Final Environmental Impact Report

for the

River Supply Conduit Improvement

Upper Reach

SCH# 2007011110

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

August 2008

DEPARTMENT OF WATER AND POWER
CITY OF LOS ANGELES

FINAL ENVIRONMENTAL IMPACT REPORT

RIVER SUPPLY CONDUIT IMPROVEMENT

UPPER REACH

SCH# 2007011110

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

August 2008

TABLE OF CONTENTS

Page

Page

Page

LIST OF TABLES

Page

LIST OF FIGURES

Executive Summary

The existing River Supply Conduit (RSC) pipeline is a major transmission pipeline in the Los Angeles Department of Water and Power's (LADWP) water system. Because of differing system requirements and operational and maintenance needs between the northern and southern sections of this 13.7 mile long pipeline, LADWP has divided the RSC into reaches (Upper Reach and Lower Reach). The Upper Reach extends from the North Hollywood Pump Station to the Hollingsworth Spillway north of Griffith Park. The Lower Reach extends from Hollingsworth Spillway to the Ivanhoe Reservoir in the Silver Lake neighborhood of Los Angeles.

The LADWP proposes to construct a new larger Upper Reach pipeline to replace the Upper Reach of the existing RSC pipeline in a new alignment (River Supply Conduit Improvement – Upper Reach Project or proposed project). The LADWP, as the lead agency for this project, has prepared an Environmental Impact Report (EIR) in compliance with the California Environmental Quality Act (CEQA) Guidelines. This Executive Summary provides an overview of the key information presented in the EIR. For a complete description of the proposed project, its impacts, and alternatives, the reader is referred to Sections 2, 3, and 4 of the EIR, respectively.

ES.1 Project Overview

The proposed project would involve the construction of approximately 31,300 linear feet (about 5.92 miles) of 78-inch diameter welded steel underground pipeline, and would also include construction of appurtenant structures (e.g., maintenance holes, flow meter, valves, and or vaults). Construction of the proposed Upper Reach would occur within existing street rights-of-way, existing easements such as Whitnall Highway and Headworks Spreading Grounds, new easements, and recreation areas within the City of Burbank and City of Los Angeles.

Factors contributing to the need for improvements to LADWP's water distribution system include: (1) California Department of Health Services Drinking Water Regulations, (2) need for increased pipeline capacity, (3) air entrainment that restricts water flow capacity, and (4) reduced open reservoir storage due to more stringent state and federal water quality regulations. To address these issues, LADWP has identified the following objectives for the proposed project:

- Install a new larger water pipeline with supporting facilities in a new alignment
- Meet or exceed current governmental codes and regulations
- Allow for maximum operational capacity, flexibility, and reliability
- Design and construct the pipeline using the latest technology and methods available.

Built in the 1940s, the RSC pipeline's purpose is to transport large amounts of water from the Van Norman Reservoir Complex and local groundwater wells to storage and distribution facilities in the central areas of the City of Los Angeles. As the existing Upper Reach pipeline has aged, numerous issues have emerged. Sections of the existing pipeline are either unpressurized or are at very low pressures. As such, the existing pipeline does not meet current requirements of the California Department of Health Services Drinking Water Regulations (Title 22, §64566(c)), which require "water mains to be designed to have at least 5 psig [pounds per square inch gauge] pressure throughout any buried length of the main except when the main is removed from service for repairs or maintenance." These minimum pressures help to prevent cross-contamination from other buried utilities, in particular, sanitary sewers.

Further impacting the service of the existing RSC, and in order to meet new state and federal water quality regulations, the LADWP is proposing to remove several open-air reservoirs from direct service to the LADWP water distribution system.

ES.2 Environmental Analysis

An Initial Study for the proposed LADWP River Supply Conduit Improvement – Upper Reach Project, was issued in January 2007, and is provided in Appendix A.2 for reference. As part of the Initial Study, mitigation measures were identified and have been committed to by the LADWP to reduce the impacts associated with the proposed project. While the criteria for determining significant impacts are unique to each issue area, the environmental analysis applies a uniform classification of the impacts based on the following definitions:

- A designation of *no impact* is given when no adverse changes in the environment are expected.
- A *less-than-significant impact* would cause no substantial adverse change in the environment.
- A *less-than-significant impact with mitigation* avoids substantial adverse impacts on the environment through mitigation.
- A *significant but unavoidable impact* would cause a substantial adverse impact on the environment, and no feasible mitigation measures would be available to reduce the impact to a less-than-significant level.

In the Initial Study, mitigation measures were identified for aesthetics, biological resources, cultural resources, geology and soils, hazards and hazardous materials, hydrology and water quality, and land use and planning, which would reduce impacts within these environmental issue areas to less-than-significant levels (see Appendix A.2 and EIR Section 5.4). Impacts associated with agricultural resources, mineral resources, population and housing, public services, and utilities and service systems were found to be less than significant or have no impacts; therefore, no mitigation measures were required. However, the Initial Study concluded that the proposed project would have the potential to cause a significant impact for the following environmental issue areas: air quality, noise, recreation, and transportation and traffic. Additionally, based on concerns expressed by the City of Burbank upon reviewing the Initial Study, it was determined that impacts related to geology and hydrogeology should be investigated further in the EIR.

The EIR analyzes those issue areas with the potential to be significant for the proposed project, considers the LADWP Project Measures as described in the EIR, and proposes mitigation measures to reduce significant impacts as much as feasibly possible (noise, traffic, air quality, recreation), or to less-than-significant levels (geology and hydrogeology). The potential significant impacts of the proposed project are all associated with project construction. No significant impacts are associated with the operation of the proposed project. Table ES-1 (at the end of this section) summarizes the identified noise, transportation and traffic, air quality, and recreation impacts of the proposed project as identified in this EIR, and those mitigation measures recommended to reduce significant impacts, to the extent feasible. For a complete listing of mitigation measures identified for the proposed project, refer to Appendix B.

Noise/Vibration. Airborne noise from construction equipment would occur at all points along the project route, except along the tunnel alignments. The primary areas of concern would be around the tunnel shafts and jacking pits. While airborne noise levels around the trenched areas would be substantially above ambient noise levels, the relatively high rate of trench progression (approximately 80 feet per day) would limit the duration to which any

one receiver along the trench route would be exposed. Construction activities around tunnel shafts and jacking pits, however, would continue for considerably longer durations, thus creating greater impacts on nearby receptors. The EIR identifies Mitigation Measures N-1 through N-11 to reduce noise impacts. However, the proposed project would result in significant and unavoidable construction noise impacts because of the extended hours of construction. Ground vibration and groundborne noise impacts would be reduced through implementation of Mitigation Measures N-1, N-3, and N-10 through N-13; however, it is unlikely that impacts would be reduced to below the recommended thresholds due to the nature of ground vibration. As such, ground vibration and groundborne noise impacts would be significant and unavoidable.

Traffic/Transportation. Construction of the pipeline and related facilities would result in significant impacts during construction along Lankershim Boulevard and Burbank Boulevard where open trenching would be used. Therefore, construction activities in these areas would reduce capacities on the roadways directly affected and divert traffic to adjacent roadways that are also heavily traveled. Areas where jacking and tunneling construction methods would be utilized would minimize traffic impacts. Implementation of the Mitigation Measures T-1 through T-13 would help to reduce impacts associated with construction of the proposed project to the extent feasible. Furthermore, with implementation of mitigation, impacts to public and emergency vehicle access, public transit, and pedestrian safety would be reduced to less-than-significant levels. However, potentially significant on-street parking supply impacts cannot be mitigated and would remain unavoidable during the construction period.

Air Quality. Temporary construction emissions would result from on-site construction, such as open trench and pipe jacking activities. Emissions would also result from off-site construction activities from construction related haul trips and construction worker commuting patterns. Implementation of Best Available Control Measures required under SCAQMD Rule 403 and Mitigation Measure AQ-1 would reduce construction-related air quality impacts (NO_x, PM10, and PM2.5); however, due to the magnitude of the construction activities, the air pollutant emissions impacts would continue to be significant and unavoidable.

Recreation. A temporary ventilation shaft may be placed within the utility ROW near the south end of Whitnall Highway North park. The area would be fenced and visible as part of a construction site, but would not significantly restrict use of park facilities. The middle section of Johnny Carson Park is scheduled to be used as a staging area to include field offices, material storage and handling, as well as the work area and shaft location for tunneling and jacking. This activity coupled with the duration (approximately three years) may result in the degradation of the park facilities, including the extensive grass area and large park trees (Sycamores and non-native trees). Construction-related recreational impacts would be reduced through implementation of Mitigation Measures R-1, N-1, and BIO-3 (Initial Study Appendix A.2); however, due to the magnitude and duration of the impacts associated with construction activities, impacts to recreation would remain significant and unavoidable.

Geology/Hydrogeology. The LADWP would implement standard design and construction practices during construction and operation of the pipeline, which consider liquefaction, subsidence, soil corrosion, and the potential for encountering contaminated groundwater. A geotechnical investigation is underway to identify soil and groundwater characteristics along the project alignment and will include recommendations specific to the proposed project alignment. This geotechnical investigation is consistent with Mitigation Measure GEO-1 (Initial Study Appendix A.2)~~;.~~ Based on the recommendations of the geotechnical investigation, LADWP will also implement a groundwater assessment and subsidence monitoring program in tunneled portions of the alignment and/or where groundwater dewatering is necessary, and post-construction monitoring will be conducted in areas

where the bottom of the pipe is at or below historic high groundwater levels. Therefore, impacts from geology and hydrogeology would be less than significant.

ES.3 Alternatives to the Project

The proposed project, which includes the installation of approximately 5.92 miles of new pipeline within the Cities of Los Angeles and Burbank, would replace and realign the existing Upper Reach of the RSC pipeline, which has provided over 50 years of continuous service to the City of Los Angeles. Various project alternatives were evaluated to determine the extent to which they attain the basic project objectives, while lessening any potentially significant environmental effects of the proposed project (e.g. noise/vibration, transportation/ traffic, air quality, and recreation).

The following seven alternatives to the proposed project were initially considered:

- **No Project** – With this alternative, proposed project development would not occur; or the predictable or reasonably foreseeable circumstance that would result if the project did not proceed or was not approved would occur.
- **All-LA Route #1 Alternative** – This route uses major streets to reach Clybourn Avenue where it continues south to Forest Lawn Drive. The alignment would border the Los Angeles and Burbank city limits along Clybourn Avenue. Although this alternative goes through a portion of the City of Burbank, it is considered an all-Los Angeles alternative because it would not impact City of Burbank public streets.
- **All-LA Route #2 Alternative** – This alternative would include the use of a portion of the Whitnall Highway in an attempt to reduce project footage. It is considered an all-Los Angeles alternative because it would not impact City of Burbank public streets.
- **All-LA Route #3 Alternative** – This alternative is completely within the City of Los Angeles and would use Lankershim Boulevard to travel south from Victory Boulevard to Riverside Drive.
- **All-Whitnall Highway Route Alternative**– This alternative would use the Whitnall Highway from the North Hollywood Pumping Station in the north to Forest Lawn Drive in the south. Tunneling would be used for the entire route to minimize disruptions to traffic, residences, and businesses.
- **LA/Burbank Route Alternative** – This alternative includes rights-of-way (ROW) within both Los Angeles and Burbank and would start at the North Hollywood Pumping Station and continue south on Lankershim to Riverside Drive and then take Riverside Drive east, crossing the Los Angeles River to the Headworks Spreading Grounds.
- **Above Ground River Crossing Alternative** – This alternative would provide an alternative to jacking under the Los Angeles River. It would involve construction of a pipe bridge over the Los Angeles River.

Of these alternatives, the All Los Angeles Route #2, LA/Burbank Route Alternative, and the Above Ground River Crossing Alternative were eliminated from further consideration because they would not reduce construction impacts, as discussed in Section 4.3.

For the other alternatives (see Section 4.4), it was found that the No Project Alternative would be expected to reduce all proposed project impacts; however, it would meet none of the project goals and objectives. Without the proposed project improvements, the LADWP would need to implement additional solutions to address the concerns with the current distribution system and to meet the Department of Health and Safety regulations and standards not achieved under the No Project Alternative. From among the remaining alternatives, the All-Whitnall Highway Alternative would be the environmentally superior alternative because it has less parking and air quality impacts and comparable recreation and geology/hydrogeology impacts to the proposed project.

However, the All-Whitnall Highway Alternative would have greater vibration impacts than the proposed project because it includes tunneling along the entire route, which would expose a greater number of residential (and other sensitive land uses such as schools) and commercial land uses to vibration impacts. Therefore, the proposed project would be environmentally preferred and would meet all the project objectives.

ES.4 Cumulative Impacts

A list of past, present, and future projects within the vicinity of the proposed project was developed to evaluate cumulative impacts. The cumulative project list provided in Section 2.8 includes projects that are either reasonably foreseeable or are expected to be constructed or operated during the life of the proposed project. Cumulative impacts associated with the construction and operation of the proposed project are discussed for each issue area (see Sections 3.1.6, 3.2.6, 3.3.6, 3.4.6, and 3.5.6).

Noise/Vibration. Noise generated from "cumulative" projects would have a cumulative impact on sensitive receptors in localized areas where construction may occur simultaneously. Construction of these projects could further add to the short-term potentially significant noise and vibration impacts associated with the construction of the proposed project. Mitigation measures identified for the proposed project would reduce impacts to the extent feasible; however, ground vibration and groundborne noise impacts would remain significant. However, these impacts are localized in nature and would not combine with any of the cumulative projects identified in Section 2.8. Therefore, cumulative noise impacts would be less than significant.

Transportation/Traffic. Transportation and traffic impacts would be cumulatively considerable if those projects listed in Section 2.8 were constructed concurrently with the construction of the proposed project. Several of the cumulative projects identified in Section 2.8 would be constructed at least partly during the construction period of the proposed project, and it is anticipated that the majority of the projects would involve some level of contribution to cumulative traffic congestion that would result in significant traffic impacts to existing levels of service. Therefore, the cumulative projects identified in Section 2.8 could further add to the projected short-term significant construction traffic impacts identified for the proposed project, and therefore, cumulative traffic impacts are considered to be significant and unavoidable.

Air Quality. Several of the cumulative projects identified in Section 2.8 would be constructed at least partly during the construction period of the proposed project. In addition, it is anticipated that the majority of the cumulative projects would involve some level of ground disturbance, such as grading and trenching, that would result in at least moderate levels of diesel exhaust emissions and fugitive dust. Therefore, the cumulative projects could further add to the projected short-term significant air quality impacts identified for the proposed project if they were constructed at the same time. Cumulative impacts are considered to be significant and unavoidable.

Recreation. Cumulative projects could further increase potentially significant recreation impacts associated with construction of the proposed project. Mitigation measures identified for the proposed project (R-1, N-1, and BIO-3) would reduce the project impacts to recreation; however, recreation impacts would remain significant. Project impacts could combine with the impacts from other (cumulative) projects constructed during the same time frame. Therefore, cumulative recreation impacts would be significant and unavoidable.

Geology/Hydrogeology. Construction and operation of the proposed project would contribute a less-than-significant increase to potential cumulative impacts for geology and hydrogeology. Mitigation measure GEO-1 would minimize any project-related impacts and would further minimize the potential for cumulative effects.

Because other identified projects in Section 2.8 would need to comply with best management practices and incorporate design requirements that address project area conditions, the effects of these projects in conjunction with the proposed project on the geologic and hydrogeologic environment are not cumulatively considerable.

ES.5 Areas of Controversy

CEQA Guidelines §15123(b)(2) requires that an EIR Executive Summary identify areas of controversy known to the lead agency, including issues raised by other agencies and the public. The LADWP has consulted with agencies such as the California Department of Transportation (CalTrans), City of Los Angeles Department of Transportation, City of Los Angeles Department of Public Works, City of Los Angeles Department of Recreation and Parks, City of Burbank Public Works Department, City of Burbank Park, Recreation & Community Services Department, and other responsible and trustee agencies. Issues and concerns expressed during the public review period for the Initial Study are provided in Appendix A.3. Based on these comments, the EIR was expanded to include the issue area of geology and hydrogeology and additional information was provided in Section 5 of the EIR regarding the San Fernando Valley Superfund sites to respond specifically to the comments received from the City of Burbank. ~~No other outstanding issues or areas of controversy have been identified for the proposed project.~~

During the review of the Draft EIR, additional questions were raised regarding the standard practices or best management practices identified by LADWP in the report; the proposed location of ventilation shafts and permanent ventilation structures; and continued concern with impacts from strong ground shaking, subsidence, noise and vibration, air quality, and impacts to recreational facilities. Revisions were incorporated in the Final EIR to address the comments made on the draft document. However, there is the potential for continued concern with the tunneling effort in the City of Burbank even though all efforts were made to respond and address the City's comments.

ES.6 Issues to be Resolved

CEQA Guidelines §15123(b)(3) requires that an EIR represent issues to be resolved by the lead agency. Project-related environmental impacts have been mitigated to the extent feasible. Although mitigation measures have been applied to reduce impacts, significant and unavoidable impacts have been identified for noise/vibration, transportation/traffic, air quality, and recreation. To move forward with the proposed project, the LADWP must adopt a Statement of Overriding Considerations along with project findings.

