

City of Los Angeles Recycled Water Master Planning



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



Non-Potable Reuse Master Planning Report

Prepared by:



Volume 3 of 3: Appendices H-J
March 2012

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Appendix H

Potential Customer List

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This appendix includes two tables of potential customers.

Table of Potential Customers	Page
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ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
H001	Warren E&P, Inc. WTU	375	0.33	0.44	Industrial	TIWRP	Warren E&P	WBMWD	Warren E&P	A	A	B
H003	Harbor Cogeneration Company	330	0.29	0.38	Industrial	TIWRP	Harbor East	WBMWD	Harbor East	A	--	--
H004	Praxair	250	0.22	0.29	Industrial	TIWRP	Harbor East	WBMWD	Harbor East	B	--	--
H005	Port of Los Angeles - San Pedro Waterfront Development	168	0.15	0.25	Mixed-Use	TIWRP	POLA	--	--	A	--	--
H006	Seaside Transportation Services	8	0.01	0.01	Industrial	TIWRP	Laterals	--	--	--	--	--
H007	Machado Lake	140	0.12	0.27	Irrigation	TIWRP	Ponte Vista	--	--	A	--	--
H008	Port of Long Beach (Tier 3)	100	0.09	0.12	Industrial	TIWRP	SA Recycling	--	--	B	--	--
H009	SA Recycling	105	0.09	0.12	Industrial	TIWRP	SA Recycling	--	--	A	--	--
H010	WBMWD Palos Verdes Customers (Tier 3)	500	0.45	0.98	Irrigation	TIWRP	Ponte Vista	--	--	--	--	--
H012	Ponte Vista	100	0.09	0.15	Mixed-Use	TIWRP	Ponte Vista	--	--	--	--	--
H014	Peck Park	70	0.06	0.14	Irrigation	TIWRP	Peck Park	--	--	A	--	--
H015	Roosevelt Memorial Park	60	0.05	0.12	Irrigation	Gateway	Roosevelt	--	--	B	--	--
H017	Field of Dreams	50	0.04	0.10	Irrigation	TIWRP	Peck Park	--	--	A	--	--
H020	Caltrans (110 at MACARTHUR AV)	40	0.04	0.08	Irrigation	TIWRP	POLA	--	--	--	--	--
H023	Gardena High School	30	0.03	0.06	Irrigation	Gateway	Roosevelt	--	--	--	--	--
H025	Frontier Logistics Services	27	0.02	0.03	Industrial	Gateway	Roosevelt	--	--	--	--	--
H026	Wilmington Athletic Complex	27	0.02	0.05	Irrigation	WBMWD	Laterals	--	--	--	--	--
H027	SAFE Collection Center	26	0.02	0.04	Mixed-Use	TIWRP	Peck Park	--	--	--	--	--
H031	WEST BASIN CONTAINER TERMINAL LLC	25	0.02	0.03	Industrial	TIWRP	POLA	--	--	--	--	--
H033	Banning High School	22	0.02	0.04	Irrigation	WBMWD	Laterals	--	--	--	--	--
H039	Kaiser Hospital (Harbor)	20	0.02	0.03	Mixed-Use	TIWRP	Ponte Vista	--	--	--	--	--
H042	Wilmington Recreation Center	15	0.01	0.03	Irrigation	TIWRP	Laterals	--	--	--	--	--
H043	E Street Cold Logistics	15	0.01	0.02	Industrial	TIWRP	Harbor East	--	--	--	--	--
H046	Juanita's Foods	14	0.01	0.02	Industrial	TIWRP	Harbor East	--	--	--	--	--
H047	CAR WASH ASSET MGMT LLCDBA JERZY BOY'S HAND CAR	12	0.01	0.01	Industrial	TIWRP	Peck Park	--	--	--	--	--
H048	ROLLING HILLS PREPARATORY SCHOOL	11	0.01	0.02	Irrigation	TIWRP	Ponte Vista	--	--	--	--	--
H049	Wilmington Middle School	11	0.01	0.02	Irrigation	WBMWD	Laterals	--	--	--	--	--
H052	Caltrans (110 at W OLIVER ST)	10	0.01	0.02	Irrigation	TIWRP	Peck Park	--	--	--	--	--
H055	HARBOR HIGHLAND PARK	8	0.01	0.02	Irrigation	TIWRP	Peck Park	--	--	--	--	--
H056	YMCA LOS ANGELES SAN PEDRO PNSLA BRANCH	8	0.01	0.01	Mixed-Use	TIWRP	Peck Park	--	--	--	--	--
H057	CITY LA STREET MAINTENANCE FUND	8	0.01	0.01	Mixed-Use	TIWRP	POLA	--	--	--	--	--
H058	WILMINGTON CEMETERY DISTRICT	7	0.01	0.01	Mixed-Use	WBMWD	Laterals	--	--	--	--	--
H059	CITY LA DEPT RECREATION& PARKS	7	0.01	0.01	Irrigation	WBMWD	Laterals	--	--	--	--	--
H061	EAST WILMINGTON WALK-IN PARK	7	0.01	0.01	Irrigation	WBMWD	Laterals	--	--	--	--	--
H063	KONOIKE PACIFIC CAL INC	7	0.01	0.01	Mixed-Use	WBMWD	Laterals	--	--	--	--	--
H065	Crowne Plaza Hotel Los Angeles Harbor	6	0.01	0.01	Mixed-Use	TIWRP	POLA	--	--	--	--	--
H066	Harbor Tower Retirement Homes	6	0.01	0.01	Irrigation	TIWRP	POLA	--	--	--	--	--
H069	Rena Park	6	0.01	0.01	Irrigation	TIWRP	Peck Park	--	--	--	--	--
H070	AMERICAN PRESIDENT LINE	6	0.01	0.01	Mixed-Use	TIWRP	Laterals	--	--	--	--	--
H075	El Dorado Car Wash	5	0.00	0.01	Industrial	WBMWD	Laterals	--	--	--	--	--
H076	San Pedro Plaza	5	0.00	0.01	Irrigation	TIWRP	POLA	--	--	--	--	--
H077	KAREN FAN	5	0.00	0.01	Irrigation	WBMWD	Laterals	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
H078	OVERTON MOORE & ASSOC INC	5	0.00	0.01	Mixed-Use	TIWRP	Peck Park	--	--	--	--	--
H079	Parks and Recreation	5	0.00	0.01	Irrigation	TIWRP	Ponte Vista	--	--	--	--	--
H080	Caltrans (110 at W PACIFIC COAST HW)	5	0.00	0.01	Irrigation	WBMWD	Laterals	--	--	--	--	--
H081	Caltrans (405 at S NORMANDIE AV)	5	0.00	0.01	Irrigation	Gateway	Roosevelt	--	--	--	--	--
H082	ILJA KIM	5	0.00	0.01	Mixed-Use	TIWRP	POLA	--	--	--	--	--
H083	Caltrans (47 at N HARBOR BL)	5	0.00	0.01	Irrigation	TIWRP	POLA	--	--	--	--	--
H084	Caltrans (110 at W E ST)	5	0.00	0.01	Irrigation	TIWRP	Ponte Vista	--	--	--	--	--
H085	Delta Dye	270	0.24	0.31	Industrial	Gateway	Swisstex	--	--	B	B	B
H086	Swisstex Textile and Apparel	180	0.16	0.21	Industrial	Gateway	Swisstex	--	--	B	C	B
H088	CM Laundry	35	0.03	0.04	Industrial	Gateway	Swisstex	--	--	--	--	--
H089	Final Touch Dyeing and Finishing	20	0.02	0.02	Industrial	Gateway	Swisstex	--	--	--	--	--
H090	Designed Metal Connections	18	0.02	0.02	Industrial	Gateway	Swisstex	--	--	--	--	--
H091	Port of Los Angeles - Berth 200	50	0.04	0.06	Industrial	TIWRP	Harbor East	--	--	--	--	--
H092	Harbor Generating Station	80	0.07	0.09	Industrial	TIWRP	Laterals	--	--	B	--	--
H093	Warren E&P, Inc. NWU	140	0.12	0.16	Industrial	TIWRP	Harbor East	WBMWD	Harbor East	A	A	B
M001	Matchmaster	800	0.71	0.93	Industrial	CBMWD	USC	LAGWRP	USC	A	--	--
M002	USC Main Campus	530	0.47	0.80	Mixed-Use	CBMWD	USC	LAGWRP	USC	A	A	B
M003	Atlas Carpet Mills	310	0.28	0.36	Industrial	LAGWRP	Atlas Carpets	--	--	A	A	A
M006	LA County Central Plant	230	0.21	0.27	Industrial	CBMWD	Downtown	LAGWRP	USC	A	A	A
M011	Washington Garment	120	0.11	0.14	Industrial	CBMWD	USC	LAGWRP	USC	C	--	--
M012	Dye House, the	140	0.12	0.16	Industrial	CBMWD	USC	LAGWRP	USC	A	A	A
M014	E&C Fashion Inc.	90	0.08	0.10	Industrial	CBMWD	USC	--	--	B	A	A
M016	Lincoln Park and Lake	115	0.10	0.23	Irrigation	LAGWRP	Medical Center	--	--	A	--	--
M017	LAC + USC Medical Center	50	0.04	0.08	Mixed-Use	LAGWRP	Medical Center	--	--	B	--	--
M018	Trigen-LA Bunker Hill	100	0.09	0.12	Industrial	CBMWD	Downtown	LAGWRP	USC	B	A	A
M019	Twin Towers Correctional Facility	95	0.08	0.11	Industrial	CBMWD	Downtown	LAGWRP	USC	B	A	A
M020	MacArthur Park and Lake	85	0.08	0.17	Irrigation	CBMWD	Echo Park	--	--	A	--	--
M022	Expo Park	140	0.12	0.27	Irrigation	CBMWD	USC	LAGWRP	USC	B	--	--
M027	LA Equestrian Center	70	0.06	0.14	Irrigation	Burbank	Laterals	--	--	--	--	--
M029	Seoul Texprint	64	0.06	0.07	Industrial	CBMWD	USC	--	--	--	--	--
M035	USC Health Sciences Campus	5	0.00	0.01	Mixed-Use	LAGWRP	Medical Center	--	--	--	--	--
M037	Bette Davis Park	30	0.03	0.06	Irrigation	LAGWRP	Laterals	--	--	A	--	--
M039	Echo Park and Lake	50	0.04	0.10	Irrigation	CBMWD	Echo Park	--	--	A	--	--
M041	Thurman Los Angeles	49	0.04	0.10	Irrigation	CBMWD	USC	--	--	--	--	--
M047	Hazard Park	40	0.04	0.08	Irrigation	LAGWRP	Medical Center	--	--	--	--	--
M053	ABC Dye House	35	0.03	0.04	Industrial	CBMWD	USC	--	--	--	--	--
M054	Azteca Dye and Laundry	35	0.03	0.04	Industrial	CBMWD	USC	--	--	--	--	--
M056	355 Grand	34	0.03	0.05	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M058	South Central LA New High School	33	0.03	0.06	Irrigation	CBMWD	USC	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
M059	Baxter Healthcare Corporation	32	0.03	0.04	Industrial	LAGWRP	Laterals	--	--	--	--	--
M065	A&M Quality Wash	30	0.03	0.03	Industrial	CBMWD	USC	--	--	--	--	--
M066	All American Wash Company	30	0.03	0.03	Industrial	CBMWD	USC	--	--	--	--	--
M067	Alpert & Alpert Iron & Metal, Inc.	30	0.03	0.03	Industrial	CBMWD	USC	--	--	--	--	--
M068	California Drop Forge	30	0.03	0.03	Industrial	CBMWD	LAG Connection	--	--	--	--	--
M071	Morgan Laundry Services	30	0.03	0.03	Industrial	CBMWD	LAG Connection	--	--	--	--	--
M072	Pacific Blue Garment Solutions	30	0.03	0.03	Industrial	CBMWD	USC	--	--	--	--	--
M073	St Vincent Medical Center	30	0.03	0.05	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
M077	Caltrans (5 at PASADENA AV)	25	0.02	0.05	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M088	Pacific Coast Laundry	25	0.02	0.03	Industrial	CBMWD	USC	--	--	--	--	--
M092	LA County Juvenile	24	0.02	0.04	Mixed-Use	LAGWRP	Medical Center	--	--	--	--	--
M096	S&H Wash and Dry	22	0.02	0.03	Industrial	CBMWD	Echo Park	--	--	--	--	--
M102	LACMTA	20	0.02	0.03	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M103	LACMTA Division 1 Bus Yard	31	0.03	0.05	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M104	LACMTA Division 3 Bus Yard	33	0.03	0.05	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
M105	LACMTA Location 30 - Metro Support Services	39	0.03	0.06	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M108	Blue Beacon	20	0.02	0.02	Industrial	CBMWD	Downtown	--	--	--	--	--
M111	Associated Ready Mix Concrete	19	0.02	0.02	Industrial	CBMWD	USC	--	--	--	--	--
M115	Central LA High School #11	19	0.02	0.04	Irrigation	CBMWD	Echo Park	--	--	--	--	--
M117	William Mulholland Memorial	19	0.02	0.04	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M124	LACMTA Division 2 Bus Yard	31	0.03	0.05	Mixed-Use	CBMWD	USC	--	--	--	--	--
M127	Classy Dyeing and Finishing	17	0.02	0.02	Industrial	CBMWD	USC	--	--	--	--	--
M129	Marriot Hotel	17	0.02	0.03	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M130	Garment Dyeing Co.	17	0.02	0.02	Industrial	CBMWD	USC	--	--	--	--	--
M135	Car Wash	16	0.01	0.02	Industrial	CBMWD	USC	--	--	--	--	--
M137	Nestle USA Inc	16	0.01	0.02	Industrial	CBMWD	USC	--	--	--	--	--
M141	Domestic Linen Supply	15	0.01	0.02	Industrial	CBMWD	USC	--	--	--	--	--
M143	Ross Snyder Recreation Center	15	0.01	0.03	Irrigation	CBMWD	USC	--	--	--	--	--
M146	Kyoto Grand Hotel and Gardens	15	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M148	Tregnan Golf Academy	15	0.01	0.03	Irrigation	LAGWRP	Laterals	--	--	A	--	--
M150	Kleen Kraft Services	15	0.01	0.02	Industrial	CBMWD	Downtown	--	--	--	--	--
M151	LA Cold Storage	15	0.01	0.02	Industrial	CBMWD	Downtown	--	--	--	--	--
M159	Federal Building	14	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M161	Belmont High School #8543	14	0.01	0.03	Irrigation	CBMWD	Echo Park	--	--	--	--	--
M162	CEMEX (Transit Mixed Concrete)	14	0.01	0.02	Industrial	LAGWRP	Medical Center	--	--	--	--	--
M163	Jefferson High School #8714	14	0.01	0.03	Irrigation	CBMWD	USC	--	--	--	--	--
M164	Museum of Compemporary Art (MOCA)	13	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M166	Peter's Garment Dyeing	13	0.01	0.02	Industrial	CBMWD	Downtown	--	--	--	--	--
M168	350 Grand	13	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
M169	Omni Hotel	13	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M179	Victory Dye House	12	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
M180	Central Recreation Center	12	0.01	0.02	Irrigation	CBMWD	USC	--	--	--	--	--
M183	Aps Finishing	12	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
M191	Sterer Engineering and Manufacturing	11	0.01	0.01	Industrial	LAGWRP	Laterals	--	--	--	--	--
M199	CA Electroplating	11	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
M200	Valley Plating Works	11	0.01	0.02	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
M202	COSTELLO Recreation Center	11	0.01	0.02	Irrigation	CBMWD	USC	--	--	--	--	--
M206	LAUSD Central Administration Building	11	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M211	Vista Hermosa Natural Park	11	0.01	0.02	Irrigation	CBMWD	Echo Park	--	--	--	--	--
M212	Little Tokyo Towers	10	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M215	Silla America	10	0.01	0.02	Mixed-Use	CBMWD	USC	--	--	--	--	--
M216	LINCOLN HIGH SCH #8730	10	0.01	0.02	Irrigation	LAGWRP	Medical Center	--	--	--	--	--
M217	Caltrans (101 at N BONNIE BRAE ST)	10	0.01	0.02	Irrigation	CBMWD	Echo Park	--	--	--	--	--
M218	Mountains Recreation & Conservation Authority	10	0.01	0.02	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M220	LA Times Newspaper	10	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M227	Los Feliz Car Wash	10	0.01	0.01	Industrial	LAGWRP	Laterals	--	--	--	--	--
M231	LA Times Newspaper	10	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M234	Grand Promenade	10	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M238	Costco	9	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
M240	Maple Dye Inc	9	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
M244	Grand Center Square	9	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M249	Caltrans (110 at N FIGUEROA ST)	9	0.01	0.02	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M258	Pershing Square	9	0.01	0.02	Irrigation	CBMWD	Downtown	--	--	--	--	--
M262	Caltrans (5 at DALLAS ST)	9	0.01	0.02	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M263	Brite Plating Co	9	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
M267	Los Angeles County Offices	9	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M289	NEIS - Humboldt ATF (planned)	8	0.01	0.01	Industrial	LAGWRP	Laterals	--	--	--	--	--
M290	Dye & Wash Tech	8	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
M291	HSIEN T HSU	8	0.01	0.01	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
M297	Cathedral of LA	8	0.01	0.02	Irrigation	CBMWD	Downtown	--	--	--	--	--
M305	Caltrans (110 at W ST)	8	0.01	0.02	Irrigation	CBMWD	Downtown	--	--	--	--	--
M316	Honda Plaza	8	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M325	Union Station	7	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M330	Caltrans - Offices	7	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M335	CHINESE COMMITTEE ON AGING OF LOS ANGELES	7	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M337	Washington Irving Junior High School #8189	7	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M341	Aztlan Cold Storage	7	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
M342	LA County Music Center	7	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M346	JSL Foods	7	0.01	0.01	Industrial	LAGWRP	Laterals	--	--	--	--	--
M347	Caltrans (110 at LORETO ST)	7	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
M354	Nightingale High School #8264	7	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M370	Caltrans (5 at STADIUM WY)	7	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M391	Bunker Hill Park	6	0.01	0.01	Irrigation	CBMWD	Downtown	--	--	--	--	--
M392	CRI-HELP INC	6	0.01	0.01	Mixed-Use	LAGWRP	Medical Center	--	--	--	--	--
M394	CENTENNIAL MILLS DIV OF ADM MILLING	6	0.01	0.01	Mixed-Use	CBMWD	USC	--	--	--	--	--
M400	AMERICAN COMMERCIAL EQUITIES THREE, LLC	6	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M411	ROSE M PARK CORP	6	0.01	0.01	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
M413	Criminal Justice Center	6	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M416	Central LA High School #10	6	0.01	0.01	Irrigation	CBMWD	Echo Park	--	--	--	--	--
M426	FOREVER 21 LOGISTICS LLC	6	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M428	Caltrans (5 at N BROADWAY)	6	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M433	Griffith Park Recreation Center	6	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M438	GENERAL SERVICES ADMIN FINANCE DIV 7BCPL-U(192)	6	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M442	Nutel Motel	6	0.01	0.01	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
M446	World Trade Center	6	0.00	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M454	Miyako Hotels & Resorts	5	0.00	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M455	Bunker Hill Tower Apartments	5	0.00	0.01	Irrigation	CBMWD	Echo Park	--	--	--	--	--
M459	CITY LA BUREAU PUBLIC BLDGS	5	0.00	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M462	Promenade Tower Apartments	5	0.00	0.01	Irrigation	CBMWD	Echo Park	--	--	--	--	--
M472	Family Park	5	0.00	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M480	BSS Urbarn Forestry	5	0.00	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M482	25th Street Recycling	5	0.00	0.01	Industrial	CBMWD	USC	--	--	--	--	--
M483	City of LA Public Works	5	0.00	0.01	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
M489	Lakeside Golf Club	200	0.18	0.39	Irrigation	LAGWRP	Laterals	--	--	--	--	--
M506	Boyle Heights Mixed-Use Community Project	150	0.13	0.23	Mixed Use	CBMWD	USC	LAGWRP	USC	--	--	--
M507	Farmers Stadium	40	0.04	0.06	Mixed Use	LAGWRP	USC	--	--	--	--	--
M508	LACMTA Division 20 Red Line Main Yard	10	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
M509	LACMTA Division 21 Pasadena Gold Line Yard (Midway)	6	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
V002	Vulcan Materials	51	0.05	0.06	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	A	A	B
V003	Braemar Country Club	300	0.27	0.59	Irrigation	DCTWRP T22	Braemar	--	--	A	A	A
V005	El Caballero Country Club	290	0.26	0.57	Irrigation	DCTWRP T22	Braemar	--	--	A	B	B
V006	Valley Sod Farms	140	0.12	0.27	Irrigation	DCTWRP T22	VA Hospital	--	--	A	A	A
V008	CSU Northridge	340	0.30	0.52	Mixed-Use	DCTWRP T22	VA Hospital	--	--	A	A	B
V009	Veteran's Administration Hospital	320	0.29	0.49	Mixed-Use	DCTWRP T22	VA Hospital	--	--	A	A	A
V010	Knollwood Golf Course	280	0.25	0.55	Irrigation	DCTWRP T22	Knollwood	--	--	A	A	A
V011	Pierce College	190	0.17	0.29	Mixed-Use	Las Virgenes	Pierce College	DCTWRP T22	Pierce College	A	A	A
V013	Almore Dye House Inc	230	0.21	0.27	Industrial	Burbank	Cesar Chavez	--	--	C	--	--
V014	Woodland Hills Country Club	230	0.21	0.45	Irrigation	Las Virgenes	Woodland Hills	--	--	A	B	B
V015	Eden Memorial Park	225	0.20	0.44	Irrigation	DCTWRP T22	Knollwood	--	--	B	B	A
V017	San Fernando Mission Cemetery	200	0.18	0.39	Irrigation	DCTWRP T22	Knollwood	--	--	B	A	A

