Pk Hr Factor	0.835	0.948	0.000	0.000	**0.925**	**Pk Hr Factor**	0.912	0.972	0.000	0.000	**0.936**

Prepared by NDS/ATD

VOLUME

Arleta Ave Bet. Van Nuys Blvd & Terra Bella St

Day: Thursday
Date: 9/3/2015

City: Arleta
Project #: CA15_5548_003

DAILY TOTALS	NB	SB	EB	WB	Total
	7,630	6,406	0	0	14,036

AM Period	NB		SB		EB	WB	TOTAL	
00:00	9		15				24	
00:15	8		18				26	
00:30	6		9				15	
00:45	9	32	9	51			18	83
01:00	7		11				18	
01:15	5		6				11	
01:30	4		5				9	
01:45	5	21	3	25			8	46
02:00	8		1				9	
02:15	3		4				7	
02:30	2		7				9	
02:45	5	18	7	19			12	37
03:00	2		1				3	
03:15	5		1				6	
03:30	6		7				13	
03:45	6	19	2	11			8	30
04:00	8		5				13	
04:15	4		4				8	
04:30	9		13				22	
04:45	19	40	5	27			24	67
05:00	20		9				29	
05:15	29		14				43	
05:30	36		24				60	
05:45	28	113	20	67			48	180
06:00	43		34				77	
06:15	63		47				110	
06:30	77		75				152	
06:45	102	285	133	289			235	574
07:00	117		180				297	
07:15	191		197				388	
07:30	222		243				465	
07:45	221	751	181	801			402	1552
08:00	182		210				392	
08:15	89		190				279	
08:30	81		162				243	
08:45	73	425	135	697			208	1122
09:00	69		116				185	
09:15	58		87				145	
09:30	65		58				123	
09:45	80	272	67	328			147	600
10:00	60		60				120	
10:15	71		53				124	
10:30	65		55				120	
10:45	77	273	55	223			132	496
11:00	72		67				139	
11:15	68		60				128	
11:30	67		46				113	
11:45	74	281	62	235			136	516
TOTALS		2530		2773				5303
SPLIT %		47.7%		52.3%				37.8%

PM Period	NB		SB		EB	WB	TOTAL	
12:00	81		54				135	
12:15	77		71				148	
12:30	56		73				129	
12:45	90	304	63	261			153	565
13:00	93		87				180	
13:15	103		57				160	
13:30	76		70				146	
13:45	89	361	57	271			146	632
14:00	97		72				169	
14:15	70		70				140	
14:30	106		64				170	
14:45	106	379	85	291			191	670
15:00	126		89				215	
15:15	150		104				254	
15:30	168		124				292	
15:45	182	626	127	444			309	1070
16:00	175		112				287	
16:15	174		121				295	
16:30	193		122				315	
16:45	201	743	102	457			303	1200
17:00	187		139				326	
17:15	228		123				351	
17:30	218		135				353	
17:45	234	867	131	528			365	1395
18:00	202		117				319	
18:15	182		117				299	
18:30	176		99				275	
18:45	155	715	85	418			240	1133
19:00	149		84				233	
19:15	136		95				231	
19:30	118		66				184	
19:45	85	488	76	321			161	809
20:00	71		67				138	
20:15	61		54				115	
20:30	63		58				121	
20:45	58	253	59	238			117	491
21:00	61		64				125	
21:15	53		52				105	
21:30	41		44				85	
21:45	34	189	41	201			75	390
22:00	30		40				70	
22:15	30		35				65	
22:30	28		22				50	
22:45	32	120	22	119			54	239
23:00	23		21				44	
23:15	9		25				34	
23:30	10		19				29	
23:45	13	55	19	84			32	139
TOTALS		5100		3633				8733
SPLIT %		58.4%		41.6%				62.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	7,630	6,406	0	0	14,036

	NB	SB	EB	WB	TOTAL
AM Peak Hour	07:15	07:15			07:15
AM Pk Volume	816	831			1647
Pk Hr Factor	0.919	0.855			0.885
7 - 9 Volume	1176	1498	0	0	2674
7 - 9 Peak Hour	07:15	07:15			07:15
7 - 9 Pk Volume	816	831	0	0	1647
Pk Hr Factor	0.919	0.855	0.000	0.000	0.885

	NB	SB	EB	WB	TOTAL
PM Peak Hour	17:15	17:00			17:00
PM Pk Volume	882	528			1395
Pk Hr Factor	0.942	0.950			0.955
4 - 6 Volume	1610	985	0	0	2595
4 - 6 Peak Hour	17:00	17:00			17:00
4 - 6 Pk Volume	867	528	0	0	1395
Pk Hr Factor	0.926	0.950	0.000	0.000	0.955

Prepared by NDS/ATD

VOLUME

Arleta Ave Bet. Terra Bella St & Osborne St

Day: Thursday
Date: 9/3/2015

City: Arleta
Project #: CA15_5548_004

DAILY TOTALS	NB	SB	EB	WB	Total
	8,904	7,356	0	0	16,260

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	17		14				31		12:00	86		50				136	
00:15	12		19				31		12:15	90		76				166	
00:30	11		7				18		12:30	65		72				137	
00:45	8	48	9	49			17	97	12:45	93	334	84	282			177	616
01:00	13		10				23		13:00	92		88				180	
01:15	8		6				14		13:15	109		75				184	
01:30	8		4				12		13:30	101		74				175	
01:45	8	37	5	25			13	62	13:45	91	393	72	309			163	702
02:00	13		1				14		14:00	98		89				187	
02:15	5		5				10		14:15	77		98				175	
02:30	1		5				6		14:30	131		85				216	
02:45	5	24	7	18			12	42	14:45	112	418	111	383			223	801
03:00	3		5				8		15:00	155		105				260	
03:15	5		2				7		15:15	196		123				319	
03:30	5		8				13		15:30	206		120				326	
03:45	5	18	7	22			12	40	15:45	227	784	150	498			377	1282
04:00	6		4				10		16:00	220		118				338	
04:15	11		15				26		16:15	228		130				358	
04:30	10		19				29		16:30	242		126				368	
04:45	15	42	17	55			32	97	16:45	253	943	128	502			381	1445
05:00	17		16				33		17:00	250		145				395	
05:15	18		22				40		17:15	296		143				439	
05:30	31		36				67		17:30	284		130				414	
05:45	23	89	47	121			70	210	17:45	296	1126	126	544			422	1670
06:00	49		51				100		18:00	261		130				391	
06:15	57		80				137		18:15	236		122				358	
06:30	72		113				185		18:30	199		98				297	
06:45	102	280	194	438			296	718	18:45	197	893	95	445			292	1338
07:00	127		253				380		19:00	186		103				289	
07:15	191		254				445		19:15	163		102				265	
07:30	206		278				484		19:30	114		74				188	
07:45	203	727	244	1029			447	1756	19:45	98	561	70	349			168	910
08:00	211		218				429		20:00	103		63				166	
08:15	141		197				338		20:15	80		60				140	
08:30	86		164				250		20:30	62		56				118	
08:45	77	515	158	737			235	1252	20:45	71	316	58	237			129	553
09:00	74		123				197		21:00	93		69				162	
09:15	51		99				150		21:15	76		48				124	
09:30	55		72				127		21:30	53		49				102	
09:45	68	248	68	362			136	610	21:45	41	263	45	211			86	474
10:00	70		69				139		22:00	51		44				95	
10:15	84		66				150		22:15	34		36				70	
10:30	64		52				116		22:30	41		32				73	
10:45	101	319	57	244			158	563	22:45	33	159	29	141			62	300
11:00	74		71				145		23:00	25		26				51	
11:15	72		75				147		23:15	20		17				37	
11:30	83		52				135		23:30	12		20				32	
11:45	72	301	77	275			149	576	23:45	9	66	17	80			26	146
TOTALS		2648		3375				**6023**	**TOTALS**		6256		3981				**10237**
SPLIT %		44.0%		56.0%				**37.0%**	**SPLIT %**		61.1%		38.9%				**63.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	8,904	7,356	0	0	16,260

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	07:15	07:00			**07:15**	**PM Peak Hour**	17:15	16:45			**17:00**
AM Pk Volume	811	1029			**1805**	**PM Pk Volume**	1137	546			**1670**
Pk Hr Factor	0.961	0.925			**0.932**	**Pk Hr Factor**	0.960	0.941			**0.951**
7 - 9 Volume	1242	1766	0	0	**3008**	**4 - 6 Volume**	2069	1046	0	0	**3115**
7 - 9 Peak Hour	07:15	07:00			**07:15**	**4 - 6 Peak Hour**	17:00	16:45			**17:00**
7 - 9 Pk Volume	811	1029	0	0	**1805**	**4 - 6 Pk Volume**	1126	546	0	0	**1670**
Pk Hr Factor	0.961	0.925	0.000	0.000	**0.932**	**Pk Hr Factor**	0.951	0.941	0.000	0.000	**0.951**

Prepared by NDS/ATD

VOLUME

Arleta Ave Bet. Osborne St & Branford St

Day: Thursday
Date: 9/3/2015

City: Arleta
Project #: CA15_5548_005

DAILY TOTALS	NB	SB	EB	WB	Total
	10,966	9,718	0	0	20,684

AM Period	NB		SB		EB	WB	TOTAL	
00:00	30		33				63	
00:15	14		27				41	
00:30	11		21				32	
00:45	15	70	14	95			29	165
01:00	11		16				27	
01:15	12		9				21	
01:30	6		16				22	
01:45	6	35	5	46			11	81
02:00	11		7				18	
02:15	7		11				18	
02:30	5		13				18	
02:45	4	27	9	40			13	67
03:00	5		7				12	
03:15	9		7				16	
03:30	5		9				14	
03:45	6	25	11	34			17	59
04:00	9		8				17	
04:15	23		19				42	
04:30	18		29				47	
04:45	20	70	26	82			46	152
05:00	27		18				45	
05:15	31		38				69	
05:30	51		50				101	
05:45	56	165	69	175			125	340
06:00	62		84				146	
06:15	76		104				180	
06:30	94		145				239	
06:45	103	335	239	572			342	907
07:00	153		297				450	
07:15	206		305				511	
07:30	237		327				564	
07:45	234	830	277	1206			511	2036
08:00	204		238				442	
08:15	155		217				372	
08:30	92		198				290	
08:45	100	551	182	835			282	1386
09:00	78		143				221	
09:15	100		137				237	
09:30	85		103				188	
09:45	89	352	84	467			173	819
10:00	70		73				143	
10:15	83		92				175	
10:30	77		74				151	
10:45	100	330	94	333			194	663
11:00	69		78				147	
11:15	98		105				203	
11:30	105		98				203	
11:45	87	359	85	366			172	725
TOTALS		3149		4251				**7400**
SPLIT %		42.6%		57.4%				**35.8%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	93		90				183	
12:15	97		101				198	
12:30	83		95				178	
12:45	87	360	84	370			171	730
13:00	112		113				225	
13:15	120		103				223	
13:30	135		113				248	
13:45	119	486	94	423			213	909
14:00	106		123				229	
14:15	102		120				222	
14:30	160		130				290	
14:45	142	510	128	501			270	1011
15:00	193		133				326	
15:15	240		159				399	
15:30	259		137				396	
15:45	300	992	186	615			486	1607
16:00	273		138				411	
16:15	334		175				509	
16:30	299		152				451	
16:45	309	1215	157	622			466	1837
17:00	291		159				450	
17:15	392		190				582	
17:30	371		158				529	
17:45	371	1425	173	680			544	2105
18:00	331		189				520	
18:15	253		170				423	
18:30	281		142				423	
18:45	238	1103	141	642			379	1745
19:00	219		150				369	
19:15	179		131				310	
19:30	144		124				268	
19:45	118	660	118	523			236	1183
20:00	120		105				225	
20:15	111		107				218	
20:30	94		81				175	
20:45	91	416	86	379			177	795
21:00	115		96				211	
21:15	104		92				196	
21:30	86		83				169	
21:45	55	360	79	350			134	710
22:00	59		73				132	
22:15	44		51				95	
22:30	42		35				77	
22:45	30	175	43	202			73	377
23:00	40		46				86	
23:15	30		35				65	
23:30	21		43				64	
23:45	24	115	36	160			60	275
TOTALS		7817		5467				**13284**
SPLIT %		58.8%		41.2%				**64.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	10,966	9,718	0	0	20,684

	NB	SB	EB	WB	Total
AM Peak Hour	07:15	07:00			**07:00**
AM Pk Volume	881	1206			**2036**
Pk Hr Factor	0.929	0.922			**0.902**
7 - 9 Volume	1381	2041	0	0	**3422**
7 - 9 Peak Hour	07:15	07:00			**07:00**
7 - 9 Pk Volume	881	1206	0	0	**2036**
Pk Hr Factor	0.929	0.922	0.000	0.000	**0.902**

	NB	SB	EB	WB	Total
PM Peak Hour	17:15	17:15			**17:15**
PM Pk Volume	1465	710			**2175**
Pk Hr Factor	0.934	0.934			**0.934**
4 - 6 Volume	2640	1302	0	0	**3942**
4 - 6 Peak Hour	17:00	17:00			**17:00**
4 - 6 Pk Volume	1425	680	0	0	**2105**
Pk Hr Factor	0.909	0.895	0.000	0.000	**0.904**

Prepared by NDS/ATD

VOLUME

Branford St Bet. Canterbury Ave & I-405

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_007

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	9,840	9,314	19,154

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			16		18		34		12:00			107		106		213	
0:15			20		10		30		12:15			98		104		202	
0:30			15		19		34		12:30			110		108		218	
0:45			8	59	13	60	21	119	12:45			125	440	122	440	247	880
1:00			9		10		19		13:00			121		110		231	
1:15			12		15		27		13:15			114		114		228	
1:30			13		12		25		13:30			119		97		216	
1:45			12	46	8	45	20	91	13:45			117	471	116	437	233	908
2:00			12		12		24		14:00			133		113		246	
2:15			12		4		16		14:15			133		118		251	
2:30			13		6		19		14:30			142		134		276	
2:45			16	53	8	30	24	83	14:45			195	603	126	491	321	1094
3:00			18		11		29		15:00			165		154		319	
3:15			13		4		17		15:15			134		173		307	
3:30			21		13		34		15:30			163		193		356	
3:45			19	71	6	34	25	105	15:45			145	607	211	731	356	1338
4:00			21		8		29		16:00			154		222		376	
4:15			25		4		29		16:15			166		212		378	
4:30			22		12		34		16:30			173		228		401	
4:45			41	109	23	47	64	156	16:45			179	672	253	915	432	1587
5:00			45		22		67		17:00			178		271		449	
5:15			47		28		75		17:15			191		249		440	
5:30			95		42		137		17:30			211		238		449	
5:45			132	319	66	158	198	477	17:45			203	783	252	1010	455	1793
6:00			139		74		213		18:00			169		124		293	
6:15			119		67		186		18:15			151		134		285	
6:30			143		88		231		18:30			168		137		305	
6:45			185	586	102	331	287	917	18:45			146	634	109	504	255	1138
7:00			182		135		317		19:00			138		120		258	
7:15			244		193		437		19:15			133		111		244	
7:30			280		223		503		19:30			125		118		243	
7:45			252	958	290	841	542	1799	19:45			118	514	106	455	224	969
8:00			204		196		400		20:00			107		84		191	
8:15			146		145		291		20:15			102		100		202	
8:30			147		118		265		20:30			101		99		200	
8:45			137	634	119	578	256	1212	20:45			120	430	88	371	208	801
9:00			113		119		232		21:00			83		80		163	
9:15			103		93		196		21:15			87		88		175	
9:30			114		89		203		21:30			90		81		171	
9:45			93	423	94	395	187	818	21:45			90	350	63	312	153	662
10:00			91		94		185		22:00			73		72		145	
10:15			84		82		166		22:15			59		77		136	
10:30			77		106		183		22:30			41		70		111	
10:45			102	354	94	376	196	730	22:45			60	233	53	272	113	505
11:00			93		84		177		23:00			37		31		68	
11:15			93		88		181		23:15			28		34		62	
11:30			104		91		195		23:30			26		32		58	
11:45			90	380	103	366	193	746	23:45			20	111	18	115	38	226
TOTALS				3992		3261		**7253**	**TOTALS**				5848		6053		**11901**
SPLIT %				55.0%		45.0%		**37.9%**	**SPLIT %**				49.1%		50.9%		**62.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	9,840	9,314	19,154

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			7:15	7:15	**7:15**	**PM Peak Hour**			17:00	16:45	**17:00**
AM Pk Volume			980	902	**1882**	**PM Pk Volume**			783	1011	**1793**
Pk Hr Factor			0.875	0.778	**0.868**	**Pk Hr Factor**			0.928	0.933	**0.985**
7 - 9 Volume	0	0	1592	1419	**3011**	**4 - 6 Volume**	0	0	1455	1925	**3380**
7 - 9 Peak Hour			7:15	7:15	**7:15**	**4 - 6 Peak Hour**			17:00	16:45	**17:00**
7 - 9 Pk Volume	0	0	980	902	**1882**	**4 - 6 Pk Volume**	0	0	783	1011	**1793**
Pk Hr Factor	0.000	0.000	0.875	0.778	**0.868**	**Pk Hr Factor**	0.000	0.000	0.928	0.933	**0.985**

Prepared by NDS/ATD

VOLUME

Branford St Bet. I-405 & San Fernando Rd

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_008

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,635	5,869	12,504

AM Period	NB	SB	EB		WB		TOTAL		PM Period	NB	SB	EB		WB		TOTAL	
0:00			6		5		11		12:00			80		83		163	
0:15			15		16		31		12:15			77		66		143	
0:30			18		17		35		12:30			85		66		151	
0:45			10	49	7	45	17	94	12:45			94	336	75	290	169	626
1:00			13		18		31		13:00			77		81		158	
1:15			16		3		19		13:15			74		61		135	
1:30			15		14		29		13:30			82		89		171	
1:45			6	50	11	46	17	96	13:45			74	307	80	311	154	618
2:00			10		12		22		14:00			86		71		157	
2:15			6		4		10		14:15			117		88		205	
2:30			20		3		23		14:30			85		87		172	
2:45			12	48	9	28	21	76	14:45			91	379	107	353	198	732
3:00			18		6		24		15:00			121		108		229	
3:15			23		12		35		15:15			113		104		217	
3:30			23		13		36		15:30			129		137		266	
3:45			44	108	25	56	69	164	15:45			117	480	125	474	242	954
4:00			22		26		48		16:00			123		120		243	
4:15			13		9		22		16:15			112		121		233	
4:30			27		18		45		16:30			128		149		277	
4:45			29	91	10	63	39	154	16:45			142	505	112	502	254	1007
5:00			38		8		46		17:00			124		154		278	
5:15			43		24		67		17:15			153		161		314	
5:30			66		16		82		17:30			142		134		276	
5:45			104	251	45	93	149	344	17:45			147	566	120	569	267	1135
6:00			86		59		145		18:00			136		125		261	
6:15			89		52		141		18:15			111		120		231	
6:30			89		56		145		18:30			85		99		184	
6:45			149	413	74	241	223	654	18:45			96	428	72	416	168	844
7:00			100		86		186		19:00			70		76		146	
7:15			135		95		230		19:15			66		54		120	
7:30			126		121		247		19:30			66		62		128	
7:45			151	512	117	419	268	931	19:45			53	255	75	267	128	522
8:00			135		66		201		20:00			49		47		96	
8:15			105		82		187		20:15			46		52		98	
8:30			115		94		209		20:30			29		40		69	
8:45			92	447	74	316	166	763	20:45			45	169	40	179	85	348
9:00			71		67		138		21:00			40		48		88	
9:15			74		60		134		21:15			38		39		77	
9:30			67		55		122		21:30			37		30		67	
9:45			75	287	64	246	139	533	21:45			32	147	40	157	72	304
10:00			64		80		144		22:00			33		32		65	
10:15			75		52		127		22:15			35		27		62	
10:30			59		73		132		22:30			21		41		62	
10:45			77	275	67	272	144	547	22:45			34	123	27	127	61	250
11:00			74		91		165		23:00			33		50		83	
11:15			76		58		134		23:15			32		28		60	
11:30			76		65		141		23:30			23		20		43	
11:45			79	305	76	290	155	595	23:45			16	104	11	109	27	213
TOTALS				2836		2115		**4951**	**TOTALS**				3799		3754		**7553**
SPLIT %				57.3%		42.7%		**39.6%**	**SPLIT %**				50.3%		49.7%		**60.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	6,635	5,869	12,504

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			7:15	7:00	**7:15**	**PM Peak Hour**			17:15	16:30	**17:00**
AM Pk Volume			547	419	**946**	**PM Pk Volume**			578	576	**1135**
Pk Hr Factor			0.906	0.866	**0.882**	**Pk Hr Factor**			0.944	0.894	**0.904**
7 - 9 Volume	0	0	959	735	**1694**	**4 - 6 Volume**	0	0	1071	1071	**2142**
7 - 9 Peak Hour			7:15	7:00	**7:15**	**4 - 6 Peak Hour**			17:00	16:30	**17:00**
7 - 9 Pk Volume	0	0	547	419	**946**	**4 - 6 Pk Volume**	0	0	566	576	**1135**
Pk Hr Factor	0.000	0.000	0.906	0.866	**0.882**	**Pk Hr Factor**	0.000	0.000	0.925	0.894	**0.904**

Prepared by NDS/ATD

VOLUME

San Fernando Rd Bet. Branford St & Tujunga Wash

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_009

DAILY TOTALS	NB	SB	EB	WB	Total
	8,472	9,512	0	0	17,984

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
0:00	30		28				58		12:00	116		126				242	
0:15	17		36				53		12:15	122		120				242	
0:30	19		37				56		12:30	108		122				230	
0:45	12	78	27	128			39	206	12:45	118	464	98	466			216	930
1:00	17		19				36		13:00	116		105				221	
1:15	10		24				34		13:15	114		111				225	
1:30	15		15				30		13:30	131		113				244	
1:45	11	53	7	65			18	118	13:45	135	496	136	465			271	961
2:00	12		16				28		14:00	129		111				240	
2:15	11		15				26		14:15	132		120				252	
2:30	7		18				25		14:30	205		113				318	
2:45	8	38	26	75			34	113	14:45	198	664	128	472			326	1136
3:00	9		15				24		15:00	160		147				307	
3:15	6		27				33		15:15	170		151				321	
3:30	15		40				55		15:30	190		147				337	
3:45	18	48	71	153			89	201	15:45	211	731	137	582			348	1313
4:00	11		39				50		16:00	210		147				357	
4:15	10		39				49		16:15	183		145				328	
4:30	16		74				90		16:30	201		150				351	
4:45	29	66	67	219			96	285	16:45	213	807	147	589			360	1396
5:00	20		47				67		17:00	221		155				376	
5:15	29		71				100		17:15	241		153				394	
5:30	49		103				152		17:30	220		127				347	
5:45	68	166	92	313			160	479	17:45	212	894	112	547			324	1441
6:00	48		136				184		18:00	155		129				284	
6:15	52		166				218		18:15	148		95				243	
6:30	81		193				274		18:30	119		92				211	
6:45	96	277	227	722			323	999	18:45	104	526	99	415			203	941
7:00	88		215				303		19:00	119		99				218	
7:15	83		295				378		19:15	94		80				174	
7:30	103		290				393		19:30	81		68				149	
7:45	132	406	285	1085			417	1491	19:45	94	388	75	322			169	710
8:00	102		234				336		20:00	78		80				158	
8:15	100		204				304		20:15	71		72				143	
8:30	87		186				273		20:30	57		68				125	
8:45	99	388	145	769			244	1157	20:45	52	258	50	270			102	528
9:00	68		125				193		21:00	37		62				99	
9:15	87		129				216		21:15	65		56				121	
9:30	94		108				202		21:30	49		33				82	
9:45	93	342	117	479			210	821	21:45	46	197	43	194			89	391
10:00	109		117				226		22:00	46		35				81	
10:15	112		116				228		22:15	36		24				60	
10:30	103		126				229		22:30	44		32				76	
10:45	118	442	116	475			234	917	22:45	30	156	24	115			54	271
11:00	107		121				228		23:00	31		27				58	
11:15	121		123				244		23:15	30		31				61	
11:30	104		134				238		23:30	38		18				56	
11:45	126	458	118	496			244	954	23:45	30	129	20	96			50	225
TOTALS		2762		4979				**7741**	**TOTALS**		5710		4533				**10243**
SPLIT %		35.7%		64.3%				**43.0%**	**SPLIT %**		55.7%		44.3%				**57.0%**

DAILY TOTALS	NB	SB	EB	WB	Total
	8,472	9,512	0	0	17,984

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	11:45	7:15			**7:15**	**PM Peak Hour**	16:45	16:30			**16:30**
AM Pk Volume	472	1104			**1524**	**PM Pk Volume**	895	605			**1481**
Pk Hr Factor	0.937	0.936			**0.914**	**Pk Hr Factor**	0.928	0.976			**0.940**
7 - 9 Volume	794	1854	0	0	**2648**	**4 - 6 Volume**	1701	1136	0	0	**2837**
7 - 9 Peak Hour	7:30	7:15			**7:15**	**4 - 6 Peak Hour**	16:45	16:30			**16:30**
7 - 9 Pk Volume	437	1104	0	0	**1524**	**4 - 6 Pk Volume**	895	605	0	0	**1481**
Pk Hr Factor	0.828	0.936	0.000	0.000	**0.914**	**Pk Hr Factor**	0.928	0.976	0.000	0.000	**0.940**

Prepared by NDS/ATD

VOLUME

San Fernando Rd Bet. Tujunga Wash & Sheldon St

Day: Wednesday **City:** San Fernando Valley

Date: 5/27/2015 **Project #:** CA15_5337_010

DAILY TOTALS	NB	SB	EB	WB	Total
	9,508	10,676	0	0	20,184

AM Period	NB		SB		EB	WB	TOTAL	
0:00	29		44				73	
0:15	28		32				60	
0:30	26		34				60	
0:45	17	100	32	142			49	242
1:00	15		25				40	
1:15	9		23				32	
1:30	21		14				35	
1:45	11	56	15	77			26	133
2:00	6		12				18	
2:15	10		19				29	
2:30	15		10				25	
2:45	9	40	22	63			31	103
3:00	17		14				31	
3:15	9		19				28	
3:30	19		25				44	
3:45	24	69	52	110			76	179
4:00	26		47				73	
4:15	25		41				66	
4:30	36		56				92	
4:45	43	130	65	209			108	339
5:00	36		63				99	
5:15	63		89				152	
5:30	82		92				174	
5:45	111	292	125	369			236	661
6:00	66		128				194	
6:15	102		156				258	
6:30	132		189				321	
6:45	136	436	231	704			367	1140
7:00	109		227				336	
7:15	111		272				383	
7:30	131		302				433	
7:45	149	500	295	1096			444	1596
8:00	123		253				376	
8:15	114		220				334	
8:30	106		207				313	
8:45	101	444	175	855			276	1299
9:00	85		150				235	
9:15	102		142				244	
9:30	100		128				228	
9:45	102	389	127	547			229	936
10:00	139		146				285	
10:15	145		126				271	
10:30	130		139				269	
10:45	138	552	149	560			287	1112
11:00	137		137				274	
11:15	125		159				284	
11:30	125		153				278	
11:45	136	523	131	580			267	1103
TOTALS		3531		5312				8843
SPLIT %		39.9%		60.1%				43.8%

PM Period	NB		SB		EB	WB	TOTAL	
12:00	138		150				288	
12:15	132		141				273	
12:30	125		147				272	
12:45	117	512	132	570			249	1082
13:00	151		122				273	
13:15	143		151				294	
13:30	160		154				314	
13:45	164	618	167	594			331	1212
14:00	146		156				302	
14:15	131		152				283	
14:30	157		164				321	
14:45	168	602	138	610			306	1212
15:00	166		157				323	
15:15	166		166				332	
15:30	185		179				364	
15:45	198	715	165	667			363	1382
16:00	196		163				359	
16:15	193		178				371	
16:30	209		161				370	
16:45	202	800	159	661			361	1461
17:00	234		162				396	
17:15	226		166				392	
17:30	212		133				345	
17:45	220	892	122	583			342	1475
18:00	204		133				337	
18:15	163		141				304	
18:30	145		119				264	
18:45	113	625	104	497			217	1122
19:00	121		110				231	
19:15	123		107				230	
19:30	104		96				200	
19:45	87	435	87	400			174	835
20:00	70		83				153	
20:15	65		83				148	
20:30	62		86				148	
20:45	59	256	64	316			123	572
21:00	72		70				142	
21:15	56		55				111	
21:30	63		44				107	
21:45	62	253	46	215			108	468
22:00	48		47				95	
22:15	35		34				69	
22:30	37		41				78	
22:45	36	156	28	150			64	306
23:00	25		29				54	
23:15	33		32				65	
23:30	34		16				50	
23:45	21	113	24	101			45	214
TOTALS		5977		5364				11341
SPLIT %		52.7%		47.3%				56.2%

DAILY TOTALS	NB	SB	EB	WB	Total
	9,508	10,676	0	0	20,184

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	10:00	7:15			7:15	PM Peak Hour	17:00	15:30			16:30
AM Pk Volume	552	1122			1636	PM Pk Volume	892	685			1519
Pk Hr Factor	0.952	0.929			0.921	Pk Hr Factor	0.953	0.957			0.959
7 - 9 Volume	944	1951	0	0	2895	4 - 6 Volume	1692	1244	0	0	2936
7 - 9 Peak Hour	7:30	7:15			7:15	4 - 6 Peak Hour	17:00	16:00			16:30
7 - 9 Pk Volume	517	1122	0	0	1636	4 - 6 Pk Volume	892	661	0	0	1519
Pk Hr Factor	0.867	0.929	0.000	0.000	0.921	Pk Hr Factor	0.953	0.928	0.000	0.000	0.959

Prepared by NDS/ATD

VOLUME

Sheldon St Bet. Glenoaks Blvd & San Fernando Rd

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_011

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,971	9,308	18,279

AM Period	NB		SB		EB		WB		TOTAL	
0:00					22		25		47	
0:15					19		10		29	
0:30					9		10		19	
0:45					14	64	7	52	21	116
1:00					10		9		19	
1:15					9		12		21	
1:30					5		10		15	
1:45					5	29	4	35	9	64
2:00					4		4		8	
2:15					6		3		9	
2:30					10		3		13	
2:45					4	24	2	12	6	36
3:00					8		4		12	
3:15					11		4		15	
3:30					18		4		22	
3:45					17	54	11	23	28	77
4:00					12		10		22	
4:15					27		15		42	
4:30					25		18		43	
4:45					56	120	27	70	83	190
5:00					50		36		86	
5:15					51		45		96	
5:30					86		61		147	
5:45					120	307	109	251	229	558
6:00					77		75		152	
6:15					91		124		215	
6:30					97		153		250	
6:45					147	412	167	519	314	931
7:00					113		166		279	
7:15					149		186		335	
7:30					194		259		453	
7:45					204	660	240	851	444	1511
8:00					168		234		402	
8:15					143		185		328	
8:30					114		155		269	
8:45					110	535	142	716	252	1251
9:00					115		121		236	
9:15					121		142		263	
9:30					113		125		238	
9:45					121	470	126	514	247	984
10:00					148		113		261	
10:15					127		136		263	
10:30					141		154		295	
10:45					133	549	123	526	256	1075
11:00					137		133		270	
11:15					139		139		278	
11:30					140		133		273	
11:45					143	559	127	532	270	1091
TOTALS						3783		4101		7884
SPLIT %						48.0%		52.0%		43.1%

PM Period	NB		SB		EB		WB		TOTAL	
12:00					142		153		295	
12:15					169		142		311	
12:30					131		138		269	
12:45					162	604	120	553	282	1157
13:00					140		116		256	
13:15					147		150		297	
13:30					168		156		324	
13:45					160	615	146	568	306	1183
14:00					141		156		297	
14:15					151		149		300	
14:30					179		194		373	
14:45					152	623	182	681	334	1304
15:00					166		172		338	
15:15					186		151		337	
15:30					178		160		338	
15:45					190	720	170	653	360	1373
16:00					191		175		366	
16:15					201		140		341	
16:30					214		155		369	
16:45					208	814	149	619	357	1433
17:00					225		182		407	
17:15					204		157		361	
17:30					193		146		339	
17:45					173	795	138	623	311	1418
18:00					122		156		278	
18:15					92		136		228	
18:30					70		126		196	
18:45					57	341	94	512	151	853
19:00					38		93		131	
19:15					39		68		107	
19:30					45		85		130	
19:45					61	183	75	321	136	504
20:00					36		76		112	
20:15					39		60		99	
20:30					41		80		121	
20:45					44	160	56	272	100	432
21:00					41		80		121	
21:15					56		51		107	
21:30					34		46		80	
21:45					40	171	43	220	83	391
22:00					23		43		66	
22:15					39		20		59	
22:30					30		24		54	
22:45					10	102	29	116	39	218
23:00					25		30		55	
23:15					12		16		28	
23:30					14		16		30	
23:45					9	60	7	69	16	129
TOTALS						5188		5207		10395
SPLIT %						49.9%		50.1%		56.9%

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	8,971	9,308	18,279

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			7:15	7:15	7:15	PM Peak Hour			16:30	14:30	16:30
AM Pk Volume			715	919	1634	PM Pk Volume			851	699	1494
Pk Hr Factor			0.876	0.887	0.902	Pk Hr Factor			0.946	0.901	0.918
7 - 9 Volume	0	0	1195	1567	2762	4 - 6 Volume	0	0	1609	1242	2851
7 - 9 Peak Hour			7:15	7:15	7:15	4 - 6 Peak Hour			16:30	16:30	16:30
7 - 9 Pk Volume	0	0	715	919	1634	4 - 6 Pk Volume	0	0	851	643	1494
Pk Hr Factor	0.000	0.000	0.876	0.887	0.902	Pk Hr Factor	0.000	0.000	0.946	0.883	0.918

Prepared by NDS/ATD

VOLUME

San Fernando Rd Bet. Sheldon St & Peoria St

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_012

DAILY TOTALS	NB	SB	EB	WB	Total
	8,171	9,520	0	0	17,691

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	13		22				35		12:00	111		128				239	
00:15	17		39				56		12:15	131		128				259	
00:30	30		33				63		12:30	108		129				237	
00:45	14	74	34	128			48	202	12:45	109	459	101	486			210	945
01:00	12		21				33		13:00	100		113				213	
01:15	6		24				30		13:15	115		113				228	
01:30	16		14				30		13:30	137		133				270	
01:45	11	45	13	72			24	117	13:45	131	483	132	491			263	974
02:00	5		15				20		14:00	131		131				262	
02:15	12		22				34		14:15	132		113				245	
02:30	3		14				17		14:30	124		121				245	
02:45	11	31	20	71			31	102	14:45	136	523	119	484			255	1007
03:00	6		17				23		15:00	153		137				290	
03:15	6		22				28		15:15	170		144				314	
03:30	20		35				55		15:30	177		168				345	
03:45	22	54	62	136			84	190	15:45	196	696	153	602			349	1298
04:00	17		42				59		16:00	206		132				338	
04:15	8		38				46		16:15	169		168				337	
04:30	16		64				80		16:30	190		141				331	
04:45	34	75	65	209			99	284	16:45	213	778	143	584			356	1362
05:00	18		60				78		17:00	206		148				354	
05:15	29		87				116		17:15	216		163				379	
05:30	51		98				149		17:30	188		114				302	
05:45	69	167	111	356			180	523	17:45	205	815	116	541			321	1356
06:00	52		125				177		18:00	212		126				338	
06:15	49		161				210		18:15	173		115				288	
06:30	83		163				246		18:30	133		88				221	
06:45	103	287	205	654			308	941	18:45	109	627	96	425			205	1052
07:00	76		217				293		19:00	110		92				202	
07:15	80		235				315		19:15	94		96				190	
07:30	103		269				372		19:30	94		75				169	
07:45	123	382	261	982			384	1364	19:45	81	379	76	339			157	718
08:00	99		214				313		20:00	53		78				131	
08:15	106		206				312		20:15	60		73				133	
08:30	91		188				279		20:30	53		70				123	
08:45	96	392	151	759			247	1151	20:45	58	224	49	270			107	494
09:00	82		138				220		21:00	52		66				118	
09:15	88		112				200		21:15	39		55				94	
09:30	93		108				201		21:30	53		31				84	
09:45	102	365	125	483			227	848	21:45	59	203	47	199			106	402
10:00	103		121				224		22:00	43		39				82	
10:15	115		122				237		22:15	30		34				64	
10:30	107		108				215		22:30	33		37				70	
10:45	104	429	146	497			250	926	22:45	34	140	28	138			62	278
11:00	110		120				230		23:00	30		28				58	
11:15	100		132				232		23:15	29		36				65	
11:30	95		132				227		23:30	27		17				44	
11:45	130	435	128	512			258	947	23:45	22	108	21	102			43	210
TOTALS		2736		4859				**7595**	**TOTALS**		5435		4661				**10096**
SPLIT %		36.0%		64.0%				**42.9%**	**SPLIT %**		53.8%		46.2%				**57.1%**