Table ES-1. Summary of Impacts and Mitigation Measures Identified in the EIR

Impact	Mitigation Measures		Level of Significance After Mitigation
Noise/Vibration			
N1. Construction of the proposed project would expose persons to or generate noise levels in excess of standards.	N-1	LADWP or its construction contractor shall provide advance notice, between two and four weeks prior to construction, by mail to all residents or property owners and businesses including the television and recording studios within 300 feet of the pipeline alignment. The announcement shall state specifically where and when construction will occur in the area. If construction delays of more than two weeks occur, an additional notice shall be made, either in person or by mail. Notices shall provide tips on reducing noise intrusion, for example, by closing windows facing the planned construction. The LADWP shall also publish a notice of impending construction in local newspapers, stating when and where construction will occur, and place signs at construction sites with construction contact information. The notices shall provide a contact person and hotline where residents or business owners can call on a 24-hour basis with questions or comments during the construction period. LADWP or its construction contractor shall promptly respond to all inquiries regarding construction noise and vibration. On-site measurements may be needed to determine if noise or vibration levels are significantly above expected levels. Notices and construction signs will include a website address, which will be updated quarterly and where interested parties can obtain construction and project-related information.	Significant.
	N-2	All machinery to be used on-site shall be equipped with the best available exhaust mufflers and any applicable "hush kits." No machinery shall be allowed on-site which emits noise levels in excess of 75 dBA when measured at a distance of 50 feet from the machine, unless technically infeasible due to the nature of the machine or its operation. LADWP or its contractor shall substitute quieter machinery, wherever feasible.	
	N-3	All machinery shall be maintained in good working order and lubricated as necessary to minimize unnecessary squeals, groans, and other noise. All cabinets, panels, covers, shrouds, and similar components shall be securely fastened to ensure that they do not create excessive noise due to vibration.	
	N-4	LADWP or its construction contractor shall turn off all unnecessary machinery. Delivery and hauling trucks shall not sit with their engines idling for periods exceeding 5 minutes. The contractor shall post signs advising drivers to turn off idling engines.	
	N-5	LADWP or its construction contractor shall erect temporary noise-barriers to shield nearby residences and other sensitive receptors or land uses from direct exposure to airborne construction noise. These barriers shall be erected to reduce construction noise levels to 70 dBA or below and to maintain one-hour average noise levels below 75 dBA at any sensitive receptor or land use. The *RSCI Upper Reach Noise and Vibration Study* (Appendix C) includes recommendations for achieving these noise levels. For example, barriers shall consist of commercially available noise-control curtains, in-situ fabricated sound walls, or equivalent barrier with an overall sound-transmission class rating of STC-28 or higher. All barriers shall be constructed to contain no unnecessary holes or gaps. Where access through the barrier is required, overlapping sections shall be constructed to prevent noise escaping through the opening. The most appropriate barrier shall be determined specific to each situation.	
	N-6	The use of noise producing signals, including horns, whistles, alarms, and bells shall be for safety warning purposes only.	
	N-7	LADWP or its construction contractor shall perform noisy work off-site and away from any residential areas wherever feasible. Such off-site activities may include rock-crushing, materials pre-fabrication, and equipment maintenance.	
	N-8	All trucking shall be constrained to major roadways (e.g. Lankershim Boulevard, Burbank Boulevard), to the extent feasible, to limit use of residential side streets. The contractor shall establish designated truck routes to serve each project area. All subcontractors shall	

Impact	Mitigation Measures	Level of Significance After Mitigation
	also be required to adhere to the designated truck routes. N-9 LADWP or its construction contractor shall restrict deliveries to those hours permitted by the City of Los Angeles and City of Burbank. Staging areas in the vicinity of sensitive receptors and land uses receivers shall be locked after hours, and shall have signs prominently displaying operating hours. N-10 LADWP or its construction contractor shall instruct all personnel, including subcontractor personnel, of the necessity for, and methods of, controlling noise and vibration impacts on sensitive receptors and land uses. Instruction should occur before construction enters any noise-sensitive areas. LADWP or its construction contractor shall instruct all personnel, including subcontractor personnel, of the necessity for, and methods of, controlling noise and vibration impacts on sensitive receptors and land uses. Instruction ~~should~~ shall occur before the start of construction. ~~enters any noise-sensitive areas~~. LADWP shall provide instruction on the necessity for controlling noise and vibration impacts to contractor at project kick-off meeting and advise the contractor to provide updates at monthly construction meetings. Contractor shall be responsible for instruction to on-site personnel. N-11 LADWP or its construction contractor shall monitor noise and vibration under the guidance of an independent qualified acoustical consultant along the project alignment to ensure the measures described in N-1 through N-10 are effectively reducing noise levels. Monitoring shall be conducted quarterly and documented. Monitoring shall include additional spot-checks of the noise and vibration levels near sensitive receptors/land uses including the television and recording studios and any additional measurements to resolve issues reported as part of the 24-hour hotline required as part of Mitigation Measure N-1. LADWP, under the guidance of the acoustical consultant, shall have the authority to cease any construction activity which significantly exceeds noise thresholds or is causing substantial disturbance to sensitive receptors or land use (as determined by the number of concerns received at a specific location) until additional noise or vibration-reducing measures are implemented. The qualified acoustical consultant will prepare a construction noise and vibration plan that documents monitoring events, monitoring thresholds, and incorporates other noise and vibration mitigation measures identified in the EIR.	
N2. The proposed project would create substantial temporary or periodic increases in ambient noise levels.	N-1 through N-11 (above).	Less than Significant.
N3. Construction of the proposed project would generate excessive groundborne vibration or groundborne noise.	N-1, N-3, N-10, and N-11 (above). N-12 LADWP or its construction contractor shall take all reasonable measures necessary to maintain ground-vibration levels below a peak-particle velocity of 0.02 inches per second (72 VdB) at any sensitive receptor or land use as verified during periodic monitoring by a qualified acoustical consultant required as part of Mitigation Measure N-11. Such measures may include any of the following: - Adjust the speed of the TBM cutting wheel (it is possible that the rotational speed of the cutting wheel may coincide with natural frequencies of nearby structures, thus amplifying the induced vibration; increasing or decreasing the wheel speed would likely reduce this impact). - Use alternate TBM cutting surfaces (different cutting surfaces, if available, may induce varying levels of vibration into the soil, particularly with regard to soil composition and condition). - Minimize the undulations and roughness of muck-train tracks (a muck car which rolls smoothly over its tracks will induce less vibration into the surrounding soils). - Minimize the number of junctions in the muck-train tracks (previous experience indicates that muck-train vibration impacts are	Significant.

Impact	Mitigation Measures	Level of Significance After Mitigation
	greatest near junctions in the tracks, where disjoints are likely to occur in the rails). - Minimize gaps between adjoining rails. - Mount muck-train tracks on resilient pads or springs. - Maintain roundness of muck-train wheels. - Lessen the load of the muck-trains (lightly-loaded cars will induce less vibration into surrounding soils than heavily-laden cars). N-13 No less than 60 days prior to construction, LADWP or its construction contractor shall identify historic and fragile buildings within 200 feet of the tunneling portions of the alignment. Buildings shall be identified in the field and, as necessary, a building inspector or architectural historian may be needed to support the identification of these buildings. If buildings are identified that are in poor condition and therefore may be adversely affected by ground vibration, or buildings are considered historical based on local, state, or federal designations, then additional information shall be documented on those buildings through an exterior evaluation of the condition of the buildings and photo documentation. The purpose of this focused survey is to document the current condition of older buildings along the tunneling portion of the alignment, if any, prior to the start of construction and to assess whether there is any change in the conditions of the buildings during or after construction. If there is reason to believe that a structure may be potentially damaged during project construction, then LADWP in conjunction with its construction contractor will determine if there are measures that can be taken to reduce vibration impacts to the building or structure.	
	Transportation/Traffic	
T1. The installation of the water line within, adjacent to, or across a roadway would reduce the number of, or the available width of, one or more travel lanes during the peak traffic periods, resulting in a temporary disruption to traffic flow and/or increased traffic congestion.	T-1 Prior to the start of construction, LADWP shall submit a Construction Traffic Management Plan to the Los Angeles Department of Transportation and City of Burbank for review and approval prior to the start of any construction work. The plan shall show the location of roadway or lane closures, traffic detours, haul routes, hours of operation, and local access (maintenance of), including bike lanes if applicable. The Plan shall also discuss the use of flag persons, warning signs, lights, barricades, cones, etc. according to standard guidelines outlined in the Caltrans Traffic Manual, the Standard Specifications for Public Works Construction, and the Work Area Traffic Control Handbook (WATCH). T-2 Pending approval from the Los Angeles Department of Transportation, the LADWP or its construction contractor shall implement the following roadway measures during construction: – Lankershim Boulevard. Three travel lanes shall be provided during the construction period - two travel lanes in the peak direction of travel. For pit/shaft construction at the Lankershim Boulevard and Hart Street intersection, two lanes of travel may not be possible for the peak travel time/direction (southbound in the a.m. peak period). In order to avoid significant traffic impacts, a recommended alternate route (not a full detour route) shall be established and signed for southbound traffic on Lankershim Boulevard. This route shall utilize eastbound Sherman Way, southbound Tujunga Avenue, and westbound Hart Street. – Burbank Boulevard. LADWP shall provide narrower rectangular working areas for jacking pit and shaft operations, where feasible, to provide for two travel lanes along the narrower portions of Burbank Boulevard. Work area width shall be reduced to 25 to 30 feet to allow for two 10-foot temporary travel lanes. – Forest Lawn Drive. Directional capacity (westbound in the a.m. peak and eastbound in the p.m. peak) shall be considered in roadway closure planning. The provision of two travel lanes in the peak direction, while providing one travel lane for the opposite direction of traffic flow, shall be provided. This peak provision may not be possible within the vicinity of the pit/shaft work areas. T-3 At the egress point on the eastern side of the Johnny Carson Park staging area site, flag persons shall be provided for truck movements from the site to the SR-134 eastbound on-ramp.	Less than Significant.

Impact	Mitigation Measures	Level of Significance After Mitigation
	T-4 So that delays are not significant for motorists on Bob Hope Drive and Riverside Drive, flag persons shall limit truck movements into and out of the site to one or two trucks at a time. Inbound truck movements shall be scheduled to allow this management to be effective, and outbound truck movements should be held if necessary.	
T2. A major roadway (arterial or collector classification) would be closed to through traffic as a result of construction activities and there would be no suitable alternative route available.	T-1 through T-4 (above).	Less than Significant.
T3. Construction activities would restrict access to or from adjacent land uses and there would be no suitable alternative access.	T-5 LADWP shall provide a minimum of 48-hour advance notification of the potential for disrupted access to and parking for any business, residence, or recreational facility that may experience delayed access or reduced parking capacity in the vicinity. The notification shall include information on restoring access and the estimated amount of time that access may be blocked. T-6 If vehicular access to businesses, residences, and recreational facilities cannot be restored within eight (8) hours, LADWP or its construction contractor shall provide a one lane temporary vehicular bridge for access (LADWP Specification F01560 - Project Controls, Section 3.07D). T-7 The westbound left turn lane into the Forest Lawn cemetery shall be maintained during proposed project construction, as well as the right turn access into the cemetery from the eastbound curb lane.	Less than Significant.
T4. Construction activities would restrict the movements of emergency vehicles (police cars, fire trucks, ambulances, and paramedic units) and there would be no reasonable alternative access routes available.	T-3 and T-6 (above). T-8 LADWP shall coordinate in advance with emergency service providers to avoid restricting movements of emergency vehicles. Police departments, fire departments, ambulance services, and paramedic services shall be notified in advance by LADWP of the proposed locations, nature, timing, and duration of any construction activities and advised of any access restrictions that could impact their effectiveness. At locations where access to nearby property is blocked, provision shall be ready at all times to accommodate emergency vehicles, such as plating over excavations, short detours, and alternate routes in conjunction with local agencies. The Traffic Construction Management Plan (T-1) shall include details regarding emergency services coordination and procedures.	Less than Significant.
T5. Construction activities or staging activities would increase the demand for and/or reduce the supply of parking spaces and there would be no provisions for accommodating the resulting parking deficiencies.	T-1 (above).	Significant.

Impact	Mitigation Measures	Level of Significance After Mitigation
T6. Construction activities would disrupt public transit service and there would be no suitable alternative routes or stops.	T-9 LADWP shall coordinate in advance with City of Los Angeles Department of Transportation (LADOT), City of Burbank, and Metropolitan Transportation Authority (Metro) to avoid restricting movements of public transportation. Notification shall include proposed locations, nature, timing, and duration of any construction activities and any access restrictions that could impact existing bus stops and service routes. The Traffic Construction Management Plan (Mitigation Measure T 1) shall include details regarding public transportation coordination and procedures. Copies of the plan shall be provided to the LADOT, City of Burbank, and Metro.	Less than Significant.
T7: Construction activities of the project would result in safety problems for vehicular traffic, pedestrians, transit operations, or trains.	T-10 LADWP shall ensure bicycle route closure signs are posted at major intersections to the west and east of the construction area (Griffith Park area and Barham Boulevard).	Less than Significant.
Air Quality		
AQ1. Construction emissions would exceed the SCAQMD regional emission thresholds, and would therefore cause a short-term impact to local air quality conditions.	AQ-1 LADWP shall implement the following mitigation measures to reduce NO_x, PM10, and PM2.5 emissions from non-road construction vehicles during construction: – Tier ~~1~~ 2 non-road diesel mobile construction equipment shall be used on-site. Prior to construction, the construction contractor shall provide LADWP a list of equipment over 50 hp and forecasted to be used for at least a month during construction, including model year, engine horsepower rating, and applicable tier designation. – Tier 2 or newer diesel generators, or alternative-fueled (e.g., gaseous fuel) generators shall be considered as an alternative to diesel generators for use during the pipe jacking/tunnel operations. – Construction equipment shall be maintained in tune per manufacturer's specifications. The construction contractor shall provide LADWP with maintenance records on a monthly basis for non-road diesel mobile construction equipment over 50 hp used for at least a week in any given month, including but not limited to records of engine tune-ups. – Diesel engine idle time shall be restricted to no more than five minutes, except for construction equipment that needs to be maintained at idle to perform.	Significant.
AQ2. Construction of the proposed project would generate emissions that would exceed SCAQMD localized significance thresholds or toxic air contaminant thresholds.	AQ-1 (above).	Significant.
AQ3. Construction of the proposed project would be cumulatively considerable.	AQ-1 (above).	Significant.

Impact	Mitigation Measures	Level of Significance After Mitigation
	Recreation	
REC2: The proposed project would directly and/or indirectly disrupt access to or activities within established recreational areas.	N-1 (above) R-1 No less than 60 days prior to construction, LADWP shall coordinate construction activities and the project construction schedule with the City of Burbank, Department of Parks and Recreation and City of Los Angeles, Department of Parks and Recreation regarding the use of a portion of Johnny Carson Park as a construction staging area. This coordination shall include consideration of heavy recreational use periods, including major holidays, in construction scheduling, and providing construction notification at park facilities and offices. The notice shall also identify alternate park facilities. In addition, coordination shall include discussion of the schedule and planning for restoration of the affected park area (vegetation and infrastructure including irrigation systems and park amenities) after construction. (BIO-3 from Initial Study, Appendix A.2) BIO-3 If mature trees will be directly or indirectly impacted by project construction, LADWP will comply with all Los Angeles City and Burbank City tree ordinances. A mature tree is defined as having a DBH (diameter at breast height) of 4 inches or greater.	Significant.
REC3: The proposed project would result in cumulatively considerable recreational impacts.	N-1 and R-1 (above) and BIO-3 (see above - from Initial Study, Appendix A.2)	Significant.
	Geology (Revised Mitigation Measure)[1]	
GEO-2 Project Structures could be damaged by strong seismic ground shaking.	GEO-1 Prior to final project design, LADWP or its consultant shall prepare a geotechnical investigation to determine areas that will be susceptible to liquefaction related phenomena and to identify the local and regional geologic and seismic setting, subsurface soil conditions, presence and character of perched or continuous groundwater including aquifer parameters, presence of toxic or combustible gases along tunnel segments or deep excavations, and potential for corrosive and expansive soil. This investigation shall be conducted by a qualified professional and conform to the requirements of the City of Los Angeles. Based on the findings of this investigation, appropriate measures will be developed to reduce potential damage due to liquefaction related phenomena and to address site-specific subsurface conditions and excavation methodology. The geotechnical analysis will determine seismic design ground shaking and liquefaction potential. Results of the geotechnical analysis will support design considerations to address seismic shaking and to implement liquefaction and lateral spreading control measures. Although it is considered unlikely that groundwater levels will be affected by the project, LADWP shall conduct a post-construction monitoring program in areas where the bottom of the pipe is at or below the historic high groundwater level. Monitoring will be conducted two to four times per year over two rainy seasons. If monitoring identifies mounding which exceeds the historic high groundwater level, an evaluation for increased liquefaction potential will be performed. If increased liquefaction potential is identified, control measures will be developed to address any substantial effects that may result during a design level earthquake.	Less than Significant

[1] This mitigation measure was identified as part of the project evaluation for the Initial Study completed in January 2007. It was revised based on comments received during the public comment period for the Draft EIR (March 2008). For details on how the measure was revised from the original measure presented in the Initial Study see Response D-22 in Appendix F of this Final EIR.