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
V019	Valley Plaza Park and Recreation Center	130	0.12	0.26	Irrigation	Burbank	Valley College	--	--	A	A	B
V021	North Hollywood Park	100	0.09	0.20	Irrigation	Burbank	North Hollywood	--	--	A	A	B
V024	Anheuser Busch	130	0.12	0.15	Industrial	DCTWRP T22	VA Hospital	--	--	B	--	--
V025	Caltrans (170 at Burton St)	50	0.04	0.10	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	A	--	--
V027	Cesar Chavez Recreation Complex	90	0.08	0.18	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	A	--	--
V028	Hjelte Sports Center	90	0.08	0.18	Irrigation	DCTWRP T22	Laterals	--	--	A	--	--
V031	Van Nuys Sherman Oaks Park	105	0.09	0.21	Irrigation	Burbank	Valley College	--	--	A	A	A
V032	LA Valley College	100	0.09	0.15	Mixed-Use	Burbank	Valley College	--	--	A	A	B
V033	Caltrans (170 at Babcock Av)	60	0.05	0.12	Irrigation	Burbank	Cesar Chavez	--	--	A	A	A
V034	Caltrans (5 at Tuxford St)	60	0.05	0.12	Irrigation	Burbank	Hansen Connection	--	--	A	--	--
V035	Reseda Park	40	0.04	0.08	Irrigation	DCTWRP T22	Reseda	--	--	A	--	--
V038	Bradley Landfill	12	0.01	0.02	Irrigation	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	A	A	A
V040	Litton Industries, Inc.	75	0.07	0.11	Mixed-Use	Las Virgenes	Pierce College	--	--	A	--	--
V042	Brand Park	50	0.04	0.10	Irrigation	DCTWRP T22	Knollwood	--	--	A	--	--
V043	Catholic Archdiocese of Los Angeles	50	0.04	0.10	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V049	Mid Valley Baseball Assoc	48	0.04	0.09	Irrigation	DCTWRP T22	Laterals	--	--	--	--	--
V050	Sun Valley Park and Recreation Center	48	0.04	0.09	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
V051	North Hollywood High School	46	0.04	0.09	Irrigation	Burbank	Valley College	--	--	--	--	--
V057	LACMTA Division 15 Bus Yard	42	0.04	0.06	Mixed-Use	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V058	Stonehurst Recreation Center	43	0.04	0.08	Irrigation	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V060	Pratt & Whitney Rocketdyne	41	0.04	0.05	Industrial	Las Virgenes	Pierce College	--	--	B	--	--
V061	Kaiser Foundation Hospital (Panorama City)	41	0.04	0.06	Mixed-Use	DCTWRP AWP	Laterals	DCTWRP T22	Hansen Connection	--	--	--
V063	Cabrini Villas	40	0.04	0.08	Irrigation	Burbank	Laterals	--	--	--	--	--
V065	Caltrans (170 at SHERMAN WY)	38	0.03	0.07	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V070	Caltrans (118 at CHATSWORTH DR)	36	0.03	0.07	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V071	Kaiser Permanente (Woodland Hills)	35	0.03	0.05	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V073	CITY LA SANITATION FUNDNON/SCM 21/14	35	0.03	0.07	Irrigation	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V074	Warner Ranch Park	34	0.03	0.07	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V076	Caltrans (5 at SHELDON ST)	34	0.03	0.07	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V077	The Village at Westfield	34	0.03	0.05	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V081	Polytechnic High School	33	0.03	0.07	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	--	--	--
V084	TUJUNGA WASH	32	0.03	0.06	Irrigation	Burbank	Valley College	--	--	--	--	--
V085	Grant High School	31	0.03	0.06	Irrigation	Burbank	Valley College	--	--	--	--	--
V089	LACMTA	30	0.03	0.05	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
V091	Jackson Shrub Supply	30	0.03	0.06	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V092	James Monroe High School	30	0.03	0.06	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V093	Little Bee Canyon Park	30	0.03	0.06	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
V095	Woodbury University	30	0.03	0.05	Mixed-Use	Burbank	Laterals	--	--	--	A	B
V096	Pacifica Hospital of the Valley	29	0.03	0.04	Mixed-Use	DCTWRP AWP	Laterals	DCTWRP T22	Hansen Connection	--	--	--
V098	Strathern Park-West	29	0.03	0.06	Irrigation	Burbank	Cesar Chavez	DCTWRP AWP	Laterals	--	--	--
V105	Community Recycling and Resource Recovery Inc	27	0.02	0.04	Mixed-Use	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V106	Fernangeles Recreation Center	26	0.02	0.05	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	--	--	--
V108	Caltrans (170 at VANOWEN ST)	26	0.02	0.05	Irrigation	Burbank	Valley College	--	--	--	--	--
V112	Providence Holy Cross Medical Center	25	0.02	0.04	Mixed-Use	DCTWRP T22	Knollwood	--	--	--	--	--
V113	San Antonio Nursery	25	0.02	0.05	Irrigation	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V116	Sun Hill Properties Inc	25	0.02	0.04	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
V118	Caltrans (405 at BURBANK BL)	24	0.02	0.05	Irrigation	Burbank	DCT Connection	--	--	--	--	--
V122	Geo K Porter Junior High	23	0.02	0.05	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V124	Caltrans (170 at TONOPAH ST)	23	0.02	0.05	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V126	East Valley New Continuation High School	23	0.02	0.04	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
V129	Reseda High School	22	0.02	0.04	Irrigation	DCTWRP T22	Reseda	--	--	--	--	--
V131	Granada Hills Little League	22	0.02	0.04	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V136	SERRANIA AVENUE PARK	21	0.02	0.04	Irrigation	Las Virgenes	Woodland Hills	--	--	--	--	--
V137	Olver Wendell Holmes Middle School	21	0.02	0.04	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V138	ENCINO BASEBALL INC	21	0.02	0.04	Irrigation	DCTWRP T22	Laterals	--	--	--	--	--
V139	Caltrans (5 at PENDLETON ST)	21	0.02	0.04	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
V140	Caltrans (170 at VICTORY BL)	21	0.02	0.04	Irrigation	Burbank	Valley College	--	--	--	--	--
V141	LACMTA	21	0.02	0.03	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
V145	LACMTA	20	0.02	0.03	Mixed-Use	Burbank	Valley College	--	--	--	--	--
V146	Kennedy High School	20	0.02	0.04	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V149	Caltrans (405 at ROSCOE BL)	20	0.02	0.04	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V150	Caltrans (405 at RINALDI ST)	20	0.02	0.04	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V153	Blue Cross of California	19	0.02	0.03	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V154	LACMTA	19	0.02	0.03	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
V155	Millikan Jr. High	19	0.02	0.04	Irrigation	Burbank	Valley College	--	--	--	--	--
V157	LACMTA	19	0.02	0.03	Mixed-Use	DCTWRP T22	Pierce College	--	--	--	--	--
V160	Warner Woodlands Townhomes	19	0.02	0.04	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V161	DOUGLAS EMMETT REALTY FUND K1232	19	0.02	0.03	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V162	LITTLE LEAGUE	18	0.02	0.04	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V164	Warner Village III Condominiums	18	0.02	0.04	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V166	Caltrans (170 at WESTPARK DR)	18	0.02	0.04	Irrigation	Burbank	Valley College	--	--	--	--	--
V167	LACMTA	18	0.02	0.03	Mixed-Use	DCTWRP T22	Pierce College	--	--	--	--	--
V170	LACMTA	17	0.02	0.03	Mixed-Use	DCTWRP T22	Laterals	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
V172	Sepulveda Basin Dog Park	17	0.02	0.03	Irrigation	DCTWRP T22	Reseda	--	--	--	--	--
V180	Emmanuel Luthern Church	17	0.01	0.03	Irrigation	Burbank	Valley College	--	--	--	--	--
V187	Notre Dame High School	16	0.01	0.03	Irrigation	Burbank	Valley College	--	--	--	--	--
V188	Providence Tarzana Medical Center	16	0.01	0.02	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
V193	Caltrans (405 at CHATSWORTH ST)	16	0.01	0.03	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V197	Victory/Vineland Park	16	0.01	0.03	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V198	Caltrans (5 at PENDLETON ST)	16	0.01	0.03	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
V199	Strathern Park	16	0.01	0.03	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V206	HENRY WEISS	15	0.01	0.03	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
V207	Motion Picture and Television Fund Hospital	15	0.01	0.02	Mixed-Use	Las Virgenes	Woodland Hills	--	--	--	--	--
V209	Jewish Home for the Aging	15	0.01	0.02	Mixed-Use	DCTWRP T22	Pierce College	--	--	--	--	--
V214	LACMTA	15	0.01	0.02	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V217	Caltrans (101 at ETIWANDA AV)	15	0.01	0.03	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
V223	Valley Middle School	15	0.01	0.03	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
V229	Green Set	14	0.01	0.03	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V230	East Valley High School	14	0.01	0.03	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	--	--	--
V231	CITY LA STREET MAINTENANCE FUND	14	0.01	0.02	Mixed-Use	Burbank	Laterals	--	--	--	--	--
V237	LACMTA	14	0.01	0.02	Mixed-Use	Burbank	Valley College	--	--	--	--	--
V243	Sheraton Universal Hotel	13	0.01	0.02	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
V244	East Valley Animal Shelter	13	0.01	0.02	Mixed-Use	DCTWRP AWP	Laterals	--	--	--	--	--
V249	Canyon Way Nursery	13	0.01	0.03	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V250	Fornaris Farms	13	0.01	0.03	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V252	UNITY REAL EST 0-800 % CENTURY EQUITIES C	13	0.01	0.02	Mixed-Use	Burbank	Valley College	--	--	--	--	--
V253	Portola Middle School	13	0.01	0.03	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
V254	MOUNTAINS RECREATION & CONSERVATION AUTHORITY	13	0.01	0.03	Irrigation	Burbank	Valley College	--	--	--	--	--
V257	Libbit Park	13	0.01	0.03	Irrigation	DCTWRP T22	Laterals	--	--	--	--	--
V265	Universal Garment Wash & Dye	13	0.01	0.01	Industrial	Burbank	Cesar Chavez	--	--	--	--	--
V267	PALISADES PARK	13	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V278	Caltrans (118 at BERMUDA ST)	12	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V281	Alert Plating Co	12	0.01	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V285	Nordhoff Recreation Center	12	0.01	0.02	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V293	ALEMANY HIGH SCHOOL Sports Fields	11	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V299	LA BD OF EDUCATION SEQUOIA JR HIGH #8368	11	0.01	0.02	Irrigation	DCTWRP T22	Pierce College	--	--	--	--	--
V300	Green Set	11	0.01	0.02	Irrigation	Burbank	Laterals	--	--	--	--	--
V306	MARINER POST ACUTE NET DEBTOR IN POSSESSION	11	0.01	0.02	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
V312	Caltrans (118 at WOODLEY AV)	11	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V316	ANGELUS BLOCK CO	11	0.01	0.02	Mixed-Use	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V318	Van Nuys Airport	11	0.01	0.02	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
V319	CORP PRESIDING BISHOP CHURCH OF J.C.L.D.S.	11	0.01	0.02	Irrigation	Las Virgenes	Woodland Hills	--	--	--	--	--
V324	Universal City Plaza	11	0.01	0.02	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
V325	Angelinos Productions	11	0.01	0.02	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
V327	Green Spot Nursery (Site 1)	11	0.01	0.02	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V331	East Valley Middle School	10	0.01	0.02	Irrigation	Burbank	Valley College	--	--	--	--	--
V333	HIGHLAND HALL SCHOOL	10	0.01	0.02	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V334	ROMAN CATHOLIC ARCHBISHOP OF LA	10	0.01	0.02	Irrigation	Las Virgenes	Woodland Hills	--	--	--	--	--
V336	SUN YOUNG OH	10	0.01	0.02	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V339	LACMTA	10	0.01	0.02	Mixed-Use	Burbank	Valley College	--	--	--	--	--
V340	PEDRO PEREZ DBA E P NURSERY	10	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V343	Walnut Gardens	10	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V344	Health Net of California	10	0.01	0.02	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V345	NATIONAL READY MIXED CONCRETE COMPANY	10	0.01	0.01	Industrial	Burbank	DCT Connection	--	--	--	--	--
V346	Hines Warner Center	10	0.01	0.02	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V348	SKYLINE CONCRETE SALES CO	10	0.01	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V356	Caltrans (405 at DEVONSHIRE ST)	10	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V360	TARZANA TREATMENT CENTER INC	10	0.01	0.02	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
V362	CHADI HAGE DBA LAUNDERLAND WASH & DRY	10	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V363	L.A.FITNESS INTERNATIONAL,LLC	10	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V364	NICOLAS ALVARADO (Nursery)	10	0.01	0.02	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
V370	WOODLEY ENTERPRISES LLC	10	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
V373	ASSOCIATED READY MIXED CONCRETE INC	10	0.01	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V377	LACMTA	9	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
V379	14857 ROSCOE BLVD CORP	9	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V380	ST GENEVIEVE HI SCHOOL	9	0.01	0.02	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
V384	Sunset Terrace Apartments	9	0.01	0.02	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
V385	BYUNG CHON CHOI DBA LUCY'S LAUNDRYMART	9	0.01	0.01	Industrial	DCTWRP AWP	Laterals	--	--	--	--	--
V388	AMERICANA INDEPENDENCE LTD	9	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V393	Caltrans (5 at SHARP AV)	9	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V396	DAN CARASSO	9	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
V403	HEMO DIALYSIS CORP HOLY CROSS RENAL CENTER	9	0.01	0.01	Mixed-Use	DCTWRP T22	Knollwood	--	--	--	--	--
V418	CHAN SOO KIM DBASANTA FE LAVANDERIA	9	0.01	0.01	Industrial	Las Virgenes	Pierce College	--	--	--	--	--
V424	Douglas Emmett Realty	9	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V429	THE HALYARD CO	9	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	DCTWRP T22	Hansen Connection	--	--	--
V430	Warner Center Marriot	8	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
V441	Colfax Avenue Elementary School	8	0.01	0.02	Irrigation	Burbank	Valley College	--	--	--	--	--
V442	Sunset Pointe Apartments	8	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V445	STEVE NEEDLEMAN DBA KIDS FROM THE VALLEY III	8	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V450	ST NICHOLAS GREEK ORTHODOX CHURCH	8	0.01	0.02	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V451	ROCCO CORDOLA DBA CORDOLA MARBLE	8	0.01	0.01	Mixed-Use	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V452	YOEL Y WAZANA DBA MICRO SOLUTIONS	8	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
V455	San Regis Apartments	8	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V457	ONEGENERATION	8	0.01	0.01	Mixed-Use	DCTWRP T22	Reseda	--	--	--	--	--
V460	Caltrans (405 at RAYEN ST)	8	0.01	0.02	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V463	PLAZA RESIDENTIAL ENTERPRISES, INC	8	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	--	--	--	--	--
V471	TRI CENTER PLAZA, LP	8	0.01	0.01	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
V475	CARR NP PROPERTIES L.L.C.	8	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V483	Sherman Oaks Fashion Square	8	0.01	0.01	Mixed-Use	Burbank	Valley College	--	--	--	--	--
V491	Hilton Woodland Hills	8	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V493	Nursery Los Pinos	8	0.01	0.01	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V501	GONZALO AMBROSIO	8	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
V502	GEORGE E MOSS	8	0.01	0.01	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
V503	GAREGIN GEZALYAN	7	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
V509	The Village at Sherman Oaks	7	0.01	0.01	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
V512	Strathern Court Apartments	7	0.01	0.01	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
V517	IGE INC	7	0.01	0.01	Industrial	Las Virgenes	Pierce College	--	--	--	--	--
V518	CIRILO GUTIERREZ	7	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	DCTWRP T22	Hansen Connection	--	--	--
V520	21st Century Insurance Company	7	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V528	Briarcliffe North Patiohomes	7	0.01	0.01	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V531	ROBERT HART	7	0.01	0.01	Mixed-Use	DCTWRP T22	Pierce College	--	--	--	--	--
V537	KARAPET DISHGRIKYAN DBA FAR EAST PETROLEUM	7	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	--	--	--	--	--
V540	ZENITH INS CO ATTN: FACILITIES DEPT	7	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V542	California Village Place HOA	7	0.01	0.01	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
V545	CITY LA STREET MAINTENANCE FUND	7	0.01	0.01	Mixed-Use	Burbank	North Hollywood	--	--	--	--	--
V553	Caltrans (134 at VINELAND AV)	7	0.01	0.01	Irrigation	Burbank	North Hollywood	--	--	--	--	--
V554	Caltrans (118 at HASKELL AV)	7	0.01	0.01	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V561	LA BD OF EDUCATION VAN NUYS JR HIGH #8434	7	0.01	0.01	Irrigation	Burbank	DCT Connection	--	--	--	--	--
V565	PET ORPHANS OF SOUTHERNCALIFORNIA	7	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
V566	Knollwood Elementary School	7	0.01	0.01	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V571	WM CITY VIEW LOFTS LLC	7	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
V572	LA BREA BAKERY	7	0.01	0.01	Industrial	DCTWRP T22	VA Hospital	--	--	--	--	--
V574	MGA ENTERTAINMENT INC.	7	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
V575	Americana Warner Center apartments	7	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V578	Warner Center	7	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V581	MOUNTAINS RECREATION & CONSERVATION AUTHORITY	7	0.01	0.01	Irrigation	Burbank	Valley College	--	--	--	--	--
V582	Whitnall Highway Dog Park	10	0.01	0.02	Irrigation	Burbank	Laterals	--	--	--	--	--
V589	PINECREST SCHOOL	7	0.01	0.01	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V594	Airtel Hotel Plaza	6	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
V597	Canterbury Avenue Elementary School	6	0.01	0.01	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V599	Tarzana Plaza HOA	6	0.01	0.01	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
V602	EXECUTIVE SOFTWARE PROPERTIES, LLC	6	0.01	0.01	Industrial	Burbank	Laterals	--	--	--	--	--
V608	Kaiser Permanente	6	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
V626	LACMTA	6	0.01	0.01	Mixed-Use	Burbank	North Hollywood	--	--	--	--	--
V630	WOODMAN AVE CORP	6	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	--	--	--	--	--
V631	LACMTA	6	0.01	0.01	Mixed-Use	Burbank	North Hollywood	--	--	--	--	--
V634	SUMMERVILLE AT COBBCO INC AT TARZANA	6	0.01	0.01	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
V637	SEYUNG CHUNG	6	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V638	VAN NUYS RECREATION CENTER	6	0.01	0.01	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V646	STANDARD CONCRETE PRODUCTS INC	6	0.01	0.01	Industrial	Burbank	Hansen Connection	--	--	--	--	--
V652	Caltrans (170 at MAGNOLIA BL)	6	0.01	0.01	Irrigation	Burbank	North Hollywood	--	--	--	--	--
V654	Caltrans (405 at CHASE ST)	6	0.01	0.01	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V657	Linen Party Rental	6	0.01	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V659	PAUL B MORGEN	6	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V665	KABABAYAN DEVELOPMENT INC	6	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V666	PROJECTS SPAN INC BEHAVIORAL SYS SOUTHWEST	6	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V676	Sherman Oaks Hospital	6	0.01	0.01	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
V682	NORMAN MORI	6	0.01	0.01	Mixed-Use	DCTWRP T22	Knollwood	--	--	--	--	--
V684	GARY W JACKSON	6	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
V691	H K REALTY INC VILLAGE POINTE APTS	6	0.01	0.01	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
V695	REPFUND ARBORS APARTMENTS, LLC	6	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V697	WEN-ER FARMS LLC	6	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V700	LACMTA	6	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
V702	L A BAPTIST CITY MISSION SOCIETY	6	0.01	0.01	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
V709	GRANADA RIDGE HOME OWNERS ASSOCIATION	6	0.00	0.01	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V710	GREG SILBERG	6	0.00	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V715	Caltrans (405 at HASKELL AV)	5	0.00	0.01	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
V716	WATERFORD WARNER CENTER LLC	5	0.00	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
V721	TARZANA FIVE LLC	5	0.00	0.01	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
V728	FAIR AVE ELEM SCHOOL	5	0.00	0.01	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
V735	SCHMIDT INDUSTRIES, INCDBA PRIME PLATING, INC	5	0.00	0.01	Industrial	Burbank	Hansen Connection	--	--	--	--	--
V738	San Fernando Community Hospital	5	0.00	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V745	12300 SHERMAN WAY, LLC	5	0.00	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
V747	DOUGLAS EMMETT REALTY FUND 1997,CA LTD PTNRSHIP	5	0.00	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V748	Caltrans (101 at BALBOA BL)	5	0.00	0.01	Irrigation	DCTWRP T22	Laterals	--	--	--	--	--
V756	CAL APPLE PRODUCTS INC	5	0.00	0.01	Industrial	Burbank	Cesar Chavez	--	--	--	--	--
V759	EQUITY RESIDENTIAL PROPERTIES MGMT	5	0.00	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V761	OAKWOOD SCHOOL	5	0.00	0.01	Irrigation	Burbank	North Hollywood	--	--	--	--	--
V766	FOOTHILL ENTERPRISES	5	0.00	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
V771	WARNER GATEWAY PRTRNR	5	0.00	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
V777	AMERICAN WASTE INDUSTRIES	5	0.00	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
V781	Best Western Carriage Inn	5	0.00	0.01	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
V782	Caltrans (170 at CHANDLER BL)	5	0.00	0.01	Irrigation	Burbank	Valley College	--	--	--	--	--
V784	HASKELL AVE ELEM SCHOOL	5	0.00	0.01	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
V786	Union Towers Management	5	0.00	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
V787	Valley Generation Station	150	0.13	0.17	Industrial	DCTWRP AWP	Laterals	--	--	B	--	--
V821	Whitnall Highway Power Line R/W	21	0.02	0.04	Irrigation	Burbank	Laterals	--	--	--	--	--
V822	Chandler Bike Path	30	0.03	0.06	Irrigation	Burbank	Laterals	--	--	--	--	--
W001	UCLA	540	0.48	0.82	Mixed-Use	Westwood	UCLA	--	--	B	--	--
W002	Veterans Administration	430	0.38	0.65	Mixed-Use	Westwood	UCLA	--	--	A	--	--
W003	Rancho Park Golf Course	400	0.36	0.79	Irrigation	Westwood	UCLA	--	--	A	--	--
W005	Brentwood Country Club	230	0.21	0.45	Irrigation	Westwood	UCLA	--	--	A	--	--
W006	Breitburn Energy	165	0.15	0.19	Industrial	Westwood	UCLA	--	--	A	--	--
W007	Kenneth Hahn State Recreation Area	160	0.14	0.31	Irrigation	Westwood	Kenneth Hahn	--	--	B	--	--
W008	Riviera Country Club	180	0.16	0.35	Irrigation	Westwood	UCLA	--	--	A	--	--
W009	Hillcrest Country Club	170	0.15	0.33	Irrigation	Westwood	UCLA	--	--	A	--	--
W010	Trigen-LA Energy	170	0.15	0.20	Industrial	Westwood	UCLA	--	--	B	--	--
W011	Los Angeles Country Club	140	0.12	0.27	Irrigation	Westwood	UCLA	--	--	A	--	--
W012	Penmar Golf Course	100	0.09	0.20	Irrigation	Westside	Penmar	--	--	A	--	--
W014	Jim Gilliam Recreation Center	75	0.07	0.15	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
W015	LMU (Cooling Towers)	50	0.04	0.06	Industrial	Westside	Laterals	--	--	--	--	--
W016	Plains Exploration & Production Company (PXP)	50	0.04	0.06	Industrial	Westwood	Kenneth Hahn	--	--	--	--	--
W018	Vista del Mar Park	49	0.04	0.10	Irrigation	Westside	Laterals	--	--	--	--	--
W021	Holmby Park	40	0.04	0.08	Irrigation	Westwood	UCLA	--	--	A	--	--
W022	Neutrogena Corporation	37	0.03	0.04	Industrial	Westside	Laterals	--	--	--	--	--
W026	Hilton Los Angeles Airport	27	0.02	0.04	Mixed-Use	Westside	Laterals	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
W027	Loyola Marymount Project (planned)	25	0.02	0.04	Mixed-Use	Westside	Laterals	--	--	--	--	--
W029	Rancho Cienega Sports Complex	25	0.02	0.05	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
W030	Bloomington	23	0.02	0.04	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W032	Hyatt Regency Century Plaza	22	0.02	0.03	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W033	Venice High School	22	0.02	0.04	Irrigation	Westside	Penmar	--	--	--	--	--
W034	Marriot Hotel (West LA)	22	0.02	0.03	Mixed-Use	Westside	Laterals	--	--	--	--	--
W036	CORP PRESIDING BISHOP CHURCH OF J.C.L.D.S.	21	0.02	0.04	Irrigation	Westwood	UCLA	--	--	--	--	--
W044	Cross Creek Village Homeowners	18	0.02	0.04	Irrigation	Westside	Laterals	--	--	--	--	--
W045	Westin Hotel	18	0.02	0.03	Mixed-Use	Westside	Laterals	--	--	--	--	--
W046	Westchester High School	17	0.02	0.03	Irrigation	Westside	Laterals	--	--	--	--	--
W047	University High School	17	0.02	0.03	Irrigation	Westwood	UCLA	--	--	--	--	--
W048	Weyburn Terraces (UCLA)	17	0.02	0.03	Irrigation	Westwood	UCLA	--	--	--	--	--
W049	Penmar Rec Center	17	0.02	0.03	Irrigation	Westside	Penmar	--	--	--	--	--
W050	Normand O. Houston Park	17	0.02	0.03	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
W051	Sheraton Gateway Hotel	16	0.01	0.02	Mixed-Use	Westside	Laterals	--	--	--	--	--
W055	Westwood Rec Center	15	0.01	0.03	Irrigation	Westwood	UCLA	--	--	--	--	--
W058	Caltrans (405 at LA TIJERA BL)	14	0.01	0.03	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
W059	One Hundred Towers	14	0.01	0.02	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W061	Westside Pavillion Shopping Center	13	0.01	0.02	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W063	Pavillions	13	0.01	0.02	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W065	Radisson Hotel LAX	12	0.01	0.02	Mixed-Use	Westside	Laterals	--	--	--	--	--
W066	Century Park Place Condominiums	12	0.01	0.02	Irrigation	Westwood	UCLA	--	--	--	--	--
W068	Blue Oval Car Rental	12	0.01	0.02	Mixed-Use	Westside	Laterals	--	--	--	--	--
W073	Renaissance Hotel	11	0.01	0.02	Mixed-Use	Westside	Laterals	--	--	--	--	--
W075	Venice Swimming Rec	11	0.01	0.02	Irrigation	Westside	Penmar	--	--	--	--	--
W076	St. Bernard High School	11	0.01	0.02	Irrigation	Westside	Laterals	--	--	--	--	--
W078	LA Park Hyatt	10	0.01	0.02	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W084	Holiday Inn - LAX	9	0.01	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
W087	SLC WESTWOOD OPERATING LLC STORE #32	9	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W089	Crowne Plaza Hotel (LAX)	9	0.01	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
W090	Caltrans (10 at CHEVIOT VISTA P)	9	0.01	0.02	Irrigation	Westwood	UCLA	--	--	--	--	--
W091	20TH CENTURY FOX FILM CORP	9	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W094	2121 AVENUE OF STARS LLC	8	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W096	WILSHIRE COMSTOCK CONDOASSO-MANAGERS OFFICE	8	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W100	EQUITY RESIDENTIAL PROPERTIES MGMT	8	0.01	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
W103	Century Park East	8	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
W106	20th Century Fox	7	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W107	LAUSD Brentwood Mgmt Center	7	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
W108	Heights Apts	7	0.01	0.01	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
W109	LACMTA Division 22 Green Line Main Yard	5	0.00	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
W113	Airport Spectrum	7	0.01	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
W114	NEW BEVERLY HILLS HOTELLIMITED PARTNERSHIP	7	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--