DAILY TOTALS	NB	SB	EB	WB	Total
	8,171	9,520	0	0	17,691

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	11:45	07:00			**07:15**	**PM Peak Hour**	16:30	15:30			**16:30**
AM Pk Volume	480	982			**1384**	**PM Pk Volume**	825	621			**1420**
Pk Hr Factor	0.916	0.913			**0.901**	**Pk Hr Factor**	0.955	0.924			**0.937**
7 - 9 Volume	774	1741	0	0	**2515**	**4 - 6 Volume**	1593	1125	0	0	**2718**
7 - 9 Peak Hour	07:30	07:00			**07:15**	**4 - 6 Peak Hour**	16:30	16:15			**16:30**
7 - 9 Pk Volume	431	982	0	0	**1384**	**4 - 6 Pk Volume**	825	600	0	0	**1420**
Pk Hr Factor	0.876	0.913	0.000	0.000	**0.901**	**Pk Hr Factor**	0.955	0.893	0.000	0.000	**0.937**

Prepared by NDS/ATD

VOLUME

Peoria St Bet. San Fernando Rd & Laurel Cyn Blvd

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_013

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,360	1,489	2,849

AM Period	NB		SB		EB		WB		TOTAL	
00:00					2		2		4	
00:15					4		2		6	
00:30					4		2		6	
00:45					1	11	3	9	4	20
01:00					2		1		3	
01:15					0		2		2	
01:30					0		1		1	
01:45					2	4	1	5	3	9
02:00					1		1		2	
02:15					0		1		1	
02:30					0		2		2	
02:45					1	2	1	5	2	7
03:00					0		1		1	
03:15					6		0		6	
03:30					1		2		3	
03:45					1	8	3	6	4	14
04:00					3		5		8	
04:15					6		2		8	
04:30					3		2		5	
04:45					5	17	3	12	8	29
05:00					2		0		2	
05:15					2		3		5	
05:30					4		7		11	
05:45					15	23	3	13	18	36
06:00					10		8		18	
06:15					16		8		24	
06:30					19		18		37	
06:45					23	68	25	59	48	127
07:00					28		13		41	
07:15					22		31		53	
07:30					35		42		77	
07:45					32	117	39	125	71	242
08:00					26		24		50	
08:15					15		27		42	
08:30					18		15		33	
08:45					13	72	11	77	24	149
09:00					13		21		34	
09:15					17		12		29	
09:30					15		16		31	
09:45					15	60	23	72	38	132
10:00					10		14		24	
10:15					17		10		27	
10:30					13		16		29	
10:45					17	57	15	55	32	112
11:00					10		22		32	
11:15					13		17		30	
11:30					18		16		34	
11:45					23	64	13	68	36	132
TOTALS						503		506		**1009**
SPLIT %						49.9%		50.1%		**35.4%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00					20		23		43	
12:15					23		23		46	
12:30					20		24		44	
12:45					17	80	11	81	28	161
13:00					22		16		38	
13:15					14		24		38	
13:30					15		16		31	
13:45					14	65	22	78	36	143
14:00					9		24		33	
14:15					19		23		42	
14:30					28		28		56	
14:45					23	79	21	96	44	175
15:00					26		23		49	
15:15					24		25		49	
15:30					24		38		62	
15:45					22	96	29	115	51	211
16:00					14		29		43	
16:15					20		30		50	
16:30					27		27		54	
16:45					23	84	36	122	59	206
17:00					24		31		55	
17:15					20		45		65	
17:30					29		32		61	
17:45					23	96	33	141	56	237
18:00					22		30		52	
18:15					24		34		58	
18:30					32		23		55	
18:45					17	95	15	102	32	197
19:00					14		20		34	
19:15					17		17		34	
19:30					18		24		42	
19:45					21	70	22	83	43	153
20:00					23		23		46	
20:15					26		11		37	
20:30					19		20		39	
20:45					12	80	18	72	30	152
21:00					13		10		23	
21:15					16		15		31	
21:30					13		15		28	
21:45					17	59	10	50	27	109
22:00					11		8		19	
22:15					11		6		17	
22:30					7		4		11	
22:45					5	34	8	26	13	60
23:00					5		5		10	
23:15					7		6		13	
23:30					4		3		7	
23:45					3	19	3	17	6	36
TOTALS						857		983		**1840**
SPLIT %						46.6%		53.4%		**64.6%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,360	1,489	2,849

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour			07:00	07:15	**07:15**	**PM Peak Hour**			14:30	16:45	**16:45**
AM Pk Volume			117	136	**251**	**PM Pk Volume**			101	144	**240**
Pk Hr Factor			0.836	0.810	**0.815**	**Pk Hr Factor**			0.902	0.800	**0.923**
7 - 9 Volume	0	0	189	202	**391**	**4 - 6 Volume**	0	0	180	263	**443**
7 - 9 Peak Hour			07:00	07:15	**07:15**	**4 - 6 Peak Hour**			16:45	16:45	**16:45**
7 - 9 Pk Volume	0	0	117	136	**251**	**4 - 6 Pk Volume**	0	0	96	144	**240**
Pk Hr Factor	0.000	0.000	0.836	0.810	**0.815**	**Pk Hr Factor**	0.000	0.000	0.828	0.800	**0.923**

Prepared by NDS/ATD

VOLUME

Laurel Cyn Blvd Bet. Webb Ave & Roscoe Blvd

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_014

DAILY TOTALS	NB	SB	EB	WB	Total
	6,984	7,503	0	0	14,487

AM Period	NB		SB		EB	WB	TOTAL	
00:00	13		20				33	
00:15	16		24				40	
00:30	12		18				30	
00:45	10	51	16	78			26	129
01:00	12		11				23	
01:15	15		25				40	
01:30	8		10				18	
01:45	3	38	5	51			8	89
02:00	6		11				17	
02:15	7		15				22	
02:30	3		9				12	
02:45	2	18	16	51			18	69
03:00	6		12				18	
03:15	5		8				13	
03:30	6		11				17	
03:45	10	27	14	45			24	72
04:00	6		33				39	
04:15	7		32				39	
04:30	5		50				55	
04:45	15	33	34	149			49	182
05:00	9		19				28	
05:15	18		29				47	
05:30	35		37				72	
05:45	28	90	46	131			74	221
06:00	26		53				79	
06:15	33		68				101	
06:30	58		86				144	
06:45	51	168	100	307			151	475
07:00	54		109				163	
07:15	56		112				168	
07:30	68		159				227	
07:45	67	245	179	559			246	804
08:00	67		146				213	
08:15	62		109				171	
08:30	50		90				140	
08:45	65	244	74	419			139	663
09:00	59		91				150	
09:15	73		89				162	
09:30	65		76				141	
09:45	84	281	88	344			172	625
10:00	82		82				164	
10:15	77		80				157	
10:30	70		101				171	
10:45	74	303	78	341			152	644
11:00	74		95				169	
11:15	71		103				174	
11:30	83		99				182	
11:45	108	336	99	396			207	732
TOTALS		1834		2871				**4705**
SPLIT %		39.0%		61.0%				**32.5%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	109		144				253	
12:15	94		109				203	
12:30	97		118				215	
12:45	105	405	95	466			200	871
13:00	94		114				208	
13:15	115		89				204	
13:30	112		104				216	
13:45	106	427	112	419			218	846
14:00	121		121				242	
14:15	114		107				221	
14:30	120		107				227	
14:45	130	485	133	468			263	953
15:00	124		129				253	
15:15	121		137				258	
15:30	129		128				257	
15:45	131	505	133	527			264	1032
16:00	154		112				266	
16:15	153		102				255	
16:30	166		114				280	
16:45	161	634	107	435			268	1069
17:00	202		129				331	
17:15	188		137				325	
17:30	172		125				297	
17:45	157	719	131	522			288	1241
18:00	170		118				288	
18:15	167		128				295	
18:30	135		98				233	
18:45	133	605	120	464			253	1069
19:00	116		93				209	
19:15	107		104				211	
19:30	127		116				243	
19:45	92	442	97	410			189	852
20:00	94		96				190	
20:15	92		106				198	
20:30	67		92				159	
20:45	78	331	82	376			160	707
21:00	76		74				150	
21:15	66		74				140	
21:30	69		58				127	
21:45	73	284	63	269			136	553
22:00	66		45				111	
22:15	60		48				108	
22:30	43		32				75	
22:45	24	193	43	168			67	361
23:00	30		32				62	
23:15	34		31				65	
23:30	26		19				45	
23:45	30	120	26	108			56	228
TOTALS		5150		4632				**9782**
SPLIT %		52.6%		47.4%				**67.5%**

DAILY TOTALS	NB	SB	EB	WB	Total
	6,984	7,503	0	0	14,487

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	11:45	07:15			**11:45**	**PM Peak Hour**	16:45	14:45			**17:00**
AM Pk Volume	408	596			**878**	**PM Pk Volume**	723	527			**1241**
Pk Hr Factor	0.936	0.832			**0.868**	**Pk Hr Factor**	0.895	0.962			**0.937**
7 - 9 Volume	489	978	0	0	**1467**	**4 - 6 Volume**	1353	957	0	0	**2310**
7 - 9 Peak Hour	07:30	07:15			**07:30**	**4 - 6 Peak Hour**	16:45	17:00			**17:00**
7 - 9 Pk Volume	264	596	0	0	**857**	**4 - 6 Pk Volume**	723	522	0	0	**1241**
Pk Hr Factor	0.971	0.832	0.000	0.000	**0.871**	**Pk Hr Factor**	0.895	0.953	0.000	0.000	**0.937**

Prepared by NDS/ATD

VOLUME

Laurel Cyn Blvd Bet. Roscoe Blvd & Saticoy St

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_015

DAILY TOTALS	NB	SB	EB	WB	Total
	10,078	8,853	0	0	18,931

AM Period	NB		SB		EB	WB	TOTAL	
00:00	14		17				31	
00:15	15		19				34	
00:30	17		23				40	
00:45	17	63	18	77			35	140
01:00	13		16				29	
01:15	8		19				27	
01:30	8		10				18	
01:45	7	36	7	52			14	88
02:00	6		12				18	
02:15	8		15				23	
02:30	8		6				14	
02:45	6	28	9	42			15	70
03:00	7		9				16	
03:15	8		7				15	
03:30	10		8				18	
03:45	16	41	10	34			26	75
04:00	18		36				54	
04:15	16		28				44	
04:30	16		32				48	
04:45	28	78	23	119			51	197
05:00	19		20				39	
05:15	25		31				56	
05:30	47		45				92	
05:45	62	153	49	145			111	298
06:00	52		63				115	
06:15	69		82				151	
06:30	81		114				195	
06:45	106	308	138	397			244	705
07:00	105		116				221	
07:15	135		171				306	
07:30	200		203				403	
07:45	216	656	257	747			473	1403
08:00	174		209				383	
08:15	115		137				252	
08:30	105		132				237	
08:45	100	494	121	599			221	1093
09:00	103		112				215	
09:15	109		107				216	
09:30	101		113				214	
09:45	109	422	108	440			217	862
10:00	103		110				213	
10:15	114		109				223	
10:30	99		103				202	
10:45	121	437	113	435			234	872
11:00	121		108				229	
11:15	91		134				225	
11:30	133		116				249	
11:45	112	457	126	484			238	941
TOTALS		3173		3571				**6744**
SPLIT %		47.0%		53.0%				**35.6%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	140		120				260	
12:15	120		118				238	
12:30	136		135				271	
12:45	121	517	113	486			234	1003
13:00	125		116				241	
13:15	123		108				231	
13:30	140		129				269	
13:45	127	515	137	490			264	1005
14:00	145		145				290	
14:15	154		123				277	
14:30	215		115				330	
14:45	197	711	150	533			347	1244
15:00	195		148				343	
15:15	170		154				324	
15:30	191		162				353	
15:45	196	752	149	613			345	1365
16:00	235		115				350	
16:15	215		126				341	
16:30	229		144				373	
16:45	241	920	138	523			379	1443
17:00	259		152				411	
17:15	264		154				418	
17:30	294		155				449	
17:45	246	1063	136	597			382	1660
18:00	248		156				404	
18:15	206		140				346	
18:30	189		117				306	
18:45	151	794	138	551			289	1345
19:00	180		106				286	
19:15	150		132				282	
19:30	145		124				269	
19:45	116	591	103	465			219	1056
20:00	103		102				205	
20:15	92		93				185	
20:30	109		110				219	
20:45	103	407	92	397			195	804
21:00	93		89				182	
21:15	82		86				168	
21:30	82		75				157	
21:45	72	329	67	317			139	646
22:00	50		54				104	
22:15	61		43				104	
22:30	46		35				81	
22:45	32	189	47	179			79	368
23:00	37		47				84	
23:15	34		32				66	
23:30	29		27				56	
23:45	17	117	25	131			42	248
TOTALS		6905		5282				**12187**
SPLIT %		56.7%		43.3%				**64.4%**

DAILY TOTALS	NB	SB	EB	WB	Total
	10,078	8,853	0	0	18,931

	NB	SB	EB	WB	TOTAL		NB	SB	EB	WB	TOTAL
AM Peak Hour	07:15	07:15			**07:15**	**PM Peak Hour**	17:00	14:45			**17:00**
AM Pk Volume	725	840			**1565**	**PM Pk Volume**	1063	614			**1660**
Pk Hr Factor	0.839	0.817			**0.827**	**Pk Hr Factor**	0.904	0.948			**0.924**
7 - 9 Volume	1150	1346	0	0	**2496**	**4 - 6 Volume**	1983	1120	0	0	**3103**
7 - 9 Peak Hour	07:15	07:15			**07:15**	**4 - 6 Peak Hour**	17:00	16:45			**17:00**
7 - 9 Pk Volume	725	840	0	0	**1565**	**4 - 6 Pk Volume**	1063	599	0	0	**1660**
Pk Hr Factor	0.839	0.817	0.000	0.000	**0.827**	**Pk Hr Factor**	0.904	0.966	0.000	0.000	**0.924**

Prepared by NDS/ATD

VOLUME

Laurel Cyn Blvd Bet. Saticoy St & Vanowen St

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_016

DAILY TOTALS	NB	SB	EB	WB	Total
	10,112	10,279	0	0	20,391

AM Period	NB		SB		EB	WB	TOTAL	
00:00	26		19				45	
00:15	20		28				48	
00:30	14		15				29	
00:45	25	85	16	78			41	163
01:00	25		20				45	
01:15	14		29				43	
01:30	20		17				37	
01:45	12	71	9	75			21	146
02:00	10		16				26	
02:15	9		18				27	
02:30	12		9				21	
02:45	10	41	11	54			21	95
03:00	6		14				20	
03:15	6		15				21	
03:30	15		13				28	
03:45	8	35	12	54			20	89
04:00	13		19				32	
04:15	8		38				46	
04:30	6		46				52	
04:45	20	47	37	140			57	187
05:00	6		35				41	
05:15	25		51				76	
05:30	31		81				112	
05:45	39	101	96	263			135	364
06:00	44		106				150	
06:15	59		129				188	
06:30	72		167				239	
06:45	79	254	191	593			270	847
07:00	89		184				273	
07:15	102		222				324	
07:30	133		252				385	
07:45	170	494	263	921			433	1415
08:00	128		218				346	
08:15	92		185				277	
08:30	99		168				267	
08:45	80	399	160	731			240	1130
09:00	86		135				221	
09:15	93		123				216	
09:30	88		128				216	
09:45	82	349	148	534			230	883
10:00	84		128				212	
10:15	115		146				261	
10:30	113		131				244	
10:45	111	423	115	520			226	943
11:00	120		139				259	
11:15	112		155				267	
11:30	140		153				293	
11:45	119	491	131	578			250	1069
TOTALS		2790		4541				7331
SPLIT %		38.1%		61.9%				36.0%

PM Period	NB		SB		EB	WB	TOTAL	
12:00	135		138				273	
12:15	146		161				307	
12:30	133		149				282	
12:45	125	539	137	585			262	1124
13:00	137		153				290	
13:15	133		122				255	
13:30	136		144				280	
13:45	127	533	142	561			269	1094
14:00	161		157				318	
14:15	132		163				295	
14:30	169		185				354	
14:45	180	642	164	669			344	1311
15:00	187		129				316	
15:15	186		161				347	
15:30	219		178				397	
15:45	222	814	147	615			369	1429
16:00	231		135				366	
16:15	245		162				407	
16:30	289		130				419	
16:45	243	1008	156	583			399	1591
17:00	292		147				439	
17:15	295		191				486	
17:30	292		164				456	
17:45	283	1162	158	660			441	1822
18:00	258		136				394	
18:15	222		145				367	
18:30	167		123				290	
18:45	203	850	127	531			330	1381
19:00	153		137				290	
19:15	156		117				273	
19:30	143		99				242	
19:45	121	573	103	456			224	1029
20:00	117		108				225	
20:15	123		85				208	
20:30	115		108				223	
20:45	127	482	104	405			231	887
21:00	82		86				168	
21:15	96		114				210	
21:30	84		80				164	
21:45	68	330	77	357			145	687
22:00	64		60				124	
22:15	74		39				113	
22:30	48		43				91	
22:45	47	233	37	179			84	412
23:00	50		47				97	
23:15	45		40				85	
23:30	29		23				52	
23:45	32	156	27	137			59	293
TOTALS		7322		5738				13060
SPLIT %		56.1%		43.9%				64.0%

DAILY TOTALS	NB	SB	EB	WB	Total
	10,112	10,279	0	0	20,391

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	11:30	07:15			07:15	PM Peak Hour	17:00	14:00			17:00
AM Pk Volume	540	955			1488	PM Pk Volume	1162	669			1822
Pk Hr Factor	0.925	0.908			0.859	Pk Hr Factor	0.985	0.904			0.937
7 - 9 Volume	893	1652	0	0	2545	4 - 6 Volume	2170	1243	0	0	3413
7 - 9 Peak Hour	07:15	07:15			07:15	4 - 6 Peak Hour	17:00	17:00			17:00
7 - 9 Pk Volume	533	955	0	0	1488	4 - 6 Pk Volume	1162	660	0	0	1822
Pk Hr Factor	0.784	0.908	0.000	0.000	0.859	Pk Hr Factor	0.985	0.864	0.000	0.000	0.937

Prepared by NDS/ATD

VOLUME

Laurel Cyn Blvd Bet. Vanowen St & Erwin St

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_017

DAILY TOTALS	NB	SB	EB	WB	Total
	12,530	14,934	0	0	27,464

AM Period	NB		SB		EB	WB	TOTAL	
00:00	38		33				71	
00:15	48		25				73	
00:30	31		17				48	
00:45	28	145	22	97			50	242
01:00	25		25				50	
01:15	23		16				39	
01:30	9		11				20	
01:45	10	67	14	66			24	133
02:00	7		7				14	
02:15	11		8				19	
02:30	14		10				24	
02:45	14	46	10	35			24	81
03:00	5		5				10	
03:15	9		7				16	
03:30	6		12				18	
03:45	6	26	15	39			21	65
04:00	5		12				17	
04:15	11		12				23	
04:30	12		20				32	
04:45	12	40	22	66			34	106
05:00	10		43				53	
05:15	22		56				78	
05:30	40		86				126	
05:45	42	114	104	289			146	403
06:00	41		142				183	
06:15	46		169				215	
06:30	67		175				242	
06:45	73	227	212	698			285	925
07:00	104		225				329	
07:15	116		319				435	
07:30	154		344				498	
07:45	202	576	332	1220			534	1796
08:00	191		292				483	
08:15	138		243				381	
08:30	135		240				375	
08:45	132	596	238	1013			370	1609
09:00	123		225				348	
09:15	129		205				334	
09:30	142		224				366	
09:45	145	539	204	858			349	1397
10:00	179		185				364	
10:15	144		211				355	
10:30	169		213				382	
10:45	184	676	218	827			402	1503
11:00	168		223				391	
11:15	177		186				363	
11:30	182		197				379	
11:45	172	699	236	842			408	1541
TOTALS		3751		6050				**9801**
SPLIT %		38.3%		61.7%				**35.7%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	202		228				430	
12:15	225		249				474	
12:30	219		217				436	
12:45	196	842	219	913			415	1755
13:00	211		236				447	
13:15	215		223				438	
13:30	202		230				432	
13:45	230	858	244	933			474	1791
14:00	206		213				419	
14:15	193		237				430	
14:30	238		269				507	
14:45	224	861	286	1005			510	1866
15:00	217		222				439	
15:15	202		217				419	
15:30	227		245				472	
15:45	219	865	225	909			444	1774
16:00	244		214				458	
16:15	257		236				493	
16:30	256		247				503	
16:45	266	1023	229	926			495	1949
17:00	272		255				527	
17:15	250		255				505	
17:30	237		246				483	
17:45	257	1016	244	1000			501	2016
18:00	271		232				503	
18:15	222		235				457	
18:30	221		185				406	
18:45	202	916	203	855			405	1771
19:00	198		183				381	
19:15	182		196				378	
19:30	197		190				387	
19:45	180	757	182	751			362	1508
20:00	162		182				344	
20:15	143		116				259	
20:30	146		129				275	
20:45	147	598	159	586			306	1184
21:00	146		139				285	
21:15	104		126				230	
21:30	112		102				214	
21:45	130	492	98	465			228	957
22:00	91		91				182	
22:15	92		102				194	
22:30	94		77				171	
22:45	73	350	83	353			156	703
23:00	62		48				110	
23:15	48		50				98	
23:30	44		51				95	
23:45	47	201	39	188			86	389
TOTALS		8779		8884				**17663**
SPLIT %		49.7%		50.3%				**64.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	12,530	14,934	0	0	27,464

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	11:45	07:15			**07:15**	**PM Peak Hour**	16:15	14:15			**16:30**
AM Pk Volume	818	1287			**1950**	**PM Pk Volume**	1051	1014			**2030**
Pk Hr Factor	0.909	0.935			**0.913**	**Pk Hr Factor**	0.966	0.886			**0.963**
7 - 9 Volume	1172	2233	0	0	**3405**	**4 - 6 Volume**	2039	1926	0	0	**3965**
7 - 9 Peak Hour	07:30	07:15			**07:15**	**4 - 6 Peak Hour**	16:15	17:00			**16:30**
7 - 9 Pk Volume	685	1287	0	0	**1950**	**4 - 6 Pk Volume**	1051	1000	0	0	**2030**
Pk Hr Factor	0.848	0.935	0.000	0.000	**0.913**	**Pk Hr Factor**	0.966	0.980	0.000	0.000	**0.963**

Prepared by NDS/ATD

VOLUME

Erwin St Bet. Laurel Cyn Blvd & Colfax Ave

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_018

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,737	1,933	3,670

AM Period	NB		SB		EB		WB		TOTAL	
00:00					4		4		8	
00:15					3		4		7	
00:30					3		3		6	
00:45					3	13	1	12	4	25
01:00					1		2		3	
01:15					1		3		4	
01:30					3		2		5	
01:45					1	6	1	8	2	14
02:00					1		0		1	
02:15					1		1		2	
02:30					0		1		1	
02:45					0	2	0	2	0	4
03:00					0		1		1	
03:15					0		0		0	
03:30					0		0		0	
03:45					0		2	3	2	3
04:00					0		1		1	
04:15					1		0		1	
04:30					0		1		1	
04:45					0	1	0	2	0	3
05:00					0		1		1	
05:15					1		2		3	
05:30					0		1		1	
05:45					7	8	4	8	11	16
06:00					4		1		5	
06:15					5		8		13	
06:30					4		7		11	
06:45					10	23	16	32	26	55
07:00					14		16		30	
07:15					35		37		72	
07:30					44		43		87	
07:45					73	166	60	156	133	322
08:00					55		24		79	
08:15					32		24		56	
08:30					21		17		38	
08:45					17	125	11	76	28	201
09:00					13		18		31	
09:15					20		23		43	
09:30					20		18		38	
09:45					13	66	16	75	29	141
10:00					24		25		49	
10:15					16		21		37	
10:30					17		20		37	
10:45					20	77	25	91	45	168
11:00					27		28		55	
11:15					26		24		50	
11:30					24		25		49	
11:45					25	102	31	108	56	210
TOTALS						589		573		**1162**
SPLIT %						50.7%		49.3%		**31.7%**

PM Period	NB		SB		EB		WB		TOTAL	
12:00					27		28		55	
12:15					31		50		81	
12:30					29		25		54	
12:45					35	122	32	135	67	257
13:00					29		30		59	
13:15					23		42		65	
13:30					31		31		62	
13:45					32	115	31	134	63	249
14:00					35		25		60	
14:15					21		50		71	
14:30					27		40		67	
14:45					40	123	32	147	72	270
15:00					38		42		80	
15:15					32		29		61	
15:30					26		33		59	
15:45					24	120	29	133	53	253
16:00					25		30		55	
16:15					35		42		77	
16:30					30		31		61	
16:45					29	119	41	144	70	263
17:00					26		45		71	
17:15					34		50		84	
17:30					35		36		71	
17:45					43	138	41	172	84	310
18:00					38		42		80	
18:15					41		42		83	
18:30					24		30		54	
18:45					28	131	32	146	60	277
19:00					24		31		55	
19:15					21		39		60	
19:30					28		22		50	
19:45					26	99	28	120	54	219
20:00					26		27		53	
20:15					26		29		55	
20:30					20		12		32	
20:45					17	89	25	93	42	182
21:00					10		31		41	
21:15					17		19		36	
21:30					10		17		27	
21:45					7	44	14	81	21	125
22:00					7		10		17	
22:15					11		11		22	
22:30					7		8		15	
22:45					10	35	9	38	19	73
23:00					3		6		9	
23:15					4		5		9	
23:30					2		2		4	
23:45					4	13	4	17	8	30
TOTALS						1148		1360		**2508**
SPLIT %						45.8%		54.2%		**68.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	0	0	1,737	1,933	3,670

	NB	SB	EB	WB	TOTAL
AM Peak Hour			07:15	07:15	**07:15**
AM Pk Volume			207	164	**371**
Pk Hr Factor			0.709	0.683	**0.697**
7 - 9 Volume	0	0	291	232	**523**
7 - 9 Peak Hour			07:15	07:15	**07:15**
7 - 9 Pk Volume	0	0	207	164	**371**
Pk Hr Factor	0.000	0.000	0.709	0.683	**0.697**

	NB	SB	EB	WB	TOTAL
PM Peak Hour			17:30	16:45	**17:15**
PM Pk Volume			157	172	**319**
Pk Hr Factor			0.913	0.860	**0.949**
4 - 6 Volume	0	0	257	316	**573**
4 - 6 Peak Hour			17:00	16:45	**17:00**
4 - 6 Pk Volume	0	0	138	172	**310**
Pk Hr Factor	0.000	0.000	0.802	0.860	**0.923**

Prepared by NDS/ATD

VOLUME

Colfax Ave Bet. Erwin St & Orange Line Busway

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_019

DAILY TOTALS	NB	SB	EB	WB	Total
	4,716	4,159	0	0	8,875

AM Period	NB		SB		EB	WB	TOTAL	
00:00	20		13				33	
00:15	15		10				25	
00:30	8		7				15	
00:45	10	53	4	34			14	87
01:00	8		2				10	
01:15	10		4				14	
01:30	6		4				10	
01:45	4	28	3	13			7	41
02:00	6		4				10	
02:15	6		1				7	
02:30	0		2				2	
02:45	2	14	3	10			5	24
03:00	5		1				6	
03:15	2		1				3	
03:30	3		3				6	
03:45	2	12	3	8			5	20
04:00	2		2				4	
04:15	2		2				4	
04:30	3		10				13	
04:45	1	8	5	19			6	27
05:00	5		5				10	
05:15	6		9				15	
05:30	8		22				30	
05:45	7	26	19	55			26	81
06:00	17		26				43	
06:15	20		40				60	
06:30	19		47				66	
06:45	17	73	76	189			93	262
07:00	22		62				84	
07:15	29		109				138	
07:30	38		120				158	
07:45	46	135	110	401			156	536
08:00	56		102				158	
08:15	54		66				120	
08:30	72		80				152	
08:45	58	240	65	313			123	553
09:00	59		72				131	
09:15	66		51				117	
09:30	59		46				105	
09:45	69	253	55	224			124	477
10:00	57		60				117	
10:15	66		57				123	
10:30	53		51				104	
10:45	44	220	45	213			89	433
11:00	52		59				111	
11:15	51		66				117	
11:30	60		57				117	
11:45	59	222	56	238			115	460
TOTALS		1284		1717				**3001**
SPLIT %		42.8%		57.2%				**33.8%**

PM Period	NB		SB		EB	WB	TOTAL	
12:00	66		39				105	
12:15	66		38				104	
12:30	50		47				97	
12:45	54	236	51	175			105	411
13:00	78		49				127	
13:15	70		62				132	
13:30	60		63				123	
13:45	77	285	61	235			138	520
14:00	63		62				125	
14:15	66		51				117	
14:30	78		61				139	
14:45	86	293	72	246			158	539
15:00	107		78				185	
15:15	103		84				187	
15:30	84		66				150	
15:45	103	397	71	299			174	696
16:00	106		62				168	
16:15	103		65				168	
16:30	102		72				174	
16:45	93	404	74	273			167	677
17:00	115		77				192	
17:15	109		79				188	
17:30	128		86				214	
17:45	98	450	68	310			166	760
18:00	96		82				178	
18:15	109		78				187	
18:30	97		69				166	
18:45	111	413	61	290			172	703
19:00	105		51				156	
19:15	80		55				135	
19:30	75		44				119	
19:45	83	343	43	193			126	536
20:00	73		50				123	
20:15	56		34				90	
20:30	59		37				96	
20:45	58	246	39	160			97	406
21:00	41		42				83	
21:15	56		34				90	
21:30	46		26				72	
21:45	31	174	25	127			56	301
22:00	33		26				59	
22:15	34		20				54	
22:30	29		17				46	
22:45	20	116	16	79			36	195
23:00	26		23				49	
23:15	18		11				29	
23:30	18		12				30	
23:45	13	75	9	55			22	130
TOTALS		3432		2442				**5874**
SPLIT %		58.4%		41.6%				**66.2%**

DAILY TOTALS	NB	SB	EB	WB	Total
	4,716	4,159	0	0	8,875

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	08:30	07:15			**07:15**	**PM Peak Hour**	17:00	16:45			**16:45**
AM Pk Volume	255	441			**610**	**PM Pk Volume**	450	316			**761**
Pk Hr Factor	0.885	0.919			**0.965**	**Pk Hr Factor**	0.879	0.919			**0.889**
7 - 9 Volume	375	714	0	0	**1089**	**4 - 6 Volume**	854	583	0	0	**1437**
7 - 9 Peak Hour	08:00	07:15			**07:15**	**4 - 6 Peak Hour**	17:00	16:45			**16:45**
7 - 9 Pk Volume	240	441	0	0	**610**	**4 - 6 Pk Volume**	450	316	0	0	**761**
Pk Hr Factor	0.833	0.919	0.000	0.000	**0.965**	**Pk Hr Factor**	0.879	0.919	0.000	0.000	**0.889**

Prepared by NDS/ATD

VOLUME

Colfax Ave Bet. Orange Line Busway & US-101

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_020

DAILY TOTALS	NB	SB	EB	WB	Total
	7,646	9,177	0	0	16,823

AM Period	NB		SB		EB	WB	TOTAL	
00:00	19		9				28	
00:15	14		14				28	
00:30	12		9				21	
00:45	9	54	8	40			17	94
01:00	9		9				18	
01:15	6		5				11	
01:30	4		6				10	
01:45	2	21	7	27			9	48
02:00	5		6				11	
02:15	2		3				5	
02:30	5		7				12	
02:45	8	20	6	22			14	42
03:00	3		2				5	
03:15	0		2				2	
03:30	5		2				7	
03:45	3	11	9	15			12	26
04:00	2		1				3	
04:15	3		4				7	
04:30	1		3				4	
04:45	4	10	4	12			8	22
05:00	8		10				18	
05:15	7		18				25	
05:30	6		33				39	
05:45	9	30	42	103			51	133
06:00	15		35				50	
06:15	12		65				77	
06:30	26		85				111	
06:45	65	118	161	346			226	464
07:00	70		165				235	
07:15	93		181				274	
07:30	166		225				391	
07:45	244	573	254	825			498	1398
08:00	134		246				380	
08:15	85		260				345	
08:30	87		244				331	
08:45	113	419	223	973			336	1392
09:00	86		191				277	
09:15	78		155				233	
09:30	84		162				246	
09:45	89	337	147	655			236	992
10:00	86		137				223	
10:15	80		119				199	
10:30	73		130				203	
10:45	82	321	109	495			191	816
11:00	95		100				195	
11:15	92		95				187	
11:30	100		110				210	
11:45	97	384	95	400			192	784
TOTALS	2298		3913				6211	
SPLIT %	37.0%		63.0%				36.9%	

PM Period	NB		SB		EB	WB	TOTAL	
12:00	102		110				212	
12:15	104		108				212	
12:30	123		102				225	
12:45	122	451	98	418			220	869
13:00	106		114				220	
13:15	105		92				197	
13:30	106		115				221	
13:45	103	420	125	446			228	866
14:00	111		140				251	
14:15	123		121				244	
14:30	126		203				329	
14:45	133	493	223	687			356	1180
15:00	186		199				385	
15:15	226		174				400	
15:30	170		189				359	
15:45	157	739	162	724			319	1463
16:00	175		142				317	
16:15	152		155				307	
16:30	155		109				264	
16:45	159	641	160	566			319	1207
17:00	177		178				355	
17:15	165		168				333	
17:30	173		148				321	
17:45	171	686	154	648			325	1334
18:00	168		158				326	
18:15	151		165				316	
18:30	139		138				277	
18:45	154	612	142	603			296	1215
19:00	129		120				249	
19:15	107		113				220	
19:30	117		89				206	
19:45	91	444	101	423			192	867
20:00	86		89				175	
20:15	75		99				174	
20:30	76		64				140	
20:45	63	300	75	327			138	627
21:00	74		62				136	
21:15	74		61				135	
21:30	63		39				102	
21:45	54	265	33	195			87	460
22:00	47		45				92	
22:15	42		28				70	
22:30	35		35				70	
22:45	34	158	31	139			65	297
23:00	30		28				58	
23:15	40		27				67	
23:30	40		18				58	
23:45	29	139	15	88			44	227
TOTALS	5348		5264				10612	
SPLIT %	50.4%		49.6%				63.1%	

DAILY TOTALS	NB	SB	EB	WB	Total
	7,646	9,177	0	0	16,823

	NB	SB	EB	WB	TOTAL
AM Peak Hour	07:15	07:45			07:30
AM Pk Volume	637	1004			1614
Pk Hr Factor	0.653	0.965			0.810
7 - 9 Volume	992	1798	0	0	2790
7 - 9 Peak Hour	07:15	07:45			07:30
7 - 9 Pk Volume	637	1004	0	0	1614
Pk Hr Factor	0.653	0.965	0.000	0.000	0.810

	NB	SB	EB	WB	TOTAL
PM Peak Hour	15:00	14:30			14:45
PM Pk Volume	739	799			1500
Pk Hr Factor	0.817	0.896			0.938
4 - 6 Volume	1327	1214	0	0	2541
4 - 6 Peak Hour	17:00	16:45			17:00
4 - 6 Pk Volume	686	654	0	0	1334
Pk Hr Factor	0.969	0.919	0.000	0.000	0.939

Prepared by NDS/ATD

VOLUME

Colfax Ave Bet. US-101 & Woodbridge St

Day: Wednesday
Date: 5/27/2015

City: San Fernando Valley
Project #: CA15_5337_021

DAILY TOTALS	NB	SB	EB	WB	Total
	7,773	8,630	0	0	16,403

AM Period	NB		SB		EB	WB	TOTAL		PM Period	NB		SB		EB	WB	TOTAL	
00:00	28		15				43		12:00	118		121				239	
00:15	16		8				24		12:15	121		117				238	
00:30	15		7				22		12:30	111		127				238	
00:45	8	67	6	36			14	103	12:45	114	464	117	482			231	946
01:00	16		7				23		13:00	129		121				250	
01:15	8		2				10		13:15	112		113				225	
01:30	7		12				19		13:30	119		119				238	
01:45	8	39	4	25			12	64	13:45	103	463	120	473			223	936
02:00	5		2				7		14:00	128		132				260	
02:15	2		2				4		14:15	132		103				235	
02:30	4		4				8		14:30	147		150				297	
02:45	6	17	5	13			11	30	14:45	156	563	164	549			320	1112
03:00	3		3				6		15:00	172		145				317	
03:15	0		3				3		15:15	168		179				347	
03:30	7		2				9		15:30	172		168				340	
03:45	3	13	6	14			9	27	15:45	160	672	148	640			308	1312
04:00	2		3				5		16:00	174		145				319	
04:15	3		4				7		16:15	170		157				327	
04:30	3		2				5		16:30	160		103				263	
04:45	7	15	7	16			14	31	16:45	163	667	143	548			306	1215
05:00	6		11				17		17:00	162		161				323	
05:15	7		13				20		17:15	172		134				306	
05:30	9		39				48		17:30	187		149				336	
05:45	13	35	43	106			56	141	17:45	190	711	127	571			317	1282
06:00	13		37				50		18:00	188		127				315	
06:15	18		54				72		18:15	163		163				326	
06:30	30		72				102		18:30	170		144				314	
06:45	45	106	134	297			179	403	18:45	157	678	149	583			306	1261
07:00	58		134				192		19:00	153		115				268	
07:15	70		148				218		19:15	125		99				224	
07:30	84		157				241		19:30	131		102				233	
07:45	89	301	194	633			283	934	19:45	105	514	87	403			192	917
08:00	104		195				299		20:00	126		84				210	
08:15	92		219				311		20:15	94		90				184	
08:30	82		220				302		20:30	76		69				145	
08:45	105	383	229	863			334	1246	20:45	85	381	80	323			165	704
09:00	78		196				274		21:00	64		76				140	
09:15	88		167				255		21:15	75		66				141	
09:30	86		162				248		21:30	49		35				84	
09:45	98	350	144	669			242	1019	21:45	66	254	38	215			104	469
10:00	99		128				227		22:00	52		30				82	
10:15	92		117				209		22:15	51		42				93	
10:30	84		131				215		22:30	53		34				87	
10:45	81	356	127	503			208	859	22:45	33	189	28	134			61	323
11:00	74		106				180		23:00	30		27				57	
11:15	86		110				196		23:15	45		18				63	
11:30	103		109				212		23:30	43		19				62	
11:45	117	380	126	451			243	831	23:45	37	155	19	83			56	238
TOTALS		2062		3626				**5688**	**TOTALS**		5711		5004				**10715**
SPLIT %		36.3%		63.7%				**34.7%**	**SPLIT %**		53.3%		46.7%				**65.3%**