1. Introduction and Purpose

1.1 Introduction

The Final Environmental Impact Report (EIR) for the proposed River Supply Conduit Improvement – Upper Reach Project will be considered by the Los Angeles Department of Water and Power Board of Commissioners in its decision-making process for the project. The Final EIR assembles in one document the Draft EIR and new sections that address the public review process (Section 6), mitigation monitoring (Appendix B.2), and responses to comments made on the Draft EIR (Appendix E). The Draft EIR was prepared in March 2008 and was circulated for public and agency review and comment for a 45-day period. The public comment period began on March 31, 2008 and ended on May 15, 2008. Following closure of the comment period, responses to all comments received on the Draft EIR were prepared. Any changes or additions to the Draft EIR that resulted from the comment period are identified in this report, additions are underlined and deletions are shown with strike-through text. The changes or clarifications made to the Draft EIR did not change the significance level of any of the environmental issue areas.

This ~~Draft Environmental Impact Report~~ Final ~~(~~EIR~~)~~ has been prepared to analyze potentially significant environmental effects associated with the construction and operation of the Los Angeles Department of Water and Power's (LADWP) proposed River Supply Conduit Improvement – Upper Reach (proposed project). LADWP proposes to construct a new larger River Supply Conduit (RSC) pipeline to replace the Upper Reach of the existing RSC pipeline in a new alignment. The proposed project would involve the construction of approximately 31,300 linear feet (about 5.92 miles) of 78-inch diameter welded steel underground pipeline, and would also include construction of appurtenant structures (e.g., maintenance/access holes, flow meters, valves, and/or vaults).

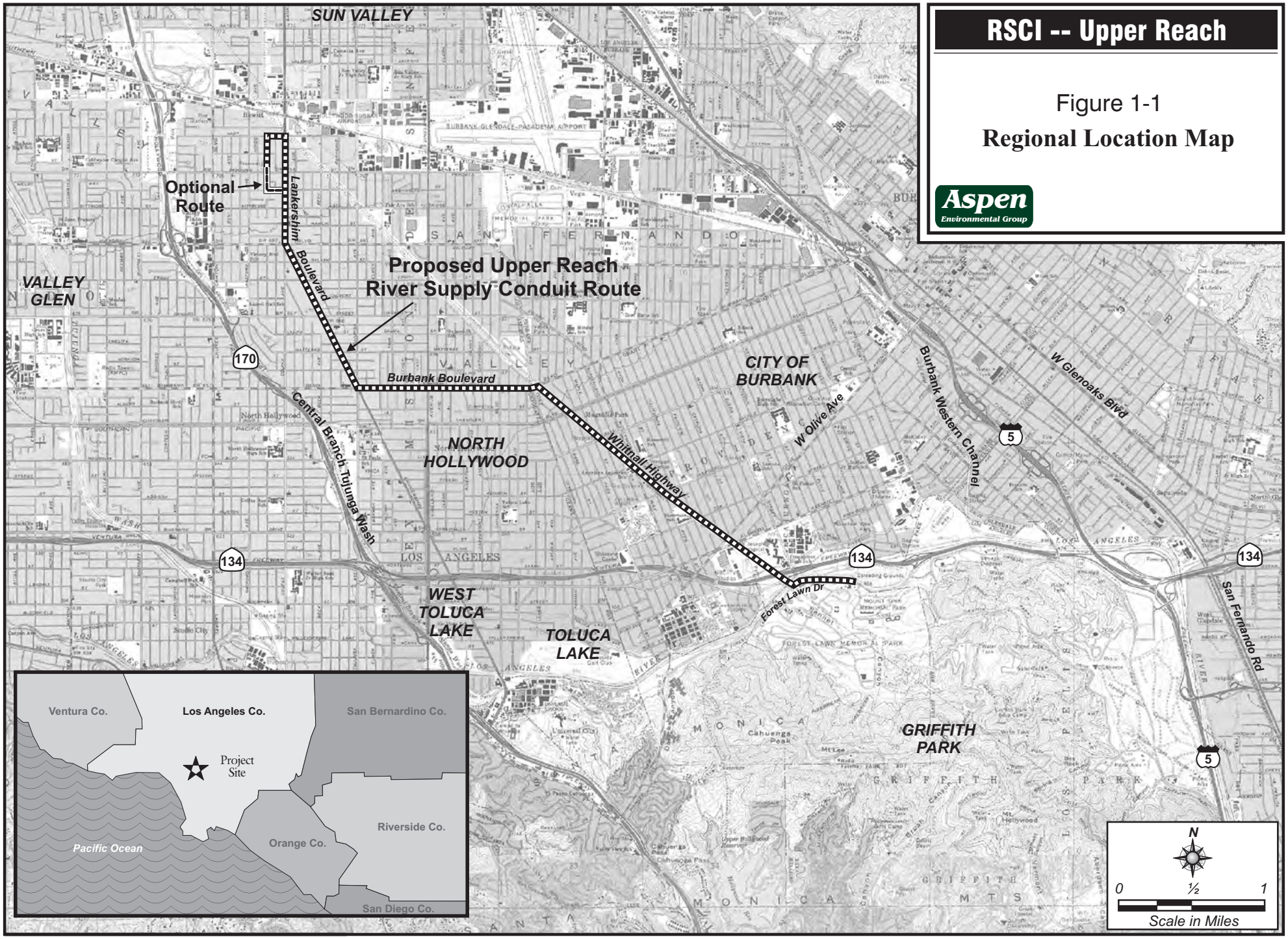
The new Upper Reach RSC pipeline would be constructed in existing street rights-of-way, LADWP property, existing utility easements such as the Whitnall Highway and Headworks Spreading Grounds, new easements, and recreation areas within the City of Burbank and City of Los Angeles. The project area is bounded by Sherman Way to the north, U.S. Highway 170/101 (Hollywood Freeway) to the west and southwest, Interstate 5 (Golden State Freeway) to the east, and Forest Lawn Drive to the south (Figure 1-1). The RSC pipeline would be located in the LADWP East Valley service area.

1.2 Purpose and Use of the EIR

The California Environmental Quality Act (CEQA) requires every project in the State of California to be examined for potential effects on the environment. As the lead agency under CEQA, LADWP has determined that the proposed project has the potential to have a significant effect on the environment. As such, this ~~Draft~~Final EIR has been prepared to provide objective information to public decision makers and the general public regarding potential environmental effects of the proposed project.

1.3 EIR Process

On January 25, 2007, LADWP filed the Notice of Preparation (NOP) and the Initial Study (IS) with the State Clearinghouse in the Office of Planning and Research as an indication that an EIR would be prepared for the


RSCI -- Upper Reach
Figure 1-1
Regional Location Map
Aspen Environmental Group
SUN VALLEY
Optional Route
Lankershim Boulevard
Proposed Upper Reach River Supply Conduit Route
VALLEY GLEN
SAN FERNANDO
170
Burbank Boulevard
CITY OF BURBANK
Burbank Western Channel
W Glenoaks Blvd
W Olive Ave
Central Branch Tujunga Wash
NORTH HOLLYWOOD
Whitnall Highway
5
134
WEST TOLUCA LAKE
TOLUCA LAKE
Forest Lawn Dr
San Fernando Rd
GRIFFITH PARK
Ventura Co.
Los Angeles Co.
San Bernardino Co.
Project Site
Riverside Co.
Orange Co.
Pacific Ocean
San Diego Co.
N
0
½
1
Scale in Miles

proposed project. The IS was distributed to state and local agencies including the City of Los Angeles and the City of Burbank to solicit comments on the scope and content of the environmental analysis to be included in the EIR

A copy of the IS was also provided to each of three local libraries (Valley Plaza Branch Library, North Hollywood Regional Library, and Buena Vista Branch Library) located within the vicinity of the proposed Upper Reach alignment for the public to review. In addition, the NOP was distributed to several neighborhood council groups, a homeowner association, the media studios in Burbank, local elected officials, and property owners along the proposed project alignment. Comment letters and/or emails were received from the City of Los Angeles, Department of Transportation; South Coast Air Quality Management District; California Department of Transportation (District 7); City of Burbank Community Development Department; City of Los Angeles Bureau of Engineering; and City of Los Angeles Department of Recreation and Parks. These letters and e-mails are provided in Appendix A.3 for reference. Relevant comments were considered in preparation of the Draft EIR, as appropriate.

Agencies or interested persons ~~will~~ also ~~have~~ had an opportunity to comment during the 45-day public review period of the Draft EIR. After the public review period, LADWP ~~will~~ prepared responses to comments received on the Draft EIR and both the comments and the responses ~~will be~~ were incorporated into the Final EIR.

If LADWP decides to carry out the proposed project, it first must make written findings addressing each significant impact identified in the Final EIR. These findings must either state that alterations have been made to the project to avoid or substantially reduce each significant impact, or that specific economic, legal, social, technological, or other considerations make mitigation of a significant impact infeasible. A mitigation monitoring plan must be adopted to ensure that the measures imposed to mitigate or avoid significant environmental impacts are implemented. The Final EIR ~~for this project will~~ includes the mitigation monitoring plan for the Upper Reach RSC Project (Appendix B.2).

If LADWP decides to move forward with the proposed project even though significant unavoidable impacts would occur, LADWP must prepare and adopt a Statement of Overriding Considerations that explains the specific reasons why the benefits of the proposed project make its unavoidable environmental effects acceptable. Figure 1-2 provides a flowchart of the EIR process.

Figure 1-2. The EIR Process

1.4 Scope of the EIR

LADWP completed a multi-part process to determine the appropriate scope of issues to be examined in the EIR. LADWP prepared an IS to determine whether any aspect of the proposed project, either individually or

cumulatively, may cause a significant effect on the environment and, if so, to narrow the focus (or scope) of the environmental analysis.

The IS/NOP identified potentially significant impacts associated with the construction of the proposed project in the following four environmental issue areas:

- Air Quality
- Noise
- Transportation/Traffic
- Recreation

In addition to the four areas initially identified in the IS, Geology and Hydrogeology has been included in the EIR to address comments received during the public scoping period. Section 3 of this EIR provides a detailed evaluation for these issues, and provides mitigation measures to reduce impacts to less-than-significant levels, to the extent feasible. Environmental issues having less-than-significant or no impacts were discussed in the IS (January 2007), which is provided in Appendix A.2. Potential cumulative impacts of the proposed project are discussed in Section 3, and an analysis of alternatives to the proposed project is included in Section 4.

1.5 EIR Organization

This EIR is organized into eight sections, each dealing with a separate aspect of the required content as described in the CEQA Guidelines. To help the reader locate information of particular interest, a brief summary of the contents of each section of the EIR is provided. The following sections are contained within the EIR:

- **Executive Summary:** This section contains an overview of the scope of the EIR, as well as a summary of environmental impacts, proposed mitigation measures, level of significance after mitigation, and unavoidable significant impacts. This section also contains a summary description of project alternatives.
- **Section 1. Introduction:** This section provides an overview of the purpose and use of an EIR, the scope of this EIR, the environmental review process for the proposed project, and the general format of the document.
- **Section 2. Project Description:** This section outlines the project objectives, describes the project location, summarizes the proposed project, discusses cumulative projects, and discusses intended uses of the EIR.
- **Section 3. Environmental Analysis:** This section describes and evaluates the environmental issue areas, including the existing environmental setting and background, applicable environmental thresholds, environmental impacts (both short term and long term), proposed mitigation measures capable of minimizing environmental harm, and the cumulative impact analysis.
- **Section 4. Alternatives Analysis:** This section analyzes feasible alternatives to the proposed project, including the No Project Alternative and alternative routes for the proposed Upper Reach alignment.
- **Section 5. Other CEQA Considerations:** This section provides responses to public scoping comments; provides a summary of the proposed project's potential growth-inducing impacts; identifies project impacts that are significant and unavoidable by issue area; summarizes those environmental issues found not to be significant for the proposed project; and identifies any irreversible changes to the natural environment resulting from the proposed project.
- **Section 6. References:** This section identifies all references used and cited in the preparation of this report.
- **Section 7. Glossary of Terms and Acronyms:** This section provides a description of environmental and project specific terms, abbreviations, and acronyms used throughout the document.
- **Section 8. Report Preparation Staff:** This section identifies all individuals responsible for the preparation of this report.
- **Appendices:** Technical data supporting the analysis or contents of this EIR are provided in appendices to the document, or in project correspondence and technical files located at the offices of the LADWP.

EIR Requirements. This EIR has been prepared to meet all of the substantive and procedural requirements of CEQA (California Public Resources Code §21000 et seq.) and the CEQA Guidelines (California Code of Regulations, Title 14, §15000 et seq.). Table 1-1 presents a list of sections required under the CEQA Guidelines, along with a reference to the chapter in this EIR where these items can be found.

Table 1-1. Required EIR Contents

Requirement (CEQA Guidelines Section)	Location in EIR
Table of contents (§15122)	Table of Contents
Summary (§15123)	Executive Summary
Project description (§15124)	Section 2
Environmental setting (§15125)	Sections 3.1.3, 3.2.3, 3.3.3, 3.4.3, 3.5.3
Significant environmental impacts (§15126.2)	Sections 3.1.4, 3.2.4, 3.3.4,3.4.4, 3.5.4
Unavoidable significant environmental impacts (§15126.2)	Section 5.5
Mitigation measures (§15126.4)	Section 3.1.4, 3.2.4, 3.3.4,3.4.4, 3.5.4
Cumulative impacts (§15130)	Section 2.8, 3.1.6, 3.2.6,3.3.6, 3.4.6, 3.5.6
Alternatives to the proposed project (§15126.6)	Section 4
Growth-inducing impacts (§15126.2)	Section 5.2
Effects not found to be significant (§15128)	Section 5.4
Irreversible environmental changes (§15126.2)	Section 5.3
Organizations and persons consulted (§15129)	Section 6
List of preparers (§15129)	Section 8
Citations (§15148)	Section 6
Glossary/Terms/Writing (§15140)	Section 7
Appendices/Technical Detail (§15147)	Appendices

1.6 Availability of the Draft EIR for Review

~~This~~The Draft EIR ~~has been~~ was distributed to affected agencies, surrounding cities, and interested parties for a 45-day review period in accordance with CEQA Guidelines §15087. During the 45-day public review period, the Draft EIR ~~may be accessed~~ was accessible via the internet at the following website:

http://www.ladwp.com/ladwp/cms/ladwp004156.jsp

and is also available for public review at the following Los Angeles Public Library locations:

Valley Plaza Branch
12311 Vanowen Street
North Hollywood, CA 91605
(818) 765-~~0805~~9251

North Hollywood Regional
5211 Tujunga Avenue
North Hollywood, CA 91601
(818) 766-7185

Buena Vista Branch Library
300 North Buena Vista Street
Burbank, CA 91505
(818) 238-5620

Interested parties ~~may~~ provided written comments on the Draft EIR prior to the close of the public review period. Comments ~~should be~~ were submitted in writing and addressed to:

Sarah Easley Perez, Environmental Program Manager
Los Angeles Department of Water and Power, Environmental Services
111 North Hope Street, Room 1044
Los Angeles, CA 90012

Information concerning the public review schedule for the Draft EIR can be obtained by contacting Sarah Easley Perez at (213) 367-1276.

2. Project Description

The LADWP proposes to construct a new larger Upper Reach pipeline to replace the existing pipeline in a new alignment. The proposed project would involve the construction of approximately 31,300 linear feet (about 5.92 miles) of 78-inch diameter welded steel underground pipeline, and would also include construction of appurtenant structures (e.g., maintenance holes, flow meter, valves, and or vaults). Construction of the proposed Upper Reach would occur within existing street rights-of-way, existing easements such as Whitnall Highway and Headworks Spreading Grounds, new easements, and recreation areas within the City of Burbank and City of Los Angeles. The project area is shown in Figure 2-1.

2.1 Background

The existing RSC pipeline is a major transmission pipeline in the LADWP water system. Built in the 1940s, the pipeline's purpose is to transport large amounts of water from the Van Norman Reservoir Complex and local groundwater wells to storage and distribution facilities in the central areas of the City of Los Angeles.

Approximately 60,000 feet in length, the existing RSC pipeline begins at the North Hollywood Pump Station and ends at the Ivanhoe Reservoir. About 70 percent of the existing RSC is located in City of Los Angeles streets and property, with the remainder within City of Burbank easements. Hollingsworth Spillway, a structure located about midpoint on the existing pipeline, is used to control the pressure in the lower portion of the pipeline. The section of the existing pipeline north of Hollingsworth Spillway is referred to as the Upper Reach RSC. Various pipe sizes and material types were used to construct the existing Upper Reach. Approximately 98 percent is concrete pipe with the remainder steel pipe.