ID	Customer Name	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
W115	Kentwood Elementary School	7	0.01	0.01	Irrigation	Westside	Laterals	--	--	--	--	--
W117	Marina Terrace I	6	0.01	0.01	Irrigation	Westside	Penmar	--	--	--	--	--
W119	WESTWOOD HORIZONS CORP	6	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W120	Palms Rec Center	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
W121	UCLA University Apartments North	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
W123	CENTURY TOWERS ASSN	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
W124	ENTERTAINMENT CTR LLC	6	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W131	AZZURRA HOMEOWNERS ASSOCIATION	6	0.01	0.01	Irrigation	Westside	Penmar	--	--	--	--	--
W132	MOSS & CO PROP MGMT	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
W133	Le Parc HOA	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
W138	VILLA MARINA EAST IV ASSOCIATION INC	6	0.00	0.01	Irrigation	Westside	Penmar	--	--	--	--	--
W144	C WHOLESALE COSTCO UTILITY BILLS	5	0.00	0.01	Mixed-Use	Westside	Penmar	--	--	--	--	--
W149	Federal Building	5	0.00	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
W150	Wright Jr High	5	0.00	0.01	Irrigation	Westside	Laterals	--	--	--	--	--
W152	Emerson Jr High	5	0.00	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
W153	Mark Twain Jr High	5	0.00	0.01	Irrigation	Westside	Penmar	--	--	--	--	--
W154	Playa Vista Park Landscaping	5	0.00	0.01	Irrigation	Westside	Laterals	--	--	--	--	--
W155	Cheviott Hills Rec Center	70	0.06	0.14	Irrigation	Westwood	UCLA	--	--	A	--	--
W157	Scattergood Generating Plant, Future	5	0.00	0.01	Industrial	Westside	Laterals	--	--	B	--	--
W158	Loyola Village Elementary School	5	0.00	0.01	Irrigation	Westside	Laterals	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
12300 SHERMAN WAY, LLC	V745	5	0.00	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
14857 ROSCOE BLVD CORP	V379	9	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
20th Century Fox	W106	7	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
20TH CENTURY FOX FILM CORP	W091	9	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
2121 AVENUE OF STARS LLC	W094	8	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
21st Century Insurance Company	V520	7	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
25th Street Recycling	M482	5	0.00	0.01	Industrial	CBMWD	USC	--	--	--	--	--
350 Grand	M168	13	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
355 Grand	M056	34	0.03	0.05	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
A&M Quality Wash	M065	30	0.03	0.03	Industrial	CBMWD	USC	--	--	--	--	--
ABC Dye House	M053	35	0.03	0.04	Industrial	CBMWD	USC	--	--	--	--	--
Airport Spectrum	W113	7	0.01	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
Airtel Hotel Plaza	V594	6	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
ALEMANY HIGH SCHOOL Sports Fields	V293	11	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Alert Plating Co	V281	12	0.01	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
All American Wash Company	M066	30	0.03	0.03	Industrial	CBMWD	USC	--	--	--	--	--
Almore Dye House Inc	V013	230	0.21	0.27	Industrial	Burbank	Cesar Chavez	--	--	C	--	--
Alpert & Alpert Iron & Metal, Inc.	M067	30	0.03	0.03	Industrial	CBMWD	USC	--	--	--	--	--
AMERICAN COMMERCIAL EQUITIES THREE, LLC	M400	6	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
AMERICAN PRESIDENT LINE	H070	6	0.01	0.01	Mixed-Use	TIWRP	Laterals	--	--	--	--	--
AMERICAN WASTE INDUSTRIES	V777	5	0.00	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
AMERICANA INDEPENDENCE LTD	V388	9	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Americana Warner Center apartments	V575	7	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
Angelinos Productions	V325	11	0.01	0.02	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
ANGELUS BLOCK CO	V316	11	0.01	0.02	Mixed-Use	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
Anheuser Busch	V024	130	0.12	0.15	Industrial	DCTWRP T22	VA Hospital	--	--	B	--	--
Aps Finishing	M183	12	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
Associated Ready Mix Concrete	M111	19	0.02	0.02	Industrial	CBMWD	USC	--	--	--	--	--
ASSOCIATED READY MIXED CONCRETE INC	V373	10	0.01	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
Atlas Carpet Mills	M003	310	0.28	0.36	Industrial	LAGWRP	Atlas Carpets	--	--	A	A	A
Azteca Dye and Laundry	M054	35	0.03	0.04	Industrial	CBMWD	USC	--	--	--	--	--
Aztlan Cold Storage	M341	7	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
AZZURRA HOMEOWNERS ASSOCIATION	W131	6	0.01	0.01	Irrigation	Westside	Penmar	--	--	--	--	--
Banning High School	H033	22	0.02	0.04	Irrigation	WBMWD	Laterals	--	--	--	--	--
Baxter Healthcare Corporation	M059	32	0.03	0.04	Industrial	LAGWRP	Laterals	--	--	--	--	--
Belmont High School #8543	M161	14	0.01	0.03	Irrigation	CBMWD	Echo Park	--	--	--	--	--
Best Western Carriage Inn	V781	5	0.00	0.01	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
Bette Davis Park	M037	30	0.03	0.06	Irrigation	LAGWRP	Laterals	--	--	A	--	--
Bloomingdales	W030	23	0.02	0.04	Mixed-Use	Westwood	UCLA	--	--	--	--	--
Blue Beacon	M108	20	0.02	0.02	Industrial	CBMWD	Downtown	--	--	--	--	--
Blue Cross of California	V153	19	0.02	0.03	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Blue Oval Car Rental	W068	12	0.01	0.02	Mixed-Use	Westside	Laterals	--	--	--	--	--
Boyle Heights Mixed-Use Community Project	M506	150	0.13	0.23	Mixed Use	CBMWD	USC	LAGWRP	USC	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
Bradley Landfill	V038	12	0.01	0.02	Irrigation	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	A	A	A
Braemar Country Club	V003	300	0.27	0.59	Irrigation	DCTWRP T22	Braemar	--	--	A	A	A
Brand Park	V042	50	0.04	0.10	Irrigation	DCTWRP T22	Knollwood	--	--	A	--	--
Breitburn Energy	W006	165	0.15	0.19	Industrial	Westwood	UCLA	--	--	A	--	--
Brentwood Country Club	W005	230	0.21	0.45	Irrigation	Westwood	UCLA	--	--	A	--	--
Briarcliffe North Patiohomes	V528	7	0.01	0.01	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
Brite Plating Co	M263	9	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
BSS Urbarn Forestry	M480	5	0.00	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
Bunker Hill Park	M391	6	0.01	0.01	Irrigation	CBMWD	Downtown	--	--	--	--	--
Bunker Hill Tower Apartments	M455	5	0.00	0.01	Irrigation	CBMWD	Echo Park	--	--	--	--	--
BYUNG CHON CHOI DBA LUCY'S LAUNDRYMART	V385	9	0.01	0.01	Industrial	DCTWRP AWP	Laterals	--	--	--	--	--
C WHOLESALE COSTCO UTILITY BILLS	W144	5	0.00	0.01	Mixed-Use	Westside	Penmar	--	--	--	--	--
CA Electroplating	M199	11	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
Cabrini Villas	V063	40	0.04	0.08	Irrigation	Burbank	Laterals	--	--	--	--	--
CAL APPLE PRODUCTS INC	V756	5	0.00	0.01	Industrial	Burbank	Cesar Chavez	--	--	--	--	--
California Drop Forge	M068	30	0.03	0.03	Industrial	CBMWD	LAG Connection	--	--	--	--	--
California Village Place HOA	V542	7	0.01	0.01	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
Caltrans - Offices	M330	7	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Caltrans (10 at CHEVIOT VISTA P)	W090	9	0.01	0.02	Irrigation	Westwood	UCLA	--	--	--	--	--
Caltrans (101 at BALBOA BL)	V748	5	0.00	0.01	Irrigation	DCTWRP T22	Laterals	--	--	--	--	--
Caltrans (101 at ETIWANDA AV)	V217	15	0.01	0.03	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
Caltrans (101 at N BONNIE BRAE ST)	M217	10	0.01	0.02	Irrigation	CBMWD	Echo Park	--	--	--	--	--
Caltrans (110 at LORETO ST)	M347	7	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
Caltrans (110 at MACARTHUR AV)	H020	40	0.04	0.08	Irrigation	TIWRP	POLA	--	--	--	--	--
Caltrans (110 at N FIGUEROA ST)	M249	9	0.01	0.02	Irrigation	LAGWRP	Laterals	--	--	--	--	--
Caltrans (110 at W E ST)	H084	5	0.00	0.01	Irrigation	TIWRP	Ponte Vista	--	--	--	--	--
Caltrans (110 at W OLIVER ST)	H052	10	0.01	0.02	Irrigation	TIWRP	Peck Park	--	--	--	--	--
Caltrans (110 at W PACIFIC COAST HW)	H080	5	0.00	0.01	Irrigation	WBMWD	Laterals	--	--	--	--	--
Caltrans (110 at W ST)	M305	8	0.01	0.02	Irrigation	CBMWD	Downtown	--	--	--	--	--
Caltrans (118 at BERMUDA ST)	V278	12	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Caltrans (118 at CHATSWORTH DR)	V070	36	0.03	0.07	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Caltrans (118 at HASKELL AV)	V554	7	0.01	0.01	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Caltrans (118 at WOODLEY AV)	V312	11	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Caltrans (134 at VINELAND AV)	V553	7	0.01	0.01	Irrigation	Burbank	North Hollywood	--	--	--	--	--
Caltrans (170 at Babcock Av)	V033	60	0.05	0.12	Irrigation	Burbank	Cesar Chavez	--	--	A	A	A
Caltrans (170 at Burton St)	V025	50	0.04	0.10	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	A	--	--
Caltrans (170 at CHANDLER BL)	V782	5	0.00	0.01	Irrigation	Burbank	Valley College	--	--	--	--	--
Caltrans (170 at MAGNOLIA BL)	V652	6	0.01	0.01	Irrigation	Burbank	North Hollywood	--	--	--	--	--
Caltrans (170 at SHERMAN WY)	V065	38	0.03	0.07	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
Caltrans (170 at TONOPAH ST)	V124	23	0.02	0.05	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Caltrans (170 at VANOWEN ST)	V108	26	0.02	0.05	Irrigation	Burbank	Valley College	--	--	--	--	--
Caltrans (170 at VICTORY BL)	V140	21	0.02	0.04	Irrigation	Burbank	Valley College	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
Caltrans (170 at WESTPARK DR)	V166	18	0.02	0.04	Irrigation	Burbank	Valley College	--	--	--	--	--
Caltrans (405 at BURBANK BL)	V118	24	0.02	0.05	Irrigation	Burbank	DCT Connection	--	--	--	--	--
Caltrans (405 at CHASE ST)	V654	6	0.01	0.01	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
Caltrans (405 at CHATSWORTH ST)	V193	16	0.01	0.03	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Caltrans (405 at DEVONSHIRE ST)	V356	10	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Caltrans (405 at HASKELL AV)	V715	5	0.00	0.01	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Caltrans (405 at LA TIJERA BL)	W058	14	0.01	0.03	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
Caltrans (405 at RAYEN ST)	V460	8	0.01	0.02	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
Caltrans (405 at RINALDI ST)	V150	20	0.02	0.04	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Caltrans (405 at ROSCOE BL)	V149	20	0.02	0.04	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
Caltrans (405 at S NORMANDIE AV)	H081	5	0.00	0.01	Irrigation	Gateway	Roosevelt	--	--	--	--	--
Caltrans (47 at N HARBOR BL)	H083	5	0.00	0.01	Irrigation	TIWRP	POLA	--	--	--	--	--
Caltrans (5 at DALLAS ST)	M262	9	0.01	0.02	Irrigation	LAGWRP	Laterals	--	--	--	--	--
Caltrans (5 at N BROADWAY)	M428	6	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
Caltrans (5 at PASADENA AV)	M077	25	0.02	0.05	Irrigation	LAGWRP	Laterals	--	--	--	--	--
Caltrans (5 at PENDLETON ST)	V139	21	0.02	0.04	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
Caltrans (5 at PENDLETON ST)	V198	16	0.01	0.03	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
Caltrans (5 at SHARP AV)	V393	9	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Caltrans (5 at SHELDON ST)	V076	34	0.03	0.07	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Caltrans (5 at STADIUM WY)	M370	7	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
Caltrans (5 at Tuxford St)	V034	60	0.05	0.12	Irrigation	Burbank	Hansen Connection	--	--	A	--	--
Canterbury Avenue Elementary School	V597	6	0.01	0.01	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Canyon Way Nursery	V249	13	0.01	0.03	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
Car Wash	M135	16	0.01	0.02	Industrial	CBMWD	USC	--	--	--	--	--
CAR WASH ASSET MGMT LLCDBA JERZY BOY'S HAND CAR	H047	12	0.01	0.01	Industrial	TIWRP	Peck Park	--	--	--	--	--
CARR NP PROPERTIES L.L.C.	V475	8	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Cathedral of LA	M297	8	0.01	0.02	Irrigation	CBMWD	Downtown	--	--	--	--	--
Catholic Archdiocese of Los Angeles	V043	50	0.04	0.10	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
CEMEX (Transit Mixed Concrete)	M162	14	0.01	0.02	Industrial	LAGWRP	Medical Center	--	--	--	--	--
CENTENNIAL MILLS DIV OF ADM MILLING	M394	6	0.01	0.01	Mixed-Use	CBMWD	USC	--	--	--	--	--
Central LA High School #10	M416	6	0.01	0.01	Irrigation	CBMWD	Echo Park	--	--	--	--	--
Central LA High School #11	M115	19	0.02	0.04	Irrigation	CBMWD	Echo Park	--	--	--	--	--
Central Recreation Center	M180	12	0.01	0.02	Irrigation	CBMWD	USC	--	--	--	--	--
Century Park East	W103	8	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
Century Park Place Condominiums	W066	12	0.01	0.02	Irrigation	Westwood	UCLA	--	--	--	--	--
CENTURY TOWERS ASSN	W123	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
Cesar Chavez Recreation Complex	V027	90	0.08	0.18	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	A	--	--
CHADI HAGE DBALAUNDERLAND WASH & DRY	V362	10	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
CHAN SOO KIM DBASANTA FE LAVANDERIA	V418	9	0.01	0.01	Industrial	Las Virgenes	Pierce College	--	--	--	--	--
Chandler Bike Path	V822	30	0.03	0.06	Irrigation	Burbank	Laterals	--	--	--	--	--
Cheviott Hills Rec Center	W155	70	0.06	0.14	Irrigation	Westwood	UCLA	--	--	A	--	--
CHINESE COMMITTEE ON AGING OF LOS ANGELES	M335	7	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
CIRILO GUTIERREZ	V518	7	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	DCTWRP T22	Hansen Connection	--	--	--
CITY LA BUREAU PUBLIC BLDGS	M459	5	0.00	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
CITY LA DEPT RECREATION& PARKS	H059	7	0.01	0.01	Irrigation	WBMWD	Laterals	--	--	--	--	--
CITY LA SANITATION FUNDNON/SCM 21/14	V073	35	0.03	0.07	Irrigation	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
CITY LA STREET MAINTENANCE FUND	H057	8	0.01	0.01	Mixed-Use	TIWRP	POLA	--	--	--	--	--
CITY LA STREET MAINTENANCE FUND	V231	14	0.01	0.02	Mixed-Use	Burbank	Laterals	--	--	--	--	--
CITY LA STREET MAINTENANCE FUND	V545	7	0.01	0.01	Mixed-Use	Burbank	North Hollywood	--	--	--	--	--
City of LA Public Works	M483	5	0.00	0.01	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
Classy Dyeing and Finishing	M127	17	0.02	0.02	Industrial	CBMWD	USC	--	--	--	--	--
CM Laundry	H088	35	0.03	0.04	Industrial	Gateway	Swisstex	--	--	--	--	--
Colfax Avenue Elementary School	V441	8	0.01	0.02	Irrigation	Burbank	Valley College	--	--	--	--	--