DAILY TOTALS	NB	SB	EB	WB	Total
	7,773	8,630	0	0	16,403

	NB	SB	EB	WB	Total		NB	SB	EB	WB	Total
AM Peak Hour	11:45	08:15			**08:00**	**PM Peak Hour**	17:15	14:45			**14:45**
AM Pk Volume	467	864			**1246**	**PM Pk Volume**	737	656			**1324**
Pk Hr Factor	0.965	0.943			**0.933**	**Pk Hr Factor**	0.970	0.916			**0.954**
7 - 9 Volume	684	1496	0	0	**2180**	**4 - 6 Volume**	1378	1119	0	0	**2497**
7 - 9 Peak Hour	08:00	08:00			**08:00**	**4 - 6 Peak Hour**	17:00	16:45			**17:00**
7 - 9 Pk Volume	383	863	0	0	**1246**	**4 - 6 Pk Volume**	711	587	0	0	**1282**
Pk Hr Factor	0.912	0.942	0.000	0.000	**0.933**	**Pk Hr Factor**	0.936	0.911	0.000	0.000	**0.954**

KOA CORPORATION
PLANNING & ENGINEERING

APPENDIX B
LOS Operations Worksheets – Existing Conditions

```
-----------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                                 Existing AM
-----------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        1.107
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180              Level Of Service:                 F
*****************************************************************************
Street Name:             Woodley Avenue               Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     76  167   109  128  998    83   48 1790   319  266 2032    92
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  76  167   109  128  998    83   48 1790   319  266 2032    92
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  76  167   109  128  998    83   48 1790   319  266 2032    92
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   76  167   109  128  998    83   48 1790   319  266 2032    92
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  76  167   109  128  998    83   48 1790   319  266 2032    92
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  76  167   109  128  998    83   48 1790   319  266 2032    92
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.55  0.45 1.00 2.87  0.13
Final Sat.: 1425 2850  1425 1425 2850  1425 1425 3628   647 1425 4090   185
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.05 0.06  0.08 0.09 0.35  0.06 0.03 0.49  0.49 0.19 0.50  0.50
Crit Volume:            109       499                    703  266
Crit Moves:            ****      ****                   ****  ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                                 Existing AM
-----------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.650
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        53              Level Of Service:                 B
*****************************************************************************
Street Name:             Densmore Avenue              Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      1    0     1  136    0    19    3 1982     1   18 2268    32
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   1    0     1  136    0    19    3 1982     1   18 2268    32
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   1    0     1  136    0    19    3 1982     1   18 2268    32
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    1    0     1  136    0    19    3 1982     1   18 2268    32
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   1    0     1  136    0    19    3 1982     1   18 2268    32
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   1    0     1  136    0    19    3 1982     1   18 2268    32
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      0.50 0.00  0.50 0.88 0.00  0.12 1.00 2.99  0.01 1.00 2.96  0.04
Final Sat.:  713    0   713 1250    0   175 1425 4273     2 1425 4216    59
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.00  0.00 0.11 0.00  0.11 0.00 0.46  0.46 0.01 0.54  0.54
Crit Volume:              2               155    3                     767
Crit Moves:            ****              ****  ****                   ****
*****************************************************************************
```

```
----------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                                  Existing AM
----------------------------------------------------------------------------------

                       Level Of Service Computation Report
            Circular 212 Planning Method (Future Volume Alternative)
**********************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
**********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          1.071
Loss Time (sec):        0              Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        180              Level Of Service:                   F
**********************************************************************************
Street Name:            Haskell Avenue                Victory Boulevard
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:       L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase       Protected        Protected
Rights:            Include           Ovl            Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  1! 0  0   1  1  0  0  1   1  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      57   10     1  830  213   589   31 1887   159    3 1622   187
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   57   10     1  830  213   589   31 1887   159    3 1622   187
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   57   10     1  830  213   589   31 1887   159    3 1622   187
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    57   10     1  830  213   589   31 1887   159    3 1622   187
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   57   10     1  830  213   589   31 1887   159    3 1622   187
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   57   10     1  913  213   589   31 1887   159    3 1622   187
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.84 0.15  0.01 1.62 0.38  1.00 1.00 2.77  0.23 1.00 2.00  1.00
Final Sat.:  1153  202    20 2230  520  1375 1375 3804   321 1375 2750  1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.05  0.05 0.41 0.41  0.43 0.02 0.50  0.50 0.00 0.59  0.14
Crit Volume:        68          563           31                    811
Crit Moves:       ****         ****         ****                   ****
**********************************************************************************
```



```
----------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                                  Existing AM
----------------------------------------------------------------------------------

                       Level Of Service Computation Report
            Circular 212 Planning Method (Future Volume Alternative)
**********************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
**********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.734
Loss Time (sec):        0              Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         70              Level Of Service:                   C
**********************************************************************************
Street Name:            I-405 NB Ramps                Victory Boulevard
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:       L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Permitted
Rights:            Include           Ovl            Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  0  0  0   1  0  1! 0  1   1  0  2  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0  219    0   227  297 2415     0    0 1583   585
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     0  219    0   227  297 2415     0    0 1583   585
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    0    0     0  219    0   227  297 2415     0    0 1583   585
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0    0     0  219    0   227  297 2415     0    0 1583   585
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0  219    0   227  297 2415     0    0 1583   585
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    0    0     0  241    0   250  297 2415     0    0 1583   585
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.47 0.00  1.53 1.00 3.00  0.00 0.00 3.00  1.00
Final Sat.:     0    0     0 2099    0  2176 1425 4275     0    0 4275  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.11 0.00  0.11 0.21 0.56  0.00 0.00 0.37  0.41
Crit Volume:         0          164          297                          585
Crit Moves:                    ****         ****                         ****
**********************************************************************************
```

```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                               Existing AM
---------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.638
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       51              Level Of Service:                 B
***************************************************************************
Street Name:             I-5 SB Ramps                   Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    2  197   22  259    0 1765   64   19  843  527
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   0    0    2  197   22  259    0 1765   64   19  843  527
Added Vol:     0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:   0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   0    0    2  197   22  259    0 1765   64   19  843  527
User Adj:   1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    0    0    2  197   22  259    0 1765   64   19  843  527
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   0    0    2  197   22  259    0 1765   64   19  843  527
PCE Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:   0    0    2  197   22  259    0 1765   64   19  843  527
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:      0.00 0.00 1.00 1.00 0.08 0.92 0.00 2.90 0.10 1.00 2.00 1.00
Final Sat.:    0    0 1425 1425  112 1313    0 4125  150 1425 2850 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.00 0.00 0.14 0.20 0.20 0.00 0.43 0.43 0.01 0.30 0.37
Crit Volume:   0                        281        610         19
Crit Moves: ****                       ****       ****       ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                               Existing AM
---------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.628
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       50              Level Of Service:                 B
***************************************************************************
Street Name:             I-5 NB Ramps                   Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  0  1  0   0  0  0  0  1   0  0  1  1  0   0  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    233    0  269    0    0    1    0  762  490    0 1152  495
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 233    0  269    0    0    1    0  762  490    0 1152  495
Added Vol:     0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:   0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut: 233    0  269    0    0    1    0  762  490    0 1152  495
User Adj:   1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:  233    0  269    0    0    1    0  762  490    0 1152  495
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol: 233    0  269    0    0    1    0  762  490    0 1152  495
PCE Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 233    0  269    0    0    1    0  762  490    0 1152  495
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:      1.00 0.00 1.00 0.00 0.00 1.00 0.00 1.22 0.78 0.00 2.10 0.90
Final Sat.: 1425    0 1425    0    0 1425    0 1735 1115    0 2990 1285
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.16 0.00 0.19 0.00 0.00 0.00 0.00 0.44 0.44 0.00 0.39 0.39
Crit Volume:             269    0                   626          0
Crit Moves:             **** ****                  ****       ****
***************************************************************************
```

```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                               Existing AM
-----------------------------------------------------------------------------

                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #7 San Fernando Road / Osborne Street
*****************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):        0.649
Loss Time (sec):       0             Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        72             Level Of Service:                 B
*****************************************************************************
Street Name:        San Fernando Road                Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:       1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     27  227    41   138  807    54    64  568    62    85  754   107
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  27  227    41   138  807    54    64  568    62    85  754   107
Added Vol:     0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  27  227    41   138  807    54    64  568    62    85  754   107
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   27  227    41   138  807    54    64  568    62    85  754   107
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  27  227    41   138  807    54    64  568    62    85  754   107
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  27  227    41   138  807    54    64  568    62    85  754   107
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.69  0.31  1.00 1.87  0.13  1.00 1.80  0.20  1.00 1.75  0.25
Final Sat.:  1425 2414   436  1425 2671   179  1425 2570   280  1425 2496   354
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.09  0.09  0.10 0.30  0.30  0.04 0.22  0.22  0.06 0.30  0.30
Crit Volume:      134              430         64                           431
Crit Moves:                       ****        ****                         ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                               Existing AM
-----------------------------------------------------------------------------

                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
*****************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):        0.999
Loss Time (sec):       0             Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180             Level Of Service:                 E
*****************************************************************************
Street Name:        Glenoaks Boulevard                 Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include            Ovl            Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:       1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     34  410   240    88 1075   181   249  401    76   601  627    26
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  34  410   240    88 1075   181   249  401    76   601  627    26
Added Vol:     0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  34  410   240    88 1075   181   249  401    76   601  627    26
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   34  410   240    88 1075   181   249  401    76   601  627    26
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  34  410   240    88 1075   181   249  401    76   601  627    26
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  34  410   240    88 1075   181   249  401    76   601  627    26
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.92  0.08
Final Sat.:  1375 2750  1375  1375 2750  1375  1375 2750  1375  1375 2641   109
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.15  0.17  0.06 0.39  0.13  0.18 0.15  0.06  0.44 0.24  0.24
Crit Volume:  34                    538              201         601
Crit Moves:  ****                  ****             ****        ****
*****************************************************************************
```

```
--------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                              Existing AM
--------------------------------------------------------------------------------
                  Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.743
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        56              Level Of Service:                  C
********************************************************************************
Street Name:         Glenoaks Boulevard                  Sheldon Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         1  0  2  0  1   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      96  427    71    72 1053   402  214  288   126  106  460    97
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   96  427    71    72 1053   402  214  288   126  106  460    97
Added Vol:      0    0     0     0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0     0    0     0    0    0     0    0    0     0
Initial Fut:   96  427    71    72 1053   402  214  288   126  106  460    97
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    96  427    71    72 1053   402  214  288   126  106  460    97
Reduct Vol:     0    0     0     0    0     0    0    0     0    0    0     0
Reduced Vol:   96  427    71    72 1053   402  214  288   126  106  460    97
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   96  427    71    72 1053   402  214  288   126  106  460    97
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00 1.00 1.39  0.61 1.00 1.65  0.35
Final Sat.:  1500 3000  1500  1500 3000  1500 1500 2087   913 1500 2478   522
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.14  0.05  0.05 0.35  0.27 0.14 0.14  0.14 0.07 0.19  0.19
Crit Volume:   96                  527         214                         279
Crit Moves:  ****                 ****        ****                        ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                              Existing AM
--------------------------------------------------------------------------------
                  Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.434
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        25              Level Of Service:                  A
********************************************************************************
Street Name:         Glenoaks Boulevard                  Penrose Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         1  0  2  0  1   1  0  2  0  1   1  0  0  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30  503     4    41  792   134  135  125    42   12   90    40
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   30  503     4    41  792   134  135  125    42   12   90    40
Added Vol:      0    0     0     0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0     0    0     0    0    0     0    0    0     0
Initial Fut:   30  503     4    41  792   134  135  125    42   12   90    40
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    30  503     4    41  792   134  135  125    42   12   90    40
Reduct Vol:     0    0     0     0    0     0    0    0     0    0    0     0
Reduced Vol:   30  503     4    41  792   134  135  125    42   12   90    40
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   30  503     4    41  792   134  135  125    42   12   90    40
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00 1.00 0.75  0.25 1.00 1.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500 1500 1123   377 1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.17  0.00  0.03 0.26  0.09 0.09 0.11  0.11 0.01 0.06  0.03
Crit Volume:   30                  396         135                    90
Crit Moves:  ****                 ****        ****                   ****
********************************************************************************
```

```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing AM
---------------------------------------------------------------------------

                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
***************************************************************************
Cycle (sec):          100            Critical Vol./Cap.(X):         0.592
Loss Time (sec):        0            Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         46            Level Of Service:                  A
***************************************************************************
Street Name:           Arleta Avenue                Devonshire Street
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted       Prot+Permit        Permitted
Rights:           Include            Ovl             Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  0  0  0   1  0  1! 0  1   1  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0  418    0   337  296  805     0    0  531   271
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     0  418    0   337  296  805     0    0  531   271
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    0    0     0  418    0   337  296  805     0    0  531   271
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0    0     0  418    0   337  296  805     0    0  531   271
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0  418    0   337  296  805     0    0  531   271
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    0    0     0  460    0   371  296  805     0    0  531   271
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.66 xxxx  1.34 1.00 2.00  0.00 0.00 2.00  1.00
Final Sat.:     0    0     0 2367    0  1908 1425 2850     0    0 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.19 0.00  0.19 0.21 0.28  0.00 0.00 0.19  0.19
Crit Volume:    0              277             296                         271
Crit Moves:                   ****            ****                        ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing AM
---------------------------------------------------------------------------

                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #12 Arleta Avenue / Branford Street
***************************************************************************
Cycle (sec):          100            Critical Vol./Cap.(X):         0.853
Loss Time (sec):        0            Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         98            Level Of Service:                  D
***************************************************************************
Street Name:           Arleta Avenue                  Branford Street
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     123  543    95  122  982   141  134  485   376  165  615   100
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  123  543    95  122  982   141  134  485   376  165  615   100
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  123  543    95  122  982   141  134  485   376  165  615   100
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   123  543    95  122  982   141  134  485   376  165  615   100
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  123  543    95  122  982   141  134  485   376  165  615   100
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  123  543    95  122  982   141  134  485   376  165  615   100
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.70  0.30 1.00 1.75  0.25 1.00 1.13  0.87 1.00 1.72  0.28
Final Sat.:  1500 2553   447 1500 2623   377 1500 1690  1310 1500 2580   420
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.21  0.21 0.08 0.37  0.37 0.09 0.29  0.29 0.11 0.24  0.24
Crit Volume:  123                        562       431        165
Crit Moves:  ****                       ****      ****       ****
***************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing AM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.885
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  D
********************************************************************************
Street Name:                 Arleta Avenue              Van Nuys Boulevard
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     173  577   82   238  670  145   118 1054  136    59  928  136
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  173  577   82   238  670  145   118 1054  136    59  928  136
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  173  577   82   238  670  145   118 1054  136    59  928  136
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   173  577   82   238  670  145   118 1054  136    59  928  136
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  173  577   82   238  670  145   118 1054  136    59  928  136
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  173  577   82   238  670  145   118 1054  136    59  928  136
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 1.75 0.25  1.00 2.00 1.00  1.00 1.77 0.23  1.00 1.74 0.26
Final Sat.:  1375 2408  342  1375 2750 1375  1375 2436  314  1375 2398  352
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.24 0.24  0.17 0.24 0.11  0.09 0.43 0.43  0.04 0.39 0.39
Crit Volume:       330        238              118                   532
Crit Moves:       ****       ****             ****                  ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing AM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.778
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        65              Level Of Service:                  C
********************************************************************************
Street Name:                 Arleta Avenue              Terra Bella Street
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     166  593   99   118  662   51    82  894  209    93  676  118
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  166  593   99   118  662   51    82  894  209    93  676  118
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  166  593   99   118  662   51    82  894  209    93  676  118
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   166  593   99   118  662   51    82  894  209    93  676  118
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  166  593   99   118  662   51    82  894  209    93  676  118
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  166  593   99   118  662   51    82  894  209    93  676  118
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 1.71 0.29  1.00 1.86 0.14  1.00 1.62 0.38  1.00 1.70 0.30
Final Sat.:  1500 2571  429  1500 2785  215  1500 2432  568  1500 2554  446
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.23 0.23  0.08 0.24 0.24  0.05 0.37 0.37  0.06 0.26 0.26
Crit Volume:  166                   357                   552    93
Crit Moves:  ****                  ****                  ****  ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                                 Existing AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.908
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       157               Level Of Service:                  E
********************************************************************************
Street Name:          Arleta Avenue                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  545   238  120  857    55   64 1128   175  129 1036   171
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  126  545   238  120  857    55   64 1128   175  129 1036   171
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  126  545   238  120  857    55   64 1128   175  129 1036   171
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   126  545   238  120  857    55   64 1128   175  129 1036   171
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  126  545   238  120  857    55   64 1128   175  129 1036   171
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  126  545   238  120  857    55   64 1128   175  129 1036   171
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.39  0.61 1.00 1.88  0.12 1.00 1.73  0.27 1.00 1.72  0.28
Final Sat.:  1500 2088   912 1500 2819   181 1500 2597   403 1500 2575   425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.26  0.26 0.08 0.30  0.30 0.04 0.43  0.43 0.09 0.40  0.40
Crit Volume:  126                        456       652         129
Crit Moves:  ****                       ****      ****        ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                               Existing PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):        0.985
Loss Time (sec):      0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180               Level Of Service:                 E
********************************************************************************
Street Name:          Woodley Avenue                Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    342  801  199  212  240  142   97 1909   96  123 1774  200
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse: 342  801  199  212  240  142   97 1909   96  123 1774  200
Added Vol:     0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:   0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut: 342  801  199  212  240  142   97 1909   96  123 1774  200
User Adj:   1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:  342  801  199  212  240  142   97 1909   96  123 1774  200
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol: 342  801  199  212  240  142   97 1909   96  123 1774  200
PCE Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume: 342  801  199  212  240  142   97 1909   96  123 1774  200
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:      1.00 2.00 1.00 1.00 2.00 1.00 1.00 2.86 0.14 1.00 2.70 0.30
Final Sat.: 1425 2850 1425 1425 2850 1425 1425 4070  205 1425 3842  433
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.24 0.28 0.14 0.15 0.08 0.10 0.07 0.47 0.47 0.09 0.46 0.46
Crit Volume:      401        212                  668        123
Crit Moves:      ****       ****                 ****       ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                               Existing PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):        0.564
Loss Time (sec):      0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       43               Level Of Service:                 A
********************************************************************************
Street Name:          Densmore Avenue                 Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      1    0    1   33    0    9   12 2253    6    7 2083   43
Growth Adj: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:   1    0    1   33    0    9   12 2253    6    7 2083   43
Added Vol:     0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:   0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   1    0    1   33    0    9   12 2253    6    7 2083   43
User Adj:   1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    1    0    1   33    0    9   12 2253    6    7 2083   43
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   1    0    1   33    0    9   12 2253    6    7 2083   43
PCE Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:   1    0    1   33    0    9   12 2253    6    7 2083   43
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment: 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:      0.50 0.00 0.50 0.79 0.00 0.21 1.00 2.99 0.01 1.00 2.94 0.06
Final Sat.:  713    0  713 1120    0  305 1425 4264   11 1425 4189   86
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.00 0.00 0.03 0.00 0.03 0.01 0.53 0.53 0.00 0.50 0.50
Crit Volume:                 2              42             753    7
Crit Moves:               ****            ****            **** ****
********************************************************************************
```

LADWP Groundwater Replenishment EIR
Existing PM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #3 Haskell Avenue / Victory Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.044
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Haskell Avenue						Victory Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Protected			Protected		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0 1! 0 0			1 1 0 0 1			1 0 2 1 0			1 0 2 0 1		
Volume Module:												
Base Vol:	117	44	26	598	45	441	100	1763	55	4	1594	381
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	117	44	26	598	45	441	100	1763	55	4	1594	381
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	117	44	26	598	45	441	100	1763	55	4	1594	381
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	117	44	26	598	45	441	100	1763	55	4	1594	381
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	117	44	26	598	45	441	100	1763	55	4	1594	381
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	117	44	26	658	45	441	100	1763	55	4	1594	381
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.63	0.23	0.14	1.87	0.13	1.00	1.00	2.91	0.09	1.00	2.00	1.00
Final Sat.:	860	324	191	2574	176	1375	1375	4000	125	1375	2750	1375
Capacity Analysis Module:												
Vol/Sat:	0.14	0.14	0.14	0.26	0.26	0.32	0.07	0.44	0.44	0.00	0.58	0.28
Crit Volume:		187		351			100				797	
Crit Moves:		****		****			****				****	

LADWP Groundwater Replenishment EIR
Existing PM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #4 I-405 NB Ramps / Victory Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.760
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	77	Level Of Service:	C

Street Name:	I-405 NB Ramps						Victory Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Protected			Protected			Permitted		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0 0 0 0			1 0 1! 0 1			1 0 2 1 0			0 0 3 0 1		
Volume Module:												
Base Vol:	0	0	0	265	0	405	306	2127	0	0	1562	531
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	0	0	0	265	0	405	306	2127	0	0	1562	531
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	265	0	405	306	2127	0	0	1562	531
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	265	0	405	306	2127	0	0	1562	531
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	265	0	405	306	2127	0	0	1562	531
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	292	0	446	306	2127	0	0	1562	531
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.19	0.00	1.81	1.00	3.00	0.00	0.00	3.00	1.00
Final Sat.:	0	0	0	1691	0	2584	1425	4275	0	0	4275	1425
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.17	0.00	0.17	0.21	0.50	0.00	0.00	0.37	0.37
Crit Volume:			0	246			306					531
Crit Moves:				****			****					****

```
--------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                              Existing PM
--------------------------------------------------------------------------------

                  Level Of Service Computation Report
        Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.765
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        79              Level Of Service:                 C
********************************************************************************
Street Name:                I-5 SB Ramps                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected         Permitted         Permitted         Permitted
Rights:           Include           Include           Include           Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:         0  0  0  0  1    1  0  0  1  0    0  0  2  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     9   446    23   574     0  1365    46    23   892   211
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:    0     0     9   446    23   574     0  1365    46    23   892   211
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:    0     0     9   446    23   574     0  1365    46    23   892   211
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:     0     0     9   446    23   574     0  1365    46    23   892   211
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:    0     0     9   446    23   574     0  1365    46    23   892   211
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:    0     0     9   446    23   574     0  1365    46    23   892   211
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425  1425  1425  1425  1425  1425  1425  1425  1425  1425  1425  1425
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       0.00  0.00  1.00  1.00  0.04  0.96  0.00  2.90  0.10  1.00  2.00  1.00
Final Sat.:     0     0  1425  1425    55  1370     0  4136   139  1425  2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.01  0.31  0.42  0.42  0.00  0.33  0.33  0.02  0.31  0.15
Crit Volume:    0                             597               470    23
Crit Moves:  ****                            ****              ****  ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                              Existing PM
--------------------------------------------------------------------------------

                  Level Of Service Computation Report
        Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.753
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        75              Level Of Service:                 C
********************************************************************************
Street Name:                I-5 NB Ramps                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted         Protected         Permitted         Permitted
Rights:           Include           Include           Include           Include
Min. Green:     0     0     0     0     0     0     0     0     0     0     0     0
Y+R:          4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0   4.0
Lanes:         1  0  0  1  0    0  0  0  0  0    0  1  0  1  0    0  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     310     0   261     0     0     0     3  1103   412     0   815   495
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  310     0   261     0     0     0     3  1103   412     0   815   495
Added Vol:      0     0     0     0     0     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  310     0   261     0     0     0     3  1103   412     0   815   495
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   310     0   261     0     0     0     3  1103   412     0   815   495
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  310     0   261     0     0     0     3  1103   412     0   815   495
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  4.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:  310     0   261     0     0     0    12  1103   412     0   815   495
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425  1425  1425  1425  1425  1425  1425  1425  1425  1425  1425  1425
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  0.00  1.00  0.00  0.00  0.00  0.01  1.45  0.54  0.00  2.00  1.00
Final Sat.:  1425     0  1425     0     0     0     6  2075   769     0  2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22  0.00  0.18  0.00  0.00  0.00  0.53  0.53  0.54  0.00  0.29  0.35
Crit Volume:  310                 0                             764     0
Crit Moves:  ****                                              ****  ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing PM
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #7 San Fernando Road / Osborne Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.709
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         64              Level Of Service:                  C
********************************************************************************
Street Name:         San Fernando Road                 Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     66  581    98  166  417    83   93  637    51   58  644   179
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  66  581    98  166  417    83   93  637    51   58  644   179
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  66  581    98  166  417    83   93  637    51   58  644   179
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   66  581    98  166  417    83   93  637    51   58  644   179
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  66  581    98  166  417    83   93  637    51   58  644   179
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  66  581    98  166  417    83   93  637    51   58  644   179
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.71  0.29 1.00 1.67  0.33 1.00 1.85  0.15 1.00 1.57  0.43
Final Sat.: 1425 2439   411 1425 2377   473 1425 2639   211 1425 2230   620
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.05 0.24  0.24 0.12 0.18  0.18 0.07 0.24  0.24 0.04 0.29  0.29
Crit Volume:       340        166              93                         412
Crit Moves:       ****       ****             ****                       ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing PM
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.956
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        180              Level Of Service:                  E
********************************************************************************
Street Name:         Glenoaks Boulevard                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include            Ovl            Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     70  930   653   98  412   142  231  576    27  275  360    31
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  70  930   653   98  412   142  231  576    27  275  360    31
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  70  930   653   98  412   142  231  576    27  275  360    31
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   70  930   653   98  412   142  231  576    27  275  360    31
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  70  930   653   98  412   142  231  576    27  275  360    31
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  70  930   653   98  412   142  231  576    27  275  360    31
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.00  1.00 1.00 1.84  0.16
Final Sat.: 1375 2750  1375 1375 2750  1375 1375 2750  1375 1375 2532   218
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.05 0.34  0.47 0.07 0.15  0.10 0.17 0.21  0.02 0.20 0.14  0.14
Crit Volume:              653   98                   288        275
Crit Moves:              **** ****                  ****       ****
********************************************************************************
```

```
---------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                               Existing PM
---------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*********************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
*********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.733
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        54              Level Of Service:                 C
*********************************************************************************
Street Name:         Glenoaks Boulevard                 Sheldon Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         1  0  2  0  1   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     117 1006   80    95  608  223   360  379  139    42  221   62
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  117 1006   80    95  608  223   360  379  139    42  221   62
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  117 1006   80    95  608  223   360  379  139    42  221   62
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   117 1006   80    95  608  223   360  379  139    42  221   62
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  117 1006   80    95  608  223   360  379  139    42  221   62
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  117 1006   80    95  608  223   360  379  139    42  221   62
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 2.00 1.00  1.00 2.00 1.00  1.00 1.46 0.54  1.00 1.56 0.44
Final Sat.:  1500 3000 1500  1500 3000 1500  1500 2195  805  1500 2343  657
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.34 0.05  0.06 0.20 0.15  0.24 0.17 0.17  0.03 0.09 0.09
Crit Volume:       503         95              360                   142
Crit Moves:       ****       ****             ****                  ****
*********************************************************************************
```



```
---------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                               Existing PM
---------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*********************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
*********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.421
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        25              Level Of Service:                 A
*********************************************************************************
Street Name:         Glenoaks Boulevard                   Penrose Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         1  0  2  0  1   1  0  2  0  1   1  0  0  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  622   12    30  664  118   194  153   52     6   66   64
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   39  622   12    30  664  118   194  153   52     6   66   64
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   39  622   12    30  664  118   194  153   52     6   66   64
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    39  622   12    30  664  118   194  153   52     6   66   64
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   39  622   12    30  664  118   194  153   52     6   66   64
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   39  622   12    30  664  118   194  153   52     6   66   64
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 2.00 1.00  1.00 2.00 1.00  1.00 0.75 0.25  1.00 1.00 1.00
Final Sat.:  1500 3000 1500  1500 3000 1500  1500 1120  380  1500 1500 1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.21 0.01  0.02 0.22 0.08  0.13 0.14 0.14  0.00 0.04 0.04
Crit Volume:   39                   332        194                    66
Crit Moves:  ****                  ****       ****                  ****
*********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing PM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.749
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         74              Level Of Service:                  C
********************************************************************************
Street Name:                Arleta Avenue                Devonshire Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Permitted      Prot+Permit       Permitted
Rights:           Include           Ovl            Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        0  0  0  0  0   1  0  1! 0  1   1  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0     0     0  178     0   357  524   511     0    0   501   348
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:    0     0     0  178     0   357  524   511     0    0   501   348
Added Vol:      0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:    0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:    0     0     0  178     0   357  524   511     0    0   501   348
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:     0     0     0  178     0   357  524   511     0    0   501   348
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:    0     0     0  178     0   357  524   511     0    0   501   348
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.10  1.00  1.10 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:    0     0     0  196     0   393  524   511     0    0   501   348
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425  1425
Adjustment:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:       0.00  0.00  0.00 1.00  0.00  2.00 1.00  2.00  0.00 0.00  2.00  1.00
Final Sat.:     0     0     0 1425     0  2850 1425  2850     0    0  2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.14  0.00  0.14 0.37  0.18  0.00 0.00  0.18  0.24
Crit Volume:    0              196              524                           348
Crit Moves:                   ****             ****                          ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing PM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #12 Arleta Avenue / Branford Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.862
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        104              Level Of Service:                  D
********************************************************************************
Street Name:                Arleta Avenue                  Branford Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0     0     0    0     0     0    0     0     0    0     0     0
Y+R:          4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     209  1035   106   78   421   106  165   484   149  136   741   217
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:  209  1035   106   78   421   106  165   484   149  136   741   217
Added Vol:      0     0     0    0     0     0    0     0     0    0     0     0
PasserByVol:    0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:  209  1035   106   78   421   106  165   484   149  136   741   217
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:   209  1035   106   78   421   106  165   484   149  136   741   217
Reduct Vol:     0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:  209  1035   106   78   421   106  165   484   149  136   741   217
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:  209  1035   106   78   421   106  165   484   149  136   741   217
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500  1500
Adjustment:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:       1.00  1.81  0.19 1.00  1.60  0.40 1.00  1.53  0.47 1.00  1.55  0.45
Final Sat.:  1500  2721   279 1500  2397   603 1500  2294   706 1500  2320   680
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14  0.38  0.38 0.05  0.18  0.18 0.11  0.21  0.21 0.09  0.32  0.32
Crit Volume:              571   78              165                    479
Crit Moves:              **** ****             ****                   ****
********************************************************************************
```

```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing PM
---------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.905
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  E
***************************************************************************
Street Name:             Arleta Avenue               Van Nuys Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    126  627   114  157  401   122  159 1204   107   62  883   146
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 126  627   114  157  401   122  159 1204   107   62  883   146
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 126  627   114  157  401   122  159 1204   107   62  883   146
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  126  627   114  157  401   122  159 1204   107   62  883   146
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 126  627   114  157  401   122  159 1204   107   62  883   146
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 126  627   114  157  401   122  159 1204   107   62  883   146
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.69  0.31 1.00 2.00  1.00 1.00 1.84  0.16 1.00 1.72  0.28
Final Sat.: 1375 2327   423 1375 2750  1375 1375 2526   224 1375 2360   390
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.09 0.27  0.27 0.11 0.15  0.09 0.12 0.48  0.48 0.05 0.37  0.37
Crit Volume:            371  157                  656         62
Crit Moves:            **** ****                 ****       ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                                Existing PM
---------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.671
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        44              Level Of Service:                  B
***************************************************************************
Street Name:             Arleta Avenue                Terra Bella Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    275  749    99   90  364    60   54  710   125   75  594    67
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 275  749    99   90  364    60   54  710   125   75  594    67
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 275  749    99   90  364    60   54  710   125   75  594    67
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  275  749    99   90  364    60   54  710   125   75  594    67
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 275  749    99   90  364    60   54  710   125   75  594    67
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 275  749    99   90  364    60   54  710   125   75  594    67
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.77  0.23 1.00 1.72  0.28 1.00 1.70  0.30 1.00 1.80  0.20
Final Sat.: 1500 2650   350 1500 2575   425 1500 2551   449 1500 2696   304
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.18 0.28  0.28 0.06 0.14  0.14 0.04 0.28  0.28 0.05 0.22  0.22
Crit Volume:      424          90                  418          75
Crit Moves:      ****        ****                 ****        ****
***************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                                  Existing PM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        0.939
Loss Time (sec):       0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180               Level Of Service:                 E
********************************************************************************
Street Name:          Arleta Avenue                      Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    254  962   245    87  419    77    90 1017   161   112 1125   132
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse: 254  962   245    87  419    77    90 1017   161   112 1125   132
Added Vol:     0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 254  962   245    87  419    77    90 1017   161   112 1125   132
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  254  962   245    87  419    77    90 1017   161   112 1125   132
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 254  962   245    87  419    77    90 1017   161   112 1125   132
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume: 254  962   245    87  419    77    90 1017   161   112 1125   132
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 1.59  0.41  1.00 1.69  0.31  1.00 1.73  0.27  1.00 1.79  0.21
Final Sat.: 1500 2391   609  1500 2534   466  1500 2590   410  1500 2685   315
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.17 0.40  0.40  0.06 0.17  0.17  0.06 0.39  0.39  0.07 0.42  0.42
Crit Volume:            604    87               90                     629
Crit Moves:            ****  ****             ****                    ****
********************************************************************************
```

APPENDIX C
LOS Operations Worksheets – Existing plus-Project Conditions

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                            Existing + Project AM
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         1.109
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180             Level Of Service:                  F
********************************************************************************
Street Name:           Woodley Avenue                Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      76  167   109  128  998    83   48 1790   319  266 2032    92
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   76  167   109  128  998    83   48 1790   319  266 2032    92
Added Vol:      0    0     2    3    0     0    0    3     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   76  167   111  131  998    83   48 1793   319  266 2032    92
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    76  167   111  131  998    83   48 1793   319  266 2032    92
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   76  167   111  131  998    83   48 1793   319  266 2032    92
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   76  167   111  131  998    83   48 1793   319  266 2032    92
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.55  0.45 1.00 2.87  0.13
Final Sat.:  1425 2850  1425 1425 2850  1425 1425 3629   646 1425 4090   185
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.06  0.08 0.09 0.35  0.06 0.03 0.49  0.49 0.19 0.50  0.50
Crit Volume:             111       499                   704  266
Crit Moves:             ****      ****                  **** ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                            Existing + Project AM
--------------------------------------------------------------------------------

                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.655
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        54             Level Of Service:                  B
********************************************************************************
Street Name:           Densmore Avenue               Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0     1  136    0    19    3 1982     1   18 2268    32
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    1    0     1  136    0    19    3 1982     1   18 2268    32
Added Vol:      0    0     6    0    0     0    0    0     9   32    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    1    0     7  136    0    19    3 1982    10   50 2268    32
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     1    0     7  136    0    19    3 1982    10   50 2268    32
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    1    0     7  136    0    19    3 1982    10   50 2268    32
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    1    0     7  136    0    19    3 1982    10   50 2268    32
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.12 0.00  0.88 0.88 0.00  0.12 1.00 2.98  0.02 1.00 2.96  0.04
Final Sat.:   178    0  1247 1250    0   175 1425 4254    21 1425 4216    59
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00  0.01 0.11 0.00  0.11 0.00 0.47  0.47 0.04 0.54  0.54
Crit Volume:               8             155    3                          767
Crit Moves:             ****            **** ****                         ****
********************************************************************************
```