As the existing Upper Reach pipeline has aged, issues regarding the pipeline have emerged. Sections of the existing pipeline are either unpressurized or are at very low pressures. As such, the existing pipeline is below the current requirements of the California Department of Health Services Drinking Water Regulations (Title 22, §64566(c)), which require "water mains to be designed to have at least 5 psig [pounds per square inch gauge] pressure throughout any buried length of the main except when the main is removed from service for repairs or maintenance." These minimum pressures help to prevent cross-contamination from other buried utilities, in particular, sanitary sewers.

Further impacting the service of the existing RSC, and in order to meet new state and federal water quality regulations, the LADWP is proposing to remove several open-air reservoirs, from direct service to the LADWP water distribution system.

2.2 LADWP's Project Objectives

The Upper Reach project proposes to replace the existing Upper Reach pipeline. The major objectives of the project are listed below:

- Install a new larger water pipeline with supporting facilities in a new alignment
- Meet or exceed current governmental codes and regulations
- Allow for maximum operational capacity, flexibility, and reliability
- Design and construct the pipeline using the latest technology and methods available.

Key reasons necessitating the project include the following:

- **California Department of Health Services Regulations.** Sections of the existing Upper Reach pipeline are un-pressurized or at low water pressures. Consequently, the pipeline is below current pressure requirements of the California Department of Health Services Drinking Water Regulations, Title 22, §64566(c). The proposed pipeline would meet minimum pressure requirements, which help to prevent cross-contamination from other buried utilities, particularly sanitary sewers.
- **Pipe Capacity**. A larger diameter pipeline is needed for both current water consumption and projected future growth. Planned changes to the water system, including commissioning of new facilities and a different water disinfection method, will require new allowances for operational sequencing and phasing. The proposed pipeline, with its increased pipe capacity, would help provide maximum operational flexibility.
- **Air Entrainment**. The proposed new pipeline would reduce air entrainment, or trapped air, which causes restricted flow capacity in the existing Upper Reach.
- **Storage Reduction**. More stringent water quality regulations have resulted in the loss of water storage within the LADWP distribution system. The proposed pipeline would improve operational capacity and flexibility.

Further, the existing pipeline is constructed mainly of concrete pipe. The properties of this material may put the pipeline at greater risk for breakage during an earthquake or other natural disaster. The proposed welded steel pipeline would help reduce this risk.

2.3 Project Selection Criteria and General Location

In developing the proposed project, the following selection criteria were used to evaluate the various possible routes for the new Upper Reach pipeline:

- Project schedule/delivery date
- Avoid existing underground utilities and substructures and utilize available underground space
- Preferentially use primary streets rather than secondary streets, as minor roads are typically too narrow to accommodate construction activities
- Avoid large tracts of high-density residential housing, which include curbside parking and driveway access that could potentially be impacted by project construction
- Minimize head losses (excessive pressure losses caused by friction) and reduce the amount of resources used by designing for shortest overall distance
- Minimize impacts on the surrounding community.

Not only were the above selection criteria considered, but scoping comments received during the public review period for the Initial Study (January 25 to February 26, 2007) were also considered in the development of the proposed project alignment (see Appendix A.3).

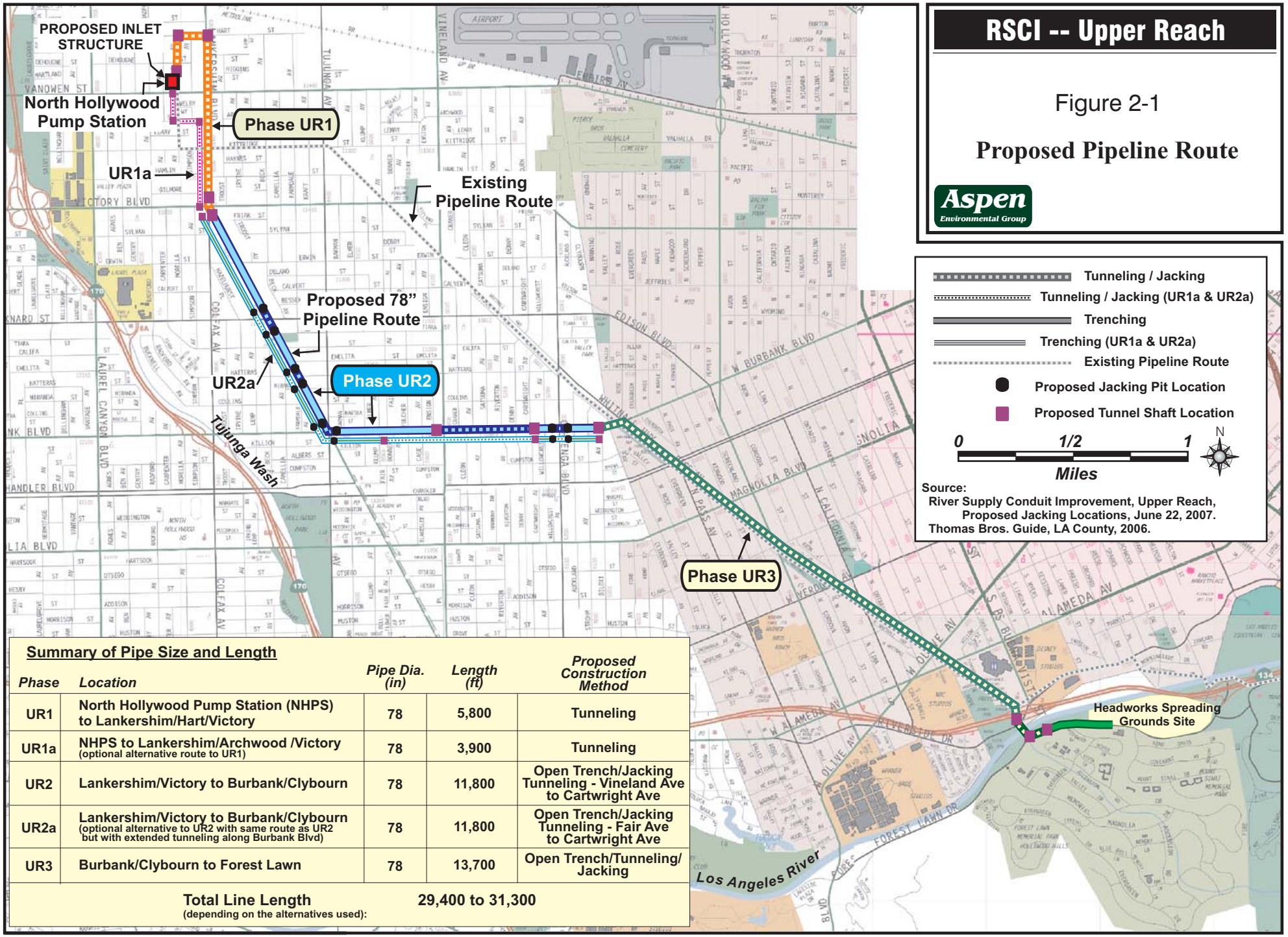
The new Upper Reach pipeline would be located in public street rights-of-way, and LADWP easements, new easements, and in recreation areas in the City of Los Angeles and the City of Burbank. The proposed pipeline route is bounded by Sherman Way to the north, U.S. Highway 170/134 (Hollywood Freeway) to the west and southwest, Interstate 5 (Golden State Freeway) to the east, and Forest Lawn Drive to the south (see Figure 1-1). The Upper Reach pipeline would be located in the LADWP East Valley service area.

RSCI -- Upper Reach

Figure 2-1

Proposed Pipeline Route

Aspen Environmental Group



Summary of Pipe Size and Length

Phase	Location	Pipe Dia. (in)	Length (ft)	Proposed Construction Method
UR1	North Hollywood Pump Station (NHPS) to Lankershim/Hart/Victory	78	5,800	Tunneling
UR1a	NHPS to Lankershim/Archwood /Victory (optional alternative route to UR1)	78	3,900	Tunneling
UR2	Lankershim/Victory to Burbank/Clybourn	78	11,800	Open Trench/Jacking Tunneling - Vineland Ave to Cartwright Ave
UR2a	Lankershim/Victory to Burbank/Clybourn (optional alternative to UR2 with same route as UR2 but with extended tunneling along Burbank Blvd)	78	11,800	Open Trench/Jacking Tunneling - Fair Ave to Cartwright Ave
UR3	Burbank/Clybourn to Forest Lawn	78	13,700	Open Trench/Tunneling/ Jacking
	Total Line Length (depending on the alternatives used):		29,400 to 31,300	

INTENTIONALLY LEFT BLANK

(BACK OF COLOR FIGURE)

2.4 Proposed Project

2.4.1 Proposed Pipeline Route

The proposed Upper Reach pipeline alignment is shown in Figure 2-1. To facilitate design and constructability of the proposed project, the Upper Reach has been divided into construction phases. Table 2-1 describes the three phases of the Upper Reach.

Table 2-1. Summary of Upper Reach Route Phases

Phase and Location	City	Route
PHASE UR 1 North Hollywood Pump Station to Lankershim/Hart/Victory	Los Angeles	Morella Avenue from the North Hollywood Pump Station north to Hart Street Hart Street east to Lankershim Boulevard Lankershim Boulevard south from Hart Street to Victory Boulevard
UR1a (Optional route) North Hollywood Pump Station to Lankershim/Archwood/Victory	Los Angeles	Morella Avenue from the North Hollywood Pump Station south to Archwood Street Archwood Street east to Lankershim Boulevard Lankershim Boulevard south from Archwood Street to Victory Boulevard
PHASE UR 2 Lankershim/Victory to Burbank/Clybourn	Los Angeles	Lankershim Boulevard south from Victory Boulevard to Burbank Boulevard Burbank Boulevard east to Clybourn Avenue/Whitnall Highway
UR2a (Option) Lankershim/Victory to Burbank/Clybourn	Los Angeles	Same route as UR2 but with extended tunneling along Burbank Boulevard
PHASE UR 3 Burbank/Clybourn to Headworks	Burbank Los Angeles	Burbank Boulevard east from Clybourn Avenue to Whitnall Highway Whitnall Highway southeast to Johnny Carson Park east of Bob Hope Drive Across the Los Angeles River from Johnny Carson Park to Forest Lawn Drive; Forest Lawn Drive east to the west end of the Headworks Spreading Grounds site

The proposed Upper Reach pipeline would be located in City of Los Angeles and City of Burbank streets, utility corridors, and parks (See Figure 2-1). The portion of the pipeline in the City of Burbank would be approximately 11,900 feet long, and the remaining approximately 19,400 feet would be in the City of Los Angeles. The majority of the proposed pipeline would be located within city streets surrounded by urban development including both residential and commercial zones, as well as the existing Whitnall Highway utility (transmission) corridor.

The north end of the Upper Reach would begin at the North Hollywood Pumping Station, north of Vanowen Street at Morella Avenue, in the North Hollywood area of the City of Los Angeles. From the North Hollywood Pump Station, the pipeline would continue north along Morella Avenue, turning east onto Hart Street, then south onto Lankershim Boulevard, and east again onto Burbank Boulevard until reaching the Whitnall Highway. At this point the alignment would turn southeast and travel within the Whitnall Highway, continuing through Johnny Carson Park, east of Bob Hope Drive. The pipeline would then cross the Los Angeles River to Forest Lawn Drive, and continue east to the west end of the Headworks Spreading Grounds site.

The proposed project also includes an optional route for Phase UR1 [UR1a (Optional Route)]. This optional route would begin at the North Hollywood Pump Station similar to UR1, but it would travel south (instead of

north) to Archwood Street. From Archwood Street, the route would go east to Lankershim Boulevard. The optional route would continue with the proposed alignment from Lankershim Boulevard.

In addition, an option has also been identified for UR2. UR2a would follow the same route as UR2 but would extend tunneling along Burbank Boulevard. The proposed route (UR2) includes tunneling from west of Vineland Avenue to Cartwright Avenue along Burbank Boulevard. In the optional route (UR2a), tunneling would be constructed from Fair Avenue to Cartwright Avenue along Burbank Boulevard, which adds approximately four blocks in comparison to the proposed route.

2.4.2 Project Components

2.4.2.1 Upper Reach Pipeline

Pipeline construction would be composed of several activities. The construction activities would be organized to proceed in the order listed below, although activities 1 through 6 will occur concurrently.

1. Pre-construction activities
2. Right-of-way clearing
3. Excavation and Pipeline installation
4. Weld inspection
5. Applying protective coating to the weld joints
6. Backfilling
7. Hydrostatic testing and disinfection
8. Restoring and cleaning of affected construction areas.

Once the proposed pipeline project is approved, a construction plan would be developed to, among other things, identify refueling operations. Refueling of construction equipment would take place along the work area rights-of-way. Absorbent material and temporary berms around the equipment staging areas would be used to contain spills, fluids, fuels, and lubricants.

Prior to construction, LADWP's contractor would develop an emergency response plan, spill prevention plan, or similar document. As part of this plan, the LADWP's contractor would be required to have available adequate spill containment and cleanup resources on site at all times. The contractor would be prepared to contain, control, clean up, and dispose of any potential fuel spill quickly and completely.

Construction of the proposed project would occur on public property, including street and utility corridor rights-of-way and municipal parks. Installation of the Upper Reach pipeline would be accomplished by a combination of open-trench excavations, jacking, and traditional tunneling, as described below under Pipeline Construction Methods. In general, deep sections of pipe would be tunneled (UR1 – 24 to 40 feet; UR2 – 30 to 33 feet; UR3 – 40 feet to 60 feet) and street intersections would be jacked or tunneled. In sequence, the general process for the construction methods consists of site preparation, excavation, pipe (and/or appurtenant structure) installation and backfilling, and site restoration (where applicable). For tunneling and jacking operations, a shaft/pit would be needed at the entrance and exit of each tunneled or jacked segment to enable installation of the pipeline. All these construction methods would require off-site staging area(s) to temporarily store supplies and materials (See "Staging Areas" below).

Ventilation shafts may be needed for the proposed tunnel drive within the City of Burbank because tunneling would be greater than 11,000 feet in length. Intermittent ventilation and emergency ingress/egress shafts may be required to augment the launch shaft and to provide tunnel safety. The frequency and size of the shafts have not been defined.

In the Upper Reach, 78-inch diameter pipe would be installed. The minimum trench depth would be about 12 feet with a maximum of about 46 feet at approaches to jacking pits. The maximum trench width would be approximately equal to the pipe diameter plus two feet on either side of the pipe for the open trench method (approximately 10.5 feet for 78-inch diameter pipe). The overall width, including the work area along the side of the trench, would be approximately 30 to 35 feet. The shaft sizes for tunneling would be about 45 feet in diameter, and the pit sizes for jacking would be about 18 feet wide by 60 feet long.

Upper Reach construction techniques would include approximately:

- 19,700 to 23,200 feet of tunneling or jacking, depending on which alternative route is used, with steel or concrete cylinder casing;
- 8,800 to 9,900 feet of open trench excavation, depending on which alternative route is used; and
- Tunneling or jacking under seven (7) street intersections, including Lankershim Blvd./Victory Blvd., Lankershim Blvd./Burbank Blvd., and Burbank Blvd./Clybourn Ave., under the Los Angeles River from north of Riverside Drive (and south of Highway 134) to Forest Lawn Drive, and beneath existing storm drain on Forest Lawn Drive northeast of Memorial Drive.

Table 2-2 provides a summary of the proposed pipeline route's construction phase details, pipeline length, pipeline diameter, and general construction method(s). The proposed construction methods presented in Table 2-2 are further described below, under 2.6 "Pipeline Construction Methods."

Table 2-2. Summary of Phase Characteristics and Construction Method

Phase No.	Phase Details	Length (Feet)	Pipe Dia. (in)	Proposed Construction Method
UR 1	North Hollywood Pump Station to Lankershim/ \Hart/Victory	5,800	78	Tunneling
UR1a	North Hollywood Pump Station to Lankershim/Archwood/Victory *(optional alternative route to UR1)*	3,900	78	Tunneling
UR 2	Lankershim/Victory to Burbank/Clybourn	11,800	78	Open Trench/ Jacking Tunneling - Vineland Avenue to Cartwright Avenue
UR2a	Lankershim/Victory to Burbank/Clybourn *(optional alternative route to UR2 with same route as UR2 but with extended tunneling)*	11,800	78	Open Trench/Jacking Tunneling - Fair Avenue to Cartwright Avenue
UR 3	Burbank/Clybourn to Forest Lawn	13,700	78	Open Trench/Tunneling/Jacking

2.4.2.2 Appurtenant Improvements

The Upper Reach pipeline would also include construction of appurtenant structures as follows:

- Vaults
- Ventilation Systems
- Maintenance and Access Holes
- Flow Meters and Monitoring Equipment
- Electrical and Mechanical Cabinets
- Valves including isolation, air vacuum, and air release
- Blowoff Systems
- Cathodic Protection System and Test Stations.