Community Recycling and Resource Recovery Inc	V105	27	0.02	0.04	Mixed-Use	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
CORP PRESIDING BISHOP CHURCH OF J.C.L.D.S.	V319	11	0.01	0.02	Irrigation	Las Virgenes	Woodland Hills	--	--	--	--	--
CORP PRESIDING BISHOP CHURCH OF J.C.L.D.S.	W036	21	0.02	0.04	Irrigation	Westwood	UCLA	--	--	--	--	--
Costco	M238	9	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
COSTELLO Recreation Center	M202	11	0.01	0.02	Irrigation	CBMWD	USC	--	--	--	--	--
CRI-HELP INC	M392	6	0.01	0.01	Mixed-Use	LAGWRP	Medical Center	--	--	--	--	--
Criminal Justice Center	M413	6	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Cross Creek Village Homeowners	W044	18	0.02	0.04	Irrigation	Westside	Laterals	--	--	--	--	--
Crowne Plaza Hotel (LAX)	W089	9	0.01	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
Crowne Plaza Hotel Los Angeles Harbor	H065	6	0.01	0.01	Mixed-Use	TIWRP	POLA	--	--	--	--	--
CSU Northridge	V008	340	0.30	0.52	Mixed-Use	DCTWRP T22	VA Hospital	--	--	A	A	B
DAN CARASSO	V396	9	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
Delta Dye	H085	270	0.24	0.31	Industrial	Gateway	Swisstex	--	--	B	B	B
Designed Metal Connections	H090	18	0.02	0.02	Industrial	Gateway	Swisstex	--	--	--	--	--
Domestic Linen Supply	M141	15	0.01	0.02	Industrial	CBMWD	USC	--	--	--	--	--
Douglas Emmett Realty	V424	9	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
DOUGLAS EMMETT REALTY FUND 1997,CA LTD PTNRSHP	V747	5	0.00	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
DOUGLAS EMMETT REALTY FUND K1232	V161	19	0.02	0.03	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Dye & Wash Tech	M290	8	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
Dye House, the	M012	140	0.12	0.16	Industrial	CBMWD	USC	LAGWRP	USC	A	A	A
E Street Cold Logistics	H043	15	0.01	0.02	Industrial	TIWRP	Harbor East	--	--	--	--	--
E&C Fashion Inc.	M014	90	0.08	0.10	Industrial	CBMWD	USC	--	--	B	A	A
East Valley Animal Shelter	V244	13	0.01	0.02	Mixed-Use	DCTWRP AWP	Laterals	--	--	--	--	--
East Valley High School	V230	14	0.01	0.03	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	--	--	--
East Valley Middle School	V331	10	0.01	0.02	Irrigation	Burbank	Valley College	--	--	--	--	--
East Valley New Continuation High School	V126	23	0.02	0.04	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
EAST WILMINGTON WALK-IN PARK	H061	7	0.01	0.01	Irrigation	WBMWD	Laterals	--	--	--	--	--
Echo Park and Lake	M039	50	0.04	0.10	Irrigation	CBMWD	Echo Park	--	--	A	--	--
Eden Memorial Park	V015	225	0.20	0.44	Irrigation	DCTWRP T22	Knollwood	--	--	B	B	A
El Caballero Country Club	V005	290	0.26	0.57	Irrigation	DCTWRP T22	Braemar	--	--	A	B	B
El Dorado Car Wash	H075	5	0.00	0.01	Industrial	WBMWD	Laterals	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
Emerson Jr High	W152	5	0.00	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
Emmanuel Luthern Church	V180	17	0.01	0.03	Irrigation	Burbank	Valley College	--	--	--	--	--
ENCINO BASEBALL INC	V138	21	0.02	0.04	Irrigation	DCTWRP T22	Laterals	--	--	--	--	--
ENTERTAINMENT CTR LLC	W124	6	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
EQUITY RESIDENTIAL PROPERTIES MGMT	V759	5	0.00	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
EQUITY RESIDENTIAL PROPERTIES MGMT	W100	8	0.01	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
EXECUTIVE SOFTWARE PROPERTIES, LLC	V602	6	0.01	0.01	Industrial	Burbank	Laterals	--	--	--	--	--
Expo Park	M022	140	0.12	0.27	Irrigation	CBMWD	USC	LAGWRP	USC	B	--	--
FAIR AVE ELEM SCHOOL	V728	5	0.00	0.01	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
Family Park	M472	5	0.00	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
Farmers Stadium	M507	40	0.04	0.06	Mixed Use	LAGWRP	USC	--	--	--	--	--
Federal Building	M159	14	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Federal Building	W149	5	0.00	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
Fernageles Recreation Center	V106	26	0.02	0.05	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	--	--	--
Field of Dreams	H017	50	0.04	0.10	Irrigation	TIWRP	Peck Park	--	--	A	--	--
Final Touch Dyeing and Finishing	H089	20	0.02	0.02	Industrial	Gateway	Swisstex	--	--	--	--	--
FOOTHILL ENTERPRISES	V766	5	0.00	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
FOREVER 21 LOGISTICS LLC	M426	6	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Forners Farms	V250	13	0.01	0.03	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Frontier Logistics Services	H025	27	0.02	0.03	Industrial	Gateway	Roosevelt	--	--	--	--	--
Gardena High School	H023	30	0.03	0.06	Irrigation	Gateway	Roosevelt	--	--	--	--	--
GAREGIN GEZALYAN	V503	7	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
Garment Dyeing Co.	M130	17	0.02	0.02	Industrial	CBMWD	USC	--	--	--	--	--
GARY W JACKSON	V684	6	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
GENERAL SERVICES ADMIN FINANCE DIV 7BCPL-U(192)	M438	6	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Geo K Porter Junior High	V122	23	0.02	0.05	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
GEORGE E MOSS	V502	8	0.01	0.01	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
GONZALO AMBROSIO	V501	8	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
Granada Hills Little League	V131	22	0.02	0.04	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
GRANADA RIDGE HOME OWNERS ASSOCIATION	V709	6	0.00	0.01	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Grand Center Square	M244	9	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Grand Promenade	M234	10	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Grant High School	V085	31	0.03	0.06	Irrigation	Burbank	Valley College	--	--	--	--	--
Green Set	V229	14	0.01	0.03	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
Green Set	V300	11	0.01	0.02	Irrigation	Burbank	Laterals	--	--	--	--	--
Green Spot Nursery (Site 1)	V327	11	0.01	0.02	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
GREG SILBERG	V710	6	0.00	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
Griffith Park Recreation Center	M433	6	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
H K REALTY INC VILLAGE POINTE APTS	V691	6	0.01	0.01	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
Harbor Cogeneration Company	H003	330	0.29	0.38	Industrial	TIWRP	Harbor East	WBMWD	Harbor East	A	--	--
Harbor Generating Station	H092	80	0.07	0.09	Industrial	TIWRP	Laterals	--	--	B	--	--
HARBOR HIGHLAND PARK	H055	8	0.01	0.02	Irrigation	TIWRP	Peck Park	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
Harbor Tower Retirement Homes	H066	6	0.01	0.01	Irrigation	TIWRP	POLA	--	--	--	--	--
HASKELL AVE ELEM SCHOOL	V784	5	0.00	0.01	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Hazard Park	M047	40	0.04	0.08	Irrigation	LAGWRP	Medical Center	--	--	--	--	--
Health Net of California	V344	10	0.01	0.02	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Heights Apts	W108	7	0.01	0.01	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
HEMO DIALYSIS CORP HOLY CROSS RENAL CENTER	V403	9	0.01	0.01	Mixed-Use	DCTWRP T22	Knollwood	--	--	--	--	--
HENRY WEISS	V206	15	0.01	0.03	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
HIGHLAND HALL SCHOOL	V333	10	0.01	0.02	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
Hillcrest Country Club	W009	170	0.15	0.33	Irrigation	Westwood	UCLA	--	--	A	--	--
Hilton Los Angeles Airport	W026	27	0.02	0.04	Mixed-Use	Westside	Laterals	--	--	--	--	--
Hilton Woodland Hills	V491	8	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Hines Warner Center	V346	10	0.01	0.02	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Hjelte Sports Center	V028	90	0.08	0.18	Irrigation	DCTWRP T22	Laterals	--	--	A	--	--
Holiday Inn - LAX	W084	9	0.01	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
Holmby Park	W021	40	0.04	0.08	Irrigation	Westwood	UCLA	--	--	A	--	--
Honda Plaza	M316	8	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
HSIEN T HSU	M291	8	0.01	0.01	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
Hyatt Regency Century Plaza	W032	22	0.02	0.03	Mixed-Use	Westwood	UCLA	--	--	--	--	--
IGE INC	V517	7	0.01	0.01	Industrial	Las Virgenes	Pierce College	--	--	--	--	--
ILJA KIM	H082	5	0.00	0.01	Mixed-Use	TIWRP	POLA	--	--	--	--	--
Jackson Shrub Supply	V091	30	0.03	0.06	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
James Monroe High School	V092	30	0.03	0.06	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
Jefferson High School #8714	M163	14	0.01	0.03	Irrigation	CBMWD	USC	--	--	--	--	--
Jewish Home for the Aging	V209	15	0.01	0.02	Mixed-Use	DCTWRP T22	Pierce College	--	--	--	--	--
Jim Gilliam Recreation Center	W014	75	0.07	0.15	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
JSL Foods	M346	7	0.01	0.01	Industrial	LAGWRP	Laterals	--	--	--	--	--
Juanita's Foods	H046	14	0.01	0.02	Industrial	TIWRP	Harbor East	--	--	--	--	--
KABABAYAN DEVELOPMENT INC	V665	6	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
Kaiser Foundation Hospital (Panorama City)	V061	41	0.04	0.06	Mixed-Use	DCTWRP AWP	Laterals	DCTWRP T22	Hansen Connection	--	--	--
Kaiser Hospital (Harbor)	H039	20	0.02	0.03	Mixed-Use	TIWRP	Ponte Vista	--	--	--	--	--
Kaiser Permanente	V608	6	0.01	0.01	Mixed-Use	Burbank	Cesar Chavez	--	--	--	--	--
Kaiser Permanente (Woodland Hills)	V071	35	0.03	0.05	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
KARAPET DISHGRIKYAN DBA FAR EAST PETROLEUM	V537	7	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	--	--	--	--	--
KAREN FAN	H077	5	0.00	0.01	Irrigation	WBMWD	Laterals	--	--	--	--	--
Kennedy High School	V146	20	0.02	0.04	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Kenneth Hahn State Recreation Area	W007	160	0.14	0.31	Irrigation	Westwood	Kenneth Hahn	--	--	B	--	--
Kentwood Elementary School	W115	7	0.01	0.01	Irrigation	Westside	Laterals	--	--	--	--	--
Kleen Kraft Services	M150	15	0.01	0.02	Industrial	CBMWD	Downtown	--	--	--	--	--
Knollwood Elementary School	V566	7	0.01	0.01	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Knollwood Golf Course	V010	280	0.25	0.55	Irrigation	DCTWRP T22	Knollwood	--	--	A	A	A
KONOIKE PACIFIC CAL INC	H063	7	0.01	0.01	Mixed-Use	WBMWD	Laterals	--	--	--	--	--
Kyoto Grand Hotel and Gardens	M146	15	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
LA BAPTIST CITY MISSION SOCIETY	V702	6	0.01	0.01	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
L.A.FITNESS INTERNATIONAL,LLC	V363	10	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
LA BD OF EDUCATION SEQUOIA JR HIGH #8368	V299	11	0.01	0.02	Irrigation	DCTWRP T22	Pierce College	--	--	--	--	--
LA BD OF EDUCATION VAN NUYS JR HIGH #8434	V561	7	0.01	0.01	Irrigation	Burbank	DCT Connection	--	--	--	--	--
LA BREA BAKERY	V572	7	0.01	0.01	Industrial	DCTWRP T22	VA Hospital	--	--	--	--	--
LA Cold Storage	M151	15	0.01	0.02	Industrial	CBMWD	Downtown	--	--	--	--	--
LA County Central Plant	M006	230	0.21	0.27	Industrial	CBMWD	Downtown	LAGWRP	USC	A	A	A
LA County Juvenile	M092	24	0.02	0.04	Mixed-Use	LAGWRP	Medical Center	--	--	--	--	--
LA County Music Center	M342	7	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
LA Equestrian Center	M027	70	0.06	0.14	Irrigation	Burbank	Laterals	--	--	--	--	--
LA Park Hyatt	W078	10	0.01	0.02	Mixed-Use	Westwood	UCLA	--	--	--	--	--
LA Times Newspaper	M220	10	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
LA Times Newspaper	M231	10	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
LA Valley College	V032	100	0.09	0.15	Mixed-Use	Burbank	Valley College	--	--	A	A	B
LAC + USC Medical Center	M017	50	0.04	0.08	Mixed-Use	LAGWRP	Medical Center	--	--	B	--	--
LACMTA	M102	20	0.02	0.03	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
LACMTA	V089	30	0.03	0.05	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
LACMTA	V141	21	0.02	0.03	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
LACMTA	V145	20	0.02	0.03	Mixed-Use	Burbank	Valley College	--	--	--	--	--
LACMTA	V154	19	0.02	0.03	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
LACMTA	V157	19	0.02	0.03	Mixed-Use	DCTWRP T22	Pierce College	--	--	--	--	--
LACMTA	V167	18	0.02	0.03	Mixed-Use	DCTWRP T22	Pierce College	--	--	--	--	--
LACMTA	V170	17	0.02	0.03	Mixed-Use	DCTWRP T22	Laterals	--	--	--	--	--
LACMTA	V214	15	0.01	0.02	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
LACMTA	V237	14	0.01	0.02	Mixed-Use	Burbank	Valley College	--	--	--	--	--
LACMTA	V339	10	0.01	0.02	Mixed-Use	Burbank	Valley College	--	--	--	--	--
LACMTA	V377	9	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
LACMTA	V626	6	0.01	0.01	Mixed-Use	Burbank	North Hollywood	--	--	--	--	--
LACMTA	V631	6	0.01	0.01	Mixed-Use	Burbank	North Hollywood	--	--	--	--	--
LACMTA	V700	6	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
LACMTA Division 1 Bus Yard	M103	31	0.03	0.05	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
LACMTA Division 15 Bus Yard	V057	42	0.04	0.06	Mixed-Use	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
LACMTA Division 2 Bus Yard	M124	31	0.03	0.05	Mixed-Use	CBMWD	USC	--	--	--	--	--
LACMTA Division 20 Red Line Main Yard	M508	10	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
LACMTA Division 21 Pasadena Gold Line Yard (Midway)	M509	6	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
LACMTA Division 22 Green Line Main Yard	W109	5	0.00	0.01	Mixed-Use	Westside	Laterals	--	--	--	--	--
LACMTA Division 3 Bus Yard	M104	33	0.03	0.05	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
LACMTA Location 30 - Metro Support Services	M105	39	0.03	0.06	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Lakeside Golf Club	M489	200	0.18	0.39	Irrigation	LAGWRP	Laterals	--	--	--	--	--
LAUSD Brentwood Mgmt Center	W107	7	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
LAUSD Central Administration Building	M206	11	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Le Parc HOA	W133	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
Libbit Park	V257	13	0.01	0.03	Irrigation	DCTWRP T22	Laterals	--	--	--	--	--
LINCOLN HIGH SCH #8730	M216	10	0.01	0.02	Irrigation	LAGWRP	Medical Center	--	--	--	--	--
Lincoln Park and Lake	M016	115	0.10	0.23	Irrigation	LAGWRP	Medical Center	--	--	A	--	--
Linen Party Rental	V657	6	0.01	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
Little Bee Canyon Park	V093	30	0.03	0.06	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
LITTLE LEAGUE	V162	18	0.02	0.04	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
Little Tokyo Towers	M212	10	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Litton Industries, Inc.	V040	75	0.07	0.11	Mixed-Use	Las Virgenes	Pierce College	--	--	A	--	--