```
-------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                           Existing + Project AM
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         1.079
Loss Time (sec):        0                Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        180                Level Of Service:                  F
*******************************************************************************
Street Name:               Haskell Avenue                 Victory Boulevard
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include           Ovl            Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         0  0  1! 0  0   1  1  0  0  1   1  0  2  1  0   1  0  2  0  1
------------|----------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      57   10    1   830  213  589    31 1887  159     3 1622  187
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   57   10    1   830  213  589    31 1887  159     3 1622  187
Added Vol:      0    0    0     0    0   11     0    5    0     0   20    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   57   10    1   830  213  600    31 1892  159     3 1642  187
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    57   10    1   830  213  600    31 1892  159     3 1642  187
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   57   10    1   830  213  600    31 1892  159     3 1642  187
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   57   10    1   913  213  600    31 1892  159     3 1642  187
------------|----------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.84 0.15 0.01  1.62 0.38 1.00  1.00 2.77 0.23  1.00 2.00 1.00
Final Sat.:  1153  202   20  2230  520 1375  1375 3805  320  1375 2750 1375
------------|----------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.05 0.05  0.41 0.41 0.44  0.02 0.50 0.50  0.00 0.60 0.14
Crit Volume:        68         563              31                  821
Crit Moves:       ****        ****            ****                 ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                           Existing + Project AM
-------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
*******************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         0.739
Loss Time (sec):        0                Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         71                Level Of Service:                  C
*******************************************************************************
Street Name:               I-405 NB Ramps                 Victory Boulevard
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Permitted
Rights:           Include           Ovl            Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         0  0  0  0  0   1  0  1! 0  1   1  0  2  1  0   0  0  3  0  1
------------|----------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    0   219    0  227   297 2415    0     0 1583  585
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0    0   219    0  227   297 2415    0     0 1583  585
Added Vol:      0    0    0     0    0    8     5    0    0     0   12    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    0    0    0   219    0  235   302 2415    0     0 1595  585
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     0    0    0   219    0  235   302 2415    0     0 1595  585
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0    0   219    0  235   302 2415    0     0 1595  585
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.10 1.00 1.10  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0    0    0   241    0  259   302 2415    0     0 1595  585
------------|----------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 0.00  1.45 0.00 1.55  1.00 3.00 0.00  0.00 3.00 1.00
Final Sat.:     0    0    0  2062    0 2213  1425 4275    0     0 4275 1425
------------|----------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.12 0.00 0.12  0.21 0.56 0.00  0.00 0.37 0.41
Crit Volume:         0         166             302                        585
Crit Moves:                   ****            ****                       ****
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Existing + Project AM
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):         0.641
Loss Time (sec):      0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       52               Level Of Service:                  B
********************************************************************************
Street Name:              I-5 SB Ramps                     Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|-----------------||---------------||---------------||---------------|
Control:         Protected        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|-----------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    2   197   22  259     0 1765   64    19  843  527
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:    0    0    2   197   22  259     0 1765   64    19  843  527
Added Vol:      0    0    0     2    0    3     0    1    0     0    1    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    0    0    2   199   22  262     0 1766   64    19  844  527
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     0    0    2   199   22  262     0 1766   64    19  844  527
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0    2   199   22  262     0 1766   64    19  844  527
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0    0    2   199   22  262     0 1766   64    19  844  527
------------|-----------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 1.00  1.00 0.08 0.92  0.00 2.90 0.10  1.00 2.00 1.00
Final Sat.:     0    0 1425  1425  110 1315     0 4125  150  1425 2850 1425
------------|-----------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.14 0.20 0.20  0.00 0.43 0.43  0.01 0.30 0.37
Crit Volume:    0                  284              610        19
Crit Moves:  ****                 ****             ****      ****
********************************************************************************
```

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK


```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Existing + Project AM
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):         0.630
Loss Time (sec):      0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       50               Level Of Service:                  B
********************************************************************************
Street Name:              I-5 NB Ramps                     Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|-----------------||---------------||---------------||---------------|
Control:         Permitted        Protected        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         1  0  0  1  0   0  0  0  0  1   0  0  1  1  0   0  1  1  1  0
------------|-----------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     233    0  269     0    0    1     0  762  490     0 1152  495
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:  233    0  269     0    0    1     0  762  490     0 1152  495
Added Vol:      1    0    0     0    0    0     0    2    0     2    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  234    0  269     0    0    1     0  764  490     2 1152  495
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   234    0  269     0    0    1     0  764  490     2 1152  495
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  234    0  269     0    0    1     0  764  490     2 1152  495
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  4.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  234    0  269     0    0    1     0  764  490     8 1152  495
------------|-----------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 0.00 1.00  0.00 0.00 1.00  0.00 1.22 0.78  0.01 2.09 0.90
Final Sat.:  1425    0 1425     0    0 1425     0 1736 1114    21 2975 1279
------------|-----------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.00 0.19  0.00 0.00 0.00  0.00 0.44 0.44  0.10 0.39 0.39
Crit Volume:             269     0                       627     2
Crit Moves:             ****  ****                      ****  ****
********************************************************************************
```

Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK

```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                          Existing + Project AM
---------------------------------------------------------------------------

                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #7 San Fernando Road / Osborne Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.652
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        73              Level Of Service:                  B
***************************************************************************
Street Name:         San Fernando Road                 Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     27  227    41   138  807    54    64  568    62    85  754   107
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  27  227    41   138  807    54    64  568    62    85  754   107
Added Vol:     0    0     0     0    5     0     0    2     0     0    2     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  27  227    41   138  812    54    64  570    62    85  756   107
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   27  227    41   138  812    54    64  570    62    85  756   107
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  27  227    41   138  812    54    64  570    62    85  756   107
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  27  227    41   138  812    54    64  570    62    85  756   107
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.69  0.31  1.00 1.88  0.12  1.00 1.80  0.20  1.00 1.75  0.25
Final Sat.:  1425 2414   436  1425 2672   178  1425 2570   280  1425 2497   353
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.09  0.09  0.10 0.30  0.30  0.04 0.22  0.22  0.06 0.30  0.30
Crit Volume:       134              433        64                            432
Crit Moves:                        ****      ****                           ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                          Existing + Project AM
---------------------------------------------------------------------------

                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.001
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
***************************************************************************
Street Name:         Glenoaks Boulevard                Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include            Ovl           Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     34  410   240    88 1075   181   249  401    76   601  627    26
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  34  410   240    88 1075   181   249  401    76   601  627    26
Added Vol:     2    0     0     0    0     0     0    0     2     1    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  36  410   240    88 1075   181   249  401    78   602  627    26
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   36  410   240    88 1075   181   249  401    78   602  627    26
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  36  410   240    88 1075   181   249  401    78   602  627    26
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  36  410   240    88 1075   181   249  401    78   602  627    26
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.92  0.08
Final Sat.:  1375 2750  1375  1375 2750  1375  1375 2750  1375  1375 2641   109
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.15  0.17  0.06 0.39  0.13  0.18 0.15  0.06  0.44 0.24  0.24
Crit Volume:  36                   538               201         602
Crit Moves:  ****                 ****              ****        ****
***************************************************************************
```

```
Existing + Project AM      Wed Mar 30, 2016 14:50:46             Page 14-1
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Existing + Project AM
---------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.744
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        56              Level Of Service:                  C
***************************************************************************
Street Name:        Glenoaks Boulevard                 Sheldon Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     96  427    71   72 1053   402  214  288   126  106  460    97
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  96  427    71   72 1053   402  214  288   126  106  460    97
Added Vol:     0    1     0    0    1     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  96  428    71   72 1054   402  214  288   126  106  460    97
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   96  428    71   72 1054   402  214  288   126  106  460    97
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  96  428    71   72 1054   402  214  288   126  106  460    97
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  96  428    71   72 1054   402  214  288   126  106  460    97
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 1.39  0.61 1.00 1.65  0.35
Final Sat.: 1500 3000  1500 1500 3000  1500 1500 2087   913 1500 2478   522
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.06 0.14  0.05 0.05 0.35  0.27 0.14 0.14  0.14 0.07 0.19  0.19
Crit Volume:  96              527        214                          279
Crit Moves: ****             ****       ****                         ****
***************************************************************************
```



```
Existing + Project AM      Wed Mar 30, 2016 14:50:46             Page 15-1
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Existing + Project AM
---------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.435
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        25              Level Of Service:                  A
***************************************************************************
Street Name:        Glenoaks Boulevard                 Penrose Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  0  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     30  503     4   41  792   134  135  125    42   12   90    40
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  30  503     4   41  792   134  135  125    42   12   90    40
Added Vol:     0    0     0    0    0     1    1    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  30  503     4   41  792   135  136  125    42   12   90    40
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   30  503     4   41  792   135  136  125    42   12   90    40
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  30  503     4   41  792   135  136  125    42   12   90    40
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  30  503     4   41  792   135  136  125    42   12   90    40
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 0.75  0.25 1.00 1.00  1.00
Final Sat.: 1500 3000  1500 1500 3000  1500 1500 1123   377 1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.02 0.17  0.00 0.03 0.26  0.09 0.09 0.11  0.11 0.01 0.06  0.03
Crit Volume:  30              396        136                     90
Crit Moves: ****             ****       ****                    ****
***************************************************************************
```

```
----------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                            Existing + Project AM
----------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
****************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.598
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        46              Level Of Service:                  A
****************************************************************************
Street Name:          Arleta Avenue                Devonshire Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Permitted       Prot+Permit       Permitted
Rights:           Include           Ovl             Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  0  0  0   1  0  1! 0  1   1  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  418    0   337  296  805     0    0  531   271
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  418    0   337  296  805     0    0  531   271
Added Vol:     0    0     0    3    0     6    2    0     0    0    5     3
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0    0     0  421    0   343  298  805     0    0  536   274
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  421    0   343  298  805     0    0  536   274
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  421    0   343  298  805     0    0  536   274
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0    0     0  463    0   377  298  805     0    0  536   274
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.65 0.01  1.34 1.00 2.00  0.00 0.00 2.00  1.00
Final Sat.:    0    0     0 2356    0  1919 1425 2850     0    0 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.20 0.00  0.20 0.21 0.28  0.00 0.00 0.19  0.19
Crit Volume:   0              280             298                          274
Crit Moves:                  ****            ****                         ****
****************************************************************************
```



```
----------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                            Existing + Project AM
----------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
****************************************************************************
Intersection #12 Arleta Avenue / Branford Street
****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.858
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       101              Level Of Service:                  D
****************************************************************************
Street Name:          Arleta Avenue                 Branford Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    123  543    95  122  982   141  134  485   376  165  615   100
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 123  543    95  122  982   141  134  485   376  165  615   100
Added Vol:     0    6     0    0   10     0    0    4     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 123  549    95  122  992   141  134  489   376  165  615   100
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  123  549    95  122  992   141  134  489   376  165  615   100
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 123  549    95  122  992   141  134  489   376  165  615   100
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 123  549    95  122  992   141  134  489   376  165  615   100
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.70  0.30 1.00 1.75  0.25 1.00 1.13  0.87 1.00 1.72  0.28
Final Sat.:  1500 2557   443 1500 2627   373 1500 1696  1304 1500 2580   420
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.21  0.21 0.08 0.38  0.38 0.09 0.29  0.29 0.11 0.24  0.24
Crit Volume: 123                        567              433  165
Crit Moves:  ****                       ****             **** ****
****************************************************************************
```

```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Existing + Project AM
---------------------------------------------------------------------------

                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.888
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180              Level Of Service:                 D
***************************************************************************
Street Name:          Arleta Avenue                Van Nuys Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     173  577    82   238  670   145   118 1054   136    59  928   136
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  173  577    82   238  670   145   118 1054   136    59  928   136
Added Vol:      0    5     0     0    3     0     0    0     1     2    0     3
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  173  582    82   238  673   145   118 1054   137    61  928   139
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   173  582    82   238  673   145   118 1054   137    61  928   139
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  173  582    82   238  673   145   118 1054   137    61  928   139
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  173  582    82   238  673   145   118 1054   137    61  928   139
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.75  0.25  1.00 2.00  1.00  1.00 1.77  0.23  1.00 1.74  0.26
Final Sat.:  1375 2410   340  1375 2750  1375  1375 2434   316  1375 2392   358
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.24  0.24  0.17 0.24  0.11  0.09 0.43  0.43  0.04 0.39  0.39
Crit Volume:               332   238               118                     534
Crit Moves:               ****  ****              ****                    ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Existing + Project AM
---------------------------------------------------------------------------

                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.780
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        65              Level Of Service:                 C
***************************************************************************
Street Name:          Arleta Avenue                Terra Bella Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     166  593    99   118  662    51    82  894   209    93  676   118
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  166  593    99   118  662    51    82  894   209    93  676   118
Added Vol:      0    5     0     0    6     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  166  598    99   118  668    51    82  894   209    93  676   118
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   166  598    99   118  668    51    82  894   209    93  676   118
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  166  598    99   118  668    51    82  894   209    93  676   118
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  166  598    99   118  668    51    82  894   209    93  676   118
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.72  0.28  1.00 1.86  0.14  1.00 1.62  0.38  1.00 1.70  0.30
Final Sat.:  1500 2574   426  1500 2787   213  1500 2432   568  1500 2554   446
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.23  0.23  0.08 0.24  0.24  0.05 0.37  0.37  0.06 0.26  0.26
Crit Volume:  166                    360               552    93
Crit Moves:  ****                   ****              ****  ****
***************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                            Existing + Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.913
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       166              Level Of Service:                  E
********************************************************************************
Street Name:          Arleta Avenue                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  545   238   120  857    55    64 1128   175   129 1036   171
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  126  545   238   120  857    55    64 1128   175   129 1036   171
Added Vol:      0    5     1     0    6     0     0    0     0     4    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  126  550   239   120  863    55    64 1128   175   133 1036   171
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   126  550   239   120  863    55    64 1128   175   133 1036   171
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  126  550   239   120  863    55    64 1128   175   133 1036   171
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  126  550   239   120  863    55    64 1128   175   133 1036   171
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.39  0.61  1.00 1.88  0.12  1.00 1.73  0.27  1.00 1.72  0.28
Final Sat.:  1500 2091   909  1500 2820   180  1500 2597   403  1500 2575   425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.26  0.26  0.08 0.31  0.31  0.04 0.43  0.43  0.09 0.40  0.40
Crit Volume:  126                           459        652          133
Crit Moves:  ****                          ****       ****         ****
********************************************************************************
```

```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Existing + Project PM
---------------------------------------------------------------------------

                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.987
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  E
***************************************************************************
Street Name:          Woodley Avenue                 Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  1  1  0  2  0  1  1  0  2  1  0  1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     342  801  199  212  240  142   97 1909   96  123 1774  200
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:  342  801  199  212  240  142   97 1909   96  123 1774  200
Added Vol:      0    0    0    0    0    0    0    0    0    2    3    3
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  342  801  199  212  240  142   97 1909   96  125 1777  203
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   342  801  199  212  240  142   97 1909   96  125 1777  203
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  342  801  199  212  240  142   97 1909   96  125 1777  203
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:  342  801  199  212  240  142   97 1909   96  125 1777  203
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       1.00 2.00 1.00 1.00 2.00 1.00 1.00 2.86 0.14 1.00 2.69 0.31
Final Sat.:  1425 2850 1425 1425 2850 1425 1425 4070  205 1425 3837  438
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.24 0.28 0.14 0.15 0.08 0.10 0.07 0.47 0.47 0.09 0.46 0.46
Crit Volume:       401       212                 668       125
Crit Moves:        ****      ****                ****      ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Existing + Project PM
---------------------------------------------------------------------------

                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.597
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        46              Level Of Service:                  A
***************************************************************************
Street Name:          Densmore Avenue                Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        0  0  1! 0  0  0  0  1! 0  0  1  0  2  1  0  1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0    1   33    0    9   12 2253    6    7 2083   43
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:    1    0    1   33    0    9   12 2253    6    7 2083   43
Added Vol:      9    0   32    0    0    0    0    0    0    6    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   10    0   33   33    0    9   12 2253    6   13 2083   43
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    10    0   33   33    0    9   12 2253    6   13 2083   43
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   10    0   33   33    0    9   12 2253    6   13 2083   43
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:   10    0   33   33    0    9   12 2253    6   13 2083   43
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.23 0.00 0.77 0.79 0.00 0.21 1.00 2.99 0.01 1.00 2.94 0.06
Final Sat.:   331    0 1094 1120    0  305 1425 4264   11 1425 4189   86
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.00 0.03 0.03 0.00 0.03 0.01 0.53 0.53 0.01 0.50 0.50
Crit Volume:              43             42            753   13
Crit Moves:             ****           ****           **** ****
***************************************************************************
```

```
-------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Existing + Project PM
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.045
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
*******************************************************************************
Street Name:           Haskell Avenue                Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include           Ovl            Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:         0  0  1! 0  0    1  1  0  0  1    1  0  2  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     117   44    26   598   45   441   100 1763    55     4 1594   381
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  117   44    26   598   45   441   100 1763    55     4 1594   381
Added Vol:      0    0     0     0    0     5     0   23     0     0    2     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  117   44    26   598   45   446   100 1786    55     4 1596   381
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   117   44    26   598   45   446   100 1786    55     4 1596   381
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  117   44    26   598   45   446   100 1786    55     4 1596   381
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.10 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  117   44    26   658   45   446   100 1786    55     4 1596   381
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.63 0.23  0.14  1.87 0.13  1.00  1.00 2.91  0.09  1.00 2.00  1.00
Final Sat.:   860  324   191  2574  176  1375  1375 4002   123  1375 2750  1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.14  0.14  0.26 0.26  0.32  0.07 0.45  0.45  0.00 0.58  0.28
Crit Volume:       187         351               100                     798
Crit Moves:       ****        ****              ****                    ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Existing + Project PM
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.768
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        80              Level Of Service:                  C
*******************************************************************************
Street Name:           I-405 NB Ramps                Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Permitted
Rights:           Include           Ovl            Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:         0  0  0  0  0    1  0  1! 0  1    1  0  2  1  0    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   265    0   405   306 2127     0     0 1562   531
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0   265    0   405   306 2127     0     0 1562   531
Added Vol:      0    0     0     0    0     2    11   12     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0   265    0   407   317 2139     0     0 1562   531
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   265    0   407   317 2139     0     0 1562   531
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   265    0   407   317 2139     0     0 1562   531
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.10 1.00  1.10  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0   292    0   448   317 2139     0     0 1562   531
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  1.18 0.01  1.81  1.00 3.00  0.00  0.00 3.00  1.00
Final Sat.:     0    0     0  1686    0  2589  1425 4275     0     0 4275  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.17 0.00  0.17  0.22 0.50  0.00  0.00 0.37  0.37
Crit Volume:         0         246               317                          531
Crit Moves:                   ****              ****                         ****
*******************************************************************************
```

```
-----------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                            Existing + Project PM
-----------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.767
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        80              Level Of Service:                  C
*****************************************************************************
Street Name:                I-5 SB Ramps                    Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted        Permitted        Permitted
Rights:           Include           Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     9  446   23   574    0 1365    46   23  892   211
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     9  446   23   574    0 1365    46   23  892   211
Added Vol:      0    0     0    2    0     3    0    1     0    0    1     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    0    0     9  448   23   577    0 1366    46   23  893   211
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0    0     9  448   23   577    0 1366    46   23  893   211
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     9  448   23   577    0 1366    46   23  893   211
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    0    0     9  448   23   577    0 1366    46   23  893   211
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  1.00 1.00 0.04  0.96 0.00 2.90  0.10 1.00 2.00  1.00
Final Sat.:     0    0  1425 1425   55  1370    0 4136   139 1425 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.01 0.31 0.42  0.42 0.00 0.33  0.33 0.02 0.31  0.15
Crit Volume:    0                  600              471        23
Crit Moves:  ****                 ****             ****      ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                            Existing + Project PM
-----------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.756
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        76              Level Of Service:                  C
*****************************************************************************
Street Name:                I-5 NB Ramps                    Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted         Protected        Permitted        Permitted
Rights:           Include           Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  0  1  0   0  0  0  0  0   0  1  0  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     310    0   261    0    0     0    3 1103   412    0  815   495
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  310    0   261    0    0     0    3 1103   412    0  815   495
Added Vol:      1    0     0    0    0     0    0    2     0    2    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  311    0   261    0    0     0    3 1105   412    2  815   495
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   311    0   261    0    0     0    3 1105   412    2  815   495
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  311    0   261    0    0     0    3 1105   412    2  815   495
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 4.00 1.00  1.00 6.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  311    0   261    0    0     0   12 1105   412   12  815   495
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 0.00  1.00 0.00 0.00  0.00 0.01 1.45  0.54 0.03 1.97  1.00
Final Sat.:  1425    0  1425    0    0     0    6 2076   768   40 2810  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.00  0.18 0.00 0.00  0.00 0.53 0.53  0.54 0.05 0.29  0.35
Crit Volume:  311                 0                     765    2
Crit Moves:  ****                                      ****  ****
*****************************************************************************
```

```
-------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                          Existing + Project PM
-------------------------------------------------------------------------------

                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #7 San Fernando Road / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.711
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        64               Level Of Service:                  C
********************************************************************************
Street Name:        San Fernando Road                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     66  581    98   166  417    83    93  637    51    58  644   179
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  66  581    98   166  417    83    93  637    51    58  644   179
Added Vol:     0    5     0     0    0     0     0    2     0     0    2     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  66  586    98   166  417    83    93  639    51    58  646   179
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   66  586    98   166  417    83    93  639    51    58  646   179
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  66  586    98   166  417    83    93  639    51    58  646   179
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  66  586    98   166  417    83    93  639    51    58  646   179
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 1.71  0.29  1.00 1.67  0.33  1.00 1.85  0.15  1.00 1.57  0.43
Final Sat.: 1425 2442   408  1425 2377   473  1425 2639   211  1425 2232   618
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.05 0.24  0.24  0.12 0.18  0.18  0.07 0.24  0.24  0.04 0.29  0.29
Crit Volume:              342   166                93                 413
Crit Moves:              ****  ****              ****                ****
********************************************************************************
```



```
-------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                          Existing + Project PM
-------------------------------------------------------------------------------

                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.956
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180               Level Of Service:                  E
********************************************************************************
Street Name:        Glenoaks Boulevard                 Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include            Ovl            Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     70  930   653    98  412   142   231  576    27   275  360    31
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  70  930   653    98  412   142   231  576    27   275  360    31
Added Vol:     2    0     1     0    0     0     0    0     2     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  72  930   654    98  412   142   231  576    29   275  360    31
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   72  930   654    98  412   142   231  576    29   275  360    31
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  72  930   654    98  412   142   231  576    29   275  360    31
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  72  930   654    98  412   142   231  576    29   275  360    31
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.84  0.16
Final Sat.: 1375 2750  1375  1375 2750  1375  1375 2750  1375  1375 2532   218
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.05 0.34  0.48  0.07 0.15  0.10  0.17 0.21  0.02  0.20 0.14  0.14
Crit Volume:              654    98                 288         275
Crit Moves:              ****  ****                ****        ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                           Existing + Project PM
--------------------------------------------------------------------------------

                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.733
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        54               Level Of Service:                  C
********************************************************************************
Street Name:        Glenoaks Boulevard                 Sheldon Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:       1  0  2  0  1    1  0  2  0  1    1  0  1  1  0    1  0  1  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:    117 1006    80    95  608   223   360  379   139    42  221    62
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse: 117 1006    80    95  608   223   360  379   139    42  221    62
Added Vol:     0    1     0     0    1     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 117 1007    80    95  609   223   360  379   139    42  221    62
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  117 1007    80    95  609   223   360  379   139    42  221    62
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 117 1007    80    95  609   223   360  379   139    42  221    62
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume: 117 1007    80    95  609   223   360  379   139    42  221    62
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.46  0.54  1.00 1.56  0.44
Final Sat.: 1500 3000  1500  1500 3000  1500  1500 2195   805  1500 2343   657
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:    0.08 0.34  0.05  0.06 0.20  0.15  0.24 0.17  0.17  0.03 0.09  0.09
Crit Volume:      504          95              360                    142
Crit Moves:      ****        ****             ****                   ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                           Existing + Project PM
--------------------------------------------------------------------------------

                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.421
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        25               Level Of Service:                  A
********************************************************************************
Street Name:        Glenoaks Boulevard                    Penrose Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:       1  0  2  0  1    1  0  2  0  1    1  0  0  1  0    1  0  1  0  1
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     39  622    12    30  664   118   194  153    52     6   66    64
Growth Adj: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  39  622    12    30  664   118   194  153    52     6   66    64
Added Vol:     0    0     0     0    0     1     1    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  39  622    12    30  664   119   195  153    52     6   66    64
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   39  622    12    30  664   119   195  153    52     6   66    64
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  39  622    12    30  664   119   195  153    52     6   66    64
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  39  622    12    30  664   119   195  153    52     6   66    64
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 2.00  1.00  1.00 2.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00
Final Sat.: 1500 3000  1500  1500 3000  1500  1500 1120   380  1500 1500  1500
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:    0.03 0.21  0.01  0.02 0.22  0.08  0.13 0.14  0.14  0.00 0.04  0.04
Crit Volume:  39                     332       195                     66
Crit Moves: ****                    ****      ****                   ****
********************************************************************************
```

```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Existing + Project PM
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):          0.758
Loss Time (sec):       0              Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        77              Level Of Service:                   C
*****************************************************************************
Street Name:              Arleta Avenue                Devonshire Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted       Prot+Permit        Permitted
Rights:           Include            Ovl             Include           Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  0  0  0    1  0  1! 0  1    1  0  2  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   178    0   357   524  511     0     0  501   348
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0   178    0   357   524  511     0     0  501   348
Added Vol:      0    0     0     0    0     2     6    5     0     0    0     6
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0   178    0   359   530  516     0     0  501   354
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   178    0   359   530  516     0     0  501   354
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   178    0   359   530  516     0     0  501   354
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.10 1.00  1.10  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0   196    0   395   530  516     0     0  501   354
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  1.00 0.00  2.00  1.00 2.00  0.00  0.00 2.00  1.00
Final Sat.:     0    0     0  1425    0  2850  1425 2850     0     0 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.14 0.00  0.14  0.37 0.18  0.00  0.00 0.18  0.25
Crit Volume:    0                196              530                      354
Crit Moves:                     ****             ****                     ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Existing + Project PM
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #12 Arleta Avenue / Branford Street
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):          0.866
Loss Time (sec):       0              Average Delay (sec/veh):       xxxxxx
Optimal Cycle:       108              Level Of Service:                   D
*****************************************************************************
Street Name:              Arleta Avenue                  Branford Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     209 1035   106    78  421   106   165  484   149   136  741   217
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  209 1035   106    78  421   106   165  484   149   136  741   217
Added Vol:      0   10     0     0    6     0     0    0     0     0    4     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  209 1045   106    78  427   106   165  484   149   136  745   217
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   209 1045   106    78  427   106   165  484   149   136  745   217
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  209 1045   106    78  427   106   165  484   149   136  745   217
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  209 1045   106    78  427   106   165  484   149   136  745   217
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.82  0.18  1.00 1.60  0.40  1.00 1.53  0.47  1.00 1.55  0.45
Final Sat.:  1500 2724   276  1500 2403   597  1500 2294   706  1500 2323   677
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.38  0.38  0.05 0.18  0.18  0.11 0.21  0.21  0.09 0.32  0.32
Crit Volume:             576    78              165                  481
Crit Moves:             ****  ****             ****                 ****
*****************************************************************************
```

```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Existing + Project PM
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.911
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  E
*****************************************************************************
Street Name:          Arleta Avenue               Van Nuys Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  627   114   157  401   122   159 1204   107    62  883   146
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  126  627   114   157  401   122   159 1204   107    62  883   146
Added Vol:      1    6     2     3    2     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  127  633   116   160  403   122   159 1204   107    62  883   146
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   127  633   116   160  403   122   159 1204   107    62  883   146
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  127  633   116   160  403   122   159 1204   107    62  883   146
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  127  633   116   160  403   122   159 1204   107    62  883   146
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.69  0.31  1.00 2.00  1.00  1.00 1.84  0.16  1.00 1.72  0.28
Final Sat.:  1375 2324   426  1375 2750  1375  1375 2526   224  1375 2360   390
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.27  0.27  0.12 0.15  0.09  0.12 0.48  0.48  0.05 0.37  0.37
Crit Volume:               375   160                    656          62
Crit Moves:               ****  ****                   ****        ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Existing + Project PM
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.674
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        44              Level Of Service:                  B
*****************************************************************************
Street Name:          Arleta Avenue               Terra Bella Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     275  749    99    90  364    60    54  710   125    75  594    67
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  275  749    99    90  364    60    54  710   125    75  594    67
Added Vol:      0    9     0     0    2     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  275  758    99    90  366    60    54  710   125    75  594    67
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   275  758    99    90  366    60    54  710   125    75  594    67
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  275  758    99    90  366    60    54  710   125    75  594    67
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  275  758    99    90  366    60    54  710   125    75  594    67
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.77  0.23  1.00 1.72  0.28  1.00 1.70  0.30  1.00 1.80  0.20
Final Sat.:  1500 2653   347  1500 2577   423  1500 2551   449  1500 2696   304
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.18 0.29  0.29  0.06 0.14  0.14  0.04 0.28  0.28  0.05 0.22  0.22
Crit Volume:        429         90                      418          75
Crit Moves:        ****       ****                     ****        ****
*****************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                             Existing + Project PM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        0.943
Loss Time (sec):       0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180               Level Of Service:                 E
********************************************************************************
Street Name:          Arleta Avenue                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     254  962   245    87  419    77    90 1017   161   112 1125   132
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  254  962   245    87  419    77    90 1017   161   112 1125   132
Added Vol:      0    9     1     0    2     0     0    0     0     4    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  254  971   246    87  421    77    90 1017   161   116 1125   132
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   254  971   246    87  421    77    90 1017   161   116 1125   132
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  254  971   246    87  421    77    90 1017   161   116 1125   132
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  254  971   246    87  421    77    90 1017   161   116 1125   132
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.60  0.40  1.00 1.69  0.31  1.00 1.73  0.27  1.00 1.79  0.21
Final Sat.:  1500 2394   606  1500 2536   464  1500 2590   410  1500 2685   315
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17 0.41  0.41  0.06 0.17  0.17  0.06 0.39  0.39  0.08 0.42  0.42
Crit Volume:             609    87               90                    629
Crit Moves:             ****  ****             ****                   ****
********************************************************************************
```

APPENDIX D
Related Projects List

Appendix D - LADWP Groundwater Replenishment
Area Projects and Trip Generation

Map ID	Location	Land Use	Intensity	Units	Daily Total	AM Peak Hour			PM Peak Hour		
						Total	In	Out	Total	In	Out
1	13535 Van Nuys Boulevard	Hotel	44	room	359	25	15	10	26	14	12
2	15136 Nordhoff Street	Charter School	600	Students	1,279	517	285	232	329	154	175
3	9989 Laurel Canyon Boulevard	Charter School	400	Students	1,680	368	221	147	168	64	104
4	8605 Colbath Avenue	School	175	Students	0	80	40	40	67	31	36
5	8755 Woodman Avenue	Charter School	480	Students	454	148	42	106	42	21	21
6	8401 Van Nuys Boulevard	Panorama Mall	-	Retail	10,000	2,000	1,000	1,000	2,000	1,000	1,000
7	12450 Branford Street	Industrial	-	-	2,766	323	273	50	347	72	275
8	9189 De Garmo Avenue	Industrial	-	-	0	265	135	130	309	162	147
9	9000 Sunland Boulevard	Mixed Use	-	-	1,582	137	89	48	177	74	103
10	11038 Peoria Street	TV/Commercial	-	-	914	146	125	21	75	15	60
11	13103 Victory Boulevard	Mixed Use	-	-	6,726	396	199	197	508	249	259
12	6301 Laurel Canyon Boulevard	Mixed Use	-	-	3,456	-78	-236	158	75	82	-7
13	12425 Victory Boulevard	Mixed Use	-	-	460	24	3	21	44	28	16
14	6605 Lankershim Boulevard	Mixed Use	-	-	904	23	-10	33	67	37	30
15	13007 Victory Boulevard	Mixed Use	-	-	18,763	1,144	887	257	1,712	566	1,146
16	7934 Lankershim Boulevard	Commercial	-	-	3,195	148	74	74	276	138	138
17	6601 Lankershim Boulevard	Commercial	-	-	1,535	139	71	68	103	53	50
18	7955 Laurel Canyon Boulevard	Commercial	-	-	586	72	35	37	26	14	12
19	12106 Burbank Boulevard	Retail	2.500	k.s.f.	2,000	300	150	150	150	75	75
20	6150 Laurel Canyon Boulevard	Mixed Use	-	-	7,270	710	423	287	759	239	520
21	4200 Radford Avenue	Studio	161.885	k.s.f.	1,634	115	102	13	112	42	70
22	12629 Riverside Drive	Condominiums	270	d.u.	1,620	88	-16	104	129	93	36
23	11933 Magnolia Boulevard	Condominiums	107	d.u.	981	89	24	65	102	55	47
24	5401Lankershim Boulevard	Mixed Use	-	-	1,826	51	36	15	135	70	65
25	11405 Chandler Boulevard	Mixed Use	-	-	519	34	8	26	46	28	18
26	11126 Chandler Boulevard	Mixed Use	-	-	903	40	-27	67	63	61	2
27	4832 Tujunga Avenue	School	-	-	244	82	45	37	28	13	15
28	11120 Chandler Avenue	Mixed Use	-	-	2,082	157	38	119	175	114	61
29	5500 Klump Avenue	Apartments	84	d.u.	559	43	22	22	52	26	26
30	11331 Ventura Avenue	Condominiums	62	d.u.	189	1	-24	25	9	22	-13
31	4141 Whitsett Avenue	Senior Apartments	200	d.u.	625	60	1	59	38	37	1
32	11000 Ventura Boulevard	Pharmacy	12.079	k.s.f.	719	-2	2	-4	72	31	41
33	11617 Venturay Bouelvard	Mixed Use	-	-	2,077	205	36	169	198	136	62
34	12548 Venturay Boulevard	Mixed Use	-	-	1,000	64	23	41	80	46	34
35	11036 Moorpark Street	Apartments	96	d.u.	506	39	7	32	47	31	16
36	6640 Sepulveda Boulevard	Apartments	72	d.u.	431	37	7	30	45	29	16
37	5700 Sepulveda Boulevard	Mixed Use	-	-	1,813	69	27	42	123	62	61
38	15225 Vanowen Street	Medical Office	80.200	k.s.f.	2,898	199	157	42	298	80	218
39	7121 Woodley Avenue	Apartments	126	d.u.	796	60	12	48	74	48	26
40	17100 Victory Boulevard	Apartments	200	d.u.	1,057	81	16	65	99	64	35
41	14615 Oxnard Street	Fire Station	18.533	k.s.f.	-	-	-	-	-	-	-
42	San Fernando Bike Bridge/Tujunga Wash				-	-	-	-	-	-	-
43	DCT - Backup Power				-	-	-	-	-	-	-
44	DCT - Electricity Usage Monitoring and Optimization				-	-	-	-	-	-	-
45	DCT - Channel 1 Air Spargers Improvements				-	-	-	-	-	-	-
46	DCT - Secondary Clarifiers Improvements				-	-	-	-	-	-	-
47	DCT - Sodium Bi-Sulfite Facility Improvements				-	-	-	-	-	-	-
Total					**86,408**	**8,399**	**4,317**	**4,082**	**9,185**	**4,176**	**5,009**

d.u. = dwelling units, k.s.f. = 1,000 square feet of floor area

Source: Los Angeles Department of Transportation (LADOT) Case Logging and Tracking System (CLATS), 2015; City of Los Angeles Engineering, City of Los Angeles Public Works.

APPENDIX E
LOS Operations Worksheets – Future Without-Project Conditions

```
---------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                        Future Without Project AM
---------------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*********************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
*********************************************************************************
Cycle (sec):        100             Critical Vol./Cap.(X):        1.272
Loss Time (sec):      0             Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180             Level Of Service:                 F
*********************************************************************************
Street Name:          Woodley Avenue                  Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase        Permitted        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     76  167  109  128  998   83   48 1790  319  266 2032   92
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:  87  192  125  147 1147   95   55 2057  367  306 2335  106
Added Vol:     0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:   0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  87  192  125  147 1147   95   55 2057  367  306 2335  106
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   87  192  125  147 1147   95   55 2057  367  306 2335  106
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  87  192  125  147 1147   95   55 2057  367  306 2335  106
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:  87  192  125  147 1147   95   55 2057  367  306 2335  106
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       1.00 2.00 1.00 1.00 2.00 1.00 1.00 2.55 0.45 1.00 2.87 0.13
Final Sat.:  1425 2850 1425 1425 2850 1425 1425 3628  647 1425 4090  185
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.07 0.09 0.10 0.40 0.07 0.04 0.57 0.57 0.21 0.57 0.57
Crit Volume:            125       573                  808  306
Crit Moves:            ****      ****                 **** ****
*********************************************************************************
```