The permanent above ground facilities consist of electrical/control cabinets located in proximity to buried valve vaults, buried vault ventilation intake/exhaust vents, water quality sample tap cabinets (estimated two locations), and air-vacuum release valves which are typically required every 1,200 to 2,600 feet (see Figure 2-2) for tunneling projects of this type. ~~The exact locations of these structures is yet to be determined.~~ The proposed location of the ventilation shafts and structures are noted below:

Proposed Temporary Ventilation Shaft Locations

- Morella Avenue parkway north of Vanowen Street
- Northeast parkway at Morella and Archwood Street (UR1a)
- Lankershim Boulevard parkway north of Victory Boulevard
- Lankershim Boulevard parkway south of Victory Boulevard
- Tower parcel on the south end of Whitnall Highway Park North, north of Chandler or the tower parcel on Pass Avenue south of Chandler
- Tower parcel on Screenland north of Clark
- Tower parcel within utility corridor adjacent to Jacaranda Avenue cul-de-sac
- Near tower within parking lot north east of Fairway Street and Olive Avenue
- Johnny Carson Park at tunnel shaft site
- Temporary shaft locations for UR2 have not been identified at this time

Additional Ventilation-Related Structures and Pipeline Facilities

- Burbank Boulevard east of Lankershim Boulevard - Aboveground control cabinet
- Burbank Boulevard west of Cybourn Avenue - Aboveground control cabinet
- Johnny Carson Park – location of permanent blow-off outlet buried vault with hatch or manhole cover at the surface for controlled drainage of the trunk line
- North parkway of Forest Lawn Drive at the Los Angeles River – aboveground control cabinet and air release vacuum valve
- Headworks – air release vacuum valve
- Permanent ventilation structures at the location of tunnel shafts and jacking pits (see Figure 2-2 Proposed Pipeline Route)

The construction ventilation shafts would be an approximately 48-inch (four-feet) to 60-inch (five-feet) diameter shaft with approximately 15-foot by 15-foot k-rail (concrete temporary barrier). The area would fenced, screened, and placed within the utility ROW. The fence would be cabled and locked to restrict entry. The permanent ventilation shafts would be approximately 24-inch (two-feet underground) diameter with an approximately 16- to 24-inch wide structure on the surface similar to the example provided in Figure 2-2 (see air release vacuum valve). The air release vacuum valve shown in the figure has an approximate eight-inch diameter whereas the one proposed for the project would be approximately 16 to 24 inches wide. The permanent ventilation on the surface would consist of either one approximately 16 to 20- inch or three approximately eight-inch structures similar to the one shown on Figure 2-2.

The ventilation shafts would take approximately eight weeks for construction and site clean up. Once the project reaches the shaft site, there would be another three weeks of construction to close the shaft if a temporary site, or to install the pipe and connect to the trunk line if the shaft would be used as permanent ventilation for the project. LADWP would restore the site to original condition after construction.

2.4.2.3 Existing Upper Reach Pipeline

The existing pipeline, from the North Hollywood Pump Station to the Hollingsworth Spillway Structure, would ~~remain in service after completion of proposed Upper Reach pipeline~~ be decommissioned for future use. Planning-level studies are underway to determine if ~~Once the proposed Upper Reach pipeline is in operation,~~ the existing pipeline ~~would~~ could be used to transport well water from the Erwin, Whitnall, and Verdugo ground water wells. ~~The pipeline will continue to operate as part of the water system reconnecting to the new RSC pipeline north of the Travel Town Pump Station.~~ LADWP would conduct separate CEQA compliance for the future use of the existing pipeline.

2.5 Project Specifics

2.5.1 Construction Schedule, Planning, and Labor Force

As shown in Table 2-3, construction of the proposed project would be expected to commence in November 2008 with work being completed by October 2012, for a total of 48 months.

Table 2-3. Proposed Construction Schedule

Phase	Early Start Date	Completion Date	Estimated Duration (Days)*
UR 1	January 2009	April 2011	630
UR 1a	January 2009	January 2011	500
UR 2	January 2009	October 2012 (late)	470
UR2a	January 2009	October 2012 (late)	540
UR 3	November 2008	September 2011	748

*Estimated duration is the number of days it will take to complete construction at each phase. For each phase, the estimated duration (in days) may take place anywhere between the early start and completion dates noted on the table.

As a worse-case scenario, it is assumed that up to three pipe jacking operations, three open trench operations, three tunneling operations and three site restoration spreads would be occurring simultaneously over three pipeline phases (e.g. UR 1/1a, 2/2a, and 3) during the peak construction period. Therefore, approximately 126 personnel[2] would be employed on the project during the peak construction period. On a typical workday, workers would travel directly to one of the predetermined staging areas, where they would gather equipment and proceed in work crews to the construction sites along the alignment. Construction activities would involve several worker vehicles traveling daily to and from the proposed pipeline alignment from the nearest construction staging area. Additional truck trips would be needed to transport unused excavated soil from trenching to an appropriate facility for reuse or ultimate disposal.

[2] Per Table 2-4, the personnel estimate includes four employees multiplied by three for three pipe jacking operations, 22 employees multiplied by three for three open trench operations, six employees multiplied by three for three tunnel operations, and ten employees multiplied by three for three site restoration spreads.

RSCI -- Upper Reach

Figure 2-2

Miscellaneous Sidewalk Appurtenances

Aspen Environmental Group

COMBINATION AIR RELEASE VACUUM VALVE

MISELLANEOUS SIDEWALK APPURTENANCES

Construction would generally occur between 7:00 a.m. and 6:00 p.m. Monday through Friday (10-hour work day) and 8:00 a.m. to 5:00 p.m. on Saturdays (8-hour workday). In addition, construction activities may continue into the swing shift generally occurring between 3:00 p.m. and 11:00 p.m. No construction activities will occur in public right-of-ways during the graveyard shift (11:00 p.m. to 7:00 a.m.), although maintenance and dewatering activities may occur 24 hours a day. It is estimated that a typical construction activity would require the closure of up to three travel lanes. Intersections where open trench construction is used would be affected for approximately four to six weeks with turning traffic affected considerably longer. Table 2-4 provides a description of personnel, equipment, and refueling required for each activity.

Table 2-4. Estimated Personnel, Equipment, and Refueling Requirements

Equipment Quantity	Type	Activity	Personnel	Refueling
5	Pickups	Open Trench	22	Off-site
1	Service truck			Off-site
1	Backhoe			On-site
6	Dump trucks			Off-site
1	Welding trucks			Off-site
1	Pitman			Off-site
1	Crane			On-site
1	Wheel loader			On-site
1	Compactor			On-site
1	Fork lift			On-site
1	Water truck			Off-site
1	Excavator			On-site
2	Pickups	Jacking	4	Off-site
1	Dump trucks			Off-site
1	Excavator			On-site
1	Crane			On-site
2	Pickups	Tunneling	6	Off-site
1	Dump trucks			Off-site
1	Excavator			On-site
1	Crane			On-site
2	Trailer truck	Pipe Delivery (40 ft/load)	2	Off-site
2	Pickups	Hydrostatic Testing and Disinfection	2	Off-site
4	Pickups	Site Restoration	10	Off-site
1	Paver			Off-site
1	Pavement roller			Off-site
1	Dump truck			Off-site
1	Front-end loader			Off-site

Note:
a. The activity/pipeline construction methods presented are further described under "Pipeline Construction Methods."

2.5.2 Staging Areas

During pipeline construction, LADWP's construction contractor would establish temporary yard locations for staging and storage of miscellaneous construction materials and equipment. As there are currently three phases of construction scheduled for this project, it is expected that a minimum of one staging area per phase would be required. The contractor(s) would be responsible for scouting and securing suitable local lots for staging areas. The two confirmed staging area locations include an approximate five-acre area of Johnny Carson Park (area

south of Highway 134 and north of Riverside Drive) and the Headworks Spreading Grounds. ~~However,~~ Other possible staging areas identified for the proposed project include ~~the Headworks Spreading Grounds, Johnny Carson Park north of Riverside Drive,~~ open right-of way within the Whitnall Highway~~,~~ or local LADWP facilities, including the North Hollywood Pump Station.

During all phases of construction, refueling and lubrication of construction equipment would occur at the contractors' staging yard or along the construction right-of-way. Equipment would be regularly checked for leaks.

2.5.3 Construction Sites

Most of the heavy construction equipment would be delivered on trucks or trailers. Mobile cranes and dump trucks would be driven in from local contractors' yards. Construction equipment would be left overnight at the site as feasible, at the contractor yards, or at other storage yards in the area. All equipment would be lubricated, refueled, and repaired as noted in Table 2-4 by the contractor or local servicing companies.

All construction materials would be delivered to the construction areas by truck on existing roadways. For pipe delivery by truck, it is assumed that each truck would carry 40-foot lengths of pipe. Materials that would be truck transported to the site would include: the pipe sections, pipe fittings, and valve assemblies to form the new Upper Reach pipeline; shoring materials to maintain trench integrity during construction; welding materials; cement, aggregate, gravel, sand, and slurry (from local plants) for backfill; asphalt for re-paving; signs and fencing for identification and protection of construction and staging areas; fuel and lubrication for equipment; drinking water for construction crew; and water for dust control. Alternatively, water may be available from fire hydrants or permitted water sources in the project area for hydrotesting and dust control. The amounts of each material needed would depend on the location and construction activity.

2.5.4 Waste Management

Generally, waste generation from construction would be in the form of short sections of pipe, welding rods, and coating materials (i.e., cement mortar) as well as boxes and crates used in the shipment of materials. These materials would be sorted by metal or non-metal and typically would be hauled to local waste disposal/recycling centers. LADWP's contractor would sort and recycle all recyclable materials. Other construction wastes would include contaminated soil that cannot be returned to the trench as backfill; rubble from trenching paved areas; and water used to hydrostatically test the pipeline. Non-recyclable, non-hazardous wastes would be hauled to a sanitary landfill; hazardous wastes would be sent to a permitted treatment or disposal facility. Hydrostatic test water would be treated to meet the requirements of the National Pollutant Discharge Elimination System (NPDES) permit as required. Test water would be then discharged into nearby storm drains, or discharged to sanitary sewer systems within the City of Los Angeles consistent with the requirement of the Bureau of Sanitation. Construction crews would use portable chemical toilets, and trash containers would be provided at each yard for daily refuse from construction workers.

2.5.5 Utility and Services Requirements

Construction equipment would require both gasoline and diesel fuel. However, the LADWP would use alternative fuels (i.e., propane, use of electrical grid for stationary motors) where available and feasible for

construction equipment. All construction equipment would be fitted with appropriate mufflers and all engines would be maintained regularly. Welding machines would use diesel or unleaded fuel.

Water would be used as necessary to control fugitive dust and to wash streets as a supplement to sweeping streets. In addition to the daily construction water needs, hydrostatic testing of the pipeline would also require water. Hydrostatic test water would be obtained from LADWP. For the Upper Reach, approximately 7.4 million gallons of hydrostatic test water would be used. A minimum of one separate hydrostatic test would be conducted for each of the three construction phases (UR 1 or UR1a, UR 2 or UR2a, and UR 3). Therefore, a maximum discharge event for any segment in the Upper Reach would be in the order of 2.5 million gallons over four days. Hydrostatic test water would be pumped from the pipeline and discharged to the nearest storm drain or sanitary sewer system. Best management practices would be used to protect affected downstream waterways during construction.

Construction along the proposed Upper Reach pipeline route would require onsite diesel fuel generators for the temporary supply of electricity. As noted earlier, where available and feasible, alternative fuels would be used. Together the main pipeline activities and street work would have approximately 15 pick-up mounted welding machines, each with its own generator. In addition, utility generators would also be used for the intermittent operation of dewatering pumps, hydraulic equipment, grinders, sandblasters, temporary lights, etc.

2.5.6 (New) LADWP Project Measures

LADWP applies standard practices in construction and operation of its projects. In addition, other measures may be added to address project-specific site conditions (i.e. groundwater assessment). This section identifies the standard practices and other measures that LADWP will apply to the project. The standard practices that will be applied to the project are summarized below.

Standard Practices:

- Project Controls
  - Air Quality and Dust Control - measures to control dust include, for example. use of water trucks and street sweepers throughout the work day; promptly remove mud, dust, dirt, or debris; implement SCAQMD Rule 403
  - Noise Control – minimize noise level during all phases of work; equipment in good operating order
  - Project Signs and Notices – requires construction sign with superintendent's, mayor's, and engineer's name; 24-hour hotline, project website address, and notice that no vehicles will be allowed on site before 7 am; construct and post signs for businesses
- Repairing and Patching – requires that repair match the previous work in material, form, and construction; also replace and repair existing paving
- Tree Pruning – detailed specification for working near or around trees and tree canopies; requires certified arborist to be consulted for any pruning of trees
- Tree Protection – requires protection of trees in project work area shown on construction drawings; requires tree protection and maintenance to performed under direction of a licensed arborist
- Landscape Irrigation
  - General Requirements – requires care in excavating and working near existing utilities; investigate utilities and show on a map
  - Trenching – conduct all excavations in accordance with Tree Protection guidance (noted above)
  - Pre-construction conference
  - Products (pipes, fittings, valve boxes); products handling; irrigation record drawings

- Closing of Pipe and Flushing of lines – mains and laterals
- Field Quality Control
- Maintenance
- Clean-up
- Pipeline Assembly – laying of lines, backfill, compaction

- Landscape Planting - all landscape planting including soil preparation, planting, seeding, staking, and clean-up; requires certified arborist
- Tree Relocation – onsite relocation and maintenance of designated trees
- Landscape Maintenance and Plant Establishment – maintain landscape in an attractive condition

Other Measures:

Groundwater Assessment. LADWP will conduct a groundwater assessment in tunneled portions of the alignment and/or in any portion of the alignment where groundwater dewatering is necessary. The assessment will determine the likelihood that groundwater and contaminated groundwater will be encountered at the time of tunnel construction. The groundwater assessment will generally include:

- Construct piezometers/monitoring wells along the alignment from Alameda Avenue to the south side of the Los Angeles River at an approximate 500-foot spacing. The well locations should be selected to remain functional during construction.
- Contact the Mobil Service Station (3020 Olive Avenue) to gain access for monitoring of MW-6 (LUFT site downgradient well).
- Conduct routine water level and water quality monitoring prior to construction to assess groundwater conditions, seasonal water level fluctuations, and water quality. The groundwater baseline data should span about one year and include a minimum of two water quality testing events. Water quality data should be current at the time of bidding.
- Analyze the available data to determine the likelihood that groundwater and contaminated groundwater will be encountered during tunnel construction.
- If necessary, develop, or require the tunnel contractor to develop, a dewatering plan that includes storage, treatment and disposal of groundwater, that complies with the requirements of the project NPDES permit.
- Project plans and specifications will include the results of the groundwater assessment and the dewatering plan. The LADWP resident engineer will oversee the contractor's compliance with the dewatering plan and NPDES permit.

Post-construction Groundwater Level Monitoring. As described in revised Mitigation Measure GEO-1, LADWP will conduct a post-construction monitoring program in areas where the bottom of the pipe is at or below the historic high groundwater level, which LADWP will address as part of the recommendations of the geotechnical investigation. Monitoring will be conducted to monitor water levels two to four times per year in select piezometers and to effectively identify groundwater mounding up gradient of the tunnel. This water level monitoring program will include provisions to measure water levels in the same wells to establish pre-construction gradients. The post-construction water level data will be evaluated to determine if a mound exists and, if so, whether the liquefaction susceptibility changed (increased) in those areas.

Subsidence Monitoring Program. Prior to, during, and after project construction, LADWP will implement a Subsidence Monitoring Program in tunneled portions of the alignment and/or in any portion of the alignment where groundwater dewatering is necessary. LADWP will address subsidence monitoring as part of the recommendations of the geotechnical investigation. LADWP will analyze the potential for ground subsidence to

occur during tunneling, and will identify project-specific trigger levels that require corrective action should subsidence occur. During tunneling, the monitoring program will address detection of subsidence, including measurements of groundwater levels, surface and subsurface settlement, ground movement and displacement, and movement in existing infrastructure as needed. LADWP will implement corrective actions, such as increased tunnel support, if measured displacement reaches the specified trigger level.

2.6 Pipeline Construction Methods

2.6.1 Open Trench Excavation

Open trench excavation is a construction method typically utilized to install pipelines and appurtenant structures which include maintenance holes, flow meters, valves, and vaults. In general, the process consists of site preparation, excavation and shoring, pipe installation, trench backfilling, and site restoration (where applicable). The proposed project would be phased in work areas, typically between 800 and 1,000 feet in length. The work areas would be contained within a 1,400 foot construction zone. Construction usually progresses along the alignment with the maximum length of open trench at one time being approximately 500 feet. Traffic detours would begin at least 200 feet on either side of the work area. The following is a description of the phases of construction for open trenching.

Site Preparation. Traffic control plans, where necessary, are first prepared in coordination with the City of Los Angeles and the City of Burbank to detour and delineate the traffic lanes around the work areas. The approved plans are then implemented. The existing pavement along the pipeline alignment is cut with a concrete saw or otherwise broken and then removed using jackhammers, pavement breakers, and loaders. Other similar equipment may be used. The pavement is removed from the project site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

Excavation and Shoring. A trench is excavated along the pipeline alignment using backhoes, excavators, or other types of excavation equipment. Portions of the trench adjacent to some utilities may be manually excavated. The excavated soil may be temporarily stored in single rows adjacent to the trenches, stored at off-site staging areas, or immediately hauled off-site. As the trench is excavated, the trench walls are supported, or shored, typically with hydraulic jacks or trench boxes. Steel or wood sheeting between H-beams (e.g., beam and plate) may also be used for shoring. Other similar shoring methods may be utilized. Utilities not relocated prior to trenching are supported as excavation and shoring occurs.