LMU (Cooling Towers)	W015	50	0.04	0.06	Industrial	Westside	Laterals	--	--	--	--	--
Los Angeles Country Club	W011	140	0.12	0.27	Irrigation	Westwood	UCLA	--	--	A	--	--
Los Angeles County Offices	M267	9	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Los Feliz Car Wash	M227	10	0.01	0.01	Industrial	LAGWRP	Laterals	--	--	--	--	--
Loyola Marymount Project (planned)	W027	25	0.02	0.04	Mixed-Use	Westside	Laterals	--	--	--	--	--
Loyola Village Elementary School	W158	5	0.00	0.01	Irrigation	Westside	Laterals	--	--	--	--	--
MacArthur Park and Lake	M020	85	0.08	0.17	Irrigation	CBMWD	Echo Park	--	--	A	--	--
Machado Lake	H007	140	0.12	0.27	Irrigation	TIWRP	Ponte Vista	--	--	A	--	--
Maple Dye Inc	M240	9	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
Marina Terrace I	W117	6	0.01	0.01	Irrigation	Westside	Penmar	--	--	--	--	--
MARINER POST ACUTE NET DEBTOR IN POSSESSION	V306	11	0.01	0.02	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
Mark Twain Jr High	W153	5	0.00	0.01	Irrigation	Westside	Penmar	--	--	--	--	--
Marriot Hotel	M129	17	0.02	0.03	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Marriot Hotel (West LA)	W034	22	0.02	0.03	Mixed-Use	Westside	Laterals	--	--	--	--	--
Matchmaster	M001	800	0.71	0.93	Industrial	CBMWD	USC	LAGWRP	USC	A	--	--
MGA ENTERTAINMENT INC.	V574	7	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
Mid Valley Baseball Assoc	V049	48	0.04	0.09	Irrigation	DCTWRP T22	Laterals	--	--	--	--	--
Millikan Jr. High	V155	19	0.02	0.04	Irrigation	Burbank	Valley College	--	--	--	--	--
Miyako Hotels & Resorts	M454	5	0.00	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Morgan Laundry Services	M071	30	0.03	0.03	Industrial	CBMWD	LAG Connection	--	--	--	--	--
MOSS & CO PROP MGMT	W132	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
Motion Picture and Television Fund Hospital	V207	15	0.01	0.02	Mixed-Use	Las Virgenes	Woodland Hills	--	--	--	--	--
Mountains Recreation & Conservation Authority	M218	10	0.01	0.02	Irrigation	LAGWRP	Laterals	--	--	--	--	--
MOUNTAINS RECREATION & CONSERVATION AUTHORITY	V254	13	0.01	0.03	Irrigation	Burbank	Valley College	--	--	--	--	--
MOUNTAINS RECREATION & CONSERVATION AUTHORITY	V581	7	0.01	0.01	Irrigation	Burbank	Valley College	--	--	--	--	--
Museum of Compemporary Art (MOCA)	M164	13	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
NATIONAL READY MIXED CONCRETE COMPANY	V345	10	0.01	0.01	Industrial	Burbank	DCT Connection	--	--	--	--	--
NEIS - Humboldt ATF (planned)	M289	8	0.01	0.01	Industrial	LAGWRP	Laterals	--	--	--	--	--
Nestle USA Inc	M137	16	0.01	0.02	Industrial	CBMWD	USC	--	--	--	--	--
Neutrogena Corporation	W022	37	0.03	0.04	Industrial	Westside	Laterals	--	--	--	--	--
NEW BEVERLY HILLS HOTELLIMITED PARTNERSHIP	W114	7	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
NICOLAS ALVARADO (Nursery)	V364	10	0.01	0.02	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
Nightingale High School #8264	M354	7	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
Nordhoff Recreation Center	V285	12	0.01	0.02	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
NORMAN MORI	V682	6	0.01	0.01	Mixed-Use	DCTWRP T22	Knollwood	--	--	--	--	--
Normand O. Houston Park	W050	17	0.02	0.03	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
North Hollywood High School	V051	46	0.04	0.09	Irrigation	Burbank	Valley College	--	--	--	--	--
North Hollywood Park	V021	100	0.09	0.20	Irrigation	Burbank	North Hollywood	--	--	A	A	B
Notre Dame High School	V187	16	0.01	0.03	Irrigation	Burbank	Valley College	--	--	--	--	--
Nursery Los Pinos	V493	8	0.01	0.01	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
Nutel Motel	M442	6	0.01	0.01	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
OAKWOOD SCHOOL	V761	5	0.00	0.01	Irrigation	Burbank	North Hollywood	--	--	--	--	--
Olver Wendell Holmes Middle School	V137	21	0.02	0.04	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
Omni Hotel	M169	13	0.01	0.02	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
One Hundred Towers	W059	14	0.01	0.02	Mixed-Use	Westwood	UCLA	--	--	--	--	--
ONEGENERATION	V457	8	0.01	0.01	Mixed-Use	DCTWRP T22	Reseda	--	--	--	--	--
VERTON MOORE & ASSOC INC	H078	5	0.00	0.01	Mixed-Use	TIWRP	Peck Park	--	--	--	--	--
Pacific Blue Garment Solutions	M072	30	0.03	0.03	Industrial	CBMWD	USC	--	--	--	--	--
Pacific Coast Laundry	M088	25	0.02	0.03	Industrial	CBMWD	USC	--	--	--	--	--
Pacifica Hospital of the Valley	V096	29	0.03	0.04	Mixed-Use	DCTWRP AWP	Laterals	DCTWRP T22	Hansen Connection	--	--	--
PALISADES PARK	V267	13	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Palms Rec Center	W120	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
Parks and Recreation	H079	5	0.00	0.01	Irrigation	TIWRP	Ponte Vista	--	--	--	--	--
PAUL B MORGEN	V659	6	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
Pavillions	W063	13	0.01	0.02	Mixed-Use	Westwood	UCLA	--	--	--	--	--
Peck Park	H014	70	0.06	0.14	Irrigation	TIWRP	Peck Park	--	--	A	--	--
PEDRO PEREZ DBA E P NURSERY	V340	10	0.01	0.02	Irrigation	DCTWRP T22	Knollwood	--	--	--	--	--
Penmar Golf Course	W012	100	0.09	0.20	Irrigation	Westside	Penmar	--	--	A	--	--
Penmar Rec Center	W049	17	0.02	0.03	Irrigation	Westside	Penmar	--	--	--	--	--
Pershing Square	M258	9	0.01	0.02	Irrigation	CBMWD	Downtown	--	--	--	--	--
PET ORPHANS OF SOUTHERNCALIFORNIA	V565	7	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
Peter's Garment Dyeing	M166	13	0.01	0.02	Industrial	CBMWD	Downtown	--	--	--	--	--
Pierce College	V011	190	0.17	0.29	Mixed-Use	Las Virgenes	Pierce College	DCTWRP T22	Pierce College	A	A	A
PINECREST SCHOOL	V589	7	0.01	0.01	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Plains Exploration & Production Company (PXP)	W016	50	0.04	0.06	Industrial	Westwood	Kenneth Hahn	--	--	--	--	--
Playa Vista Park Landscaping	W154	5	0.00	0.01	Irrigation	Westside	Laterals	--	--	--	--	--
PLAZA RESIDENTIAL ENTERPRISES, INC	V463	8	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	--	--	--	--	--
Polytechnic High School	V081	33	0.03	0.07	Irrigation	Burbank	Cesar Chavez	DCTWRP T22	Hansen Connection	--	--	--
Ponte Vista	H012	100	0.09	0.15	Mixed-Use	TIWRP	Ponte Vista	--	--	--	--	--
Port of Long Beach (Tier 3)	H008	100	0.09	0.12	Industrial	TIWRP	SA Recycling	--	--	B	--	--
Port of Los Angeles - Berth 200	H091	50	0.04	0.06	Industrial	TIWRP	Harbor East	--	--	--	--	--
Port of Los Angeles - San Pedro Waterfront Development	H005	168	0.15	0.25	Mixed-Use	TIWRP	POLA	--	--	A	--	--
Portola Middle School	V253	13	0.01	0.03	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
Pratt & Whitney Rocketdyne	V060	41	0.04	0.05	Industrial	Las Virgenes	Pierce College	--	--	B	--	--
Praxair	H004	250	0.22	0.29	Industrial	TIWRP	Harbor East	WBMWD	Harbor East	B	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
PROJECTS SPAN INC BEHAVIORAL SYS SOUTHWEST	V666	6	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
Promenade Tower Apartments	M462	5	0.00	0.01	Irrigation	CBMWD	Echo Park	--	--	--	--	--
Providence Holy Cross Medical Center	V112	25	0.02	0.04	Mixed-Use	DCTWRP T22	Knollwood	--	--	--	--	--
Providence Tarzana Medical Center	V188	16	0.01	0.02	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
Radisson Hotel LAX	W065	12	0.01	0.02	Mixed-Use	Westside	Laterals	--	--	--	--	--
Rancho Cienega Sports Complex	W029	25	0.02	0.05	Irrigation	Westwood	Kenneth Hahn	--	--	--	--	--
Rancho Park Golf Course	W003	400	0.36	0.79	Irrigation	Westwood	UCLA	--	--	A	--	--
Rena Park	H069	6	0.01	0.01	Irrigation	TIWRP	Peck Park	--	--	--	--	--
Renaissance Hotel	W073	11	0.01	0.02	Mixed-Use	Westside	Laterals	--	--	--	--	--
REPFUND ARBORS APARTMENTS, LLC	V695	6	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
Reseda High School	V129	22	0.02	0.04	Irrigation	DCTWRP T22	Reseda	--	--	--	--	--
Reseda Park	V035	40	0.04	0.08	Irrigation	DCTWRP T22	Reseda	--	--	A	--	--
Riviera Country Club	W008	180	0.16	0.35	Irrigation	Westwood	UCLA	--	--	A	--	--
ROBERT HART	V531	7	0.01	0.01	Mixed-Use	DCTWRP T22	Pierce College	--	--	--	--	--
ROCCO CORDOLA DBA CORDOLA MARBLE	V451	8	0.01	0.01	Mixed-Use	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
ROLLING HILLS PREPARATORY SCHOOL	H048	11	0.01	0.02	Irrigation	TIWRP	Ponte Vista	--	--	--	--	--
ROMAN CATHOLIC ARCHBISHOP OF LA	V334	10	0.01	0.02	Irrigation	Las Virgenes	Woodland Hills	--	--	--	--	--
Roosevelt Memorial Park	H015	60	0.05	0.12	Irrigation	Gateway	Roosevelt	--	--	B	--	--
ROSE M PARK CORP	M411	6	0.01	0.01	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
Ross Snyder Recreation Center	M143	15	0.01	0.03	Irrigation	CBMWD	USC	--	--	--	--	--
S&H Wash and Dry	M096	22	0.02	0.03	Industrial	CBMWD	Echo Park	--	--	--	--	--
SA Recycling	H009	105	0.09	0.12	Industrial	TIWRP	SA Recycling	--	--	A	--	--
SAFE Collection Center	H027	26	0.02	0.04	Mixed-Use	TIWRP	Peck Park	--	--	--	--	--
San Antonio Nursery	V113	25	0.02	0.05	Irrigation	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
San Fernando Community Hospital	V738	5	0.00	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
San Fernando Mission Cemetery	V017	200	0.18	0.39	Irrigation	DCTWRP T22	Knollwood	--	--	B	A	A
San Pedro Plaza	H076	5	0.00	0.01	Irrigation	TIWRP	POLA	--	--	--	--	--
San Regis Apartments	V455	8	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Scattergood Generating Plant, Future	W157	5	0.00	0.01	Industrial	Westside	Laterals	--	--	B	--	--
SCHMIDT INDUSTRIES, INCDBA PRIME PLATING, INC	V735	5	0.00	0.01	Industrial	Burbank	Hansen Connection	--	--	--	--	--
Seaside Transportation Services	H006	8	0.01	0.01	Industrial	TIWRP	Laterals	--	--	--	--	--
Seoul Texprint	M029	64	0.06	0.07	Industrial	CBMWD	USC	--	--	--	--	--
Sepulveda Basin Dog Park	V172	17	0.02	0.03	Irrigation	DCTWRP T22	Reseda	--	--	--	--	--
SERRANIA AVENUE PARK	V136	21	0.02	0.04	Irrigation	Las Virgenes	Woodland Hills	--	--	--	--	--
SEYUNG CHUNG	V637	6	0.01	0.01	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
Sheraton Gateway Hotel	W051	16	0.01	0.02	Mixed-Use	Westside	Laterals	--	--	--	--	--
Sheraton Universal Hotel	V243	13	0.01	0.02	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
Sherman Oaks Fashion Square	V483	8	0.01	0.01	Mixed-Use	Burbank	Valley College	--	--	--	--	--
Sherman Oaks Hospital	V676	6	0.01	0.01	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
Silla America	M215	10	0.01	0.02	Mixed-Use	CBMWD	USC	--	--	--	--	--
SKYLINE CONCRETE SALES CO	V348	10	0.01	0.01	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
SLC WESTWOOD OPERATING LLC STORE #32	W087	9	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
South Central LA New High School	M058	33	0.03	0.06	Irrigation	CBMWD	USC	--	--	--	--	--
ST GENEVIEVE HI SCHOOL	V380	9	0.01	0.02	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
ST NICHOLAS GREEK ORTHODOX CHURCH	V450	8	0.01	0.02	Irrigation	DCTWRP T22	VA Hospital	--	--	--	--	--
St Vincent Medical Center	M073	30	0.03	0.05	Mixed-Use	CBMWD	Echo Park	--	--	--	--	--
St. Bernard High School	W076	11	0.01	0.02	Irrigation	Westside	Laterals	--	--	--	--	--
STANDARD CONCRETE PRODUCTS INC	V646	6	0.01	0.01	Industrial	Burbank	Hansen Connection	--	--	--	--	--
Sterer Engineering and Manufacturing	M191	11	0.01	0.01	Industrial	LAGWRP	Laterals	--	--	--	--	--
STEVE NEEDLEMAN DBA KIDS FROM THE VALLEY III	V445	8	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Stonehurst Recreation Center	V058	43	0.04	0.08	Irrigation	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	--	--	--
Strathern Court Apartments	V512	7	0.01	0.01	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
Strathern Park	V199	16	0.01	0.03	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
Strathern Park-West	V098	29	0.03	0.06	Irrigation	Burbank	Cesar Chavez	DCTWRP AWP	Laterals	--	--	--
SUMMERVILLE AT COBBCO INC AT TARZANA	V634	6	0.01	0.01	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
Sun Hill Properties Inc	V116	25	0.02	0.04	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
Sun Valley Park and Recreation Center	V050	48	0.04	0.09	Irrigation	Burbank	Hansen Connection	--	--	--	--	--
SUN YOUNG OH	V336	10	0.01	0.02	Mixed-Use	DCTWRP T22	Hansen Connection	--	--	--	--	--
Sunset Pointe Apartments	V442	8	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Sunset Terrace Apartments	V384	9	0.01	0.02	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
Swisstex Textile and Apparel	H086	180	0.16	0.21	Industrial	Gateway	Swisstex	--	--	B	C	B
TARZANA FIVE LLC	V721	5	0.00	0.01	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
Tarzana Plaza HOA	V599	6	0.01	0.01	Irrigation	DCTWRP T22	Braemar	--	--	--	--	--
TARZANA TREATMENT CENTER INC	V360	10	0.01	0.02	Mixed-Use	DCTWRP T22	Braemar	--	--	--	--	--
THE HALYARD CO	V429	9	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	DCTWRP T22	Hansen Connection	--	--	--
The Village at Sherman Oaks	V509	7	0.01	0.01	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
The Village at Westfield	V077	34	0.03	0.05	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Thurman Los Angeles	M041	49	0.04	0.10	Irrigation	CBMWD	USC	--	--	--	--	--
Tregnan Golf Academy	M148	15	0.01	0.03	Irrigation	LAGWRP	Laterals	--	--	A	--	--
TRI CENTER PLAZA, LP	V471	8	0.01	0.01	Mixed-Use	Burbank	DCT Connection	--	--	--	--	--
Trigen-LA Bunker Hill	M018	100	0.09	0.12	Industrial	CBMWD	Downtown	LAGWRP	USC	B	A	A
Trigen-LA Energy	W010	170	0.15	0.20	Industrial	Westwood	UCLA	--	--	B	--	--
TUJUNGA WASH	V084	32	0.03	0.06	Irrigation	Burbank	Valley College	--	--	--	--	--
Twin Towers Correctional Facility	M019	95	0.08	0.11	Industrial	CBMWD	Downtown	LAGWRP	USC	B	A	A
UCLA	W001	540	0.48	0.82	Mixed-Use	Westwood	UCLA	--	--	B	--	--
UCLA University Apartments North	W121	6	0.01	0.01	Irrigation	Westwood	UCLA	--	--	--	--	--
Union Station	M325	7	0.01	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Union Towers Management	V786	5	0.00	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
UNITY REAL EST 0-800 % CENTURY EQUITIES C	V252	13	0.01	0.02	Mixed-Use	Burbank	Valley College	--	--	--	--	--
Universal City Plaza	V324	11	0.01	0.02	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
Universal Garment Wash & Dye	V265	13	0.01	0.01	Industrial	Burbank	Cesar Chavez	--	--	--	--	--
University High School	W047	17	0.02	0.03	Irrigation	Westwood	UCLA	--	--	--	--	--
USC Health Sciences Campus	M035	5	0.00	0.01	Mixed-Use	LAGWRP	Medical Center	--	--	--	--	--
USC Main Campus	M002	530	0.47	0.80	Mixed-Use	CBMWD	USC	LAGWRP	USC	A	A	B