```
---------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                        Future Without Project AM
---------------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*********************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
*********************************************************************************
Cycle (sec):        100             Critical Vol./Cap.(X):        0.747
Loss Time (sec):      0             Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       74             Level Of Service:                 C
*********************************************************************************
Street Name:          Densmore Avenue                 Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      1    0    1  136    0   19    3 1982    1   18 2268   32
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:   1    0    1  156    0   22    3 2277    1   21 2606   37
Added Vol:     0    0    0    0    0    0    0    0    0    0    0    0
PasserByVol:   0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   1    0    1  156    0   22    3 2277    1   21 2606   37
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    1    0    1  156    0   22    3 2277    1   21 2606   37
Reduct Vol:    0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   1    0    1  156    0   22    3 2277    1   21 2606   37
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:   1    0    1  156    0   22    3 2277    1   21 2606   37
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.50 0.00 0.50 0.88 0.00 0.12 1.00 2.99 0.01 1.00 2.96 0.04
Final Sat.:   713    0  713 1250    0  175 1425 4273    2 1425 4216   59
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.12 0.00 0.12 0.00 0.53 0.53 0.01 0.62 0.62
Crit Volume:              2                178    3                      881
Crit Moves:            ****               **** ****                     ****
*********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future Without Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        1.231
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180              Level Of Service:                 F
********************************************************************************
Street Name:           Haskell Avenue                Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:          Include           Ovl            Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  1! 0  0   1  1  0  0  1   1  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      57   10    1   830  213  589    31 1887  159     3 1622  187
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:   65   11    1   954  245  677    36 2168  183     3 1864  215
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   65   11    1   954  245  677    36 2168  183     3 1864  215
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    65   11    1   954  245  677    36 2168  183     3 1864  215
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   65   11    1   954  245  677    36 2168  183     3 1864  215
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   65   11    1  1049  245  677    36 2168  183     3 1864  215
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.84 0.15 0.01  1.62 0.38 1.00  1.00 2.77 0.23  1.00 2.00 1.00
Final Sat.:  1153  202   20  2230  520 1375  1375 3804  321  1375 2750 1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06 0.06  0.47 0.47 0.49  0.03 0.57 0.57  0.00 0.68 0.16
Crit Volume:        78        647              36                   932
Crit Moves:       ****       ****            ****                  ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future Without Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.843
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       118              Level Of Service:                 D
********************************************************************************
Street Name:           I-405 NB Ramps                Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Permitted
Rights:          Include           Ovl            Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  0  0  0   1  0  1! 0  1   1  0  2  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    0   219    0  227   297 2415    0     0 1583  585
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:    0    0    0   252    0  261   341 2775    0     0 1819  672
Added Vol:      0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    0    0    0   252    0  261   341 2775    0     0 1819  672
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     0    0    0   252    0  261   341 2775    0     0 1819  672
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0    0   252    0  261   341 2775    0     0 1819  672
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.10 1.00 1.10  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0    0    0   277    0  287   341 2775    0     0 1819  672
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 0.00  1.47 xxxx 1.53  1.00 3.00 0.00  0.00 3.00 1.00
Final Sat.:     0    0    0  2099    0 2176  1425 4275    0     0 4275 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.13 0.00 0.13  0.24 0.65 0.00  0.00 0.43 0.47
Crit Volume:        0         188             341                        672
Crit Moves:                  ****            ****                       ****
********************************************************************************
```

```
-------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                        Future Without Project AM
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
*******************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.733
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        70             Level Of Service:                  C
*******************************************************************************
Street Name:           I-5 SB Ramps                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     2  197   22   259    0 1765    64   19  843   527
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:   0    0     2  226   25   298    0 2028    74   22  969   606
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0    0     2  226   25   298    0 2028    74   22  969   606
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     2  226   25   298    0 2028    74   22  969   606
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     2  226   25   298    0 2028    74   22  969   606
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0    0     2  226   25   298    0 2028    74   22  969   606
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  1.00 1.00 0.08  0.92 0.00 2.90  0.10 1.00 2.00  1.00
Final Sat.:    0    0  1425 1425  112  1313    0 4125   150 1425 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.16 0.23  0.23 0.00 0.49  0.49 0.02 0.34  0.42
Crit Volume:   0                         323       701         22
Crit Moves:  ****                       ****      ****       ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                        Future Without Project AM
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
*******************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.722
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        67             Level Of Service:                  C
*******************************************************************************
Street Name:           I-5 NB Ramps                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  0  1  0   0  0  0  0  1   0  0  1  1  0   0  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    233    0   269    0    0     1    0  762   490    0 1152   495
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 268    0   309    0    0     1    0  876   563    0 1324   569
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 268    0   309    0    0     1    0  876   563    0 1324   569
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  268    0   309    0    0     1    0  876   563    0 1324   569
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 268    0   309    0    0     1    0  876   563    0 1324   569
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 268    0   309    0    0     1    0  876   563    0 1324   569
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 0.00  1.00 0.00 0.00  1.00 0.00 1.22  0.78 0.00 2.10  0.90
Final Sat.:  1425    0  1425    0    0  1425    0 1735  1115    0 2990  1285
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.19 0.00  0.22 0.00 0.00  0.00 0.00 0.50  0.50 0.00 0.44  0.44
Crit Volume:            309    0                   719          0
Crit Moves:            **** ****                  ****       ****
*******************************************************************************
```

```
------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future Without Project AM
------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
******************************************************************************
Intersection #7 San Fernando Road / Osborne Street
******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):        0.746
Loss Time (sec):        0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        127              Level Of Service:                 C
******************************************************************************
Street Name:         San Fernando Road                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      27  227    41   138  807    54    64  568    62    85  754   107
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:   31  261    47   159  927    62    74  653    71    98  866   123
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   31  261    47   159  927    62    74  653    71    98  866   123
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    31  261    47   159  927    62    74  653    71    98  866   123
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   31  261    47   159  927    62    74  653    71    98  866   123
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   31  261    47   159  927    62    74  653    71    98  866   123
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.69  0.31  1.00 1.87  0.13  1.00 1.80  0.20  1.00 1.75  0.25
Final Sat.:  1425 2414   436  1425 2671   179  1425 2570   280  1425 2496   354
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.11  0.11  0.11 0.35  0.35  0.05 0.25  0.25  0.07 0.35  0.35
Crit Volume:       154               495         74                       495
Crit Moves:                         ****       ****                       ****
******************************************************************************
```



```
------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future Without Project AM
------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
******************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):        1.147
Loss Time (sec):        0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        180              Level Of Service:                 F
******************************************************************************
Street Name:         Glenoaks Boulevard                 Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include            Ovl            Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      34  410   240    88 1075   181   249  401    76   601  627    26
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:   39  471   276   101 1235   208   286  461    87   691  720    30
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   39  471   276   101 1235   208   286  461    87   691  720    30
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    39  471   276   101 1235   208   286  461    87   691  720    30
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   39  471   276   101 1235   208   286  461    87   691  720    30
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   39  471   276   101 1235   208   286  461    87   691  720    30
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.92  0.08
Final Sat.:  1375 2750  1375  1375 2750  1375  1375 2750  1375  1375 2641   109
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.17  0.20  0.07 0.45  0.15  0.21 0.17  0.06  0.50 0.27  0.27
Crit Volume:   39                    618               230         691
Crit Moves:  ****                   ****              ****        ****
******************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                           Future Without Project AM
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
********************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.854
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        99             Level Of Service:                  D
********************************************************************************
Street Name:        Glenoaks Boulevard                 Sheldon Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      96  427    71    72 1053   402   214  288   126   106  460    97
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  110  491    82    83 1210   462   246  331   145   122  529   111
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  110  491    82    83 1210   462   246  331   145   122  529   111
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   110  491    82    83 1210   462   246  331   145   122  529   111
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  110  491    82    83 1210   462   246  331   145   122  529   111
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  110  491    82    83 1210   462   246  331   145   122  529   111
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.39  0.61  1.00 1.65  0.35
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 2087   913  1500 2478   522
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.16  0.05  0.06 0.40  0.31  0.16 0.16  0.16  0.08 0.21  0.21
Crit Volume:  110                   605         246                          320
Crit Moves:  ****                  ****        ****                         ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                           Future Without Project AM
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
********************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.499
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        29             Level Of Service:                  A
********************************************************************************
Street Name:        Glenoaks Boulevard                 Penrose Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  0  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30  503     4    41  792   134   135  125    42    12   90    40
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:   34  578     5    47  910   154   155  144    48    14  103    46
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   34  578     5    47  910   154   155  144    48    14  103    46
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    34  578     5    47  910   154   155  144    48    14  103    46
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   34  578     5    47  910   154   155  144    48    14  103    46
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   34  578     5    47  910   154   155  144    48    14  103    46
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 1123   377  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.19  0.00  0.03 0.30  0.10  0.10 0.13  0.13  0.01 0.07  0.03
Crit Volume:   34                   455         155                    103
Crit Moves:  ****                  ****        ****                   ****
********************************************************************************
```

LADWP Groundwater Replenishment EIR
Future Without Project AM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #11 Arleta Avenue / Devonshire Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.680
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	58	Level Of Service:	B

Street Name:	Arleta Avenue						Devonshire Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Protected			Permitted			Prot+Permit			Permitted		
Rights:	Include			Ovl			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0 0 0 0			1 0 1! 0 1			1 0 2 0 0			0 0 2 0 1		
Volume Module:												
Base Vol:	0	0	0	418	0	337	296	805	0	0	531	271
Growth Adj:	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Initial Bse:	0	0	0	480	0	387	340	925	0	0	610	311
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	0	0	0	480	0	387	340	925	0	0	610	311
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	0	0	0	480	0	387	340	925	0	0	610	311
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	0	0	0	480	0	387	340	925	0	0	610	311
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.10	1.00	1.10	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	0	0	0	528	0	426	340	925	0	0	610	311
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.00	0.00	0.00	1.66	0.00	1.34	1.00	2.00	0.00	0.00	2.00	1.00
Final Sat.:	0	0	0	2367	0	1908	1425	2850	0	0	2850	1425
Capacity Analysis Module:												
Vol/Sat:	0.00	0.00	0.00	0.22	0.00	0.22	0.24	0.32	0.00	0.00	0.21	0.22
Crit Volume:	0			318			340					311
Crit Moves:				****			****					****

LADWP Groundwater Replenishment EIR
Future Without Project AM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #12 Arleta Avenue / Branford Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.980
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	E

Street Name:	Arleta Avenue						Branford Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Permitted			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0 1 1 0			1 0 1 1 0			1 0 1 1 0			1 0 1 1 0		
Volume Module:												
Base Vol:	123	543	95	122	982	141	134	485	376	165	615	100
Growth Adj:	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Initial Bse:	141	624	109	140	1128	162	154	557	432	190	707	115
Added Vol:	0	0	0	0	0	0	0	0	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	141	624	109	140	1128	162	154	557	432	190	707	115
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	141	624	109	140	1128	162	154	557	432	190	707	115
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	141	624	109	140	1128	162	154	557	432	190	707	115
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	141	624	109	140	1128	162	154	557	432	190	707	115
Saturation Flow Module:												
Sat/Lane:	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500	1500
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.70	0.30	1.00	1.75	0.25	1.00	1.13	0.87	1.00	1.72	0.28
Final Sat.:	1500	2553	447	1500	2623	377	1500	1690	1310	1500	2580	420
Capacity Analysis Module:												
Vol/Sat:	0.09	0.24	0.24	0.09	0.43	0.43	0.10	0.33	0.33	0.13	0.27	0.27
Crit Volume:	141					645		495		190		
Crit Moves:	****					****		****		****		

```
---------------------------------------------------------------------------
                 LADWP Groundwater Replenishment EIR
                       Future Without Project AM
---------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.021
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
***************************************************************************
Street Name:           Arleta Avenue                Van Nuys Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    173  577    82  238  670   145  118 1054   136   59  928   136
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 199  663    94  273  770   167  136 1211   156   68 1066   156
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 199  663    94  273  770   167  136 1211   156   68 1066   156
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  199  663    94  273  770   167  136 1211   156   68 1066   156
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 199  663    94  273  770   167  136 1211   156   68 1066   156
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 199  663    94  273  770   167  136 1211   156   68 1066   156
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.75  0.25 1.00 2.00  1.00 1.00 1.77  0.23 1.00 1.74  0.26
Final Sat.: 1375 2408   342 1375 2750  1375 1375 2436   314 1375 2398   352
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.14 0.28  0.28 0.20 0.28  0.12 0.10 0.50  0.50 0.05 0.44  0.44
Crit Volume:      379        273                           684   68
Crit Moves:      ****       ****                          **** ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                 LADWP Groundwater Replenishment EIR
                       Future Without Project AM
---------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.894
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       136              Level Of Service:                  D
***************************************************************************
Street Name:           Arleta Avenue                Terra Bella Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    166  593    99  118  662    51   82  894   209   93  676   118
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 191  681   114  136  761    59   94 1027   240  107  777   136
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 191  681   114  136  761    59   94 1027   240  107  777   136
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  191  681   114  136  761    59   94 1027   240  107  777   136
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 191  681   114  136  761    59   94 1027   240  107  777   136
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 191  681   114  136  761    59   94 1027   240  107  777   136
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.71  0.29 1.00 1.86  0.14 1.00 1.62  0.38 1.00 1.70  0.30
Final Sat.: 1500 2571   429 1500 2785   215 1500 2432   568 1500 2554   446
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.13 0.27  0.27 0.09 0.27  0.27 0.06 0.42  0.42 0.07 0.30  0.30
Crit Volume: 191                   410                     634  107
Crit Moves: ****                  ****                    **** ****
***************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                           Future Without Project AM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         1.044
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180               Level Of Service:                  F
********************************************************************************
Street Name:          Arleta Avenue                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  545   238   120  857    55    64 1128   175   129 1036   171
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  145  626   273   138  985    63    74 1296   201   148 1190   196
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  145  626   273   138  985    63    74 1296   201   148 1190   196
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   145  626   273   138  985    63    74 1296   201   148 1190   196
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  145  626   273   138  985    63    74 1296   201   148 1190   196
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  145  626   273   138  985    63    74 1296   201   148 1190   196
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.39  0.61  1.00 1.88  0.12  1.00 1.73  0.27  1.00 1.72  0.28
Final Sat.:  1500 2088   912  1500 2819   181  1500 2597   403  1500 2575   425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.30  0.30  0.09 0.35  0.35  0.05 0.50  0.50  0.10 0.46  0.46
Crit Volume:  145                           524        749        148
Crit Moves:  ****                          ****       ****       ****
********************************************************************************
```

```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future Without Project PM
---------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        1.132
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180              Level Of Service:                 F
***************************************************************************
Street Name:          Woodley Avenue              Victory Boulevard
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Permitted        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     342  801   199  212  240   142   97 1909    96  123 1774   200
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  393  920   229  244  276   163  111 2193   110  141 2038   230
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  393  920   229  244  276   163  111 2193   110  141 2038   230
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   393  920   229  244  276   163  111 2193   110  141 2038   230
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  393  920   229  244  276   163  111 2193   110  141 2038   230
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  393  920   229  244  276   163  111 2193   110  141 2038   230
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.86  0.14 1.00 2.70  0.30
Final Sat.:  1425 2850  1425 1425 2850  1425 1425 4070   205 1425 3842   433
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.28 0.32  0.16 0.17 0.10  0.11 0.08 0.54  0.54 0.10 0.53  0.53
Crit Volume:       460         244                   768        141
Crit Moves:       ****        ****                  ****       ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future Without Project PM
---------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.648
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       53              Level Of Service:                 B
***************************************************************************
Street Name:          Densmore Avenue             Victory Boulevard
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0     1   33    0     9   12 2253     6    7 2083    43
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:    1    0     1   38    0    10   14 2589     7    8 2393    49
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    1    0     1   38    0    10   14 2589     7    8 2393    49
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     1    0     1   38    0    10   14 2589     7    8 2393    49
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    1    0     1   38    0    10   14 2589     7    8 2393    49
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    1    0     1   38    0    10   14 2589     7    8 2393    49
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.50 0.00  0.50 0.79 0.00  0.21 1.00 2.99  0.01 1.00 2.94  0.06
Final Sat.:   713    0   713 1120    0   305 1425 4264    11 1425 4189    86
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.03 0.00  0.03 0.01 0.61  0.61 0.01 0.57  0.57
Crit Volume:              2                48               865    8
Crit Moves:            ****              ****              **** ****
***************************************************************************
```

```
-------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                            Future Without Project PM
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.199
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
*******************************************************************************
Street Name:              Haskell Avenue                Victory Boulevard
Approach:         North Bound       South Bound       East Bound        West Bound
Movement:       L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase       Split Phase       Protected         Protected
Rights:            Include            Ovl             Include           Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:          0  0  1! 0  0    1  1  0  0  1    1  0  2  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     117   44    26   598   45   441   100 1763    55     4 1594   381
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  134   51    30   687   52   507   115 2026    63     5 1832   438
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  134   51    30   687   52   507   115 2026    63     5 1832   438
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   134   51    30   687   52   507   115 2026    63     5 1832   438
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  134   51    30   687   52   507   115 2026    63     5 1832   438
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.10 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  134   51    30   756   52   507   115 2026    63     5 1832   438
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.63 0.23  0.14  1.87 0.13  1.00  1.00 2.91  0.09  1.00 2.00  1.00
Final Sat.:   860  324   191  2574  176  1375  1375 4000   125  1375 2750  1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.16  0.16  0.29 0.29  0.37  0.08 0.51  0.51  0.00 0.67  0.32
Crit Volume:       215         404               115                     916
Crit Moves:       ****        ****              ****                    ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                            Future Without Project PM
-------------------------------------------------------------------------------
                       Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.873
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       146              Level Of Service:                  D
*******************************************************************************
Street Name:              I-405 NB Ramps                Victory Boulevard
Approach:         North Bound       South Bound       East Bound        West Bound
Movement:       L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected         Protected         Protected         Permitted
Rights:            Include            Ovl             Include           Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:          0  0  0  0  0    1  0  1! 0  1    1  0  2  1  0    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   265    0   405   306 2127     0     0 1562   531
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:    0    0     0   304    0   465   352 2444     0     0 1795   610
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0   304    0   465   352 2444     0     0 1795   610
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   304    0   465   352 2444     0     0 1795   610
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   304    0   465   352 2444     0     0 1795   610
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.10 1.00  1.10  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0   335    0   512   352 2444     0     0 1795   610
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  1.18 0.01  1.81  1.00 3.00  0.00  0.00 3.00  1.00
Final Sat.:     0    0     0  1691    0  2584  1425 4275     0     0 4275  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.20 0.00  0.20  0.25 0.57  0.00  0.00 0.42  0.43
Crit Volume:                 0   282               352                         610
Crit Moves:                     ****              ****                        ****
*******************************************************************************
```

```
-------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                           Future Without Project PM
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.879
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       154              Level Of Service:                  D
*******************************************************************************
Street Name:            I-5 SB Ramps                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected         Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  0  0  1    1  0  0  1  0    0  0  2  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    9   446   23  574     0 1365   46    23  892  211
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:   0    0   10   512   26  660     0 1568   53    26 1025  242
Added Vol:     0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   0    0   10   512   26  660     0 1568   53    26 1025  242
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    0    0   10   512   26  660     0 1568   53    26 1025  242
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   0    0   10   512   26  660     0 1568   53    26 1025  242
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   0    0   10   512   26  660     0 1568   53    26 1025  242
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 1.00  1.00 0.04 0.96  0.00 2.90 0.10  1.00 2.00 1.00
Final Sat.:    0    0 1425  1425   55 1370     0 4136  139  1425 2850 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.01  0.36 0.48 0.48  0.00 0.38 0.38  0.02 0.36 0.17
Crit Volume:   0                        686              540    26
Crit Moves:  ****                      ****             ****  ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                           Future Without Project PM
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.866
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       138              Level Of Service:                  D
*******************************************************************************
Street Name:            I-5 NB Ramps                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Permitted         Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        1  0  0  1  0    0  0  0  0  0    0  1  0  1  0    0  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    310    0  261     0    0    0     3 1103  412     0  815  495
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse: 356    0  300     0    0    0     3 1267  473     0  936  569
Added Vol:     0    0    0     0    0    0     0    0    0     0    0    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut: 356    0  300     0    0    0     3 1267  473     0  936  569
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:  356    0  300     0    0    0     3 1267  473     0  936  569
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol: 356    0  300     0    0    0     3 1267  473     0  936  569
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  4.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume: 356    0  300     0    0    0    14 1267  473     0  936  569
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 0.00 1.00  0.00 0.00 0.00  0.01 1.45 0.54  0.00 2.00 1.00
Final Sat.:  1425    0 1425     0    0    0     6 2075  769     0 2850 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.25 0.00 0.21  0.00 0.00 0.00  0.61 0.61 0.62  0.00 0.33 0.40
Crit Volume: 356               0                         877     0
Crit Moves:  ****                                       ****  ****
*******************************************************************************
```

```
-----------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                        Future Without Project PM
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #7 San Fernando Road / Osborne Street
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         0.814
Loss Time (sec):      0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      100              Level Of Service:                  D
*****************************************************************************
Street Name:          San Fernando Road                 Osborne Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Protected        Protected        Protected
Rights:            Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      66  581    98   166  417    83    93  637    51    58  644   179
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:   76  668   113   191  479    95   107  732    59    67  740   206
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   76  668   113   191  479    95   107  732    59    67  740   206
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    76  668   113   191  479    95   107  732    59    67  740   206
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   76  668   113   191  479    95   107  732    59    67  740   206
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   76  668   113   191  479    95   107  732    59    67  740   206
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.71  0.29  1.00 1.67  0.33  1.00 1.85  0.15  1.00 1.57  0.43
Final Sat.:  1425 2439   411  1425 2377   473  1425 2639   211  1425 2230   620
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.27  0.27  0.13 0.20  0.20  0.07 0.28  0.28  0.05 0.33  0.33
Crit Volume:       390         191               107                          473
Crit Moves:       ****        ****              ****                         ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                        Future Without Project PM
-----------------------------------------------------------------------------
                    Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         1.098
Loss Time (sec):      0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180              Level Of Service:                  F
*****************************************************************************
Street Name:          Glenoaks Boulevard                Osborne Street
Approach:      North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:            Include          Include              Ovl          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      70  930   653    98  412   142   231  576    27   275  360    31
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:   80 1069   750   113  473   163   265  662    31   316  414    36
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   80 1069   750   113  473   163   265  662    31   316  414    36
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    80 1069   750   113  473   163   265  662    31   316  414    36
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   80 1069   750   113  473   163   265  662    31   316  414    36
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   80 1069   750   113  473   163   265  662    31   316  414    36
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.84  0.16
Final Sat.:  1375 2750  1375  1375 2750  1375  1375 2750  1375  1375 2532   218
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.39  0.55  0.08 0.17  0.12  0.19 0.24  0.02  0.23 0.16  0.16
Crit Volume:             750   113                   331         316
Crit Moves:             ****  ****                  ****        ****
*****************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                           Future Without Project PM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.842
Loss Time (sec):        0              Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         91              Level Of Service:                   D
********************************************************************************
Street Name:         Glenoaks Boulevard                   Sheldon Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     117 1006    80    95  608   223   360  379   139    42  221    62
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  134 1156    92   109  699   256   414  435   160    48  254    71
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  134 1156    92   109  699   256   414  435   160    48  254    71
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   134 1156    92   109  699   256   414  435   160    48  254    71
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  134 1156    92   109  699   256   414  435   160    48  254    71
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  134 1156    92   109  699   256   414  435   160    48  254    71
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.46  0.54  1.00 1.56  0.44
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 2195   805  1500 2343   657
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.39  0.06  0.07 0.23  0.17  0.28 0.20  0.20  0.03 0.11  0.11
Crit Volume:       578         109               414                    163
Crit Moves:       ****        ****              ****                   ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                           Future Without Project PM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):          0.483
Loss Time (sec):        0              Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         28              Level Of Service:                   A
********************************************************************************
Street Name:         Glenoaks Boulevard                   Penrose Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  0  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  622    12    30  664   118   194  153    52     6   66    64
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:   45  715    14    34  763   136   223  176    60     7   76    74
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   45  715    14    34  763   136   223  176    60     7   76    74
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    45  715    14    34  763   136   223  176    60     7   76    74
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   45  715    14    34  763   136   223  176    60     7   76    74
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   45  715    14    34  763   136   223  176    60     7   76    74
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 1120   380  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.24  0.01  0.02 0.25  0.09  0.15 0.16  0.16  0.00 0.05  0.05
Crit Volume:   45                    381         223                     76
Crit Moves:  ****                   ****        ****                   ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future Without Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
********************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.861
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       134             Level Of Service:                  D
********************************************************************************
Street Name:          Arleta Avenue                 Devonshire Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Permitted        Prot+Permit       Permitted
Rights:          Include            Ovl             Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       0  0  0  0  0    1  0  1! 0  1    1  0  2  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  178    0   357  524  511     0    0  501   348
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:   0    0     0  205    0   410  602  587     0    0  576   400
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0    0     0  205    0   410  602  587     0    0  576   400
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  205    0   410  602  587     0    0  576   400
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  205    0   410  602  587     0    0  576   400
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0    0     0  225    0   451  602  587     0    0  576   400
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.00 0.00  2.00 1.00 2.00  0.00 0.00 2.00  1.00
Final Sat.:    0    0     0 1425    0  2850 1425 2850     0    0 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.16 0.00  0.16 0.42 0.21  0.00 0.00 0.20  0.28
Crit Volume:   0              225              602                          400
Crit Moves:                  ****             ****                         ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future Without Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #12 Arleta Avenue / Branford Street
********************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.990
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180             Level Of Service:                  E
********************************************************************************
Street Name:          Arleta Avenue                   Branford Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    209 1035   106   78  421   106  165  484   149  136  741   217
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 240 1189   122   90  484   122  190  556   171  156  851   249
Added Vol:     0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 240 1189   122   90  484   122  190  556   171  156  851   249
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  240 1189   122   90  484   122  190  556   171  156  851   249
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 240 1189   122   90  484   122  190  556   171  156  851   249
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 240 1189   122   90  484   122  190  556   171  156  851   249
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.81  0.19 1.00 1.60  0.40 1.00 1.53  0.47 1.00 1.55  0.45
Final Sat.:  1500 2721   279 1500 2397   603 1500 2294   706 1500 2320   680
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.44  0.44 0.06 0.20  0.20 0.13 0.24  0.24 0.10 0.37  0.37
Crit Volume:            656   90              190                   550
Crit Moves:            ****  ****             ****                 ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                         Future Without Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):          1.040
Loss Time (sec):       0               Average Delay (sec/veh):       xxxxxx
Optimal Cycle:       180               Level Of Service:                   F
********************************************************************************
Street Name:           Arleta Avenue                Van Nuys Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  627   114   157  401   122   159 1204   107    62  883   146
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  145  720   131   180  461   140   183 1383   123    71 1015   168
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  145  720   131   180  461   140   183 1383   123    71 1015   168
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   145  720   131   180  461   140   183 1383   123    71 1015   168
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  145  720   131   180  461   140   183 1383   123    71 1015   168
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  145  720   131   180  461   140   183 1383   123    71 1015   168
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.69  0.31  1.00 2.00  1.00  1.00 1.84  0.16  1.00 1.72  0.28
Final Sat.:  1375 2327   423  1375 2750  1375  1375 2526   224  1375 2360   390
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.31  0.31  0.13 0.17  0.10  0.13 0.55  0.55  0.05 0.43  0.43
Crit Volume:             426   180                   753          71
Crit Moves:             ****  ****                  ****        ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                         Future Without Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):          0.771
Loss Time (sec):       0               Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        63               Level Of Service:                   C
********************************************************************************
Street Name:           Arleta Avenue                Terra Bella Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     275  749    99    90  364    60    54  710   125    75  594    67
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  316  861   114   103  418    69    62  816   144    86  683    77
Added Vol:      0    0     0     0    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  316  861   114   103  418    69    62  816   144    86  683    77
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   316  861   114   103  418    69    62  816   144    86  683    77
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  316  861   114   103  418    69    62  816   144    86  683    77
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  316  861   114   103  418    69    62  816   144    86  683    77
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.77  0.23  1.00 1.72  0.28  1.00 1.70  0.30  1.00 1.80  0.20
Final Sat.:  1500 2650   350  1500 2575   425  1500 2551   449  1500 2696   304
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21 0.32  0.32  0.07 0.16  0.16  0.04 0.32  0.32  0.06 0.25  0.25
Crit Volume:       487         103                   480          86
Crit Moves:       ****        ****                  ****        ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                           Future Without Project PM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        1.079
Loss Time (sec):       0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180               Level Of Service:                 F
********************************************************************************
Street Name:          Arleta Avenue                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     254  962   245   87  419    77   90 1017   161  112 1125   132
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  292 1105   282  100  481    88  103 1169   185  129 1293   152
Added Vol:      0    0     0    0    0     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  292 1105   282  100  481    88  103 1169   185  129 1293   152
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   292 1105   282  100  481    88  103 1169   185  129 1293   152
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  292 1105   282  100  481    88  103 1169   185  129 1293   152
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  292 1105   282  100  481    88  103 1169   185  129 1293   152
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.59  0.41 1.00 1.69  0.31 1.00 1.73  0.27 1.00 1.79  0.21
Final Sat.:  1500 2391   609 1500 2534   466 1500 2590   410 1500 2685   315
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.19 0.46  0.46 0.07 0.19  0.19 0.07 0.45  0.45 0.09 0.48  0.48
Crit Volume:             693  100              103                    722
Crit Moves:             ****  ****             ****                  ****
********************************************************************************
```

KOA CORPORATION
PLANNING & ENGINEERING

APPENDIX F
LOS Operations Worksheets – Future with Project Construction Conditions

```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                         Future With Project AM
---------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.274
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
***************************************************************************
Street Name:           Woodley Avenue                Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      76  167  109  128  998   83   48 1790  319  266 2032   92
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:   87  192  125  147 1147   95   55 2057  367  306 2335  106
Added Vol:      0    0    2    3    0    0    0    3    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   87  192  127  150 1147   95   55 2060  367  306 2335  106
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    87  192  127  150 1147   95   55 2060  367  306 2335  106
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   87  192  127  150 1147   95   55 2060  367  306 2335  106
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:   87  192  127  150 1147   95   55 2060  367  306 2335  106
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       1.00 2.00 1.00 1.00 2.00 1.00 1.00 2.55 0.45 1.00 2.87 0.13
Final Sat.:  1425 2850 1425 1425 2850 1425 1425 3629  646 1425 4090  185
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.07 0.09 0.11 0.40 0.07 0.04 0.57 0.57 0.21 0.57 0.57
Crit Volume:             127       573                 809  306
Crit Moves:             ****      ****                ****  ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                         Future With Project AM
---------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.751
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        75              Level Of Service:                  C
***************************************************************************
Street Name:           Densmore Avenue               Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0    1  136    0   19    3 1982    1   18 2268   32
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:    1    0    1  156    0   22    3 2277    1   21 2606   37
Added Vol:      0    0    6    0    0    0    0    0    9   32    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    1    0    7  156    0   22    3 2277   10   53 2606   37
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:     1    0    7  156    0   22    3 2277   10   53 2606   37
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:    1    0    7  156    0   22    3 2277   10   53 2606   37
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:    1    0    7  156    0   22    3 2277   10   53 2606   37
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.14 0.00 0.86 0.88 0.00 0.12 1.00 2.99 0.01 1.00 2.96 0.04
Final Sat.:   197    0 1228 1250    0  175 1425 4256   19 1425 4216   59
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00 0.01 0.12 0.00 0.12 0.00 0.54 0.54 0.04 0.62 0.62
Crit Volume:               8              178    3                       881
Crit Moves:             ****             **** ****                      ****
***************************************************************************
```

```
---------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project AM
---------------------------------------------------------------------------------

                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*********************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
*********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        1.238
Loss Time (sec):       0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180               Level Of Service:                 F
*********************************************************************************
Street Name:            Haskell Avenue                 Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include           Ovl             Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        0  0  1! 0  0   1  1  0  0  1   1  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      57   10    1  830  213  589   31 1887  159    3 1622  187
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:   65   11    1  954  245  677   36 2168  183    3 1864  215
Added Vol:      0    0    0    0    0   11    0    5    0    0   20    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:   65   11    1  954  245  688   36 2173  183    3 1884  215
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:    65   11    1  954  245  688   36 2173  183    3 1884  215
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:   65   11    1  954  245  688   36 2173  183    3 1884  215
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.10 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:   65   11    1 1049  245  688   36 2173  183    3 1884  215
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375 1375 1375 1375 1375 1375 1375 1375 1375 1375 1375
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.84 0.15 0.01 1.62 0.38 1.00 1.00 2.77 0.23 1.00 2.00 1.00
Final Sat.:  1153  202   20 2230  520 1375 1375 3805  320 1375 2750 1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06 0.06 0.47 0.47 0.50 0.03 0.57 0.57 0.00 0.68 0.16
Crit Volume:        78       647                36                  942
Crit Moves:        ****      ****              ****                ****
*********************************************************************************
```



```
---------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project AM
---------------------------------------------------------------------------------

                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*********************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
*********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        0.849
Loss Time (sec):       0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       123               Level Of Service:                 D
*********************************************************************************
Street Name:            I-405 NB Ramps                 Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Permitted
Rights:           Include           Ovl             Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        0  0  0  0  0   1  0  1! 0  1   1  0  2  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    0  219    0  227  297 2415    0    0 1583  585
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:    0    0    0  252    0  261  341 2775    0    0 1819  672
Added Vol:      0    0    0    0    0    8    5    0    0    0   12    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    0    0    0  252    0  269  346 2775    0    0 1831  672
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:     0    0    0  252    0  269  346 2775    0    0 1831  672
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:    0    0    0  252    0  269  346 2775    0    0 1831  672
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.10 1.00 1.10 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:    0    0    0  277    0  296  346 2775    0    0 1831  672
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.00 0.00 0.00 1.45 xxxx 1.55 1.00 3.00 0.00 0.00 3.00 1.00
Final Sat.:     0    0    0 2067    0 2208 1425 4275    0    0 4275 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.13 0.00 0.13 0.24 0.65 0.00 0.00 0.43 0.47
Crit Volume:                0  191            346                       672
Crit Moves:                    ****           ****                      ****
*********************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                            Future With Project AM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.736
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         70              Level Of Service:                  C
********************************************************************************
Street Name:                I-5 SB Ramps                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted        Permitted        Permitted
Rights:           Include           Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    2  197   22  259    0 1765   64   19  843  527
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:    0    0    2  226   25  298    0 2028   74   22  969  606
Added Vol:      0    0    0    2    0    3    0    1    0    0    1    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:    0    0    2  228   25  301    0 2029   74   22  970  606
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:     0    0    2  228   25  301    0 2029   74   22  970  606
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:    0    0    2  228   25  301    0 2029   74   22  970  606
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:    0    0    2  228   25  301    0 2029   74   22  970  606
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       0.00 0.00 1.00 1.00 0.08 0.92 0.00 2.90 0.10 1.00 2.00 1.00
Final Sat.:     0    0 1425 1425  111 1314    0 4125  150 1425 2850 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00 0.16 0.23 0.23 0.00 0.49 0.49 0.02 0.34 0.42
Crit Volume:    0                  326                 701   22
Crit Moves:  ****                 ****                ****  ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                            Future With Project AM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
********************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.724
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         67              Level Of Service:                  C
********************************************************************************
Street Name:                I-5 NB Ramps                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted         Protected        Permitted        Permitted
Rights:           Include           Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  0  1  0   0  0  0  0  1   0  0  1  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     233    0  269    0    0    1    0  762  490    0 1152  495
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:  268    0  309    0    0    1    0  876  563    0 1324  569
Added Vol:      1    0    0    0    0    0    0    2    0    2    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  269    0  309    0    0    1    0  878  563    2 1324  569
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   269    0  309    0    0    1    0  878  563    2 1324  569
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  269    0  309    0    0    1    0  878  563    2 1324  569
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 4.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:  269    0  309    0    0    1    0  878  563    8 1324  569
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       1.00 0.00 1.00 0.00 0.00 1.00 0.00 1.22 0.78 0.01 2.09 0.90
Final Sat.:  1425    0 1425    0    0 1425    0 1736 1114   18 2977 1279
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.19 0.00 0.22 0.00 0.00 0.00 0.00 0.51 0.51 0.11 0.44 0.44
Crit Volume:              309    0                 720         2
Crit Moves:              **** ****                ****        ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #7 San Fernando Road / Osborne Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.748
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       129              Level Of Service:                  C
********************************************************************************
Street Name:        San Fernando Road                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     27  227    41  138  807    54   64  568    62   85  754   107
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  31  261    47  159  927    62   74  653    71   98  866   123
Added Vol:     0    0     0    0    5     0    0    2     0    0    2     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  31  261    47  159  932    62   74  655    71   98  868   123
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   31  261    47  159  932    62   74  655    71   98  868   123
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  31  261    47  159  932    62   74  655    71   98  868   123
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  31  261    47  159  932    62   74  655    71   98  868   123
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.69  0.31 1.00 1.88  0.12 1.00 1.80  0.20 1.00 1.75  0.25
Final Sat.: 1425 2414   436 1425 2672   178 1425 2570   280 1425 2497   353
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.02 0.11  0.11 0.11 0.35  0.35 0.05 0.25  0.25 0.07 0.35  0.35
Crit Volume:      154              497          74                    496
Crit Moves:                       ****        ****                   ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.150
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
********************************************************************************
Street Name:        Glenoaks Boulevard                 Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include            Ovl            Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     34  410   240   88 1075   181  249  401    76  601  627    26
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  39  471   276  101 1235   208  286  461    87  691  720    30
Added Vol:     2    0     0    0    0     0    0    0     2    1    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  41  471   276  101 1235   208  286  461    89  692  720    30
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   41  471   276  101 1235   208  286  461    89  692  720    30
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  41  471   276  101 1235   208  286  461    89  692  720    30
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  41  471   276  101 1235   208  286  461    89  692  720    30
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.00  1.00 1.00 1.92  0.08
Final Sat.: 1375 2750  1375 1375 2750  1375 1375 2750  1375 1375 2641   109
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.03 0.17  0.20 0.07 0.45  0.15 0.21 0.17  0.06 0.50 0.27  0.27
Crit Volume:  41                   618              230        692
Crit Moves: ****                  ****             ****       ****
********************************************************************************
```