If construction occurs in areas with high groundwater, the groundwater would be removed during the excavation of trenches, usually by pumping it from the ground through dewatering wells that have been drilled along the alignment. The extracted groundwater would first be treated for any contaminants, if present, before being discharged to the storm drain system under a permit issued by the Regional Water Quality Control Board.

Pipe Installation and Backfilling. Once the trench has been excavated and shored, pipelaying begins. Bedding material (such as sand or slurry) would be placed on the bottom of the trench. Pipe segments would then be lowered into the trench and placed on the bedding. The segments would be welded to one another at the joints. The rate at which pipe may be installed in a single day varies, but is estimated to be installed at a rate of approximately 80 feet per day for the proposed project. Prior to backfilling, appurtenant structures would be installed as necessitated by design. After laying and attaching the pipe segments, the trench is immediately

backfilled with native soils, crushed miscellaneous bases, or cement slurry. Not more than 500 feet of trench, or the amount of the trench that can be backfilled in one day, may be under construction at any given time.

Site Restoration. Any portion of the roadway damaged as a result of construction activities will be repaved and restored in accordance with all applicable City of Los Angeles and City of Burbank standards. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

2.6.2 Jacking Method

Pipe-jacking is utilized when open-trenching is not feasible, or to avoid the disruption of other facilities such as flood control channels (e.g., Los Angeles River). Although the installation of pipelines using jacking techniques avoids the continuous surface disruption common to open-trench construction, some surface disruption is unavoidable because jacking and receiving pits are required and may be located in street rights-of-way.

Pipe-jacking is an operation in which the soil ahead of the steel casing is excavated and brought out through the steel casing barrel while the casing is pushed forward by a horizontal, hydraulic jack which is placed at the rear of the casing. The jacking equipment utilized for this operation is placed in the jacking pit. Once the casing is placed, the pipe is installed inside the casing (see Figure 2-3).

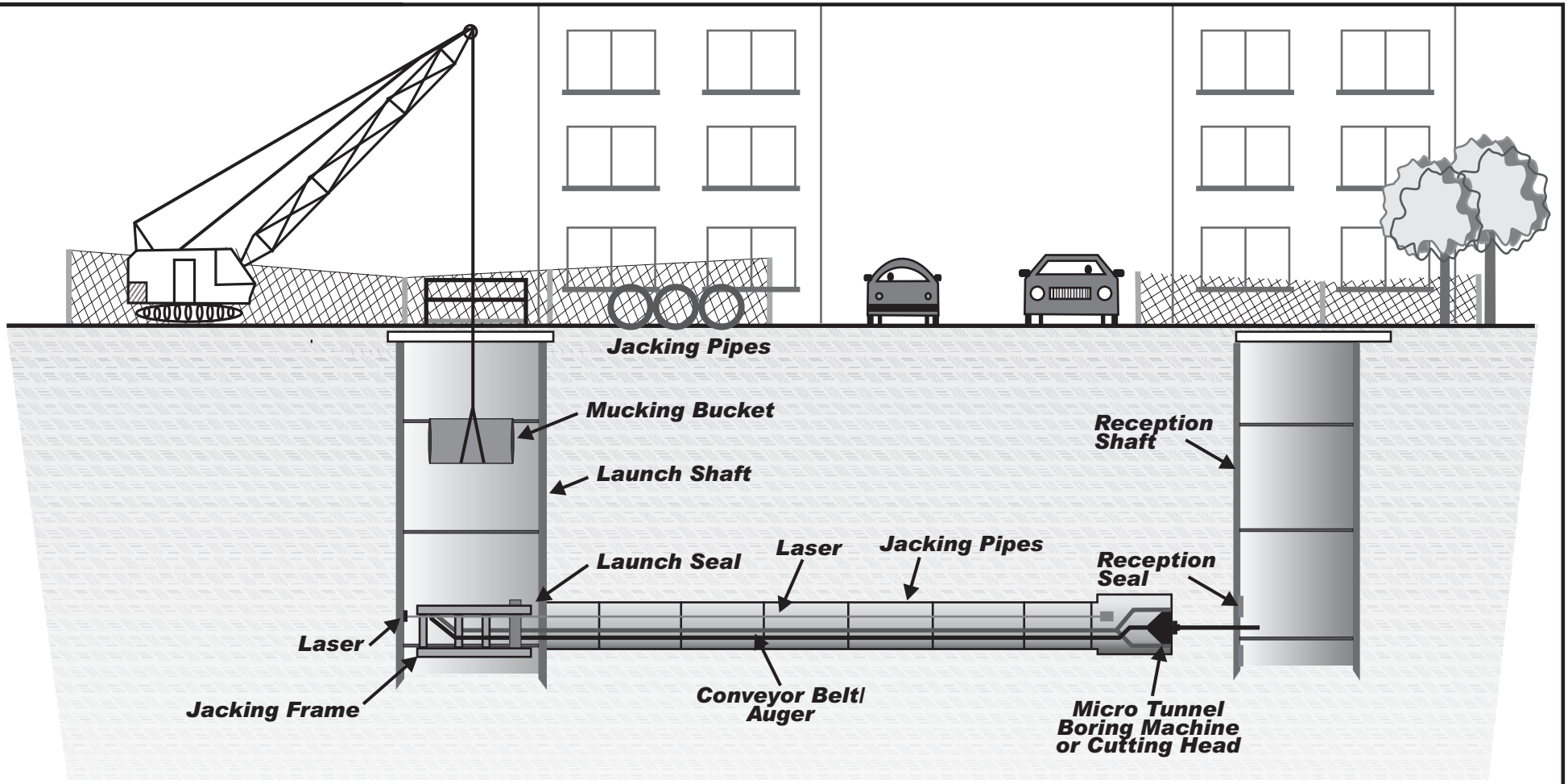
As with open trench excavation, the four primary phases for pipe-jacking are site preparation, excavation and shoring, pipe installation, and site restoration.

Site Preparation. Traffic control plans, where necessary, are first prepared in coordination with the City of Los Angeles and the City of Burbank, to detour and delineate the traffic lanes around the work areas and then implemented. In preparing to construct the jacking and receiving pits, the pavement is first cut using a concrete saw or pavement breaker. The pavement is removed from the pit site and recycled, reused as a backfill material, or disposed of at an appropriate facility.

Excavation and Shoring. A jacking pit and a receiving pit are generally used for each jacking location, one at each end of the pipe segment. The distance between the pits typically ranges from 250 to 500 feet, but may be longer or shorter depending on site conditions.

For the proposed project, the size of the jacking and receiving pit for the Upper Reach would be approximately 20 to 60 feet long, 12 to 18 feet wide and 15 to 55 feet deep. The pits are excavated with backhoes, cranes, and other excavation equipment. The excavated soil is immediately hauled away. As excavation occurs, the pits are shored utilizing a beam and plate shoring system.

Pipe Installation. Once the pits are constructed and shored, a horizontal hydraulic jack is placed at the bottom of the jacking pit. The steel casing is lowered into the pit with a crane and placed on the jack. A simple cutting shield is placed in front of the pipe segment to cut through the soil more easily. As the jack pushes the steel casing and cutting shield into the soil, soil is removed from within the lead casing with an auger or boring machine, either by hand or on a conveyor. Once the segment has been pushed into the soil, a new segment is lowered, set in place, and welded to the casing that has been pushed. Installation of the steel casing is expected to progress at approximately 40 feet per day for auger-bored jacked casing. Once the casing has been installed, the carrier pipe is then lowered and placed on the jacks, which push the pipe into the steel casing. Installation of carrier pipe is expected to progress at approximately 40 to 60 feet per day.



Microtunnel Boring Machine

The Bottom of the Shaft

Source: Adapted from Myra L. Frank & Associates, Inc. 2000. and http://www.istt.com/index.cfm?menuID=65&cmid=63&object_ID=4

RSCI -- Upper Reach

Figure 2-3

Typical Jacking Operation

Aspen Environmental Group

Site Restoration. After completion of the pipe installation along the jacking location, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

2.6.3 Tunneling Method

Tunneling involves the placement of the pipeline in an underground tunnel, which is excavated between two or more shafts. Tunneling consists of the excavation of shafts, the excavation of tunnels, the installation of the pipeline, and site restoration (see Figure 2-4). In addition, ventilation shafts would be constructed for the tunneling in the City of Burbank. See Section 2.4.2.2. (Appurtenant Structures) for more information on the proposed location, size, and construction period of the ventilation shafts. ~~Because the proposed tunnel~~

Shaft Excavation. Two or more shafts are constructed as described previously for pipe-jacking. The tunnel shaft is typically circular with an approximate diameter range of 35 to 45 feet. Because many shafts will be located in street right-a-ways, rectangular shafts may also be utilized.

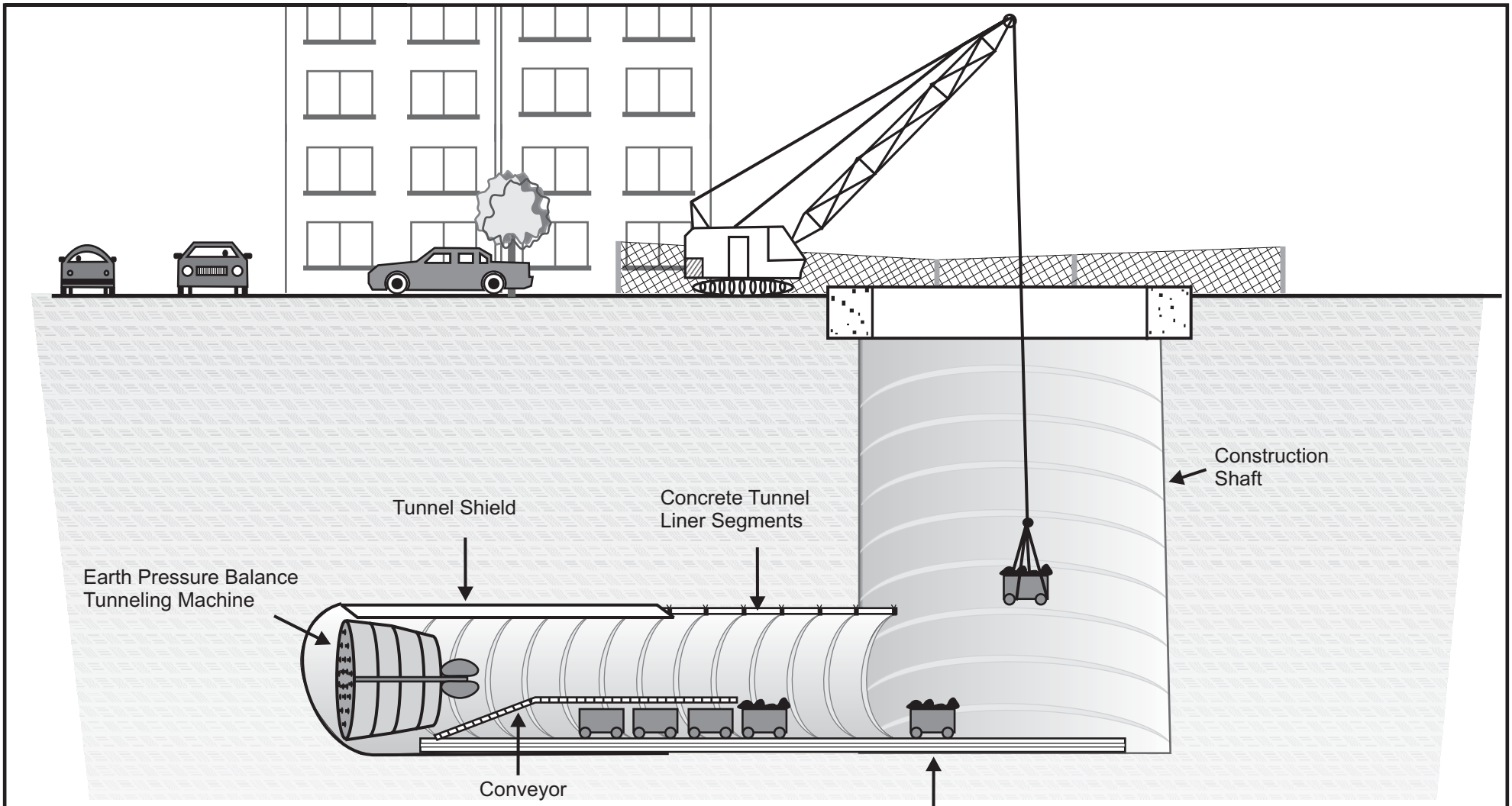
Tunnel Excavation. The large diameter tunnels are excavated using a tunnel boring machine (TBM). For tunneling below the groundwater level without dewatering, pressurized-face TBMs are used to stabilize the tunnel face and prevent water from entering the tunnel. One of two basic types of TBMs may be used: (1) Slurry Pressure Balance (SPB) TBM or (2) Earth Pressure Balance (EPB) TBM.

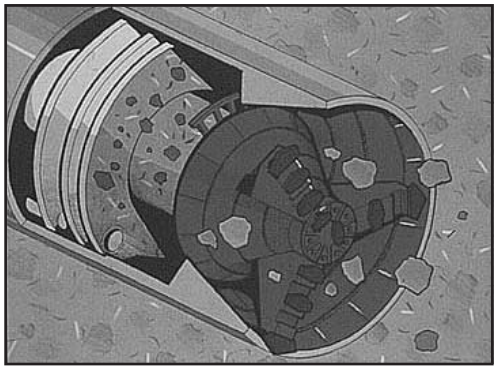
Excavation by SPB machine supports the tunnel face using a pressurized bentonite slurry mix within the cutter head. The slurry and excavated muck mixture is pumped through slurry lines from the tunnel face, back to the surface work area to a separation plant equipped with a shaker and cyclone to separate sand, gravel, and silt from the slurry. The slurry is recycled back into the system and the sand, gravel, and silts are transported to appropriate disposal sites. SPB machines can also be fitted with a stone crusher to allow tunneling through soils with intermittent cobbles and boulders.

Excavation by EPB machine supports the tunnel face by pneumatically pressurizing the excavated soil (muck) within a chamber behind the cutter head. Muck is removed from the chamber by a screw conveyor and then transported out of the tunnel by means of a conveyor belt and/or muck cars on rails. The granular, cohesionless materials anticipated require addition of soil conditioners to the native soil prior to excavation to increase stability and minimize potential for tunnel collapse. Conditioners include bentonite, polymers and foams. LADWP will use soil conditioners that will not contaminate soil and groundwater.

The tunneling process proceeds until a fully supported tunnel has been constructed. Typical tunnel supports include steel or pre-cast concrete linings. Support linings are lifted into the proper position and bolted or otherwise fixed in place. Installation of tunnel liner is expected to progress at a maximum rate of 20 feet per day.

Pipe Installation. The pipeline is installed in segments following completion of the tunnel. Each pipe segment is lowered into the pit with cranes or other loading equipment, mechanically pushed, carried, or hauled into the proper position within the tunnel, and placed on supports that allow for adjustments in the pipe's alignment. The joints of adjoining pipe segments are welded as pipe placement occurs. Once the entire length of pipe has been





Earth Pressure Balance Tunneling Machine

Source: Adapted from Myra L. Frank & Associates, Inc. 2000. and http://www.microtunneling.com/topics/photos.htm

RSCI -- Upper Reach

Figure 2-4

Typical Tunneling Operation

Aspen Environmental Group

placed in the proper position and the joints welded, the annular space between the pipe and the tunnel wall (supports) is completely filled with grout or concrete and allowed to cure. Installation of pipe is expected to progress at a rate of approximately 40 to 60 feet per day.

Site Restoration. After completion of the pipe installation along the tunneling alignment, the shoring system is disassembled as the pits are backfilled, the soil compacted and the pavement above replaced. Once the pavement has been restored, traffic delineation (restriping) will also be restored.

During construction, fugitive dust emissions at the construction site during earthmoving operations would be controlled as needed by water trucks equipped with spray nozzles.

Spoils from cuts, including cuts in streets, would typically be used as backfill materials at the site of origin. It is possible that contaminated soil would be excavated during construction, especially in older industrial areas with shallow groundwater. Materials and soil that cannot be returned as backfill or be economically usable for other purposes would be treated at an appropriate permitted facility or disposed of in accordance with local and county guidelines in available landfills.

2.7 Operation and Maintenance

2.7.1 System Operation

Future improvements to the water system infrastructure will allow increased supply to the Upper Reach through the North Hollywood Pump Station. Operation of the Upper Reach pipeline would be controlled by the Los Angeles Water System Data Acquisition and Control (LAWSDAC) and manually controlled when needed. Standard safety, operation, and maintenance appurtenances would include maintenance holes, isolation valves, regulator valves, blowoffs, and air and vacuum valves. Valves are used to isolate sections of the pipeline and would be placed along the pipeline route. For the tunneled section along Whitnall Highway, both valves and flow meters would be placed upstream and downstream of the tunneled pipeline. The valve located upstream of the tunneled portion of the pipeline would be designed for electric operation by LAWSAC control. Flow meters will monitor any change in water flow along the pipeline. In addition, a drainage system will be included to release excess water to the storm drain system.