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
Valley Generation Station	V787	150	0.13	0.17	Industrial	DCTWRP AWP	Laterals	--	--	B	--	--
Valley Middle School	V223	15	0.01	0.03	Irrigation	DCTWRP T22	Hansen Connection	--	--	--	--	--
Valley Plating Works	M200	11	0.01	0.02	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
Valley Plaza Park and Recreation Center	V019	130	0.12	0.26	Irrigation	Burbank	Valley College	--	--	A	A	B
Valley Sod Farms	V006	140	0.12	0.27	Irrigation	DCTWRP T22	VA Hospital	--	--	A	A	A
Van Nuys Airport	V318	11	0.01	0.02	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
VAN NUYS RECREATION CENTER	V638	6	0.01	0.01	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Van Nuys Sherman Oaks Park	V031	105	0.09	0.21	Irrigation	Burbank	Valley College	--	--	A	A	A
Venice High School	W033	22	0.02	0.04	Irrigation	Westside	Penmar	--	--	--	--	--
Venice Swimming Rec	W075	11	0.01	0.02	Irrigation	Westside	Penmar	--	--	--	--	--
Veterans Administration	W002	430	0.38	0.65	Mixed-Use	Westwood	UCLA	--	--	A	--	--
Veteran's Administration Hospital	V009	320	0.29	0.49	Mixed-Use	DCTWRP T22	VA Hospital	--	--	A	A	A
Victory Dye House	M179	12	0.01	0.01	Industrial	CBMWD	USC	--	--	--	--	--
Victory/Vineland Park	V197	16	0.01	0.03	Irrigation	Burbank	Cesar Chavez	--	--	--	--	--
VILLA MARINA EAST IV ASSOCIATION INC	W138	6	0.00	0.01	Irrigation	Westside	Penmar	--	--	--	--	--
Vista del Mar Park	W018	49	0.04	0.10	Irrigation	Westside	Laterals	--	--	--	--	--
Vista Hermosa Natural Park	M211	11	0.01	0.02	Irrigation	CBMWD	Echo Park	--	--	--	--	--
Vulcan Materials	V002	51	0.05	0.06	Industrial	DCTWRP AWP	Vulcan	DCTWRP T22	Vulcan	A	A	B
Walnut Gardens	V343	10	0.01	0.02	Irrigation	DCTWRP AWP	Laterals	--	--	--	--	--
Warner Center	V578	7	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
Warner Center Marriot	V430	8	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
WARNER GATEWAY PRTRN	V771	5	0.00	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
Warner Ranch Park	V074	34	0.03	0.07	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
Warner Village III Condominiums	V164	18	0.02	0.04	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
Warner Woodlands Townhomes	V160	19	0.02	0.04	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
Warren E&P, Inc. NWU	H093	140	0.12	0.16	Industrial	TIWRP	Harbor East	WBMWD	Harbor East	A	A	B
Warren E&P, Inc. WTU	H001	375	0.33	0.44	Industrial	TIWRP	Warren E&P	WBMWD	Warren E&P	A	A	B
Washington Garment	M011	120	0.11	0.14	Industrial	CBMWD	USC	LAGWRP	USC	C	--	--
Washington Irving Junior High School #8189	M337	7	0.01	0.01	Irrigation	LAGWRP	Laterals	--	--	--	--	--
WATERFORD WARNER CENTER LLC	V716	5	0.00	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--
WBMWD Palos Verdes Customers (Tier 3)	H010	500	0.45	0.98	Irrigation	TIWRP	Ponte Vista	--	--	--	--	--
WEN-ER FARMS LLC	V697	6	0.01	0.01	Irrigation	Las Virgenes	Pierce College	--	--	--	--	--
WEST BASIN CONTAINER TERMINAL LLC	H031	25	0.02	0.03	Industrial	TIWRP	POLA	--	--	--	--	--
Westchester High School	W046	17	0.02	0.03	Irrigation	Westside	Laterals	--	--	--	--	--
Westin Hotel	W045	18	0.02	0.03	Mixed-Use	Westside	Laterals	--	--	--	--	--
Westside Pavillion Shopping Center	W061	13	0.01	0.02	Mixed-Use	Westwood	UCLA	--	--	--	--	--
WESTWOOD HORIZONS CORP	W119	6	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
Westwood Rec Center	W055	15	0.01	0.03	Irrigation	Westwood	UCLA	--	--	--	--	--
Weyburn Terraces (UCLA)	W048	17	0.02	0.03	Irrigation	Westwood	UCLA	--	--	--	--	--
Whitnall Highway Dog Park	V582	10	0.01	0.02	Irrigation	Burbank	Laterals	--	--	--	--	--
Whitnall Highway Power Line R/W	V821	21	0.02	0.04	Irrigation	Burbank	Laterals	--	--	--	--	--
William Mulholland Memorial	M117	19	0.02	0.04	Irrigation	LAGWRP	Laterals	--	--	--	--	--