```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Future With Project AM
---------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
***************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.854
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         99              Level Of Service:                  D
***************************************************************************
Street Name:        Glenoaks Boulevard                Sheldon Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     96  427    71    72 1053   402   214  288   126   106  460    97
Growth Adj: 1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse: 110  491    82    83 1210   462   246  331   145   122  529   111
Added Vol:     0    1     0     0    1     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 110  492    82    83 1211   462   246  331   145   122  529   111
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  110  492    82    83 1211   462   246  331   145   122  529   111
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 110  492    82    83 1211   462   246  331   145   122  529   111
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume: 110  492    82    83 1211   462   246  331   145   122  529   111
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.39  0.61  1.00 1.65  0.35
Final Sat.: 1500 3000  1500  1500 3000  1500  1500 2087   913  1500 2478   522
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.07 0.16  0.05  0.06 0.40  0.31  0.16 0.16  0.16  0.08 0.21  0.21
Crit Volume: 110                    605        246                          320
Crit Moves: ****                   ****       ****                         ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Future With Project AM
---------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
***************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.499
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         29              Level Of Service:                  A
***************************************************************************
Street Name:        Glenoaks Boulevard                 Penrose Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  0  1  0    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     30  503     4    41  792   134   135  125    42    12   90    40
Growth Adj: 1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  34  578     5    47  910   154   155  144    48    14  103    46
Added Vol:     0    0     0     0    0     1     1    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  34  578     5    47  910   155   156  144    48    14  103    46
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   34  578     5    47  910   155   156  144    48    14  103    46
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  34  578     5    47  910   155   156  144    48    14  103    46
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  34  578     5    47  910   155   156  144    48    14  103    46
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 2.00  1.00  1.00 2.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00
Final Sat.: 1500 3000  1500  1500 3000  1500  1500 1123   377  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.02 0.19  0.00  0.03 0.30  0.10  0.10 0.13  0.13  0.01 0.07  0.03
Crit Volume:  34                    455        156                   103
Crit Moves: ****                   ****       ****                  ****
***************************************************************************
```

```
-----------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                        Future With Project AM
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
*****************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.686
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        59             Level Of Service:                  B
*****************************************************************************
Street Name:          Arleta Avenue                Devonshire Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected         Permitted      Prot+Permit        Permitted
Rights:          Include           Ovl             Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:       0  0  0  0  0   1  0  1! 0  1   1  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0   418    0  337   296  805    0     0  531  271
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:   0    0    0   480    0  387   340  925    0     0  610  311
Added Vol:     0    0    0     3    0    6     2    0    0     0    5    3
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   0    0    0   483    0  393   342  925    0     0  615  314
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    0    0    0   483    0  393   342  925    0     0  615  314
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   0    0    0   483    0  393   342  925    0     0  615  314
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.10 1.00 1.10  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   0    0    0   532    0  433   342  925    0     0  615  314
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 0.00  1.65 xxxx 1.35  1.00 2.00 0.00  0.00 2.00 1.00
Final Sat.:    0    0    0  2357    0 1918  1425 2850    0     0 2850 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.23 0.00 0.23  0.24 0.32 0.00  0.00 0.22 0.22
Crit Volume:   0              321             342                         314
Crit Moves:                  ****            ****                        ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                        Future With Project AM
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #12 Arleta Avenue / Branford Street
*****************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.985
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180             Level Of Service:                  E
*****************************************************************************
Street Name:          Arleta Avenue                 Branford Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:       1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    123  543   95   122  982  141   134  485  376   165  615  100
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse: 141  624  109   140 1128  162   154  557  432   190  707  115
Added Vol:     0    6    0     0   10    0     0    4    0     0    0    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut: 141  630  109   140 1138  162   154  561  432   190  707  115
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:  141  630  109   140 1138  162   154  561  432   190  707  115
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol: 141  630  109   140 1138  162   154  561  432   190  707  115
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume: 141  630  109   140 1138  162   154  561  432   190  707  115
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 1.70 0.30  1.00 1.75 0.25  1.00 1.13 0.87  1.00 1.72 0.28
Final Sat.:  1500 2557  443  1500 2626  374  1500 1695 1305  1500 2580  420
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.25 0.25  0.09 0.43 0.43  0.10 0.33 0.33  0.13 0.27 0.27
Crit Volume: 141                        650         497         190
Crit Moves:  ****                       ****        ****        ****
*****************************************************************************
```

```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project AM
---------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        1.024
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180              Level Of Service:                 F
***************************************************************************
Street Name:           Arleta Avenue                Van Nuys Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     173  577    82  238  670   145  118 1054   136   59  928   136
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  199  663    94  273  770   167  136 1211   156   68 1066   156
Added Vol:      0    5     0    0    3     0    0    0     1    2    0     3
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  199  668    94  273  773   167  136 1211   157   70 1066   159
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   199  668    94  273  773   167  136 1211   157   70 1066   159
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  199  668    94  273  773   167  136 1211   157   70 1066   159
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  199  668    94  273  773   167  136 1211   157   70 1066   159
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.75  0.25 1.00 2.00  1.00 1.00 1.77  0.23 1.00 1.74  0.26
Final Sat.:  1375 2410   340 1375 2750  1375 1375 2434   316 1375 2393   357
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.28  0.28 0.20 0.28  0.12 0.10 0.50  0.50 0.05 0.45  0.45
Crit Volume:             381  273                            684   70
Crit Moves:             **** ****                           **** ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project AM
---------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.896
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      138              Level Of Service:                 D
***************************************************************************
Street Name:           Arleta Avenue               Terra Bella Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     166  593    99  118  662    51   82  894   209   93  676   118
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  191  681   114  136  761    59   94 1027   240  107  777   136
Added Vol:      0    5     0    0    6     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  191  686   114  136  767    59   94 1027   240  107  777   136
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   191  686   114  136  767    59   94 1027   240  107  777   136
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  191  686   114  136  767    59   94 1027   240  107  777   136
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  191  686   114  136  767    59   94 1027   240  107  777   136
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.72  0.28 1.00 1.86  0.14 1.00 1.62  0.38 1.00 1.70  0.30
Final Sat.:  1500 2573   427 1500 2787   213 1500 2432   568 1500 2554   446
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.27  0.27 0.09 0.28  0.28 0.06 0.42  0.42 0.07 0.30  0.30
Crit Volume:  191                    413                     634  107
Crit Moves:  ****                   ****                    **** ****
***************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                            Future With Project AM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):          100                Critical Vol./Cap.(X):         1.048
Loss Time (sec):        0                Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        180                Level Of Service:                  F
********************************************************************************
Street Name:           Arleta Avenue                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  545   238  120  857    55   64 1128   175  129 1036   171
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 145  626   273  138  985    63   74 1296   201  148 1190   196
Added Vol:      0    5     1    0    6     0    0    0     0    4    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 145  631   274  138  991    63   74 1296   201  152 1190   196
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  145  631   274  138  991    63   74 1296   201  152 1190   196
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 145  631   274  138  991    63   74 1296   201  152 1190   196
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 145  631   274  138  991    63   74 1296   201  152 1190   196
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.39  0.61 1.00 1.88  0.12 1.00 1.73  0.27 1.00 1.72  0.28
Final Sat.:  1500 2091   909 1500 2820   180 1500 2597   403 1500 2575   425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.30  0.30 0.09 0.35  0.35 0.05 0.50  0.50 0.10 0.46  0.46
Crit Volume:  145                          527        749        152
Crit Moves:  ****                         ****       ****       ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         1.133
Loss Time (sec):        0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        180               Level Of Service:                  F
********************************************************************************
Street Name:          Woodley Avenue                Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    342  801   199  212  240   142   97 1909    96  123 1774   200
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 393  920   229  244  276   163  111 2193   110  141 2038   230
Added Vol:     0    0     0    0    0     0    0    0     0    2    3     3
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 393  920   229  244  276   163  111 2193   110  143 2041   233
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  393  920   229  244  276   163  111 2193   110  143 2041   233
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 393  920   229  244  276   163  111 2193   110  143 2041   233
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 393  920   229  244  276   163  111 2193   110  143 2041   233
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.86  0.14 1.00 2.69  0.31
Final Sat.: 1425 2850  1425 1425 2850  1425 1425 4070   205 1425 3837   438
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.28 0.32  0.16 0.17 0.10  0.11 0.08 0.54  0.54 0.10 0.53  0.53
Crit Volume:      460        244                   768        143
Crit Moves:      ****       ****                  ****       ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):          100               Critical Vol./Cap.(X):         0.681
Loss Time (sec):        0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:         58               Level Of Service:                  B
********************************************************************************
Street Name:          Densmore Avenue                  Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      1    0     1   33    0     9   12 2253     6    7 2083    43
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:   1    0     1   38    0    10   14 2589     7    8 2393    49
Added Vol:     9    0    32    0    0     0    0    0     0    6    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  10    0    33   38    0    10   14 2589     7   14 2393    49
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   10    0    33   38    0    10   14 2589     7   14 2393    49
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  10    0    33   38    0    10   14 2589     7   14 2393    49
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  10    0    33   38    0    10   14 2589     7   14 2393    49
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      0.23 0.01  0.76 0.79 0.00  0.21 1.00 2.99  0.01 1.00 2.94  0.06
Final Sat.:  334    0  1091 1120    0   305 1425 4264    11 1425 4189    86
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.03 0.00  0.03 0.03 0.00  0.03 0.01 0.61  0.61 0.01 0.57  0.57
Crit Volume:             43                48               865   14
Crit Moves:            ****              ****              ****  ****
********************************************************************************
```

```
---------------------------------------------------------------------------
                 LADWP Groundwater Replenishment EIR
                        Future With Project PM
---------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.200
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
***************************************************************************
Street Name:          Haskell Avenue               Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include           Ovl            Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:       0  0  1! 0  0    1  1  0  0  1    1  0  2  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    117   44    26   598   45   441   100 1763    55     4 1594   381
Growth Adj: 1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse: 134   51    30   687   52   507   115 2026    63     5 1832   438
Added Vol:     0    0     0     0    0     5     0   23     0     0    2     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 134   51    30   687   52   512   115 2049    63     5 1834   438
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  134   51    30   687   52   512   115 2049    63     5 1834   438
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 134   51    30   687   52   512   115 2049    63     5 1834   438
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.10 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume: 134   51    30   756   52   512   115 2049    63     5 1834   438
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      0.63 0.23  0.14  1.87 0.13  1.00  1.00 2.91  0.09  1.00 2.00  1.00
Final Sat.:  860  324   191  2574  176  1375  1375 4002   123  1375 2750  1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.16 0.16  0.16  0.29 0.29  0.37  0.08 0.51  0.51  0.00 0.67  0.32
Crit Volume:       215         404              115                     917
Crit Moves:       ****        ****             ****                    ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                 LADWP Groundwater Replenishment EIR
                        Future With Project PM
---------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.881
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       157              Level Of Service:                  D
***************************************************************************
Street Name:          I-405 NB Ramps               Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Permitted
Rights:           Include           Ovl            Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:       0  0  0  0  0    1  0  1! 0  1    1  0  2  1  0    0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0   265    0   405   306 2127     0     0 1562   531
Growth Adj: 1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:   0    0     0   304    0   465   352 2444     0     0 1795   610
Added Vol:     0    0     0     0    0     2    11   12     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   0    0     0   304    0   467   363 2456     0     0 1795   610
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    0    0     0   304    0   467   363 2456     0     0 1795   610
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   0    0     0   304    0   467   363 2456     0     0 1795   610
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.10 1.00  1.10  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   0    0     0   335    0   514   363 2456     0     0 1795   610
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      0.00 0.00  0.00  1.18 0.01  1.81  1.00 3.00  0.00  0.00 3.00  1.00
Final Sat.:    0    0     0  1686    0  2589  1425 4275     0     0 4275  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.00  0.00  0.20 0.00  0.20  0.25 0.57  0.00  0.00 0.42  0.43
Crit Volume:         0         283              363                          610
Crit Moves:                   ****             ****                         ****
***************************************************************************
```

```
-------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Future With Project PM
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.881
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      157              Level Of Service:                 D
*******************************************************************************
Street Name:             I-5 SB Ramps                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:       0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    9   446   23  574     0 1365   46    23  892  211
Growth Adj: 1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:   0    0   10   512   26  660     0 1568   53    26 1025  242
Added Vol:     0    0    0     2    0    3     0    1    0     0    1    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   0    0   10   514   26  663     0 1569   53    26 1026  242
User Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    0    0   10   514   26  663     0 1569   53    26 1026  242
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   0    0   10   514   26  663     0 1569   53    26 1026  242
PCE Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   0    0   10   514   26  663     0 1569   53    26 1026  242
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:      0.00 0.00 1.00  1.00 0.04 0.96  0.00 2.90 0.10  1.00 2.00 1.00
Final Sat.:    0    0 1425  1425   55 1370     0 4136  139  1425 2850 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.00 0.01  0.36 0.48 0.48  0.00 0.38 0.38  0.02 0.36 0.17
Crit Volume:   0                    689                   541    26
Crit Moves: ****                   ****                  ****  ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                          Future With Project PM
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
*******************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.868
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      141              Level Of Service:                 D
*******************************************************************************
Street Name:             I-5 NB Ramps                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:       1  0  0  1  0   0  0  0  0  0   0  1  0  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    310    0  261     0    0    0     3 1103  412     0  815  495
Growth Adj: 1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse: 356    0  300     0    0    0     3 1267  473     0  936  569
Added Vol:     1    0    0     0    0    0     0    2    0     2    0    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut: 357    0  300     0    0    0     3 1269  473     2  936  569
User Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:  357    0  300     0    0    0     3 1269  473     2  936  569
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol: 357    0  300     0    0    0     3 1269  473     2  936  569
PCE Adj:    1.00 1.00 1.00  1.00 1.00 1.00  4.00 1.00 1.00  6.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume: 357    0  300     0    0    0    14 1269  473    12  936  569
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:      1.00 0.00 1.00  0.00 0.00 0.00  0.01 1.45 0.54  0.02 1.98 1.00
Final Sat.: 1425    0 1425     0    0    0     6 2076  768    34 2816 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.25 0.00 0.21  0.00 0.00 0.00  0.61 0.61 0.62  0.06 0.33 0.40
Crit Volume: 357               0                      878     2
Crit Moves: ****                                     ****  ****
*******************************************************************************
```

```
-----------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project PM
-----------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #7 San Fernando Road / Osborne Street
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         0.817
Loss Time (sec):      0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      102              Level Of Service:                  D
*****************************************************************************
Street Name:         San Fernando Road                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     66  581    98  166  417    83   93  637    51   58  644   179
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  76  668   113  191  479    95  107  732    59   67  740   206
Added Vol:     0    5     0    0    0     0    0    2     0    0    2     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  76  673   113  191  479    95  107  734    59   67  742   206
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   76  673   113  191  479    95  107  734    59   67  742   206
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  76  673   113  191  479    95  107  734    59   67  742   206
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  76  673   113  191  479    95  107  734    59   67  742   206
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.71  0.29 1.00 1.67  0.33 1.00 1.85  0.15 1.00 1.57  0.43
Final Sat.: 1425 2441   409 1425 2377   473 1425 2639   211 1425 2231   619
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.05 0.28  0.28 0.13 0.20  0.20 0.07 0.28  0.28 0.05 0.33  0.33
Crit Volume:      393        191              107                         474
Crit Moves:      ****       ****             ****                        ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project PM
-----------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         1.099
Loss Time (sec):      0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180              Level Of Service:                  F
*****************************************************************************
Street Name:         Glenoaks Boulevard                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include            Ovl            Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     70  930   653   98  412   142  231  576    27  275  360    31
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  80 1069   750  113  473   163  265  662    31  316  414    36
Added Vol:     2    0     1    0    0     0    0    0     2    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  82 1069   751  113  473   163  265  662    33  316  414    36
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   82 1069   751  113  473   163  265  662    33  316  414    36
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  82 1069   751  113  473   163  265  662    33  316  414    36
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  82 1069   751  113  473   163  265  662    33  316  414    36
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.00  1.00 1.00 1.84  0.16
Final Sat.: 1375 2750  1375 1375 2750  1375 1375 2750  1375 1375 2532   218
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.06 0.39  0.55 0.08 0.17  0.12 0.19 0.24  0.02 0.23 0.16  0.16
Crit Volume:            751  113                  331        316
Crit Moves:            **** ****                 ****       ****
*****************************************************************************
```

```
----------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                         Future With Project PM
----------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
****************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
****************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.843
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        91               Level Of Service:                  D
****************************************************************************
Street Name:        Glenoaks Boulevard                Sheldon Street
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:       1  0  2  0  1   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    117 1006    80    95  608   223   360  379   139    42  221    62
Growth Adj: 1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse: 134 1156    92   109  699   256   414  435   160    48  254    71
Added Vol:     0    1     0     0    1     0     0    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 134 1157    92   109  700   256   414  435   160    48  254    71
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:  134 1157    92   109  700   256   414  435   160    48  254    71
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol: 134 1157    92   109  700   256   414  435   160    48  254    71
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume: 134 1157    92   109  700   256   414  435   160    48  254    71
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.46  0.54  1.00 1.56  0.44
Final Sat.: 1500 3000  1500  1500 3000  1500  1500 2195   805  1500 2343   657
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.09 0.39  0.06  0.07 0.23  0.17  0.28 0.20  0.20  0.03 0.11  0.11
Crit Volume:      578         109               414                    163
Crit Moves:      ****        ****              ****                   ****
****************************************************************************
```



```
----------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                         Future With Project PM
----------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
****************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
****************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.484
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        28               Level Of Service:                  A
****************************************************************************
Street Name:        Glenoaks Boulevard                 Penrose Street
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:       1  0  2  0  1   1  0  2  0  1   1  0  0  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     39  622    12    30  664   118   194  153    52     6   66    64
Growth Adj: 1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  45  715    14    34  763   136   223  176    60     7   76    74
Added Vol:     0    0     0     0    0     1     1    0     0     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  45  715    14    34  763   137   224  176    60     7   76    74
User Adj:   1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   45  715    14    34  763   137   224  176    60     7   76    74
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  45  715    14    34  763   137   224  176    60     7   76    74
PCE Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  45  715    14    34  763   137   224  176    60     7   76    74
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment: 1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:      1.00 2.00  1.00  1.00 2.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00
Final Sat.: 1500 3000  1500  1500 3000  1500  1500 1120   380  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.03 0.24  0.01  0.02 0.25  0.09  0.15 0.16  0.16  0.00 0.05  0.05
Crit Volume:  45                    381         224                     76
Crit Moves:  ****                  ****        ****                   ****
****************************************************************************
```

```
--------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                         Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.869
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       142               Level Of Service:                  D
********************************************************************************
Street Name:              Arleta Avenue                 Devonshire Street
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted       Prot+Permit        Permitted
Rights:           Include            Ovl            Include           Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         0  0  0  0  0    1  0  1! 0  1    1  0  2  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0  178    0   357  524  511     0    0  501   348
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:    0    0     0  205    0   410  602  587     0    0  576   400
Added Vol:      0    0     0    0    0     2    6    5     0    0    0     6
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    0    0     0  205    0   412  608  592     0    0  576   406
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0    0     0  205    0   412  608  592     0    0  576   406
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0  205    0   412  608  592     0    0  576   406
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    0    0     0  225    0   453  608  592     0    0  576   406
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.00 0.00  2.00 1.00 2.00  0.00 0.00 2.00  1.00
Final Sat.:     0    0     0 1425    0  2850 1425 2850     0    0 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.16 0.00  0.16 0.43 0.21  0.00 0.00 0.20  0.28
Crit Volume:    0               225              608                       406
Crit Moves:                    ****             ****                      ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                         Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #12 Arleta Avenue / Branford Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.995
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180               Level Of Service:                  E
********************************************************************************
Street Name:              Arleta Avenue                  Branford Street
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted         Permitted        Permitted        Permitted
Rights:           Include           Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     209 1035   106   78  421   106  165  484   149  136  741   217
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  240 1189   122   90  484   122  190  556   171  156  851   249
Added Vol:      0   10     0    0    6     0    0    0     0    0    4     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  240 1199   122   90  490   122  190  556   171  156  855   249
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   240 1199   122   90  490   122  190  556   171  156  855   249
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  240 1199   122   90  490   122  190  556   171  156  855   249
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  240 1199   122   90  490   122  190  556   171  156  855   249
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.82  0.18 1.00 1.60  0.40 1.00 1.53  0.47 1.00 1.55  0.45
Final Sat.:  1500 2723   277 1500 2403   597 1500 2294   706 1500 2323   677
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.44  0.44 0.06 0.20  0.20 0.13 0.24  0.24 0.10 0.37  0.37
Crit Volume:       661          90              190                   552
Crit Moves:       ****         ****            ****                  ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.045
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
********************************************************************************
Street Name:          Arleta Avenue                Van Nuys Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    126  627   114  157  401   122  159 1204   107   62  883   146
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 145  720   131  180  461   140  183 1383   123   71 1015   168
Added Vol:     1    6     2    3    2     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 146  726   133  183  463   140  183 1383   123   71 1015   168
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  146  726   133  183  463   140  183 1383   123   71 1015   168
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 146  726   133  183  463   140  183 1383   123   71 1015   168
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 146  726   133  183  463   140  183 1383   123   71 1015   168
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.69  0.31 1.00 2.00  1.00 1.00 1.84  0.16 1.00 1.72  0.28
Final Sat.: 1375 2324   426 1375 2750  1375 1375 2526   224 1375 2360   390
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.11 0.31  0.31 0.13 0.17  0.10 0.13 0.55  0.55 0.05 0.43  0.43
Crit Volume:            430  183                   753          71
Crit Moves:            **** ****                  ****        ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                           Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.774
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        64              Level Of Service:                  C
********************************************************************************
Street Name:          Arleta Avenue                Terra Bella Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    275  749    99   90  364    60   54  710   125   75  594    67
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 316  861   114  103  418    69   62  816   144   86  683    77
Added Vol:     0    9     0    0    2     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 316  870   114  103  420    69   62  816   144   86  683    77
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  316  870   114  103  420    69   62  816   144   86  683    77
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 316  870   114  103  420    69   62  816   144   86  683    77
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 316  870   114  103  420    69   62  816   144   86  683    77
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.77  0.23 1.00 1.72  0.28 1.00 1.70  0.30 1.00 1.80  0.20
Final Sat.: 1500 2653   347 1500 2577   423 1500 2551   449 1500 2696   304
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.21 0.33  0.33 0.07 0.16  0.16 0.04 0.32  0.32 0.06 0.25  0.25
Crit Volume:            492  103                   480          86
Crit Moves:            **** ****                  ****        ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                          Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.083
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
********************************************************************************
Street Name:          Arleta Avenue                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    254  962   245   87  419    77   90 1017   161  112 1125   132
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 292 1105   282  100  481    88  103 1169   185  129 1293   152
Added Vol:     0    9     1    0    2     0    0    0     0    4    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 292 1114   283  100  483    88  103 1169   185  133 1293   152
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  292 1114   283  100  483    88  103 1169   185  133 1293   152
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 292 1114   283  100  483    88  103 1169   185  133 1293   152
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 292 1114   283  100  483    88  103 1169   185  133 1293   152
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.60  0.40 1.00 1.69  0.31 1.00 1.73  0.27 1.00 1.79  0.21
Final Sat.: 1500 2393   607 1500 2536   464 1500 2590   410 1500 2685   315
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.19 0.47  0.47 0.07 0.19  0.19 0.07 0.45  0.45 0.09 0.48  0.48
Crit Volume:      698         100              103                    722
Crit Moves:      ****        ****             ****                   ****
********************************************************************************
```

APPENDIX G
VGS - LOS Operations Worksheets – Existing plus-Project Construction Conditions

LADWP Groundwater Replenishment EIR
VGS - Existing + Project AM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #1 Woodley Avenue / Victory Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.107
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Woodley Avenue						Victory Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	0 1	1 0	2	0 1	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	76	167	109	128	998	83	48	1790	319	266	2032	92
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	76	167	109	128	998	83	48	1790	319	266	2032	92
Added Vol:	0	0	0	1	0	0	0	1	0	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	167	109	129	998	83	48	1791	319	266	2032	92
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	167	109	129	998	83	48	1791	319	266	2032	92
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	167	109	129	998	83	48	1791	319	266	2032	92
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	167	109	129	998	83	48	1791	319	266	2032	92
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.55	0.45	1.00	2.87	0.13
Final Sat.:	1425	2850	1425	1425	2850	1425	1425	3629	646	1425	4090	185
Capacity Analysis Module:												
Vol/Sat:	0.05	0.06	0.08	0.09	0.35	0.06	0.03	0.49	0.49	0.19	0.50	0.50
Crit Volume:			109		499			703		266		
Crit Moves:			****		****			****		****		

LADWP Groundwater Replenishment EIR
VGS - Existing + Project AM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #2 Densmore Avenue / Victory Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.657
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	54	Level Of Service:	B

Street Name:	Densmore Avenue						Victory Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1!	0 0	0 0	1!	0 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	1	0	1	136	0	19	3	1982	1	18	2268	32
Growth Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Initial Bse:	1	0	1	136	0	19	3	1982	1	18	2268	32
Added Vol:	0	0	10	0	0	0	0	0	2	17	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	1	0	11	136	0	19	3	1982	3	35	2268	32
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	1	0	11	136	0	19	3	1982	3	35	2268	32
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	1	0	11	136	0	19	3	1982	3	35	2268	32
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	1	0	11	136	0	19	3	1982	3	35	2268	32
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.08	0.00	0.92	0.88	0.00	0.12	1.00	2.99	0.01	1.00	2.96	0.04
Final Sat.:	119	0	1306	1250	0	175	1425	4269	6	1425	4216	59
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.11	0.00	0.11	0.00	0.46	0.46	0.02	0.54	0.54
Crit Volume:			12			155	3					767
Crit Moves:			****			****	****					****

```
--------------------------------------------------------------------------------
                       LADWP Groundwater Replenishment EIR
                           VGS - Existing + Project AM
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
             Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         1.074
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180               Level Of Service:                  F
********************************************************************************
Street Name:           Haskell Avenue                 Victory Boulevard
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Split Phase      Split Phase       Protected        Protected
Rights:            Include           Ovl            Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         0  0  1! 0  0   1  1  0  0  1   1  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     57   10     1  830  213   589   31 1887   159    3 1622   187
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  57   10     1  830  213   589   31 1887   159    3 1622   187
Added Vol:     0    0     0    0    0     9    0    8     0    0    7     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  57   10     1  830  213   598   31 1895   159    3 1629   187
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   57   10     1  830  213   598   31 1895   159    3 1629   187
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  57   10     1  830  213   598   31 1895   159    3 1629   187
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.10 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  57   10     1  913  213   598   31 1895   159    3 1629   187
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      0.84 0.15  0.01 1.62 0.38  1.00 1.00 2.77  0.23 1.00 2.00  1.00
Final Sat.: 1153  202    20 2230  520  1375 1375 3806   319 1375 2750  1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.05 0.05  0.05 0.41 0.41  0.43 0.02 0.50  0.50 0.00 0.59  0.14
Crit Volume:        68          563              31                     815
Crit Moves:       ****        ****             ****                   ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                       LADWP Groundwater Replenishment EIR
                           VGS - Existing + Project AM
--------------------------------------------------------------------------------
                       Level Of Service Computation Report
             Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.740
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        72               Level Of Service:                  C
********************************************************************************
Street Name:           I-405 NB Ramps                 Victory Boulevard
Approach:        North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Protected        Permitted
Rights:            Include           Ovl            Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         0  0  0  0  0   1  0  1! 0  1   1  0  2  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  219    0   227  297 2415     0    0 1583   585
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     0  219    0   227  297 2415     0    0 1583   585
Added Vol:     0    0     0    0    0     4    8    0     0    0    3     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0    0     0  219    0   231  305 2415     0    0 1586   585
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  219    0   231  305 2415     0    0 1586   585
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  219    0   231  305 2415     0    0 1586   585
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.10 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0    0     0  241    0   254  305 2415     0    0 1586   585
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      0.00 0.00  0.00 1.46 0.00  1.54 1.00 3.00  0.00 0.00 3.00  1.00
Final Sat.:    0    0     0 2081    0  2195 1425 4275     0    0 4275  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.00  0.00 0.12 0.00  0.12 0.21 0.56  0.00 0.00 0.37  0.41
Crit Volume:         0          165             305                         585
Crit Moves:                   ****             ****                        ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                         VGS - Existing + Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
********************************************************************************
Cycle (sec):         100            Critical Vol./Cap.(X):        0.638
Loss Time (sec):       0            Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        51            Level Of Service:                 B
********************************************************************************
Street Name:             I-5 SB Ramps                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted        Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:       0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    2   197   22  259     0 1765   64    19  843  527
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse:   0    0    2   197   22  259     0 1765   64    19  843  527
Added Vol:     0    0    0     3    0    0     0    0    0     0    0    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   0    0    2   200   22  259     0 1765   64    19  843  527
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    0    0    2   200   22  259     0 1765   64    19  843  527
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   0    0    2   200   22  259     0 1765   64    19  843  527
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   0    0    2   200   22  259     0 1765   64    19  843  527
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 1.00  1.00 0.08 0.92  0.00 2.90 0.10  1.00 2.00 1.00
Final Sat.:    0    0 1425  1425  112 1313     0 4125  150  1425 2850 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.14 0.20 0.20  0.00 0.43 0.43  0.01 0.30 0.37
Crit Volume:   0                        281        610          19
Crit Moves:  ****                      ****       ****        ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                         VGS - Existing + Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
********************************************************************************
Cycle (sec):         100            Critical Vol./Cap.(X):        0.631
Loss Time (sec):       0            Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        50            Level Of Service:                 B
********************************************************************************
Street Name:             I-5 NB Ramps                     Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted         Protected        Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:       1  0  0  1  0   0  0  0  0  1   0  0  1  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    233    0  269     0    0    1     0  762  490     0 1152  495
Growth Adj:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Initial Bse: 233    0  269     0    0    1     0  762  490     0 1152  495
Added Vol:     0    0    0     0    0    0     0    3    0     2    0    2
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut: 233    0  269     0    0    1     0  765  490     2 1152  497
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:  233    0  269     0    0    1     0  765  490     2 1152  497
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol: 233    0  269     0    0    1     0  765  490     2 1152  497
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  4.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume: 233    0  269     0    0    1     0  765  490     8 1152  497
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 0.00 1.00  0.00 0.00 1.00  0.00 1.22 0.78  0.01 2.09 0.90
Final Sat.:  1425    0 1425     0    0 1425     0 1737 1113    21 2972 1282
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.16 0.00 0.19  0.00 0.00 0.00  0.00 0.44 0.44  0.10 0.39 0.39
Crit Volume:            269     0                       628     2
Crit Moves:            ****  ****                      ****  ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                        VGS - Existing + Project AM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #7 San Fernando Road / Osborne Street
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.654
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       74              Level Of Service:                 B
********************************************************************************
Street Name:        San Fernando Road                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Protected        Protected        Protected
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     27  227    41   138  807    54    64  568    62    85  754   107
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  27  227    41   138  807    54    64  568    62    85  754   107
Added Vol:     0    1     0     0   12     0     0    3     0     0    3     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  27  228    41   138  819    54    64  571    62    85  757   107
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   27  228    41   138  819    54    64  571    62    85  757   107
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  27  228    41   138  819    54    64  571    62    85  757   107
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  27  228    41   138  819    54    64  571    62    85  757   107
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.70  0.30  1.00 1.88  0.12  1.00 1.80  0.20  1.00 1.75  0.25
Final Sat.:  1425 2416   434  1425 2674   176  1425 2571   279  1425 2497   353
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.09  0.09  0.10 0.31  0.31  0.04 0.22  0.22  0.06 0.30  0.30
Crit Volume:       135              437        64                     432
Crit Moves:                        ****      ****                    ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                        VGS - Existing + Project AM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        1.004
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180              Level Of Service:                 F
********************************************************************************
Street Name:        Glenoaks Boulevard                 Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include            Ovl            Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     34  410   240    88 1075   181   249  401    76   601  627    26
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  34  410   240    88 1075   181   249  401    76   601  627    26
Added Vol:     3    0     0     0    3     0     0    0     3     3    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  37  410   240    88 1078   181   249  401    79   604  627    26
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   37  410   240    88 1078   181   249  401    79   604  627    26
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  37  410   240    88 1078   181   249  401    79   604  627    26
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  37  410   240    88 1078   181   249  401    79   604  627    26
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.92  0.08
Final Sat.:  1375 2750  1375  1375 2750  1375  1375 2750  1375  1375 2641   109
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.15  0.17  0.06 0.39  0.13  0.18 0.15  0.06  0.44 0.24  0.24
Crit Volume:  37                    539              201        604
Crit Moves:  ****                  ****             ****       ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                         VGS - Existing + Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.748
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        57              Level Of Service:                  C
********************************************************************************
Street Name:        Glenoaks Boulevard                  Sheldon Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      96  427    71    72 1053   402   214  288   126   106  460    97
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   96  427    71    72 1053   402   214  288   126   106  460    97
Added Vol:      3    1     0     0    1     6     2    0     1     0    2     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   99  428    71    72 1054   408   216  288   127   106  462    97
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    99  428    71    72 1054   408   216  288   127   106  462    97
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   99  428    71    72 1054   408   216  288   127   106  462    97
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   99  428    71    72 1054   408   216  288   127   106  462    97
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.39  0.61  1.00 1.65  0.35
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 2082   918  1500 2479   521
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.07 0.14  0.05  0.05 0.35  0.27  0.14 0.14  0.14  0.07 0.19  0.19
Crit Volume:   99                    527        216                          280
Crit Moves:  ****                  ****        ****                         ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                         VGS - Existing + Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.435
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        25              Level Of Service:                  A
********************************************************************************
Street Name:        Glenoaks Boulevard                    Penrose Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  0  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      30  503     4    41  792   134   135  125    42    12   90    40
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   30  503     4    41  792   134   135  125    42    12   90    40
Added Vol:      0    3     0     0    0     1     1    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   30  506     4    41  792   135   136  125    42    12   90    40
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    30  506     4    41  792   135   136  125    42    12   90    40
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   30  506     4    41  792   135   136  125    42    12   90    40
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   30  506     4    41  792   135   136  125    42    12   90    40
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 1123   377  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.02 0.17  0.00  0.03 0.26  0.09  0.09 0.11  0.11  0.01 0.06  0.03
Crit Volume:   30                    396        136                     90
Crit Moves:  ****                  ****        ****                   ****
********************************************************************************
```

```
-------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                        VGS - Existing + Project AM
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.596
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        46              Level Of Service:                  A
*******************************************************************************
Street Name:          Arleta Avenue                Devonshire Street
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Permitted       Prot+Permit       Permitted
Rights:          Include           Ovl             Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:       0  0  0  0  0   1  0  1! 0  1   1  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0     0     0  418     0   337  296   805     0    0   531   271
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse:   0     0     0  418     0   337  296   805     0    0   531   271
Added Vol:     0     0     0    3     0     6    2     0     0    0     5     0
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:   0     0     0  421     0   343  298   805     0    0   536   271
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:    0     0     0  421     0   343  298   805     0    0   536   271
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0     0     0  421     0   343  298   805     0    0   536   271
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.10  1.00  1.10 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:   0     0     0  463     0   377  298   805     0    0   536   271
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425  1425
Adjustment:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:       0.00  0.00  0.00 1.65  0.01  1.34 1.00  2.00  0.00 0.00  2.00  1.00
Final Sat.:    0     0     0  2356    0  1919 1425  2850     0    0  2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00  0.00  0.00 0.20  0.00  0.20 0.21  0.28  0.00 0.00  0.19  0.19
Crit Volume:   0               280              298                          271
Crit Moves:                   ****             ****                         ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                        VGS - Existing + Project AM
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #12 Arleta Avenue / Branford Street
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.857
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       101              Level Of Service:                  D
*******************************************************************************
Street Name:          Arleta Avenue                  Branford Street
Approach:     North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:       1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    123   543    95  122   982   141  134   485   376  165   615   100
Growth Adj:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Initial Bse: 123   543    95  122   982   141  134   485   376  165   615   100
Added Vol:     0     2     0    0     6     0    0     5     0    0     0     0
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut: 123   545    95  122   988   141  134   490   376  165   615   100
User Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:  123   545    95  122   988   141  134   490   376  165   615   100
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol: 123   545    95  122   988   141  134   490   376  165   615   100
PCE Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume: 123   545    95  122   988   141  134   490   376  165   615   100
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500  1500
Adjustment:  1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:       1.00  1.70  0.30 1.00  1.75  0.25 1.00  1.13  0.87 1.00  1.72  0.28
Final Sat.:  1500  2555   445 1500  2625   375 1500  1697  1303 1500  2580   420
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08  0.21  0.21 0.08  0.38  0.38 0.09  0.29  0.29 0.11  0.24  0.24
Crit Volume: 123                    565              433        165
Crit Moves:  ****                  ****             ****       ****
*******************************************************************************
```