LAWSDAC monitors and controls major facilities from a centralized location, 24-hours a day, 7-days a week. Control room operators monitor pressures, flows, tank and reservoir elevations, and disinfection levels throughout the water system. Major pumping stations, regulating stations, and isolation valves can be operated remotely. Alarms are used to alert operators of abnormal system conditions.

2.7.2 System Inspection and Maintenance

Periodically, water utility crews would perform an inspection on the isolation, air, and vacuum valves. When appropriate, water utility crews would also exercise the isolation valves.

2.7.3 Emergency Response

During an emergency, LAWSDAC has established protocols for responding to different emergency situations and for contacting other emergency response personnel such as LA Police Department, LA Fire Department,

LADWP security, and LADWP Energy Control Center. In the event of a pipeline failure, LADWP operation control personnel would recognize changes to the pipeline flow and pressure readings. In the event of a pipeline leak, remotely controlled valves would be closed to discontinue water flow to the area of the leak. Additionally any turbines, relief valves, or well feeding the system would be shut down. Finally residual water pressure within the pipeline would be released through the drainage system at the storm drain.

Emergency response procedures for the new Upper Reach pipeline would include:

- LAWSDAC identifies problem or an individual informs LAWSDAC personnel.
- LAWSDAC automated response or LAWSDAC personnel contacts appropriate managers and operations personnel who would then do the following:
  - Isolate damaged pipeline sections and provide alternate source of supply to affected areas.
  - Repair damaged pipeline section(s).

2.8 Cumulative Projects

For the purposes of this Draft EIR, a list of past, present, and future projects has been used to evaluate cumulative impacts. This cumulative project list includes projects that are either reasonably foreseeable or are expected to be constructed or operated during the life of the proposed project. This list was developed in consultation with the following agencies:

- City of Burbank, Public Works Department, (City of Burbank Public Works Department, 2007a and b)
- City of Burbank, Planning Division (City of Burbank Community Development Department, 2007)
- City of Glendale, Planning Department (City of Glendale, 2007)
- City of Los Angeles Community Redevelopment Agency (CRA, 2007)
- City of Los Angeles, Department of Public Works, Bureau of Engineering (LADPW, 2007)
- City of Los Angeles, Department of City Planning, Quarterly Case Activity Map and Summary Case Information by Area Planning Commission (APC) boundaries. (City of Los Angeles, 2007)

These agencies were requested to provide information on all projects that are being considered within their jurisdiction. Any current or future projects identified by one of the above agencies, which is expected to occur within approximately 2.5 miles of the proposed project alignment, is listed in Table 2-5 and shown in Figure 2-5 at the end of this section.

Table 2-5. Other Planned or Proposed Projects Within 2.5 Miles[1]

Map ID	Name	Agency/ Project Type	Description	Location	Status
City of Burbank					
1	4100 Hood Ave.	Building/Planning - CDD	24 Unit Condominiums	4100 Hood Ave.	Entitled Complete 2009
2	Warner Bros. Studios	Media Office	694,995 Office (office equivalency)	Olive Ave. at Hollywood Way	Entitled Complete 2010*
3	Olive / Screenland Mixed Use	Mixed Use	14,600 Quality Restaurant 1,800 Coffee Shop 9,300 Office 5 Luxury Apartments	3805 Olive Ave	Entitled Complete 2011
4	Riverside / Kenwood Mixed Use	Mixed Use	2,700 Coffee Shop 1,900 Bagel Shop 3,100 Specialty Retail	3901 Riverside Dr	Entitled Complete 2011

Map ID	Name	Agency/ Project Type	Description	Location	Status
			8 Apartments		
5	Riverside / Pass Office Project	Office/Restaurant	24,100 Office 7,065 Specialty Retail	4001 Riverside Dr	Entitled Complete 2010
6	Caltrans 134 WB On-Ramp	Street Improvements & Utility Relocations - City	New On-ramp, Freeway Widening	s/s Alameda Ave. e/o Hollywood Way	Under construction 2010
7	NBC Studios	Media Office	176,379 Office (office equivalency)	Olive Ave. at Alameda Ave.	Entitled Complete 2010
8	Bob Hope Center	Office/Theater	103,500 Office 20,000 Live Theater	SW Corner Olive Ave & Alameda Ave	Entitled Complete 2009
9	Platt – Media Center Mixed Use	Residential	220 Apartment Units 20,500 Quality Restaurant 17,500 Church 7,500 Child Care	Lima Street at Olive Avenue	Entitled Complete 2009
10	Pointe Project Phase II	Media Office	335,614 Office (office equivalency)	SE Corner Bob Hope Dr & Alameda Ave	Entitled Complete 2010
11	Catalina Project	Building/Planning - CDD	14 Story Commercial Building 325,000 Office (office equivalency)	2900 W. Alameda Ave.	Under Construction Complete 2009
12	Medical Office Building II	Medical Office & Cancer Center	155,000 Medical Office	NW Corner Buena Vista St & Alameda Ave	Under Construction Estimated Date of Completion Fall 2008/ Winter 2009
13	Walt Disney Studios	Media Office	123,585 Office (office equivalency)	SE Corner Buena Vista St. & Alameda Ave.	Entitled Complete 2010
14	Warner Bros. Ranch Facility	Media Office	273,885 Office (office equivalency)	NW Corner Hollywood Way & Oak St.	Entitled Complete 2010
15	CVS Pharmacy	Pharmacy	18,070 Pharmacy with Drive Thru 3,220 Shopping Center	1820 W Verdugo Ave	Complete 2007
16	Verdugo Ave Office/Retail	Office/Retail	10,395 Office 5,059 Specialty Retail	1701 W Verdugo Ave	Entitled Complete 2009
17	Verdugo Sewer	Sewer Main - PW	2,000 feet	Verdugo Ave. & Victory Bl.	Unknown
18	Screenland/ Magnolia Office	Office	19,393 Office	4201 W Magnolia Blvd	Entitled Complete 2009
19	Caltrans I-5 Empire Interchange	Street Improvements & Utility Relocations - City	Major utility relocation, Street Improvements-PW, new Caltrans interchange, Metrolink	s/s Alameda Ave. e/o Hollywood Way	Utility Relocation - 2007/2008 Roadwork 2008/2012
20	Burbank Boulevard	Street Improvements and Traffic Signal Modification -PW	City Boundary (Clybourn) to Victory Blvd	Burbank	Under Construction Estimated Date of Completion April 2008
21	Cusumano Office Project	Office	214,240 Office 5,000 High-turnover Restaurant 14,220 Shopping Center	160 W Olive Ave	Entitled Complete 2010
22	Marriott Residence Inn	All-Suites Hotel	162 Rooms	NW Corner First St & Verdugo Ave	Completed 2007

Map ID	Name	Agency/ Project Type	Description	Location	Status
23	The Collection Project	Building/Planning - CDD	Mixed Used Retail (50,000 Retail/Restaurant) & Residential (118 Apartments)	250 N. First St. (SE Corner First St & Palm Ave)	Under Construction Estimated Date of Completion Fall 2008
24	City of Burbank Community Services Building	Government Office	60,678 Government Office	SE Corner Third St & Orange Grove Ave	Under Construction Estimated Date of Completion Summer 2008
25	1601 Scott Rd.	Building/Planning - CDD	3 Story 43 Unit Condominium	1601 Scott Rd.	Under Construction Estimated Date of Completion Fall 2008
26	Keeler Center	Restaurant/Comm. Service	4,164 Fast Food without Drive Thru 1,700 Starbucks	2128 N Glenoaks Blvd	Completed 2007
27	Zelman Dev.	Building/Planning - CDD	Restaurants & 7 Unit Retail Complex Includes: 15,470 High Turnover Restaurant 2,450 Fast Food without Drive Thru 5,875 Fast Food With Drive Thru	2501-2555 N. Hollywood Way	Under Construction Estimated Date of Completion Spring/ Summer 2008
28	Media Studios North	Office	95,000 Office	3333 Empire Ave	Entitled Complete 2009
29	Media Studios Avon	Office	163,000 Office	3435 Empire Ave	Application Submitted
30	Empire Center Project	Building/Planning - CDD	Commercial Building (363,000 Office)	SE Corner Buena Vista St & Empire Ave	Under Construction Estimated Date of Completion Fall 2008/ Winter 2009
31	Buena Vista Villas or Fairfield Project	Building/Planning / Residential	44 Condominiums 232 Apartments 1,000 Specialty Retail 1,000 Convenience Retail	SW Corner Buena Vista Street & Empire Avenue	Entitled Complete 2009
City of Glendale					
1	Disney Creative Campus – GC3	City of Glendale Redevelopment Agency / Landscape Creative Campuses	The Grand Central Creative Campus (GC3) project consists of developing the 125-acre site into a series of landscaped creative campuses. The proposed project will replace existing improvements and involve construction of up to 3.57 million square feet of additional space resulting in an overall potential of 5.95 million square feet of new and rehabilitated development.	The proposed project would be located along the San Fernando Road Corridor, at the intersection of Western Avenue in the City of Glendale.	EIR was certified in 2000. Build out is expected over a 30 year period with the first phase, to begin no later than Dec. 2004.

Map ID	Name	Agency/ Project Type	Description	Location	Status
City of Los Angeles					
Not on map	Integrated Resource Plan (IRP) Final EIR	City of Los Angeles Department of Public Works, Bureau of Sanitation	An integrated wastewater facilities plan that describes the existing wastewater, recycled water, and runoff systems in the City of Los Angeles, identifies system inadequacies based on the needs projected for the year 2020, and provides recommended alternatives to address the future needs of the systems, of the City of Los Angeles.	City of Los Angeles	Final EIR Approved by Board Of Public Works on 10/4/06 and executed by City Council on 11/14/06. City of Burbank filed a Petition for a Writ of Mandate on 12/13/06 regarding GBIS component.
Not on Map	Los Angeles River Revitalization Master Plan (EIR/EIS)	City of Los Angeles	The Los Angeles River Revitalization Master Plan is a blueprint for implementing a variety of greening projects, including the development of parks and open space, pedestrian and bicycle trails, bridges, enhanced connector streets, channel modifications, revitalized riverfront communities in key opportunity areas and a River Improvement Overlay (RIO) district along the 32-mile stretch of the River within the City of Los Angeles.	The general project area includes approximately one-half mile on each side of the 32-mile River corridor that begins near Owensmouth Avenue in Canoga and continues downstream to Washington Boulevard, near the northern boundary of the city of Vernon.	Draft EIR/EIS review period from 1/31/07 to 3/16/07.
Not on Map	Griffith Park Master Plan	City of Los Angeles Department of Recreation and Parks / Master Plan	The 1978 Griffith Park Master Plan was updated in 2004. Updates include current planning improvements to Griffith Park.	Located in Griffith Park, Los Angeles, CA.	A Draft Griffith Park Master Plan was completed in October 2004.
1	Glendale-Burbank Interceptor Sewer (GBIS)	City of Los Angeles Department of Public Works, Bureau of Sanitation	The GBIS is a component of Integrated Resources Program (IRP). The GBIS would include construction and operation of approximately 5.75 miles of 8-foot-diameter (inside) interceptor sewer and associated structures, including diversion structures, drop structures, maintenance hole structures, and air treatment facilities (if needed).	GBIS has two options for corridor alignment, both of which would be located from the northern terminus of NEIS II (the Los Angeles Zoo shaft site or the Brazil Street site) and travel westward to the Toluca Lake area to Woodbridge Park or the California Department of Transportation (Caltrans) North Hollywood Maintenance Yard.	Final EIR Approved by Board Of Public Works on 10/4/06 and executed by City Council on 11/14/06. City of Burbank filed a Petition for a Writ of Mandate on 12/13/06.

Map ID	Name	Agency/ Project Type	Description	Location	Status
2	Apartment Complex	City of Los Angeles/ Department of Building and Safety	The proposed project would consist of a 47-unit apartment building.	The proposed project would be located at 3400 Cahuenga Boulevard, in the City of Los Angeles.	Completed
3	ENV-2006-7811-EAF	Planning	123-unit condominium with 4-5 stories and a total of 308 subterranean parking spaces	11170 W Aqua Vista St	VTT-67461 Approved with Conditions 6/15/07
4	ENV-2006-6664-MND	Planning	New 31 condominium units with 77 parking spaces	11147 W Acama St	TT-67237 Approved with Conditions 10/20/06
5	CPC-2005-8658-ZC-SPR	Planning	5-story, 50-foot high mixed-use project consisting of a first floor, 13,327-square-foot retail commercial and 82 residential units in the upper floors, over a 2-level subterranean parking and providing 192 spaces at grade and below grade.	10601, 10609, 10615, 10623 W Riverside Dr	Application on hold pending historical resource assessment for possible historical/ cultural monument status.
6	ZA-2006-9907-ZAD	Planning	Adaptive reuse project consisting of 56 condo units and 11,325 square feet of commercial uses in an existing 73,291-square-foot, 8-story plus basement, 125-foot high commercial building	10850 W Riverside Dr	Partially approved on 3/8/07; on hold.
7	TT-66398	Planning	41-unit residential condo-conversion	4636 N Cahuenga Blvd	Approved with Conditions 5/9/07
8	ENV-2006-7626-MND	Planning	12-unit residential condominium with 27 parking spaces	10826 W Kling St	TT67638 Approved with Conditions 11/22/06
9	TT-67908	Planning	9-unit new residential condo	10844 W Blix St	Approved with Conditions 8/7/07
10	ENV-2006-6367-EAF	Planning	9-unit residential condominium with 18 resident parking spaces and 2 guest parking spaces.	10800 W Blix St	TT-66324 Approved with Conditions 10/27/06
11	ENV-2006-6587-MND	Planning	Develop 15 new condos and 34 parking spaces. Existing structures to be demolished.	11022 W Camarillo St	VTT-67495 Appealed Information Not Available
12	4900 Vineland Condos	Community Redevelopment Agency of the City of Los Angeles (CRA/LA)	53 residential	East side of Vineland between Peach Gove & Huston	Completion Scheduled for Spring 2009
13	ENV-2006-6947-MND	Planning	14 new residential condos and 31 parking spaces. Existing structures will be demolished.	11146 W Huston St	VTT-67495 Approved with Conditions 12/19/06 (On Appeal)

Map ID	Name	Agency/ Project Type	Description	Location	Status
14	ENV-2006-7249-EAF	Planning	7-unit new condominium with 16 parking spaces	5010 N Riverton Ave/ 10769 W Addison St	TT-67087 Approved with Conditions 12/18/06
15	TT-66193	Planning	5-unit new residential condo	10916 W Otsego St	Approved with Conditions 6/1/07
16	ENV-2006-9063-MND	Planning	14-unit condominium with 28 resident parking spaces and 7 guest parking spaces	11312 W Huston St	TT-67599 Approved with Conditions 2/20/07
17	Bakman Apts	CRA/LA	25 Residential	East side of Bakman north of Morrison	Unknown
18	ENV-2006-6467-MND	Planning	24 new residential condos and 54 parking spaces. Existing structures will be demolished.	5051, 5053 N Fair Ave	VTT-66734 Approved with Conditions 10/20/06
19	Gangi Mixed Use	CRA/LA	152 residential 10,250 commercial	West side of Vineland between Weddington & McCormick	Completion Scheduled for Spring 2008
20[2]	Milano Mixed Use	CRA/LA	196 residential 10,300 commercial	N/E corner McCormick & Blakeslee	Completed December 2007
20[2]	Imperia Mixed Use	CRA/LA	103 residential 6,400 commercial	N/E corner McCormick & Blakeslee	Completed December 2007
21	No Ho Commons Phase III	CRA/LA	150 residential 95,000 office 1,200 seat multi-screen theater 2,000 Retail	S/E corner Lankershim & Weddington	Completion scheduled for Winter 2009
22	North Hollywood Redevelopment Project	CRA/LA Redevelopment – Mixed Used	The 740-acre project sets forth a range of goals including the preservation and expansion of the housing stock, revitalization of the commercial core, improvements of public facilities, and promotion of quality urban design. The agency has proposed to construct 1,500 new affordable housing units over the 35-year life. Future plans include: Add an additional 1.5 million square feet of new commercial space; further development of the NoHo Art and Entertainment District; add commercial and residential development adjacent to the Metro Rail station; and provide residential housing for all income levels.	The Project area is located one mile north of the intersection of Hollywood Freeway (U.S.101) and Ventura Freeway (SR-134), immediately north of the Cahuenga Pass in east San Fernando Valley.	The Redevelopment Plan was adopted on February, 1979. The project is expected to be finalized and completed by 2014.
23	NoHo Tower Mixed Use	CRA/LA	180 residential units 15,000 commercial	S/W corner Lankershim & Cumpston	Completed 2007
24	ZA-2005-9345-ZV-ZAA	Planning	3-story, 47.5 foot high multiple residential building with 24 new live/work condominium units with 54 parking spaces	5357 N Denny Ave	Approved with Conditions 7/27/07
25	TT-65486	Planning	8 residential condominiums	5258 N Denny Ave	Approved with Conditions 11/7/07
26	TT-67525 ENV-2006-8749-MND	Planning	28-unit residential condominium with 63 parking spaces	10341, 10347, 10353 W Magnolia Blvd	Completed