Customer Name	ID	Demand			General Type of Use	System	WRP	System 2	WRP 2	Conversion Ratings		
		Annual		Peak Day						Initial	Comprehensive	
		(AFY)	(MGD)	(MGD)							Likeli- hood	Cost
Wilmington Athletic Complex	H026	27	0.02	0.05	Irrigation	WBMWD	Laterals	--	--	--	--	--
WILMINGTON CEMETERY DISTRICT	H058	7	0.01	0.01	Mixed-Use	WBMWD	Laterals	--	--	--	--	--
Wilmington Middle School	H049	11	0.01	0.02	Irrigation	WBMWD	Laterals	--	--	--	--	--
Wilmington Recreation Center	H042	15	0.01	0.03	Irrigation	TIWRP	Laterals	--	--	--	--	--
WILSHIRE COMSTOCK CONDOASSO-MANAGERS OFFICE	W096	8	0.01	0.01	Mixed-Use	Westwood	UCLA	--	--	--	--	--
WM CITY VIEW LOFTS LLC	V571	7	0.01	0.01	Mixed-Use	LAGWRP	Laterals	--	--	--	--	--
Woodbury University	V095	30	0.03	0.05	Mixed-Use	Burbank	Laterals	--	--	--	A	B
Woodland Hills Country Club	V014	230	0.21	0.45	Irrigation	Las Virgenes	Woodland Hills	--	--	A	B	B
WOODLEY ENTERPRISES LLC	V370	10	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
WOODMAN AVE CORP	V630	6	0.01	0.01	Mixed-Use	DCTWRP AWP	Laterals	--	--	--	--	--
World Trade Center	M446	6	0.00	0.01	Mixed-Use	CBMWD	Downtown	--	--	--	--	--
Wright Jr High	W150	5	0.00	0.01	Irrigation	Westside	Laterals	--	--	--	--	--
YMCA LOS ANGELES SAN PEDRO PNSLA BRANCH	H056	8	0.01	0.01	Mixed-Use	TIWRP	Peck Park	--	--	--	--	--
YOEL Y WAZANA DBA MICRO SOLUTIONS	V452	8	0.01	0.01	Mixed-Use	DCTWRP T22	VA Hospital	--	--	--	--	--
ZENITH INS CO ATTN: FACILITIES DEPT	V540	7	0.01	0.01	Mixed-Use	Las Virgenes	Pierce College	--	--	--	--	--