```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                       VGS - Existing + Project AM
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
*****************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):        0.887
Loss Time (sec):      0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180               Level Of Service:                 D
*****************************************************************************
Street Name:          Arleta Avenue                Van Nuys Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         1  0  1  1  0    1  0  2  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    173  577    82  238  670   145  118 1054   136   59  928   136
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 173  577    82  238  670   145  118 1054   136   59  928   136
Added Vol:     0    2     0    0    3     0    0    0     1    2    0     3
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 173  579    82  238  673   145  118 1054   137   61  928   139
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  173  579    82  238  673   145  118 1054   137   61  928   139
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 173  579    82  238  673   145  118 1054   137   61  928   139
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 173  579    82  238  673   145  118 1054   137   61  928   139
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.75  0.25 1.00 2.00  1.00 1.00 1.77  0.23 1.00 1.74  0.26
Final Sat.: 1375 2409   341 1375 2750  1375 1375 2434   316 1375 2392   358
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.13 0.24  0.24 0.17 0.24  0.11 0.09 0.43  0.43 0.04 0.39  0.39
Crit Volume:              331  238              118                         534
Crit Moves:              **** ****             ****                        ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                       VGS - Existing + Project AM
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
*****************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):        0.780
Loss Time (sec):      0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       65               Level Of Service:                 C
*****************************************************************************
Street Name:          Arleta Avenue                Terra Bella Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:      L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    166  593    99  118  662    51   82  894   209   93  676   118
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 166  593    99  118  662    51   82  894   209   93  676   118
Added Vol:     0    2     0    0    6     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 166  595    99  118  668    51   82  894   209   93  676   118
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  166  595    99  118  668    51   82  894   209   93  676   118
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 166  595    99  118  668    51   82  894   209   93  676   118
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 166  595    99  118  668    51   82  894   209   93  676   118
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.71  0.29 1.00 1.86  0.14 1.00 1.62  0.38 1.00 1.70  0.30
Final Sat.: 1500 2572   428 1500 2787   213 1500 2432   568 1500 2554   446
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.11 0.23  0.23 0.08 0.24  0.24 0.05 0.37  0.37 0.06 0.26  0.26
Crit Volume: 166                    360                   552   93
Crit Moves: ****                   ****                  **** ****
*****************************************************************************
```

```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                      VGS - Existing + Project AM
---------------------------------------------------------------------------
                  Level Of Service Computation Report
        Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
***************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):        0.910
Loss Time (sec):        0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        161              Level Of Service:                 E
***************************************************************************
Street Name:           Arleta Avenue                   Osborne Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  545  238  120  857   55   64 1128  175  129 1036  171
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:  126  545  238  120  857   55   64 1128  175  129 1036  171
Added Vol:      0    2    0    0    6    0    0    0    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  126  547  238  120  863   55   64 1128  175  129 1036  171
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   126  547  238  120  863   55   64 1128  175  129 1036  171
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  126  547  238  120  863   55   64 1128  175  129 1036  171
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:  126  547  238  120  863   55   64 1128  175  129 1036  171
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500 1500 1500 1500 1500 1500 1500 1500 1500 1500 1500
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       1.00 1.39 0.61 1.00 1.88 0.12 1.00 1.73 0.27 1.00 1.72 0.28
Final Sat.:  1500 2090  910 1500 2820  180 1500 2597  403 1500 2575  425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.26 0.26 0.08 0.31 0.31 0.04 0.43 0.43 0.09 0.40 0.40
Crit Volume:  126                         459       652       129
Crit Moves:  ****                        ****      ****      ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                      VGS - Existing + Project AM
---------------------------------------------------------------------------
                  Level Of Service Computation Report
        Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #16 Laurel Canyon Boulevard / Branford Street
***************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):        0.864
Loss Time (sec):        0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        137              Level Of Service:                 D
***************************************************************************
Street Name:     Laurel Canyon Boulevard            Branford Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Protected        Protected        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        2  0  1  1  0   2  0  1  1  0   1  0  1  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     125  397  146  120  854  175   62  399  146  106  469  116
Growth Adj:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Initial Bse:  125  397  146  120  854  175   62  399  146  106  469  116
Added Vol:      0    0    0    1    3    0    0    5    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  125  397  146  121  857  175   62  404  146  106  469  116
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   125  397  146  121  857  175   62  404  146  106  469  116
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  125  397  146  121  857  175   62  404  146  106  469  116
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.10 1.00 1.00 1.10 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:  138  397  146  133  857  175   62  404  146  106  469  116
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       2.00 1.46 0.54 2.00 1.66 0.34 1.00 1.47 0.53 1.00 0.80 0.20
Final Sat.:  2850 2084  766 2850 2367  483 1425 2093  757 1425 1142  283
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.19 0.19 0.05 0.36 0.36 0.04 0.19 0.19 0.07 0.41 0.41
Crit Volume:   69                         516   62                       585
Crit Moves:  ****                        **** ****                      ****
***************************************************************************
```

```
--------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                          VGS - Existing + Project AM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #17 San Fernando Road / Branford Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.687
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       104              Level Of Service:                  B
********************************************************************************
Street Name:        San Fernando Road                  Branford Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      51  262   112    49  850    84    30  240   203    75  190    28
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   51  262   112    49  850    84    30  240   203    75  190    28
Added Vol:      0    1     4     5    7     0     0    4     1     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   51  263   116    54  857    84    30  244   204    75  190    28
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    51  263   116    54  857    84    30  244   204    75  190    28
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   51  263   116    54  857    84    30  244   204    75  190    28
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   51  263   116    54  857    84    30  244   204    75  190    28
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.39  0.61  1.00 1.82  0.18  1.00 1.00  1.00  0.28 0.72  1.00
Final Sat.:  1425 1978   872  1425 2596   254  1425 1425  1425   403 1022  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.13  0.13  0.04 0.33  0.33  0.02 0.17  0.14  0.19 0.19  0.02
Crit Volume:       189               470               244               265
Crit Moves:                         ****              ****              ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                       VGS - Existing + Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.985
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  E
********************************************************************************
Street Name:          Woodley Avenue                 Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     342  801   199  212  240   142   97 1909    96  123 1774   200
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:  342  801   199  212  240   142   97 1909    96  123 1774   200
Added Vol:      0    0     0    0    0     0    0    0     0    0    1     1
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  342  801   199  212  240   142   97 1909    96  123 1775   201
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   342  801   199  212  240   142   97 1909    96  123 1775   201
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  342  801   199  212  240   142   97 1909    96  123 1775   201
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  342  801   199  212  240   142   97 1909    96  123 1775   201
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.86  0.14 1.00 2.69  0.31
Final Sat.:  1425 2850  1425 1425 2850  1425 1425 4070   205 1425 3840   435
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.24 0.28  0.14 0.15 0.08  0.10 0.07 0.47  0.47 0.09 0.46  0.46
Crit Volume:       401        212                   668        123
Crit Moves:       ****       ****                  ****       ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                       VGS - Existing + Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.585
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        45              Level Of Service:                  A
********************************************************************************
Street Name:          Densmore Avenue                Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0     1   33    0     9   12 2253     6    7 2083    43
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    1    0     1   33    0     9   12 2253     6    7 2083    43
Added Vol:      2    0    17    0    0     0    0    0     0   10    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    3    0    18   33    0     9   12 2253     6   17 2083    43
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     3    0    18   33    0     9   12 2253     6   17 2083    43
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    3    0    18   33    0     9   12 2253     6   17 2083    43
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    3    0    18   33    0     9   12 2253     6   17 2083    43
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.14 0.00  0.86 0.79 0.00  0.21 1.00 2.99  0.01 1.00 2.94  0.06
Final Sat.:   204    0  1221 1120    0   305 1425 4264    11 1425 4189    86
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00  0.01 0.03 0.00  0.03 0.01 0.53  0.53 0.01 0.50  0.50
Crit Volume:              21                42               753   17
Crit Moves:             ****              ****              **** ****
********************************************************************************
```

```
-----------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                      VGS - Existing + Project PM
-----------------------------------------------------------------------------
                  Level Of Service Computation Report
       Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.045
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
*****************************************************************************
Street Name:              Haskell Avenue               Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include            Ovl            Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         0  0  1! 0  0   1  1  0  0  1   1  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     117   44    26  598   45   441  100 1763    55    4 1594   381
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 117   44    26  598   45   441  100 1763    55    4 1594   381
Added Vol:      0    0     0    0    0     8    0   12     0    0    3     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 117   44    26  598   45   449  100 1775    55    4 1597   381
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   117   44    26  598   45   449  100 1775    55    4 1597   381
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 117   44    26  598   45   449  100 1775    55    4 1597   381
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 117   44    26  658   45   449  100 1775    55    4 1597   381
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.63 0.23  0.14 1.87 0.13  1.00 1.00 2.91  0.09 1.00 2.00  1.00
Final Sat.:   860  324   191 2574  176  1375 1375 4001   124 1375 2750  1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.14  0.14 0.26 0.26  0.33 0.07 0.44  0.44 0.00 0.58  0.28
Crit Volume:        187         351             100                    799
Crit Moves:        ****        ****            ****                   ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                      VGS - Existing + Project PM
-----------------------------------------------------------------------------
                  Level Of Service Computation Report
       Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
*****************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.767
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        80              Level Of Service:                  C
*****************************************************************************
Street Name:              I-405 NB Ramps               Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Permitted
Rights:           Include            Ovl            Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:         0  0  0  0  0   1  0  1! 0  1   1  0  2  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0  265    0   405  306 2127     0    0 1562   531
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:    0    0     0  265    0   405  306 2127     0    0 1562   531
Added Vol:      0    0     0    0    0     3    9    3     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    0    0     0  265    0   408  315 2130     0    0 1562   531
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     0    0     0  265    0   408  315 2130     0    0 1562   531
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    0    0     0  265    0   408  315 2130     0    0 1562   531
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    0    0     0  292    0   449  315 2130     0    0 1562   531
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.18 xxxx  1.82 1.00 3.00  0.00 0.00 3.00  1.00
Final Sat.:     0    0     0 1683    0  2592 1425 4275     0    0 4275  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.17 0.00  0.17 0.22 0.50  0.00 0.00 0.37  0.37
Crit Volume:          0         247             315                          531
Crit Moves:                    ****            ****                         ****
*****************************************************************************
```

```
---------------------------------------------------------------------------
                LADWP Groundwater Replenishment EIR
                    VGS - Existing + Project PM
---------------------------------------------------------------------------
                Level Of Service Computation Report
       Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
***************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):        0.765
Loss Time (sec):       0             Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        79             Level Of Service:                 C
***************************************************************************
Street Name:           I-5 SB Ramps                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     9  446   23   574    0 1365    46   23  892   211
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse:   0    0     9  446   23   574    0 1365    46   23  892   211
Added Vol:     0    0     0    3    0     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0    0     9  449   23   574    0 1365    46   23  892   211
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     9  449   23   574    0 1365    46   23  892   211
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     9  449   23   574    0 1365    46   23  892   211
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0    0     9  449   23   574    0 1365    46   23  892   211
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  1.00 1.00 0.04  0.96 0.00 2.90  0.10 1.00 2.00  1.00
Final Sat.:    0    0  1425 1425   55  1370    0 4136   139 1425 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.01 0.32 0.42  0.42 0.00 0.33  0.33 0.02 0.31  0.15
Crit Volume:   0                        597               470   23
Crit Moves:  ****                      ****              ****  ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                LADWP Groundwater Replenishment EIR
                    VGS - Existing + Project PM
---------------------------------------------------------------------------
                Level Of Service Computation Report
       Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
***************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):        0.756
Loss Time (sec):       0             Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        76             Level Of Service:                 C
***************************************************************************
Street Name:           I-5 NB Ramps                  Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       1  0  0  1  0   0  0  0  0  0   0  1  0  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    310    0   261    0    0     0    3 1103   412    0  815   495
Growth Adj:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 310    0   261    0    0     0    3 1103   412    0  815   495
Added Vol:     0    0     0    0    0     0    0    3     0    2    0     2
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 310    0   261    0    0     0    3 1106   412    2  815   497
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  310    0   261    0    0     0    3 1106   412    2  815   497
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 310    0   261    0    0     0    3 1106   412    2  815   497
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 4.00 1.00  1.00 6.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 310    0   261    0    0     0   12 1106   412   12  815   497
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 0.00  1.00 0.00 0.00  0.00 0.01 1.45  0.54 0.03 1.97  1.00
Final Sat.:  1425    0  1425    0    0     0    6 2077   767   40 2810  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.22 0.00  0.18 0.00 0.00  0.00 0.53 0.53  0.54 0.05 0.29  0.35
Crit Volume: 310                  0                       765    2
Crit Moves:  ****                                        ****  ****
***************************************************************************
```

```
------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                       VGS - Existing + Project PM
------------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #7 San Fernando Road / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.714
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        65               Level Of Service:                  C
********************************************************************************
Street Name:        San Fernando Road                Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected         Protected         Protected
Rights:          Include          Include           Include           Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     66  581    98   166  417    83    93  637    51    58  644   179
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  66  581    98   166  417    83    93  637    51    58  644   179
Added Vol:     0   12     0     0    1     0     0    3     0     0    3     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  66  593    98   166  418    83    93  640    51    58  647   179
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   66  593    98   166  418    83    93  640    51    58  647   179
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  66  593    98   166  418    83    93  640    51    58  647   179
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  66  593    98   166  418    83    93  640    51    58  647   179
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.72  0.28  1.00 1.67  0.33  1.00 1.85  0.15  1.00 1.57  0.43
Final Sat.:  1425 2446   404  1425 2378   472  1425 2640   210  1425 2232   618
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.24  0.24  0.12 0.18  0.18  0.07 0.24  0.24  0.04 0.29  0.29
Crit Volume:       346         166               93                       413
Crit Moves:        ****        ****              ****                     ****
********************************************************************************
```



```
------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                       VGS - Existing + Project PM
------------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):         0.958
Loss Time (sec):       0               Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180               Level Of Service:                  E
********************************************************************************
Street Name:        Glenoaks Boulevard                 Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include            Ovl            Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  0  1   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     70  930   653    98  412   142   231  576    27   275  360    31
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  70  930   653    98  412   142   231  576    27   275  360    31
Added Vol:     3    3     3     0    0     0     0    0     3     0    0     0
PasserByVol:   0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  73  933   656    98  412   142   231  576    30   275  360    31
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   73  933   656    98  412   142   231  576    30   275  360    31
Reduct Vol:    0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  73  933   656    98  412   142   231  576    30   275  360    31
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  73  933   656    98  412   142   231  576    30   275  360    31
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.84  0.16
Final Sat.:  1375 2750  1375  1375 2750  1375  1375 2750  1375  1375 2532   218
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.34  0.48  0.07 0.15  0.10  0.17 0.21  0.02  0.20 0.14  0.14
Crit Volume:             656    98                    288         275
Crit Moves:             ****  ****                   ****        ****
********************************************************************************
```

```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                      VGS - Existing + Project PM
---------------------------------------------------------------------------
                  Level Of Service Computation Report
        Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
***************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.737
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        55             Level Of Service:                  C
***************************************************************************
Street Name:        Glenoaks Boulevard                Sheldon Street
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     117 1006    80    95  608   223   360  379   139    42  221    62
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  117 1006    80    95  608   223   360  379   139    42  221    62
Added Vol:      1    1     0     0    1     2     6    2     3     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  118 1007    80    95  609   225   366  381   142    42  221    62
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   118 1007    80    95  609   225   366  381   142    42  221    62
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  118 1007    80    95  609   225   366  381   142    42  221    62
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  118 1007    80    95  609   225   366  381   142    42  221    62
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.46  0.54  1.00 1.56  0.44
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 2185   815  1500 2343   657
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.08 0.34  0.05  0.06 0.20  0.15  0.24 0.17  0.17  0.03 0.09  0.09
Crit Volume:       504          95                366                    142
Crit Moves:       ****        ****              ****                    ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                      VGS - Existing + Project PM
---------------------------------------------------------------------------
                  Level Of Service Computation Report
        Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
***************************************************************************
Cycle (sec):         100             Critical Vol./Cap.(X):         0.422
Loss Time (sec):       0             Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        25             Level Of Service:                  A
***************************************************************************
Street Name:        Glenoaks Boulevard                   Penrose Street
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  0  1  0   1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  622    12    30  664   118   194  153    52     6   66    64
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:   39  622    12    30  664   118   194  153    52     6   66    64
Added Vol:      0    0     0     0    3     1     1    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   39  622    12    30  667   119   195  153    52     6   66    64
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    39  622    12    30  667   119   195  153    52     6   66    64
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   39  622    12    30  667   119   195  153    52     6   66    64
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   39  622    12    30  667   119   195  153    52     6   66    64
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 1120   380  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.21  0.01  0.02 0.22  0.08  0.13 0.14  0.14  0.00 0.04  0.04
Crit Volume:   39                    334        195                       66
Crit Moves:  ****                   ****       ****                      ****
***************************************************************************
```

```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                        VGS - Existing + Project PM
---------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
***************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):          0.756
Loss Time (sec):        0             Average Delay (sec/veh):       xxxxxx
Optimal Cycle:         76             Level Of Service:                   C
***************************************************************************
Street Name:                Arleta Avenue               Devonshire Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted      Prot+Permit        Permitted
Rights:           Include            Ovl            Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  0  0  0    1  0  1! 0  1    1  0  2  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     0   178    0   357   524  511     0     0  501   348
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:    0    0     0   178    0   357   524  511     0     0  501   348
Added Vol:      0    0     0     0    0     2     6    5     0     0    0     3
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     0   178    0   359   530  516     0     0  501   351
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     0   178    0   359   530  516     0     0  501   351
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     0   178    0   359   530  516     0     0  501   351
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.10 1.00  1.10  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     0   196    0   395   530  516     0     0  501   351
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  0.00  1.00 0.00  2.00  1.00 2.00  0.00  0.00 2.00  1.00
Final Sat.:     0    0     0  1425    0  2850  1425 2850     0     0 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.14 0.00  0.14  0.37 0.18  0.00  0.00 0.18  0.25
Crit Volume:    0                196              530                         351
Crit Moves:                     ****             ****                        ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                        VGS - Existing + Project PM
---------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #12 Arleta Avenue / Branford Street
***************************************************************************
Cycle (sec):          100             Critical Vol./Cap.(X):          0.865
Loss Time (sec):        0             Average Delay (sec/veh):       xxxxxx
Optimal Cycle:        107             Level Of Service:                   D
***************************************************************************
Street Name:                Arleta Avenue                Branford Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     209 1035   106    78  421   106   165  484   149   136  741   217
Growth Adj:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Initial Bse:  209 1035   106    78  421   106   165  484   149   136  741   217
Added Vol:      0    6     0     0    2     0     0    0     0     0    5     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  209 1041   106    78  423   106   165  484   149   136  746   217
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   209 1041   106    78  423   106   165  484   149   136  746   217
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  209 1041   106    78  423   106   165  484   149   136  746   217
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  209 1041   106    78  423   106   165  484   149   136  746   217
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.82  0.18  1.00 1.60  0.40  1.00 1.53  0.47  1.00 1.55  0.45
Final Sat.:  1500 2723   277  1500 2399   601  1500 2294   706  1500 2324   676
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.38  0.38  0.05 0.18  0.18  0.11 0.21  0.21  0.09 0.32  0.32
Crit Volume:       574          78              165                           482
Crit Moves:       ****        ****             ****                          ****
***************************************************************************
```

```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                      VGS - Existing + Project PM
---------------------------------------------------------------------------

                  Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.909
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  E
***************************************************************************
Street Name:                Arleta Avenue              Van Nuys Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:            Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    126  627   114  157  401   122  159 1204   107   62  883   146
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 126  627   114  157  401   122  159 1204   107   62  883   146
Added Vol:     1    3     2    3    2     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 127  630   116  160  403   122  159 1204   107   62  883   146
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  127  630   116  160  403   122  159 1204   107   62  883   146
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 127  630   116  160  403   122  159 1204   107   62  883   146
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 127  630   116  160  403   122  159 1204   107   62  883   146
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.69  0.31 1.00 2.00  1.00 1.00 1.84  0.16 1.00 1.72  0.28
Final Sat.: 1375 2322   428 1375 2750  1375 1375 2526   224 1375 2360   390
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.09 0.27  0.27 0.12 0.15  0.09 0.12 0.48  0.48 0.05 0.37  0.37
Crit Volume:             373  160                   656         62
Crit Moves:             ****  ****                  ****       ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                      VGS - Existing + Project PM
---------------------------------------------------------------------------

                  Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.673
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        44              Level Of Service:                  B
***************************************************************************
Street Name:                Arleta Avenue              Terra Bella Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:            Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    275  749    99   90  364    60   54  710   125   75  594    67
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 275  749    99   90  364    60   54  710   125   75  594    67
Added Vol:     0    6     0    0    2     0    0    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 275  755    99   90  366    60   54  710   125   75  594    67
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  275  755    99   90  366    60   54  710   125   75  594    67
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 275  755    99   90  366    60   54  710   125   75  594    67
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 275  755    99   90  366    60   54  710   125   75  594    67
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.77  0.23 1.00 1.72  0.28 1.00 1.70  0.30 1.00 1.80  0.20
Final Sat.: 1500 2652   348 1500 2577   423 1500 2551   449 1500 2696   304
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.18 0.28  0.28 0.06 0.14  0.14 0.04 0.28  0.28 0.05 0.22  0.22
Crit Volume:       427          90                  418         75
Crit Moves:       ****        ****                 ****       ****
***************************************************************************
```

```
-------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                          VGS - Existing + Project PM
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.941
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        180              Level Of Service:                  E
*******************************************************************************
Street Name:          Arleta Avenue                  Osborne Street
Approach:      North Bound     South Bound      East Bound      West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted       Permitted        Permitted       Permitted
Rights:          Include         Include          Include         Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     254   962   245    87   419    77    90  1017   161   112  1125   132
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  254   962   245    87   419    77    90  1017   161   112  1125   132
Added Vol:      0     6     0     0     2     0     0     0     0     0     0     0
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  254   968   245    87   421    77    90  1017   161   112  1125   132
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   254   968   245    87   421    77    90  1017   161   112  1125   132
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  254   968   245    87   421    77    90  1017   161   112  1125   132
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:  254   968   245    87   421    77    90  1017   161   112  1125   132
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500  1500  1500  1500  1500  1500  1500  1500  1500  1500  1500  1500
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       1.00  1.60  0.40  1.00  1.69  0.31  1.00  1.73  0.27  1.00  1.79  0.21
Final Sat.:  1500  2394   606  1500  2536   464  1500  2590   410  1500  2685   315
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.17  0.40  0.40  0.06  0.17  0.17  0.06  0.39  0.39  0.07  0.42  0.42
Crit Volume:        607          87                90                     629
Crit Moves:        ****        ****              ****                    ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                          VGS - Existing + Project PM
-------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #16 Laurel Canyon Boulevard / Branford Street
*******************************************************************************
Cycle (sec):          100              Critical Vol./Cap.(X):         0.934
Loss Time (sec):        0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        180              Level Of Service:                  E
*******************************************************************************
Street Name:     Laurel Canyon Boulevard               Branford Street
Approach:      North Bound     South Bound      East Bound      West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected       Protected        Permitted       Permitted
Rights:          Include         Include          Include         Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        2  0  1  1  0    2  0  1  1  0    1  0  1  1  0    1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     112   979   174    89   459   135   177   455   177   126   362   159
Growth Adj:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Initial Bse:  112   979   174    89   459   135   177   455   177   126   362   159
Added Vol:      0     3     0     0     0     0     0     0     0     0     5     1
PasserByVol:    0     0     0     0     0     0     0     0     0     0     0     0
Initial Fut:  112   982   174    89   459   135   177   455   177   126   367   160
User Adj:    1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
PHF Volume:   112   982   174    89   459   135   177   455   177   126   367   160
Reduct Vol:     0     0     0     0     0     0     0     0     0     0     0     0
Reduced Vol:  112   982   174    89   459   135   177   455   177   126   367   160
PCE Adj:     1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
MLF Adj:     1.10  1.00  1.00  1.10  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
FinalVolume:  123   982   174    98   459   135   177   455   177   126   367   160
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425  1425  1425  1425  1425  1425  1425  1425  1425  1425  1425  1425
Adjustment:  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00  1.00
Lanes:       2.00  1.70  0.30  2.00  1.55  0.45  1.00  1.44  0.56  1.00  0.70  0.30
Final Sat.:  2850  2421   429  2850  2202   648  1425  2052   798  1425   992   433
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04  0.41  0.41  0.03  0.21  0.21  0.12  0.22  0.22  0.09  0.37  0.37
Crit Volume:        578          49               177                           527
Crit Moves:        ****        ****              ****                          ****
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                        VGS - Existing + Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #17 San Fernando Road / Branford Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.792
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        89              Level Of Service:                  C
********************************************************************************
Street Name:        San Fernando Road                 Branford Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected       Split Phase      Split Phase
Rights:           Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       1  0  1  1  0    1  0  1  1  0    1  0  1  0  1    0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    123  636   138   33  417    77   74  263    79  124  310    43
Growth Adj: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Initial Bse: 123  636   138   33  417    77   74  263    79  124  310    43
Added Vol:     1    7     0    0    1     0    0    0     0    4    4     5
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 124  643   138   33  418    77   74  263    79  128  314    48
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  124  643   138   33  418    77   74  263    79  128  314    48
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 124  643   138   33  418    77   74  263    79  128  314    48
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 124  643   138   33  418    77   74  263    79  128  314    48
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.65  0.35 1.00 1.69  0.31 1.00 1.00  1.00 0.29 0.71  1.00
Final Sat.: 1425 2346   504 1425 2407   443 1425 1425  1425  413 1012  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.09 0.27  0.27 0.02 0.17  0.17 0.05 0.18  0.06 0.31 0.31  0.03
Crit Volume:      391          33               263               442
Crit Moves:       ****        ****              ****              ****
********************************************************************************
```

APPENDIX H
VGS - LOS Operations Worksheets – Future with Project Construction Conditions

```
-------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                      VGS - Future With Project AM
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #1 Woodley Avenue / Victory Boulevard
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.272
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
*******************************************************************************
Street Name:          Woodley Avenue                Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Protected
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1   1  0  2  0  1   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      76  167   109  128  998    83   48 1790   319  266 2032    92
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:   87  192   125  147 1147    95   55 2057   367  306 2335   106
Added Vol:      0    0     0    1    0     0    0    1     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   87  192   125  148 1147    95   55 2058   367  306 2335   106
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    87  192   125  148 1147    95   55 2058   367  306 2335   106
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   87  192   125  148 1147    95   55 2058   367  306 2335   106
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   87  192   125  148 1147    95   55 2058   367  306 2335   106
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.55  0.45 1.00 2.87  0.13
Final Sat.:  1425 2850  1425 1425 2850  1425 1425 3629   646 1425 4090   185
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.07  0.09 0.10 0.40  0.07 0.04 0.57  0.57 0.21 0.57  0.57
Crit Volume:             125       573                   808  306
Crit Moves:             ****      ****                  **** ****
*******************************************************************************
```



```
-------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                      VGS - Future With Project AM
-------------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
*******************************************************************************
Intersection #2 Densmore Avenue / Victory Boulevard
*******************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.754
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        76              Level Of Service:                  C
*******************************************************************************
Street Name:          Densmore Avenue               Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        0  0  1! 0  0   0  0  1! 0  0   1  0  2  1  0   1  0  2  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       1    0     1  136    0    19    3 1982     1   18 2268    32
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:    1    0     1  156    0    22    3 2277     1   21 2606    37
Added Vol:      0    0    10    0    0     0    0    0     2   17    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:    1    0    11  156    0    22    3 2277     3   38 2606    37
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:     1    0    11  156    0    22    3 2277     3   38 2606    37
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:    1    0    11  156    0    22    3 2277     3   38 2606    37
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:    1    0    11  156    0    22    3 2277     3   38 2606    37
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.09 0.00  0.91 0.88 0.00  0.12 1.00 2.99  0.01 1.00 2.96  0.04
Final Sat.:   133    0  1292 1250    0   175 1425 4269     6 1425 4216    59
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.01 0.00  0.01 0.12 0.00  0.12 0.00 0.53  0.53 0.03 0.62  0.62
Crit Volume:              12              178    3                         881
Crit Moves:             ****             **** ****                        ****
*******************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):        1.233
Loss Time (sec):      0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180               Level Of Service:                 F
********************************************************************************
Street Name:          Haskell Avenue                 Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Split Phase      Split Phase       Protected        Protected
Rights:           Include           Ovl            Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  1! 0  0   1  1  0  0  1   1  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      57   10    1   830  213  589    31 1887  159     3 1622  187
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:   65   11    1   954  245  677    36 2168  183     3 1864  215
Added Vol:      0    0    0     0    0    9     0    8    0     0    7    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   65   11    1   954  245  686    36 2176  183     3 1871  215
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    65   11    1   954  245  686    36 2176  183     3 1871  215
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   65   11    1   954  245  686    36 2176  183     3 1871  215
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   65   11    1  1049  245  686    36 2176  183     3 1871  215
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.84 0.15 0.01  1.62 0.38 1.00  1.00 2.77 0.23  1.00 2.00 1.00
Final Sat.:  1153  202   20  2230  520 1375  1375 3806  319  1375 2750 1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.06 0.06  0.47 0.47 0.50  0.03 0.57 0.57  0.00 0.68 0.16
Crit Volume:        78        647              36                   935
Crit Moves:       ****       ****            ****                 ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
********************************************************************************
Cycle (sec):        100               Critical Vol./Cap.(X):        0.850
Loss Time (sec):      0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      124               Level Of Service:                 D
********************************************************************************
Street Name:          I-405 NB Ramps                 Victory Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Protected        Permitted
Rights:           Include           Ovl            Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  0  0  0   1  0  1! 0  1   1  0  2  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    0   219    0  227   297 2415    0     0 1583  585
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:    0    0    0   252    0  261   341 2775    0     0 1819  672
Added Vol:      0    0    0     0    0    4     8    0    0     0    3    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    0    0    0   252    0  265   349 2775    0     0 1822  672
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     0    0    0   252    0  265   349 2775    0     0 1822  672
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0    0   252    0  265   349 2775    0     0 1822  672
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.10 1.00 1.10  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0    0    0   277    0  291   349 2775    0     0 1822  672
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 0.00  1.46 0.01 1.53  1.00 3.00 0.00  0.00 3.00 1.00
Final Sat.:     0    0    0  2083    0 2192  1425 4275    0     0 4275 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.00  0.13 0.00 0.13  0.25 0.65 0.00  0.00 0.43 0.47
Crit Volume:              0   189             349                        672
Crit Moves:                  ****            ****                       ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.733
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        70              Level Of Service:                  C
********************************************************************************
Street Name:               I-5 SB Ramps                   Osborne Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted         Permitted         Permitted
Rights:           Include           Include           Include           Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        0  0  0  0  1    1  0  0  1  0    0  0  2  1  0    1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0     2   197   22   259     0 1765    64    19  843   527
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:    0    0     2   226   25   298     0 2028    74    22  969   606
Added Vol:      0    0     0     3    0     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:    0    0     2   229   25   298     0 2028    74    22  969   606
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:     0    0     2   229   25   298     0 2028    74    22  969   606
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:    0    0     2   229   25   298     0 2028    74    22  969   606
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:    0    0     2   229   25   298     0 2028    74    22  969   606
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       0.00 0.00  1.00  1.00 0.08  0.92  0.00 2.90  0.10  1.00 2.00  1.00
Final Sat.:     0    0  1425  1425  112  1313     0 4125   150  1425 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00  0.16 0.23  0.23  0.00 0.49  0.49  0.02 0.34  0.42
Crit Volume:    0                         323        701          22
Crit Moves:  ****                        ****       ****        ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project AM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.724
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        67              Level Of Service:                  C
********************************************************************************
Street Name:               I-5 NB Ramps                   Osborne Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted         Protected         Permitted         Permitted
Rights:           Include           Include           Include           Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  0  1  0    0  0  0  0  1    0  0  1  1  0    0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     233    0   269     0    0     1     0  762   490     0 1152   495
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  268    0   309     0    0     1     0  876   563     0 1324   569
Added Vol:      0    0     0     0    0     0     0    3     0     2    0     2
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  268    0   309     0    0     1     0  879   563     2 1324   571
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   268    0   309     0    0     1     0  879   563     2 1324   571
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  268    0   309     0    0     1     0  879   563     2 1324   571
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  4.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  268    0   309     0    0     1     0  879   563     8 1324   571
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 0.00  1.00  0.00 0.00  1.00  0.00 1.22  0.78  0.01 2.09  0.90
Final Sat.:  1425    0  1425     0    0  1425     0 1737  1113    18 2974  1283
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.19 0.00  0.22  0.00 0.00  0.00  0.00 0.51  0.51  0.11 0.45  0.45
Crit Volume:              309     0                  721           2
Crit Moves:              ****  ****                 ****        ****
********************************************************************************
```

```
-------------------------------------------------------------------------------
                 LADWP Groundwater Replenishment EIR
                    VGS - Future With Project AM
-------------------------------------------------------------------------------
                 Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #7 San Fernando Road / Osborne Street
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.751
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      132              Level Of Service:                 C
********************************************************************************
Street Name:         San Fernando Road                 Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected        Protected        Protected
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     27  227    41  138  807    54   64  568    62   85  754   107
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  31  261    47  159  927    62   74  653    71   98  866   123
Added Vol:     0    1     0    0   12     0    0    3     0    0    3     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  31  262    47  159  939    62   74  656    71   98  869   123
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   31  262    47  159  939    62   74  656    71   98  869   123
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  31  262    47  159  939    62   74  656    71   98  869   123
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  31  262    47  159  939    62   74  656    71   98  869   123
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 1.70  0.30 1.00 1.88  0.12 1.00 1.80  0.20 1.00 1.75  0.25
Final Sat.: 1425 2415   435 1425 2673   177 1425 2571   279 1425 2497   353
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.02 0.11  0.11 0.11 0.35  0.35 0.05 0.26  0.26 0.07 0.35  0.35
Crit Volume:       154             501          74                       496
Crit Moves:                       ****        ****                      ****
********************************************************************************
```



```
-------------------------------------------------------------------------------
                 LADWP Groundwater Replenishment EIR
                    VGS - Future With Project AM
-------------------------------------------------------------------------------
                 Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #8 Glenoaks Boulevard / Osborne Street
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        1.153
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180              Level Of Service:                 F
********************************************************************************
Street Name:         Glenoaks Boulevard                Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:          Include          Include            Ovl            Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  2  0  1    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     34  410   240   88 1075   181  249  401    76  601  627    26
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  39  471   276  101 1235   208  286  461    87  691  720    30
Added Vol:     3    0     0    0    3     0    0    0     3    3    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  42  471   276  101 1238   208  286  461    90  694  720    30
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   42  471   276  101 1238   208  286  461    90  694  720    30
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  42  471   276  101 1238   208  286  461    90  694  720    30
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  42  471   276  101 1238   208  286  461    90  694  720    30
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 2.00  1.00 1.00 1.92  0.08
Final Sat.: 1375 2750  1375 1375 2750  1375 1375 2750  1375 1375 2641   109
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.03 0.17  0.20 0.07 0.45  0.15 0.21 0.17  0.07 0.50 0.27  0.27
Crit Volume:  42                    619              230        694
Crit Moves: ****                   ****             ****       ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                      VGS - Future With Project AM
--------------------------------------------------------------------------------
                  Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.858
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       102              Level Of Service:                  D
********************************************************************************
Street Name:        Glenoaks Boulevard                Sheldon Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     96  427    71   72 1053   402  214  288   126  106  460    97
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 110  491    82   83 1210   462  246  331   145  122  529   111
Added Vol:     3    1     0    0    1     6    2    0     1    0    2     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 113  492    82   83 1211   468  248  331   146  122  531   111
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  113  492    82   83 1211   468  248  331   146  122  531   111
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 113  492    82   83 1211   468  248  331   146  122  531   111
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 113  492    82   83 1211   468  248  331   146  122  531   111
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 1.39  0.61 1.00 1.65  0.35
Final Sat.: 1500 3000  1500 1500 3000  1500 1500 2083   917 1500 2479   521
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.08 0.16  0.05 0.06 0.40  0.31 0.17 0.16  0.16 0.08 0.21  0.21
Crit Volume: 113                   605        248                    321
Crit Moves: ****                  ****       ****                   ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                      VGS - Future With Project AM
--------------------------------------------------------------------------------
                  Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.499
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        29              Level Of Service:                  A
********************************************************************************
Street Name:        Glenoaks Boulevard                  Penrose Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  0  1  0    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     30  503     4   41  792   134  135  125    42   12   90    40
Growth Adj: 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  34  578     5   47  910   154  155  144    48   14  103    46
Added Vol:     0    3     0    0    0     1    1    0     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  34  581     5   47  910   155  156  144    48   14  103    46
User Adj:   1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   34  581     5   47  910   155  156  144    48   14  103    46
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  34  581     5   47  910   155  156  144    48   14  103    46
PCE Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  34  581     5   47  910   155  156  144    48   14  103    46
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment: 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:      1.00 2.00  1.00 1.00 2.00  1.00 1.00 0.75  0.25 1.00 1.00  1.00
Final Sat.: 1500 3000  1500 1500 3000  1500 1500 1123   377 1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.02 0.19  0.00 0.03 0.30  0.10 0.10 0.13  0.13 0.01 0.07  0.03
Crit Volume:  34                   455        156                    103
Crit Moves: ****                  ****       ****                   ****
********************************************************************************
```