Map ID	Name	Agency/ Project Type	Description	Location	Status
27	DIR-2006-6128-SPP	Planning	10-unit condominium with 25 semi-subterranean parking with passive open space	5401 N Morella Ave	Approved with conditions on 8/26/06
28	ENV-2006-5910-MND	Planning	22 units of condominium with 50 parking spaces	5226 N Ben Ave	TT-66949 Approved with Conditions 4/5/07
29	ENV-2006-6051-MND	Planning	97 new residential condos and 244 parking spaces. All existing structures, including apartment buildings and garages, to be demolished.	11945, 11949 W Magnolia Blvd/5218 N Ben Ave/	VTT-65785 Approved with Conditions 5/10/07 (On Appeal)
30	DIR-2006-1765-SPP	Planning	Two-story, 30-foot high, 12-unit condominium with a 30-car subterranean parking	12014 W Magnolia Blvd	Approved With Conditions on 7/13/06
31	ENV-2006-7054-MND	Planning	16-unit condominium with 4 stories and 40 parking spaces	4716 N Whitsett Ave	TT-67338 Approved with Conditions 11/16/06
32	ENV-2006-2098-MND	Planning	New 20 unit residential condo	4640 N Coldwater Canyon Ave	TT-64903 Approved with Conditions 11/6/06
33	VTT-67072	Planning	20-unit new residential condo	4432 Coldwater Canyon Ave	Approved with Conditions 4/17/07
34	DIR-2006-7705-SPP	Planning	Three-story, six-unit apartment with subterranean parking	5254 N Wilkinson Ave	Unknown
35	Laurel Plaza	CRA/LA	742 multi-family units: 477condominiums, 170 apartments, 54 townhouses, 23 boathouses, and 18 penthouses and includes adaptive reuse of the existing 465,000-square foot four-story Macy's department store, and approx. 5 acre public park	Southeast corner of Laurel Canyon Boulevard and Erwin Street and is generally bounded by Erwin Street to the north, Radford Avenue to the east, Laurel Canyon Boulevard and the Hollywood Freeway to the west, and the Hollywood Freeway and Oxnard Street to the south	EIR being prepared; completion scheduled for Fall 2012
36	Valley Plaza	CRA/LA	777,142 commercial including: 174,000 department store 70,000 multi-screen theater 533,000 other retail and restaurant 4,222 car parking structure	Victory Boulevard to the north, Laurel Canyon Boulevard to the east, and the Hollywood Freeway to the south and west and is bisected by Bellingham Avenue	EIR being prepared; completion scheduled for Winter 2010
37	TT-67865	Planning	Mixed-use project with 54-unit residential condominium with 122 parking spaces, and 3-unit commercial condominium (one restaurant and two retail totaling 8,350 square-foot) with 44 parking spaces and 5 stories	12425 W Victory Blvd	Approved with Conditions 6/27/07

Map ID	Name	Agency/ Project Type	Description	Location	Status
38	TT-66343	Planning	5-unit new residential condo	11828 W Hamlin St	Approved with Conditions 4/5/07
39	TT-67360	Planning	6-unit new residential condo	13224 W Victory Blvd	Applicant revising plans-project on hold 3/27/07
40	ENV-2006-4150-EAF	Planning	Mixed use project consisting of 120,000 square feet of office, retail and restaurant, and 110 multiple residential units	13103, 13109, 13115, 13119, 13125, 13131, 13137, 13141, 13147, 13153, 13159, 13203, 13207, 13213, 13219, 13225 W Victory Blvd	Environmental Assessment published on 3/29/07
41	ENV-2006-6351-MND	Planning	9 new residential condos and 20 parking spaces	13148 Victory Blvd	TT-66325 Approved with Conditions 10/20/06
42	TT-52465-M1	Planning	15-19 unit residential condo	11160 Victory Blvd	TT-52465 Approved with Conditions 7/24/07
43	ENV-2006-5527-MND	Planning	18-unit condominium	12132 W Hart St	TT-66703 Approved with Conditions 10/19/06
44	ENV-2006-7110-MND	Planning	14-unit residential condominium with 28 resident parking spaces and 3 guest parking spaces	8409 N Glenoaks Blvd	VTT-67373 Approved with Conditions 11/16/06
45	TT-67292	Planning	20 detached condos with 52 parking spaces	11834 W Roscoe Blvd	Mitigated Negative Declaration published on 5/10/07
46	VTT-63326	Planning	37 condos with 74 parking spaces	13719 W Oxnard St	File accepted for review on 8/21/06
47	Burbank Street Widening Project	Engineering	Burbank Blvd will be widened by 13 feet on both sides to Major Highway Standards. This project will provide a center turn lane, two thru traffic lanes and a parking lane in each direction. This project will need to acquire Right-of-Way for the widening. Also, it will require Temporary Construction Easements to construct the project. Improvements to include construction of concrete curb, gutter and sidewalk; AC Pavement; Storm Drain and Sanitary Sewer facilities; Street Trees; Street Lighting, Striping, Work site Traffic Control Plan and Traffic Signals.	This project will widen Burbank Blvd from Lankershim Blvd to Cleon Ave.	December 1, 2010 thru May 30, 2012

Map ID	Name	Agency/ Project Type	Description	Location	Status
City of Los Angeles Department of Water and Power					
D1	City Trunk Line South Projects	LADWP	LADWP's capital improvement program to replace the City's aging water infrastructure system.	City wide	UR1 completed; other phases from 2008 to 2011
D2	North Hollywood Ammoniation Station	LADWP	The construction of a tall single story building and appurtenant facilities to store and inject aqua ammonia into the water to form a chloramine disinfectant. This process will reduce the disinfection byproducts in the water supply in compliance with recently promulgated water quality regulations.	The project will be located on the DWP's North Hollywood Pumping Station Complex located at 6830 Hinds Ave.	Construction scheduled to begin January 2009
D3	Existing RSC Upper Reach to Well Connector Line	LADWP	Continue to use the existing RSC Upper Reach to collect groundwater. Construct supporting facilities and appurtenances including valves, disinfection system, etc., as needed.	Existing RSC Upper Reach route along Whitnall Highway, beginning near Kittridge Street towards Griffith Park.	In planning stages. Construction of supporting facilities towards the end of RSC Upper Reach completion.
D4	RSC Lower Reach Water Pipeline	LADWP	This project would replace the Lower Reach of the existing RSC water pipeline. The Lower Reach RSC would eventually tie into the proposed Upper Reach RSC.	The proposed pipeline would begin at the LADWP Headworks property, would go through Griffith Park, and would end at Ivanhoe Reservoir.	March 2010 to December 2012
D5	Griffith Park Water System Improvements	Los Angeles Department of Water and Power/ Infrastructure	Improvements to the Park water system is on-going and include the installation of new facilities such as pipelines, pump stations, storage tanks (e.g., Travel Town Water Tank), and supporting appurtenances. In addition, the rehabilitation of existing services is also necessary to increase system reliability as new facilities are completed and added to the water system and older ones abandoned.	Located in Griffith Park.	Construction began in 2006 and will continue through 2014
D6	Headworks Restoration	LADWP and US Army Corps of Engineers / Restoration	LADWP and USACE are jointly evaluating ecosystem restoration alternatives at the Headworks Spreading Grounds Site.	Located at the Headworks Spreading Grounds site, north of Forest Lawn Drive just west of Griffith Park	Restoration activities would occur following completion of the SLRC SRP) (i.e., after July 2013)
D7	Silver Lake Reservoir Complex Storage Replacement Project (SLRC SRP)	Los Angeles Department of Water and Power / Infrastructure	Water storage currently provided by the Silver Lake Reservoir Complex (SLRC) would be replaced by an underground covered storage reservoir at the former Headworks Spreading Grounds site. A regulating station at the SLRC and a new bypass pipeline around the reservoir complex would convey water delivery flow to existing service areas.	The proposed project would be located at both the former Headworks Spreading Grounds site and along Silver Lake Drive adjacent to Ivanhoe and Silver Lake Reservoirs.	March 2010 to December 2015

Map ID	Name	Agency/ Project Type	Description	Location	Status
D8	Groundwater Improvement Project	LADWP	Performing an independent analysis of the LADWP's San Fernando Basin (SFB) groundwater system and identifying plans to maximize pumping capacities by analyzing water quality issues, operational strategies, and the condition of the existing groundwater facilities in the SFB. This will include reviewing, and evaluating the need for new monitoring wells, installation of approximately 40 new monitoring wells, and short term monitoring of existing and new wells.	The new monitoring wells will be located in the SFB. The number and exact location of wells will be determined as part of the GSIS.	GSIS may start April 2008. Drilling new monitoring wells may start April 2009, and last approximately 2 years.
D9	Power Line Easement Stormwater Capture Pilot Project	LADWP	To help alleviate local flooding, recharge the groundwater basin, and improve downstream water quality, a conceptual design to direct stormwater from the surrounding residential neighborhood, through treatment, and into large recharge basins situated on the power line ROW has been developed. Potential opportunities exist that incorporate the abandoned RSC to convey/store/infiltrate excess stormwater from Vineland to Clybourn.	Existing RSC along the Whitnall Highway, from Vineland to Clybourn.	2010 Conceptual Study Report should be finalized in early 2008. Smaller portions of the project as early as 2008; bulk of the project to be constructed in 2010

1 Projects were originally identified in July 2007 and updated in March 2008.
2 Please note that due to the scale of map, the location of multiple projects may be represented by a single Map ID. This means that they are located in the same general area but not necessarily the exact same address.

The proposed project may contribute to cumulative impacts during construction of the Upper Reach RSC pipeline. The majority of construction of the proposed project is expected to occur over a 48-month period (~4 years), and is tentatively scheduled from November 2008 to October 2012. Cumulative impacts associated with construction and operation of the proposed project are discussed under each issue area (see Section 3).

RSCI -- Upper Reach

Figure 2-5

Other Planned or Proposed Projects Within 2.5 Miles

Aspen Environmental Group

Cumulative Projects

- 1 City of Glendale
- 37 City of Burbank
- 24 City of Los Angeles
- D1 Department of Water and Power

0 ½ 1

Scale in Miles

N

Please note that due to the scale of map, the location of multiple projects may be represented by a single Map ID. This means that they are located in the same general area but not necessarily the exact same address.

This page intentionally left blank. Back of color figure.

2.9 Intended Uses of the EIR and Other Public Agency Actions

This EIR is intended to provide environmental review for the proposed project pursuant to the requirements of CEQA. The Final EIR must be certified by the LADWP as to its adequacy in complying with the requirements of CEQA before any action is taken to approve the proposed project. The LADWP must consider the information contained in the Final EIR in making a decision to approve the proposed project. In addition to LADWP's approval, the proposed project would be subject to the applicable agency permits and approvals listed in Table 2-6. The Final EIR is intended to provide CEQA review for all required permit and approvals needed to construct, operate, and maintain the proposed project.

Table 2-6. Summary of Required Permits and Approvals*

Agency/Department	Permit/Approval	Description
Federal		
U.S. Army Corps of Engineers, Los Angeles District	Section 10	Section 10 of the Rivers and Harbors Act of 1899 requires approval prior to the accomplishment of any work in, over or under navigable waters of the United States, or which affects the course, location, condition or capacity of such waters. Typical activities requiring Section 10 permits are: construction of piers, wharves, bulkheads, dolphins, marinas, ramps, floats intake structures, and cable or pipeline crossings; dredging and excavation.
Federal Aviation Administration (FAA)	Approval, as necessary	Those areas of the proposed project located within 20,000 feet of the Bob Hope Airport, the height of construction equipment shall not exceed one foot in height for each 100 feet horizontal distance from the nearest point of a runway, without clearance from the FAA (City of Burbank, 1988).
State of California		
Division of Occupational Safety and Health (Formerly CAL OSHA)	Construction Permit	A permit is required for construction of trenches or excavations which are five (5) feet or deeper and into which a person is required to descend.
Regional Water Quality Control Board (RWQCB)	NPDES Permit for construction dewatering	RWQCB approval is needed for general construction runoff and/or construction dewatering discharges under the National Pollutant Discharge Elimination System (NPDES).
	NPDES Permit for hydrostatic test water discharge	Approval is needed for discharge of hydrostatic test water into any surface water of the State of California.
	Groundwater Permit	Section 402 of the Clean Water Act of 1977, as amended (33 U.S.C. 1342 et seq.) requires a NPDES permit (No. CAG994001) for Groundwater Discharges Associated with Construction Activities to regulate discharges of treated groundwater from construction and other projects dewatering to surface waters in the Region.
California Department of Transportation (Caltrans)	Encroachment Permit	An Encroachment Permit is required for trenching activities near State Route 134 on-and-off ramps.
	Transportation Permit	A Transportation Permit may be needed for transportation of heavy construction equipment and/or materials on oversized-transport vehicles on State Highways.
California Department of Fish and Game (CDFG)	Streambed Alternation Agreement	A Streambed Alternation Agreement may be required if construction activities result in minor impacts to riparian habitats.
California Department of Toxic Substances Control (DTSC)	Approval as necessary	Coordinate with DTSC, as needed, to address the classification and disposal of contaminated soils if encountered during construction.

Agency/Department	Permit/Approval	Description
County of Los Angeles		
Department of Public Works	Excavation Permit	Excavation Permits are necessary when any portion of the road right of way, from property line to property line, is cut for the purpose of laying down utility lines, installing electrical cabinets, installing poles or constructing manholes. In addition, this permit is needed to excavate under the Los Angeles River.
	Encroachment Permit	Encroachment Permits are necessary when you wish to place anything in the road right-of-way temporarily or long term.
	Construction Permit	A Construction Permit is necessary for activities such as cutting, removing, or reconstructing curbs, curb and gutter, parkway drains, driveways, and/or sidewalks.
Department of Public Works, Flood Control	Discharge Permit	A Discharge Permit is needed for construction dewatering and hydrostatic test water discharge into the storm system and channels.
City of Los Angeles		
Department of Building and Safety	Building Permits	Grading, electrical, plumbing, and mechanical permits may be needed.
Department of Public Works, Bureau of Engineering	Excavation Permit	An Excavation Permit must be obtained from the Bureau of Engineering for any trench excavation activities, as well as electrifier and pull box relocations, monitoring wells, soil borings and potholes drilling within public right-of-way.
	Excavation (U) Permit	A U-Permit is required by the Bureau of Engineering for construction projects that will require public right-of-ways to be trenched or excavated. Electrolier and pull box relocations, monitoring wells, soil borings, and potholes drilling in public right-of-ways also need to obtain an excavation permit.
Department of Public Works, Bureau of Sanitation	Sanitation Application Form for Discharging to Sewer System	Approval for discharging hydrostatic test water to the sewer system is required from the Bureau of Sanitation. A Sanitation Application Form must be submitted to the Department of Public Works, Bureau of Sanitation.
Department of Public Works, Bureau of Street Services, Street Tree Division	Tree Permit	A Permit must be obtained from the Bureau of Street Services, Street Tree Division for the removal of any tree on City streets or public property. Removal of more than three trees may also require review and approval by the Board of Public Works.
Department of Transportation	Traffic Management Plan	Approval is needed for temporary lane closures and traffic/transportation – related issues during construction.
Department of Recreation and Parks, Planning and Development Division	Right-of-Entry Permit	Use of Johnny Carson Park as a construction staging area will require approval of a Right-of-Entry Permit and other related approvals.
City of Burbank		
Public Works Department	Excavation Permit	Excavation Permits are issued for construction projects requiring excavation, trenching or any type of digging in the City of Burbank right of way (including Johnny Carson Park).
	Encroachment Permit	Temporary and long-term Encroachment Permits are issued to allow the use of City-owned right of way. In addition to completing the permit application form, applicants must meet the City's insurance requirements for Public Works permits.
	Industrial Waste Permit	Industrial Waste Permits are issued to sewer customers discharging industrial waste as part of the City's wastewater pretreatment program.
	Street Use Permit	Street Use Permits are issued to allow the complete or partial closure of sidewalks or streets for specific, short-term purposes (BMC Chapter 29, Articles 17 and 23). Depending on the street use requested, the permit may require traffic control plans. Permits requiring traffic control plans are generally routed through the Traffic Division for approval.
	Water Discharge Permit	Water Discharge Permit is needed for any discharge of water into the public right-a-way.
	Transportation Permit	Transportation Permits are issued for the transportation of oversized loads in the City of Burbank (BMC Chapter 29, Article 25).

Agency/Department	Permit/Approval	Description
	Traffic Control Plan	Review and approval of Traffic Control Plan including restricted hours, peak traffic travel time restrictions, local traffic detours, protective devices and traffic controls, and emergency access through work areas and haul routes.
	Noise and Vibration Control Plan	Review and approval of noise and vibration control plan.
Community Development Department, Building Division	Building Permits	Grading, electrical, plumbing, and mechanical permits would be needed.
Fire Department	Confined Space Entry Permit	Confined Space Entry Permit needed for any work in the City of Burbank that involves work in confined or enclosed areas.
Park, Recreation, and Community Services	Use or work in City Parks	Review and approval of construction staging area or other work that is conducted in City parks.

*List may change based on consultation with affected agencies.