```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                      VGS - Future With Project AM
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.684
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       59              Level Of Service:                 B
*****************************************************************************
Street Name:            Arleta Avenue                Devonshire Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected         Permitted      Prot+Permit        Permitted
Rights:          Include            Ovl            Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       0  0  0  0  0   1  0  1! 0  1   1  0  2  0  0   0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0     0  418    0   337  296  805     0    0  531   271
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:   0    0     0  480    0   387  340  925     0    0  610   311
Added Vol:     0    0     0    3    0     6    2    0     0    0    5     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   0    0     0  483    0   393  342  925     0    0  615   311
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    0    0     0  483    0   393  342  925     0    0  615   311
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   0    0     0  483    0   393  342  925     0    0  615   311
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.10 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   0    0     0  532    0   433  342  925     0    0  615   311
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       0.00 0.00  0.00 1.65 xxxx  1.35 1.00 2.00  0.00 0.00 2.00  1.00
Final Sat.:    0    0     0 2357    0  1918 1425 2850     0    0 2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00  0.00 0.23 0.00  0.23 0.24 0.32  0.00 0.00 0.22  0.22
Crit Volume:   0              321             342                          311
Crit Moves:                  ****            ****                         ****
*****************************************************************************
```



```
-----------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                      VGS - Future With Project AM
-----------------------------------------------------------------------------
                   Level Of Service Computation Report
         Circular 212 Planning Method (Future Volume Alternative)
*****************************************************************************
Intersection #12 Arleta Avenue / Branford Street
*****************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.984
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180              Level Of Service:                 E
*****************************************************************************
Street Name:            Arleta Avenue                 Branford Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0    0    0     0    0    0     0    0    0     0
Y+R:         4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:       1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    123  543    95  122  982   141  134  485   376  165  615   100
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse: 141  624   109  140 1128   162  154  557   432  190  707   115
Added Vol:     0    2     0    0    6     0    0    5     0    0    0     0
PasserByVol:   0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut: 141  626   109  140 1134   162  154  562   432  190  707   115
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:  141  626   109  140 1134   162  154  562   432  190  707   115
Reduct Vol:    0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol: 141  626   109  140 1134   162  154  562   432  190  707   115
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume: 141  626   109  140 1134   162  154  562   432  190  707   115
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.70  0.30 1.00 1.75  0.25 1.00 1.13  0.87 1.00 1.72  0.28
Final Sat.:  1500 2555   445 1500 2625   375 1500 1696  1304 1500 2580   420
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.25  0.25 0.09 0.43  0.43 0.10 0.33  0.33 0.13 0.27  0.27
Crit Volume: 141                          648              497  190
Crit Moves:  ****                        ****             **** ****
*****************************************************************************
```

```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                      VGS - Future With Project AM
---------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        1.023
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      180              Level Of Service:                 F
***************************************************************************
Street Name:           Arleta Avenue                Van Nuys Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  2  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     173  577    82   238  670   145   118 1054   136    59  928   136
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  199  663    94   273  770   167   136 1211   156    68 1066   156
Added Vol:      0    2     0     0    3     0     0    0     1     2    0     3
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  199  665    94   273  773   167   136 1211   157    70 1066   159
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   199  665    94   273  773   167   136 1211   157    70 1066   159
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  199  665    94   273  773   167   136 1211   157    70 1066   159
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  199  665    94   273  773   167   136 1211   157    70 1066   159
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375  1375 1375  1375  1375 1375  1375  1375 1375  1375
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.75  0.25  1.00 2.00  1.00  1.00 1.77  0.23  1.00 1.74  0.26
Final Sat.:  1375 2409   341  1375 2750  1375  1375 2434   316  1375 2393   357
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.14 0.28  0.28  0.20 0.28  0.12  0.10 0.50  0.50  0.05 0.45  0.45
Crit Volume:             380   273                         684    70
Crit Moves:             ****  ****                        ****  ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                   LADWP Groundwater Replenishment EIR
                      VGS - Future With Project AM
---------------------------------------------------------------------------
                   Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
***************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):        0.896
Loss Time (sec):      0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:      138              Level Of Service:                 D
***************************************************************************
Street Name:           Arleta Avenue                 Terra Bella Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0     0    0     0     0    0     0     0    0     0
Y+R:          4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     166  593    99   118  662    51    82  894   209    93  676   118
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  191  681   114   136  761    59    94 1027   240   107  777   136
Added Vol:      0    2     0     0    6     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  191  683   114   136  767    59    94 1027   240   107  777   136
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   191  683   114   136  767    59    94 1027   240   107  777   136
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  191  683   114   136  767    59    94 1027   240   107  777   136
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  191  683   114   136  767    59    94 1027   240   107  777   136
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.71  0.29  1.00 1.86  0.14  1.00 1.62  0.38  1.00 1.70  0.30
Final Sat.:  1500 2572   428  1500 2787   213  1500 2432   568  1500 2554   446
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.13 0.27  0.27  0.09 0.28  0.28  0.06 0.42  0.42  0.07 0.30  0.30
Crit Volume:  191                   413                    634   107
Crit Moves:  ****                  ****                   ****  ****
***************************************************************************
```

```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                     VGS - Future With Project AM
---------------------------------------------------------------------------
                  Level Of Service Computation Report
        Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        1.046
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180              Level Of Service:                 F
***************************************************************************
Street Name:           Arleta Avenue                  Osborne Street
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  545  238  120  857   55   64 1128  175  129 1036  171
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:  145  626  273  138  985   63   74 1296  201  148 1190  196
Added Vol:      0    2    0    0    6    0    0    0    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  145  628  273  138  991   63   74 1296  201  148 1190  196
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   145  628  273  138  991   63   74 1296  201  148 1190  196
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  145  628  273  138  991   63   74 1296  201  148 1190  196
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:  145  628  273  138  991   63   74 1296  201  148 1190  196
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500 1500 1500 1500 1500 1500 1500 1500 1500 1500 1500
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       1.00 1.39 0.61 1.00 1.88 0.12 1.00 1.73 0.27 1.00 1.72 0.28
Final Sat.:  1500 2090  910 1500 2820  180 1500 2597  403 1500 2575  425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.30 0.30 0.09 0.35 0.35 0.05 0.50 0.50 0.10 0.46 0.46
Crit Volume:  145                      527       749       148
Crit Moves:  ****                     ****      ****      ****
***************************************************************************
```



```
---------------------------------------------------------------------------
                  LADWP Groundwater Replenishment EIR
                     VGS - Future With Project AM
---------------------------------------------------------------------------
                  Level Of Service Computation Report
        Circular 212 Planning Method (Future Volume Alternative)
***************************************************************************
Intersection #16 Laurel Canyon Boulevard / Branford Street
***************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.993
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180              Level Of Service:                 E
***************************************************************************
Street Name:     Laurel Canyon Boulevard              Branford Street
Approach:      North Bound      South Bound      East Bound      West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0    0    0    0    0    0    0    0    0    0    0
Y+R:         4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0  4.0
Lanes:        2  0  1  1  0   2  0  1  1  0   1  0  1  1  0   1  0  0  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     125  397  146  120  854  175   62  399  146  106  469  116
Growth Adj:  1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15 1.15
Initial Bse:  144  456  168  138  981  201   71  458  168  122  539  133
Added Vol:      0    0    0    1    3    0    0    5    0    0    0    0
PasserByVol:    0    0    0    0    0    0    0    0    0    0    0    0
Initial Fut:  144  456  168  139  984  201   71  463  168  122  539  133
User Adj:    1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
PHF Volume:   144  456  168  139  984  201   71  463  168  122  539  133
Reduct Vol:     0    0    0    0    0    0    0    0    0    0    0    0
Reduced Vol:  144  456  168  139  984  201   71  463  168  122  539  133
PCE Adj:     1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
MLF Adj:     1.10 1.00 1.00 1.10 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
FinalVolume:  158  456  168  153  984  201   71  463  168  122  539  133
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425 1425
Adjustment:  1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00
Lanes:       2.00 1.46 0.54 2.00 1.66 0.34 1.00 1.47 0.53 1.00 0.80 0.20
Final Sat.:  2850 2084  766 2850 2367  483 1425 2093  757 1425 1142  283
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.06 0.22 0.22 0.05 0.42 0.42 0.05 0.22 0.22 0.09 0.47 0.47
Crit Volume:   79                      593   71                       672
Crit Moves:  ****                     **** ****                      ****
***************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project AM
--------------------------------------------------------------------------------
                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #17 San Fernando Road / Branford Street
********************************************************************************
Cycle (sec):         100               Critical Vol./Cap.(X):        0.789
Loss Time (sec):       0               Average Delay (sec/veh):     xxxxxx
Optimal Cycle:       180               Level Of Service:                 C
********************************************************************************
Street Name:        San Fernando Road                 Branford Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:    L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  0  1   0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      51  262   112   49  850    84   30  240   203   75  190    28
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:   59  301   129   56  977    97   34  276   233   86  218    32
Added Vol:      0    1     4    5    7     0    0    4     1    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:   59  302   133   61  984    97   34  280   234   86  218    32
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:    59  302   133   61  984    97   34  280   234   86  218    32
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:   59  302   133   61  984    97   34  280   234   86  218    32
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:   59  302   133   61  984    97   34  280   234   86  218    32
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425  1425
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.39  0.61 1.00 1.82  0.18 1.00 1.00  1.00 0.28 0.72  1.00
Final Sat.:  1425 1980   870 1425 2595   255 1425 1425  1425  403 1022  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.04 0.15  0.15 0.04 0.38  0.38 0.02 0.20  0.16 0.21 0.21  0.02
Crit Volume:       217              540              280              304
Crit Moves:                        ****             ****             ****
********************************************************************************
```

LADWP Groundwater Replenishment EIR
VGS - Future With Project PM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #1 Woodley Avenue / Victory Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	1.132
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Woodley Avenue						Victory Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	0 1	1 0	2	0 1	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	342	801	199	212	240	142	97	1909	96	123	1774	200
Growth Adj:	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Initial Bse:	393	920	229	244	276	163	111	2193	110	141	2038	230
Added Vol:	0	0	0	0	0	0	0	0	0	0	1	1
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	393	920	229	244	276	163	111	2193	110	141	2039	231
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	393	920	229	244	276	163	111	2193	110	141	2039	231
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	393	920	229	244	276	163	111	2193	110	141	2039	231
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	393	920	229	244	276	163	111	2193	110	141	2039	231
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.86	0.14	1.00	2.69	0.31
Final Sat.:	1425	2850	1425	1425	2850	1425	1425	4070	205	1425	3840	435
Capacity Analysis Module:												
Vol/Sat:	0.28	0.32	0.16	0.17	0.10	0.11	0.08	0.54	0.54	0.10	0.53	0.53
Crit Volume:		460		244				768		141		
Crit Moves:		****		****				****		****		

LADWP Groundwater Replenishment EIR
VGS - Future With Project PM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #2 Densmore Avenue / Victory Boulevard

Cycle (sec):	100	Critical Vol./Cap.(X):	0.669
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	56	Level Of Service:	B

Street Name:	Densmore Avenue						Victory Boulevard					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Split Phase			Split Phase			Permitted			Permitted		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	0 0	1!	0 0	0 0	1!	0 0	1 0	2	1 0	1 0	2	1 0
Volume Module:												
Base Vol:	1	0	1	33	0	9	12	2253	6	7	2083	43
Growth Adj:	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Initial Bse:	1	0	1	38	0	10	14	2589	7	8	2393	49
Added Vol:	2	0	17	0	0	0	0	0	0	10	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	3	0	18	38	0	10	14	2589	7	18	2393	49
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	3	0	18	38	0	10	14	2589	7	18	2393	49
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	3	0	18	38	0	10	14	2589	7	18	2393	49
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	3	0	18	38	0	10	14	2589	7	18	2393	49
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	0.15	0.00	0.85	0.79	0.00	0.21	1.00	2.99	0.01	1.00	2.94	0.06
Final Sat.:	211	0	1214	1120	0	305	1425	4264	11	1425	4189	86
Capacity Analysis Module:												
Vol/Sat:	0.01	0.00	0.01	0.03	0.00	0.03	0.01	0.61	0.61	0.01	0.57	0.57
Crit Volume:			21			48			865	18		
Crit Moves:			****			****			****	****		

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                       VGS - Future With Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #3 Haskell Avenue / Victory Boulevard
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.201
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
********************************************************************************
Street Name:          Haskell Avenue                  Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:      Split Phase      Split Phase       Protected        Protected
Rights:          Include           Ovl            Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  1! 0  0   1  1  0  0  1   1  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    117   44   26   598   45  441   100 1763   55     4 1594  381
Growth Adj: 1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse: 134   51   30   687   52  507   115 2026   63     5 1832  438
Added Vol:     0    0    0     0    0    8     0   12    0     0    3    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut: 134   51   30   687   52  515   115 2038   63     5 1835  438
User Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:  134   51   30   687   52  515   115 2038   63     5 1835  438
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol: 134   51   30   687   52  515   115 2038   63     5 1835  438
PCE Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00  1.10 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume: 134   51   30   756   52  515   115 2038   63     5 1835  438
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1375 1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375
Adjustment: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:      0.63 0.23 0.14  1.87 0.13 1.00  1.00 2.91 0.09  1.00 2.00 1.00
Final Sat.:  860  324  191  2574  176 1375  1375 4001  124  1375 2750 1375
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.16 0.16 0.16  0.29 0.29 0.37  0.08 0.51 0.51  0.00 0.67 0.32
Crit Volume:      215         404              115                  917
Crit Moves:      ****        ****             ****                 ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                       VGS - Future With Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #4 I-405 NB Ramps / Victory Boulevard
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.880
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       155              Level Of Service:                  D
********************************************************************************
Street Name:          I-405 NB Ramps                  Victory Boulevard
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Protected        Protected        Protected        Permitted
Rights:          Include           Ovl            Include          Include
Min. Green:    0    0    0     0    0    0     0    0    0     0    0    0
Y+R:         4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:        0  0  0  0  0   1  0  1! 0  1   1  0  2  1  0   0  0  3  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0    0    0   265    0  405   306 2127    0     0 1562  531
Growth Adj: 1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:   0    0    0   304    0  465   352 2444    0     0 1795  610
Added Vol:     0    0    0     0    0    3     9    3    0     0    0    0
PasserByVol:   0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:   0    0    0   304    0  468   361 2447    0     0 1795  610
User Adj:   1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:    0    0    0   304    0  468   361 2447    0     0 1795  610
Reduct Vol:    0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:   0    0    0   304    0  468   361 2447    0     0 1795  610
PCE Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:    1.00 1.00 1.00  1.10 1.00 1.10  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:   0    0    0   335    0  515   361 2447    0     0 1795  610
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment: 1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:      0.00 0.00 0.00  1.18 0.00 1.82  1.00 3.00 0.00  0.00 3.00 1.00
Final Sat.:    0    0    0  1684    0 2591  1425 4275    0     0 4275 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00 0.00 0.00  0.20 0.00 0.20  0.25 0.57 0.00  0.00 0.42 0.43
Crit Volume:        0         283              361                        610
Crit Moves:                  ****             ****                       ****
********************************************************************************
```

```
Future With Project PM     Wed Mar 30, 2016 14:01:39            Page 10-1
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #5 I-5 SB Ramps / Osborne Street
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         0.879
Loss Time (sec):      0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      154              Level Of Service:                  D
********************************************************************************
Street Name:             I-5 SB Ramps                   Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted        Permitted        Permitted
Rights:           Include           Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         0  0  0  0  1   1  0  0  1  0   0  0  2  1  0   1  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:       0    0    9   446   23  574     0 1365   46    23  892  211
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:    0    0   10   512   26  660     0 1568   53    26 1025  242
Added Vol:      0    0    0     3    0    0     0    0    0     0    0    0
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:    0    0   10   515   26  660     0 1568   53    26 1025  242
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:     0    0   10   515   26  660     0 1568   53    26 1025  242
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:    0    0   10   515   26  660     0 1568   53    26 1025  242
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:    0    0   10   515   26  660     0 1568   53    26 1025  242
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       0.00 0.00 1.00  1.00 0.04 0.96  0.00 2.90 0.10  1.00 2.00 1.00
Final Sat.:     0    0 1425  1425   55 1370     0 4136  139  1425 2850 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.00 0.00 0.01  0.36 0.48 0.48  0.00 0.38 0.38  0.02 0.36 0.17
Crit Volume:    0                         686              540    26
Crit Moves:  ****                        ****             ****  ****
********************************************************************************

  Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK
```

```
Future With Project PM     Wed Mar 30, 2016 14:01:39            Page 11-1
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #6 I-5 NB Ramps / Osborne Street
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         0.868
Loss Time (sec):      0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      141              Level Of Service:                  D
********************************************************************************
Street Name:             I-5 NB Ramps                   Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Protected        Permitted        Permitted
Rights:           Include           Include          Include          Include
Min. Green:     0    0    0     0    0    0     0    0    0     0    0    0
Y+R:          4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0
Lanes:         1  0  0  1  0   0  0  0  0  0   0  1  0  1  0   0  1  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     310    0  261     0    0    0     3 1103  412     0  815  495
Growth Adj:  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15
Initial Bse:  356    0  300     0    0    0     3 1267  473     0  936  569
Added Vol:      0    0    0     0    0    0     0    3    0     2    0    2
PasserByVol:    0    0    0     0    0    0     0    0    0     0    0    0
Initial Fut:  356    0  300     0    0    0     3 1270  473     2  936  571
User Adj:    1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
PHF Volume:   356    0  300     0    0    0     3 1270  473     2  936  571
Reduct Vol:     0    0    0     0    0    0     0    0    0     0    0    0
Reduced Vol:  356    0  300     0    0    0     3 1270  473     2  936  571
PCE Adj:     1.00 1.00 1.00  1.00 1.00 1.00  4.00 1.00 1.00  6.00 1.00 1.00
MLF Adj:     1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
FinalVolume:  356    0  300     0    0    0    14 1270  473    12  936  571
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425 1425  1425 1425 1425  1425 1425 1425  1425 1425 1425
Adjustment:  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00
Lanes:       1.00 0.00 1.00  0.00 0.00 0.00  0.01 1.45 0.54  0.02 1.98 1.00
Final Sat.:  1425    0 1425     0    0    0     6 2077  768    34 2816 1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.25 0.00 0.21  0.00 0.00 0.00  0.61 0.61 0.62  0.06 0.33 0.40
Crit Volume:  356               0                          879     2
Crit Moves:  ****                                         ****  ****
********************************************************************************

  Traffix 8.0.0715 (c) 2008 Dowling Assoc. Licensed to KOA CORP, MONTEREY PK
```

LADWP Groundwater Replenishment EIR
VGS - Future With Project PM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #7 San Fernando Road / Osborne Street

Cycle (sec):	100	Critical Vol./Cap.(X):	0.820
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	103	Level Of Service:	D

Street Name:	San Fernando Road						Osborne Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Permitted			Protected			Protected			Protected		
Rights:	Include			Include			Include			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0	1 0	1	1 0
Volume Module:												
Base Vol:	66	581	98	166	417	83	93	637	51	58	644	179
Growth Adj:	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Initial Bse:	76	668	113	191	479	95	107	732	59	67	740	206
Added Vol:	0	12	0	0	1	0	0	3	0	0	3	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	76	680	113	191	480	95	107	735	59	67	743	206
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	76	680	113	191	480	95	107	735	59	67	743	206
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	76	680	113	191	480	95	107	735	59	67	743	206
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	76	680	113	191	480	95	107	735	59	67	743	206
Saturation Flow Module:												
Sat/Lane:	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425	1425
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	1.72	0.28	1.00	1.67	0.33	1.00	1.85	0.15	1.00	1.57	0.43
Final Sat.:	1425	2445	405	1425	2378	472	1425	2640	210	1425	2232	618
Capacity Analysis Module:												
Vol/Sat:	0.05	0.28	0.28	0.13	0.20	0.20	0.07	0.28	0.28	0.05	0.33	0.33
Crit Volume:			396	191			107				474	
Crit Moves:			****	****			****				****	

LADWP Groundwater Replenishment EIR
VGS - Future With Project PM

Level Of Service Computation Report
Circular 212 Planning Method (Future Volume Alternative)

Intersection #8 Glenoaks Boulevard / Osborne Street

Cycle (sec):	100	Critical Vol./Cap.(X):	1.100
Loss Time (sec):	0	Average Delay (sec/veh):	xxxxxx
Optimal Cycle:	180	Level Of Service:	F

Street Name:	Glenoaks Boulevard						Osborne Street					
Approach:	North Bound			South Bound			East Bound			West Bound		
Movement:	L	T	R	L	T	R	L	T	R	L	T	R
Control:	Prot+Permit			Prot+Permit			Prot+Permit			Prot+Permit		
Rights:	Include			Include			Ovl			Include		
Min. Green:	0	0	0	0	0	0	0	0	0	0	0	0
Y+R:	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0	4.0
Lanes:	1 0	2	0 1	1 0	2	0 1	1 0	2	0 1	1 0	1	1 0
Volume Module:												
Base Vol:	70	930	653	98	412	142	231	576	27	275	360	31
Growth Adj:	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15	1.15
Initial Bse:	80	1069	750	113	473	163	265	662	31	316	414	36
Added Vol:	3	3	3	0	0	0	0	0	3	0	0	0
PasserByVol:	0	0	0	0	0	0	0	0	0	0	0	0
Initial Fut:	83	1072	753	113	473	163	265	662	34	316	414	36
User Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
PHF Volume:	83	1072	753	113	473	163	265	662	34	316	414	36
Reduct Vol:	0	0	0	0	0	0	0	0	0	0	0	0
Reduced Vol:	83	1072	753	113	473	163	265	662	34	316	414	36
PCE Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
MLF Adj:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
FinalVolume:	83	1072	753	113	473	163	265	662	34	316	414	36
Saturation Flow Module:												
Sat/Lane:	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375	1375
Adjustment:	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Lanes:	1.00	2.00	1.00	1.00	2.00	1.00	1.00	2.00	1.00	1.00	1.84	0.16
Final Sat.:	1375	2750	1375	1375	2750	1375	1375	2750	1375	1375	2532	218
Capacity Analysis Module:												
Vol/Sat:	0.06	0.39	0.55	0.08	0.17	0.12	0.19	0.24	0.02	0.23	0.16	0.16
Crit Volume:			753	113				331		316		
Crit Moves:			****	****				****		****		

```
-------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                       VGS - Future With Project PM
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #9 Glenoaks Boulevard / Sheldon Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.847
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        94              Level Of Service:                 D
********************************************************************************
Street Name:        Glenoaks Boulevard                 Sheldon Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     117 1006    80    95  608   223   360  379   139    42  221    62
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse: 134 1156    92   109  699   256   414  435   160    48  254    71
Added Vol:      1    1     0     0    1     2     6    2     3     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut: 135 1157    92   109  700   258   420  437   163    48  254    71
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   135 1157    92   109  700   258   420  437   163    48  254    71
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  135 1157    92   109  700   258   420  437   163    48  254    71
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  135 1157    92   109  700   258   420  437   163    48  254    71
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 1.46  0.54  1.00 1.56  0.44
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 2187   813  1500 2343   657
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.09 0.39  0.06  0.07 0.23  0.17  0.28 0.20  0.20  0.03 0.11  0.11
Crit Volume:       578         109               420                     163
Crit Moves:       ****        ****              ****                    ****
********************************************************************************
```



```
-------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                       VGS - Future With Project PM
-------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #10 Glenoaks Boulevard / Penrose Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):        0.485
Loss Time (sec):       0              Average Delay (sec/veh):     xxxxxx
Optimal Cycle:        28              Level Of Service:                 A
********************************************************************************
Street Name:        Glenoaks Boulevard                 Penrose Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:         Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  2  0  1    1  0  2  0  1    1  0  0  1  0    1  0  1  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      39  622    12    30  664   118   194  153    52     6   66    64
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:   45  715    14    34  763   136   223  176    60     7   76    74
Added Vol:      0    0     0     0    3     1     1    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:   45  715    14    34  766   137   224  176    60     7   76    74
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:    45  715    14    34  766   137   224  176    60     7   76    74
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:   45  715    14    34  766   137   224  176    60     7   76    74
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:   45  715    14    34  766   137   224  176    60     7   76    74
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 2.00  1.00  1.00 2.00  1.00  1.00 0.75  0.25  1.00 1.00  1.00
Final Sat.:  1500 3000  1500  1500 3000  1500  1500 1120   380  1500 1500  1500
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.03 0.24  0.01  0.02 0.26  0.09  0.15 0.16  0.16  0.00 0.05  0.05
Crit Volume:   45                    383         224                     76
Crit Moves:  ****                   ****        ****                   ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                       VGS - Future With Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #11 Arleta Avenue / Devonshire Street
********************************************************************************
Cycle (sec):         100            Critical Vol./Cap.(X):         0.867
Loss Time (sec):       0            Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       140            Level Of Service:                  D
********************************************************************************
Street Name:            Arleta Avenue                 Devonshire Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Protected         Permitted       Prot+Permit        Permitted
Rights:           Include            Ovl             Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        0  0  0  0  0    1  0  1! 0  1    1  0  2  0  0    0  0  2  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:      0     0     0  178     0   357  524   511     0    0   501   348
Growth Adj: 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15
Initial Bse:   0     0     0  205     0   410  602   587     0    0   576   400
Added Vol:     0     0     0    0     0     2    6     5     0    0     0     3
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut:   0     0     0  205     0   412  608   592     0    0   576   403
User Adj:   1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:    0     0     0  205     0   412  608   592     0    0   576   403
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol:   0     0     0  205     0   412  608   592     0    0   576   403
PCE Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:    1.00  1.00  1.00 1.10  1.00  1.10 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume:   0     0     0  225     0   453  608   592     0    0   576   403
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425  1425
Adjustment: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:      0.00  0.00  0.00 1.00  0.00  2.00 1.00  2.00  0.00 0.00  2.00  1.00
Final Sat.:    0     0     0 1425     0  2850 1425  2850     0    0  2850  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.00  0.00  0.00 0.16  0.00  0.16 0.43  0.21  0.00 0.00  0.20  0.28
Crit Volume:   0              225               608                          403
Crit Moves:                  ****              ****                         ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                    LADWP Groundwater Replenishment EIR
                       VGS - Future With Project PM
--------------------------------------------------------------------------------
                    Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #12 Arleta Avenue / Branford Street
********************************************************************************
Cycle (sec):         100            Critical Vol./Cap.(X):         0.994
Loss Time (sec):       0            Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180            Level Of Service:                  E
********************************************************************************
Street Name:            Arleta Avenue                  Branford Street
Approach:       North Bound      South Bound       East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted         Permitted         Permitted        Permitted
Rights:           Include          Include           Include          Include
Min. Green:    0     0     0    0     0     0    0     0     0    0     0     0
Y+R:         4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:    209  1035   106   78   421   106  165   484   149  136   741   217
Growth Adj: 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15
Initial Bse: 240  1189   122   90   484   122  190   556   171  156   851   249
Added Vol:     0     6     0    0     2     0    0     0     0    0     5     0
PasserByVol:   0     0     0    0     0     0    0     0     0    0     0     0
Initial Fut: 240  1195   122   90   486   122  190   556   171  156   856   249
User Adj:   1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
PHF Volume:  240  1195   122   90   486   122  190   556   171  156   856   249
Reduct Vol:    0     0     0    0     0     0    0     0     0    0     0     0
Reduced Vol: 240  1195   122   90   486   122  190   556   171  156   856   249
PCE Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
MLF Adj:    1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
FinalVolume: 240  1195   122   90   486   122  190   556   171  156   856   249
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:   1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500  1500
Adjustment: 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00
Lanes:      1.00  1.82  0.18 1.00  1.60  0.40 1.00  1.53  0.47 1.00  1.55  0.45
Final Sat.: 1500  2723   277 1500  2399   601 1500  2294   706 1500  2324   676
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:    0.16  0.44  0.44 0.06  0.20  0.20 0.13  0.24  0.24 0.10  0.37  0.37
Crit Volume:             659   90               190                    553
Crit Moves:             **** ****              ****                   ****
********************************************************************************
```

```
---------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project PM
---------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*********************************************************************************
Intersection #13 Arleta Avenue / Van Nuys Boulevard
*********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         1.044
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  F
*********************************************************************************
Street Name:          Arleta Avenue                Van Nuys Boulevard
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:       Prot+Permit      Prot+Permit      Prot+Permit      Prot+Permit
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  2  0  1   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     126  627   114  157  401   122  159 1204   107   62  883   146
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  145  720   131  180  461   140  183 1383   123   71 1015   168
Added Vol:      1    3     2    3    2     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  146  723   133  183  463   140  183 1383   123   71 1015   168
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   146  723   133  183  463   140  183 1383   123   71 1015   168
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  146  723   133  183  463   140  183 1383   123   71 1015   168
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  146  723   133  183  463   140  183 1383   123   71 1015   168
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1375 1375  1375 1375 1375  1375 1375 1375  1375 1375 1375  1375
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.69  0.31 1.00 2.00  1.00 1.00 1.84  0.16 1.00 1.72  0.28
Final Sat.:  1375 2323   427 1375 2750  1375 1375 2526   224 1375 2360   390
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.11 0.31  0.31 0.13 0.17  0.10 0.13 0.55  0.55 0.05 0.43  0.43
Crit Volume:             428  183                    753         71
Crit Moves:             ****  ****                  ****       ****
*********************************************************************************
```



```
---------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project PM
---------------------------------------------------------------------------------
                     Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
*********************************************************************************
Intersection #14 Arleta Avenue / Terra Bella Street
*********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.773
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:        63              Level Of Service:                  C
*********************************************************************************
Street Name:          Arleta Avenue                Terra Bella Street
Approach:       North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:           Include          Include          Include          Include
Min. Green:     0    0    0    0    0    0    0    0    0    0    0    0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  1  0   1  0  1  1  0
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     275  749    99   90  364    60   54  710   125   75  594    67
Growth Adj:  1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15 1.15 1.15  1.15
Initial Bse:  316  861   114  103  418    69   62  816   144   86  683    77
Added Vol:      0    6     0    0    2     0    0    0     0    0    0     0
PasserByVol:    0    0     0    0    0     0    0    0     0    0    0     0
Initial Fut:  316  867   114  103  420    69   62  816   144   86  683    77
User Adj:    1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
PHF Volume:   316  867   114  103  420    69   62  816   144   86  683    77
Reduct Vol:     0    0     0    0    0     0    0    0     0    0    0     0
Reduced Vol:  316  867   114  103  420    69   62  816   144   86  683    77
PCE Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
FinalVolume:  316  867   114  103  420    69   62  816   144   86  683    77
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500 1500 1500  1500 1500 1500  1500 1500 1500  1500
Adjustment:  1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00 1.00 1.00  1.00
Lanes:       1.00 1.77  0.23 1.00 1.72  0.28 1.00 1.70  0.30 1.00 1.80  0.20
Final Sat.:  1500 2652   348 1500 2577   423 1500 2551   449 1500 2696   304
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.21 0.33  0.33 0.07 0.16  0.16 0.04 0.32  0.32 0.06 0.25  0.25
Crit Volume:       490         103                    480         86
Crit Moves:       ****        ****                   ****        ****
*********************************************************************************
```

```
--------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                         VGS - Future With Project PM
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #15 Arleta Avenue / Osborne Street
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         1.081
Loss Time (sec):      0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180              Level Of Service:                  F
********************************************************************************
Street Name:          Arleta Avenue                    Osborne Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Permitted        Permitted        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        1  0  1  1  0    1  0  1  1  0    1  0  1  1  0    1  0  1  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     254  962   245    87  419    77    90 1017   161   112 1125   132
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  292 1105   282   100  481    88   103 1169   185   129 1293   152
Added Vol:      0    6     0     0    2     0     0    0     0     0    0     0
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  292 1111   282   100  483    88   103 1169   185   129 1293   152
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   292 1111   282   100  483    88   103 1169   185   129 1293   152
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  292 1111   282   100  483    88   103 1169   185   129 1293   152
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  292 1111   282   100  483    88   103 1169   185   129 1293   152
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1500 1500  1500  1500 1500  1500  1500 1500  1500  1500 1500  1500
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.60  0.40  1.00 1.69  0.31  1.00 1.73  0.27  1.00 1.79  0.21
Final Sat.:  1500 2394   606  1500 2536   464  1500 2590   410  1500 2685   315
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.19 0.46  0.46  0.07 0.19  0.19  0.07 0.45  0.45  0.09 0.48  0.48
Crit Volume:       696         100               103                     722
Crit Moves:       ****        ****              ****                    ****
********************************************************************************
```



```
--------------------------------------------------------------------------------
                      LADWP Groundwater Replenishment EIR
                         VGS - Future With Project PM
--------------------------------------------------------------------------------

                      Level Of Service Computation Report
           Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #16 Laurel Canyon Boulevard / Branford Street
********************************************************************************
Cycle (sec):        100              Critical Vol./Cap.(X):         1.072
Loss Time (sec):      0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:      180              Level Of Service:                  F
********************************************************************************
Street Name:     Laurel Canyon Boulevard               Branford Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R    L  -  T  -  R    L  -  T  -  R    L  -  T  -  R
------------|----------------||----------------||----------------||----------------|
Control:        Protected        Protected        Permitted        Permitted
Rights:          Include          Include          Include          Include
Min. Green:    0    0     0     0    0     0     0    0     0     0    0     0
Y+R:         4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0   4.0  4.0   4.0
Lanes:        2  0  1  1  0    2  0  1  1  0    1  0  1  1  0    1  0  0  1  0
------------|----------------||----------------||----------------||----------------|
Volume Module:
Base Vol:     112  979   174    89  459   135   177  455   177   126  362   159
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  129 1125   200   102  527   155   203  523   203   145  416   183
Added Vol:      0    3     0     0    0     0     0    0     0     0    5     1
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  129 1128   200   102  527   155   203  523   203   145  421   184
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   129 1128   200   102  527   155   203  523   203   145  421   184
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  129 1128   200   102  527   155   203  523   203   145  421   184
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.10 1.00  1.00  1.10 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  142 1128   200   112  527   155   203  523   203   145  421   184
------------|----------------||----------------||----------------||----------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       2.00 1.70  0.30  2.00 1.55  0.45  1.00 1.44  0.56  1.00 0.70  0.30
Final Sat.:  2850 2421   429  2850 2202   648  1425 2052   798  1425  992   433
------------|----------------||----------------||----------------||----------------|
Capacity Analysis Module:
Vol/Sat:     0.05 0.47  0.47  0.04 0.24  0.24  0.14 0.25  0.25  0.10 0.42  0.42
Crit Volume:             664    56               203                           605
Crit Moves:             ****  ****              ****                          ****
********************************************************************************
```

```
--------------------------------------------------------------------------------
                     LADWP Groundwater Replenishment EIR
                        VGS - Future With Project PM
--------------------------------------------------------------------------------
                     Level Of Service Computation Report
          Circular 212 Planning Method (Future Volume Alternative)
********************************************************************************
Intersection #17 San Fernando Road / Branford Street
********************************************************************************
Cycle (sec):         100              Critical Vol./Cap.(X):         0.909
Loss Time (sec):       0              Average Delay (sec/veh):      xxxxxx
Optimal Cycle:       180              Level Of Service:                  E
********************************************************************************
Street Name:        San Fernando Road                  Branford Street
Approach:      North Bound      South Bound      East Bound       West Bound
Movement:     L  -  T  -  R   L  -  T  -  R   L  -  T  -  R   L  -  T  -  R
------------|---------------||---------------||---------------||---------------|
Control:        Permitted        Protected       Split Phase      Split Phase
Rights:          Include          Include          Include          Include
Min. Green:     0    0     0    0    0     0    0    0     0    0    0     0
Y+R:          4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0  4.0  4.0   4.0
Lanes:        1  0  1  1  0   1  0  1  1  0   1  0  1  0  1   0  1  0  0  1
------------|---------------||---------------||---------------||---------------|
Volume Module:
Base Vol:     123  636   138    33  417    77    74  263    79   124  310    43
Growth Adj:  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15  1.15 1.15  1.15
Initial Bse:  141  731   159    38  479    88    85  302    91   142  356    49
Added Vol:      1    7     0     0    1     0     0    0     0     4    4     5
PasserByVol:    0    0     0     0    0     0     0    0     0     0    0     0
Initial Fut:  142  738   159    38  480    88    85  302    91   146  360    54
User Adj:    1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
PHF Volume:   142  738   159    38  480    88    85  302    91   146  360    54
Reduct Vol:     0    0     0     0    0     0     0    0     0     0    0     0
Reduced Vol:  142  738   159    38  480    88    85  302    91   146  360    54
PCE Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
MLF Adj:     1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
FinalVolume:  142  738   159    38  480    88    85  302    91   146  360    54
------------|---------------||---------------||---------------||---------------|
Saturation Flow Module:
Sat/Lane:    1425 1425  1425  1425 1425  1425  1425 1425  1425  1425 1425  1425
Adjustment:  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00  1.00 1.00  1.00
Lanes:       1.00 1.65  0.35  1.00 1.69  0.31  1.00 1.00  1.00  0.29 0.71  1.00
Final Sat.:  1425 2346   504  1425 2407   443  1425 1425  1425   412 1013  1425
------------|---------------||---------------||---------------||---------------|
Capacity Analysis Module:
Vol/Sat:     0.10 0.31  0.31  0.03 0.20  0.20  0.06 0.21  0.06  0.36 0.36  0.04
Crit Volume:       448          38                   302                507
Crit Moves:       ****        ****                  ****               ****
********************************************************************************
```