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Appendix I

Potential Water Recycling Project Descriptions

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1. Overall Summary

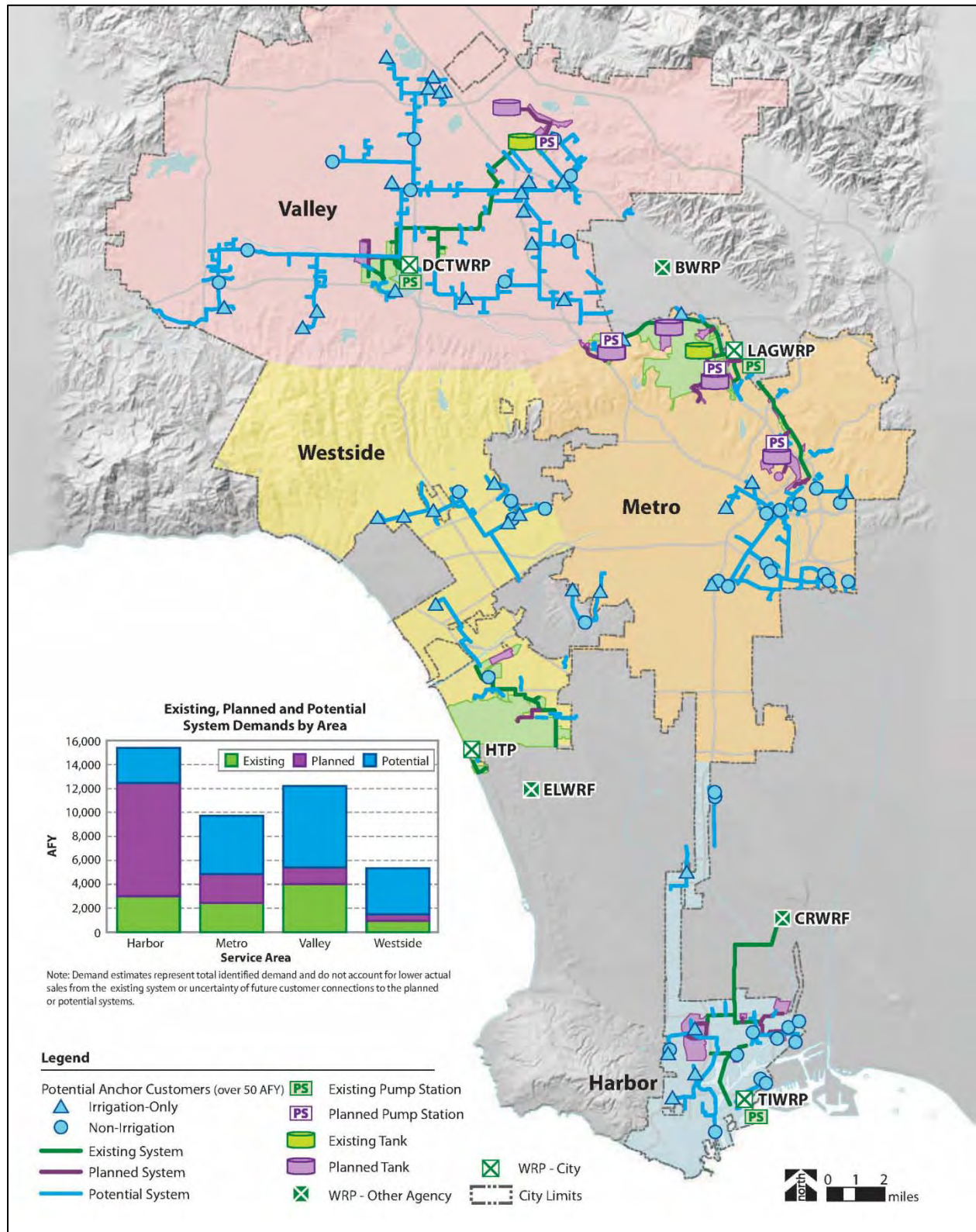
The purpose of the Potential Water Recycling Project (WRP) Descriptions appendix is to present more detailed information, such as potential customers, facilities, cost and other considerations, on each WRP discussed in the Non-Potable Reuse Master Planning Report. The appendix is organized by service area and system. The WRPs associated with each system are presented as a group in alphabetical order.

Common terms used throughout this appendix include:

- **Existing:** LADWP's existing systems and customers discussed in this report consist of the existing recycled water facilities and customers being served as of January 2012.
- **Planned:** Planned projects consist of water recycling projects (WRPs) that are planning, design, or construction stage as of January 2012. Planned customers are customers that have been identified and considered for service by LADWP but are not confirmed for service.
- **Potential:** Potential projects are water recycling projects newly defined in this report and have the potential to help achieve the goal of increasing non-potable reuse an additional 9,650 AFY by 2035. These WRPs would serve potential customers (identified for future planning purposes).
- **Service Area:** Contiguous geographic area of the City.
- **System:** A set of hydraulically independent NPR facilities (i.e., pump stations, tanks, and pipelines) with a unique recycled water supply.
- **Water Recycling Project (WRP):** Distinct set of facilities and customers that make up a system.

The following figure shows the existing, planned, and potential recycled water systems across the City, which are presented in the report and discussed in this appendix. The table following the figure summarizes each WRP presented in the report and discussed in this appendix.

Existing, Planned, and Potential Recycled Water Systems



Summary of Potential WRPs

WRP	Annual Demand (AFY)	Annual Demand (mgd)	Peak Day Demand (mgd)	Capital Cost (\$M)	O&M Cost (\$M/yr)	PV Unit Cost (\$/AF)
Harbor-TIWRP System						
Laterals	109	0.10	0.14	\$0.62	\$0.15	\$1,420
Harbor East	799	0.71	0.93	\$11.84	\$1.08	\$1,620
Peck Park	194	0.17	0.35	\$5.93	\$0.33	\$2,380
POLA	268	0.24	0.42	\$8.49	\$0.37	\$1,990
Ponte Vista	281	0.25	0.50	\$7.03	\$0.43	\$2,070
SA Recycling	105	0.09	0.12	\$1.85	\$0.15	\$1,710
Warren E&P	375	0.33	0.44	\$1.01	\$0.50	\$1,370
Potential Total	2,132	1.90	2.90	\$36.77	\$3.00	\$1,740
Existing System	3,000	2.68	2.68			
Planned System	210	0.19	0.37			
System Total	5,342	4.77	5.95			
Harbor-WBMWD System						
Laterals	104	0.09	0.19	\$1.79	\$0.09	\$1,460
Harbor East	720	0.64	0.84	\$2.80	\$0.58	\$1,150
Warren E&P	375	0.33	0.44	\$0.27	\$0.30	\$1,080
Potential Total	1,199	1.07	1.46	\$4.86	\$0.97	\$1,160
Existing System	--	--	--			
Planned System	9,300	8.3	12.0			
System Total	10,499	9.37	13.46			
Harbor-Gateway System						
Roosevelt	123	0.11	0.22	\$2.70	\$0.10	\$1,470
Swisstex	523	0.47	0.61	\$3.52	\$0.39	\$1,120
Potential Total	645	0.58	0.83	\$6.21	\$0.48	\$1,180
Metro-LAGWRP System						
Laterals	565	0.50	1.00	\$6.35	\$0.07	\$340
Atlas Carpets	310	0.28	0.36	\$0.84	\$0.02	\$130
Medical Center	264	0.24	0.47	\$3.96	\$0.03	\$400
USC	2,345	2.09	3.09	\$30.99	\$0.20	\$350
Potential Total	3,485	3.11	4.92	\$42.14	\$0.32	\$330
Existing System	2,430	2.17	4.77			
Planned System	2,370	2.12	4.56			
System Total	8,285	7.40	14.25			
Metro-CBMWD System						
Downtown	884	0.79	1.18	\$24.32	\$0.65	\$1,500
Echo Park	282	0.25	0.51	\$7.23	\$0.19	\$1,380
LAGWRP Conn.	60	0.05	0.07	\$3.01	\$0.04	\$1,860
USC	2,605	2.33	3.50	\$32.24	\$1.34	\$930
Potential Total	3,831	3.42	5.27	\$66.80	\$2.22	\$1,110
Valley-DCTWRP AWP System						
Laterals	438	0.39	0.68	\$6.99	\$0.05	\$420
Vulcan	296	0.27	0.47	\$8.47	\$0.08	\$870

WRP	Annual Demand (AFY)	Annual Demand (mgd)	Peak Day Demand (mgd)	Capital Cost (\$M)	O&M Cost (\$M/yr)	PV Unit Cost (\$/AF)
Potential Total	734	0.66	1.15	\$15.45	\$0.13	\$600
Existing System	2,298	2.05	2.83			
Planned System	671	0.60	1.26			
System Total	3,703	3.31	5.24			
Valley-DCTWRP T22 System						
Laterals	195	0.17	0.37	\$4.51	\$0.03	\$660
Braemar	707	0.63	1.36	\$21.32	\$0.18	\$920
Knollwood	1,074	0.96	2.09	\$35.12	\$0.45	\$1,170
Pierce College	261	0.23	0.40	\$7.80	\$0.04	\$790
Reseda WRP	88	0.08	0.17	\$9.80	\$0.02	\$2,480
VA Hospital	1,177	1.05	1.87	\$32.44	\$0.20	\$750
Potential Total	3,502	3.13	6.26	\$110.95	\$0.92	\$950
Existing System	1,690	1.51	3.32			
Planned System	688	0.61	1.35			
System Total	5,880	5.25	10.93			
Valley-Burbank System						
Laterals	233	0.21	0.43	\$2.80	\$0.01	\$270
Cesar Chavez	767	0.69	1.29	\$20.11	\$0.27	\$930
N. Hollywood	137	0.12	0.26	\$7.74	\$0.01	\$1,210
Valley College	670	0.60	1.24	\$23.00	\$0.20	\$1,010
Potential Total	1,808	1.61	3.23	\$53.66	\$0.48	\$910
Valley-Las Virgenes System						
Pierce College	666	0.59	1.04	\$10.98	\$0.36	\$1,030
Woodland Hills	288	0.26	0.56	\$12.68	\$0.16	\$1,590
Potential Total	954	0.85	1.60	\$23.66	\$0.52	\$1,200
Westside-Westside System						
Laterals	390	0.35	0.61	\$5.23	\$0.30	\$1,280
Penmar	177	0.16	0.35	\$10.63	\$0.14	\$2,240
Potential Total	568	0.51	0.96	\$15.87	\$0.44	\$1,580
Existing System	880	0.79	1.72			
Planned System	610	0.54	0.91			
System Total	2,058	1.84	3.59			
Westside-Westwood System						
Kenneth Hahn	349	0.31	0.64	\$14.67	\$0.43	\$2,430
UCLA	2,836	2.53	4.80	\$61.28	\$2.55	\$1,610
Potential Total	3,185	2.84	5.44	\$75.97	\$2.99	\$1,700
Potential Total¹	18,453	16.48	N/A	\$408.8	\$11.35	
Planned Total²	9,650	10.81	N/A	\$195.3	\$4.5	\$990/AF

Notes:

- Total excludes double-counting of WRPs in multiple systems: a) 1,095 AFY of potential demand and \$3.1 M of capital cost for the Harbor East and Warren E&P WRPs in WBMWD System; b) 2,306 AFY of potential demand and \$30.1 M of capital cost for the USC WRP in the LAG System; and c) 190 AFY of potential demand and \$10.3 M of capital cost for the Pierce College WRP in the Las Virgenes System. Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.
- Reduced to NPR potential systems goal of 9,650 AFY.

2. Harbor – TIWRP System

Overview

The Harbor – TIWRP System includes potential WRPs to maximize the use of recycled water from TIWRP. The existing TIWRP production capacity is 5.0 mgd, assuming that existing reliability and operational issues with the advanced treatment process are addressed. After existing and planned customers are satisfied, approximately 2.1 mgd remains available for potential recycled water customers. Additional supply from TIWRP can be created by decreasing the deliveries to DGB during peak demand periods or by expanding the treatment plant to apply advanced treatment to all flows, resulting in a 7.5 mgd expansion to 12.5 mgd of product water. The TIWRP AWTF expansion option was developed as part of the TIWRP Barrier Supplement and NPR Concepts Report; therefore, the TIWRP AWTF expansion option was not considered further in this report. Note that the Harbor East and Warren E&P WRPs are defined as part of both the Harbor – TIWRP System and the Harbor – WBWMD System so that they can be compared when selecting the potential WRPs to implement for each system.

Harbor – TIWRP System – Summary of WRPs

WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Harbor East	799	0.71	0.93	\$11.84	\$1.08	\$1,620
Laterals	109	0.10	0.14	\$0.62	\$0.15	\$1,420
Peck Park	194	0.17	0.35	\$5.93	\$0.33	\$2,380
POLA	268	0.24	0.42	\$8.49	\$0.37	\$1,990
Ponte Vista	281	0.25	0.50	\$7.03	\$0.43	\$2,070
SA Recycling	105	0.09	0.12	\$1.85	\$0.15	\$1,710
Warren E&P	375	0.33	0.44	\$1.01	\$0.50	\$1,370
Potential Total	2,132	1.90	2.90	\$36.77	\$3.00	\$1,740
Existing System	3,000	2.68	2.68	--	--	--
Planned System	210	0.19	0.37	--	--	--
System Total	5,342	4.77	5.95	--	--	--

Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

The peak day demand for all of the potential WRPs (2.9 mgd) exceeds the available peak season supply from TIWRP (2.1 mgd). Also, the available peak season supply needs to be confirmed based on delivery projections for the DGB. In addition to a TIWRP expansion, the TIWRP Barrier Supplement and NPR Concepts Report is evaluating the size of the recycled water market in the Harbor area beyond the non-potable reuse identified here. The conclusions of this assessment will help determine how many of these potential WRPs are ultimately implemented.

All of the potential WRPs can be implemented independently except for Peck Park WRP, which is dependent on the Port of Los Angeles (POLA) WRP being constructed first. Also, the Ponte Vista and SA Recycling WRPs each have the potential to serve recycled water to adjacent agencies (WBWMD and Long Beach, respectively). The full potential demands were not included in the potential WRPs so future service should be considered before the potential WRPs are implemented.



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Data Sources: USGS, LADWP, ESRI, NAIP Note: Only potential customers ≥ 50 AFY are labeled and potential customers < 50 AFY have IDs shown.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
2,132

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	610	gpm	formula	\$ 633,000
PS 3 - Peck Park	860	gpm	formula	\$ 821,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	30,300	in-diam*LF	\$24	\$ 4,363,000
8 inch	32,600	in-diam*LF	\$24	\$ 6,259,000
12 inch	24,300	in-diam*LF	\$20	\$ 5,832,000
Channel Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 21,758,000
Contingency Costs 30%				\$ 6,527,000
Construction Total				\$ 28,285,000
Implementation Costs 30%				\$ 8,486,000
Total Capital Cost				\$ 36,771,000

Capital Replacement Costs

20-Year Useful Life

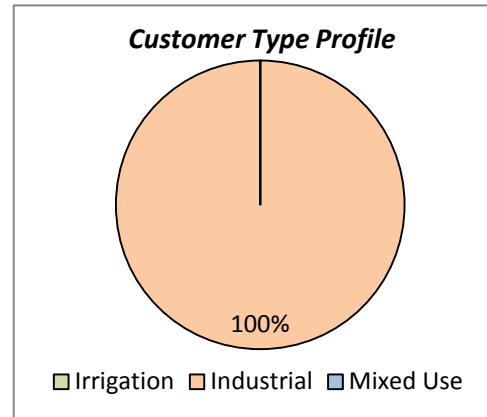
Storage	10%	\$	-
Pump Station	50%	\$	727,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 727,000
Contingency Costs 30%			\$ 218,000
Construction Total			\$ 945,000
Implementation Costs 30%			\$ 284,000
Total 20-year Capital Cost			\$ 1,229,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 1,454,000	capital cost	5.0%	\$ 73,000
Maintenance	2	LS	\$10,000	\$ 20,000
PS 1 - Electricity	564,800	kWh	\$0.12	\$ 68,000
PS 2 - Electricity	44,900	kWh	\$0.12	\$ 5,000
PS 3 - Electricity	85,500	kWh	\$0.12	\$ 10,000
Conveyance	87,200	LF	\$0.60	\$ 52,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	2,132	AFY	\$1,300	\$ 2,771,000
			Total Annual O&M	\$ 2,999,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	-		Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	2,132
Water Purchase Escalator	4.0%		Total Yield (AF)	106,588
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 36,771,000		1.00	\$ 36,771,000
20-Year Capital Costs	\$ 1,229,000		2.00	\$ 2,458,000
Annual O&M Costs	\$ 2,999,000		49.00	\$ 146,951,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (614,500)		1.00	\$ (615,000)
			Total PV	\$ 185,565,000
			50-year Project Yield (AF)	106,588
			Unit Cost (\$/af)	\$1,740

2.1 Harbor East WRP

This WRP defines service to six potential customers located to the east of the terminus of the existing Harbor – TIWRP System, including four anchor customers:

- Harbor Cogeneration Company
- Port of LA, Berth 200
- Praxair
- Warren E&P – North Wilmington Unit (NWU)



A WRP to serve the three largest customers was also defined for the Harbor – WBMWD System for comparison.

Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
799	0.71	0.93	\$11.84	\$1.08	\$1,620/AF

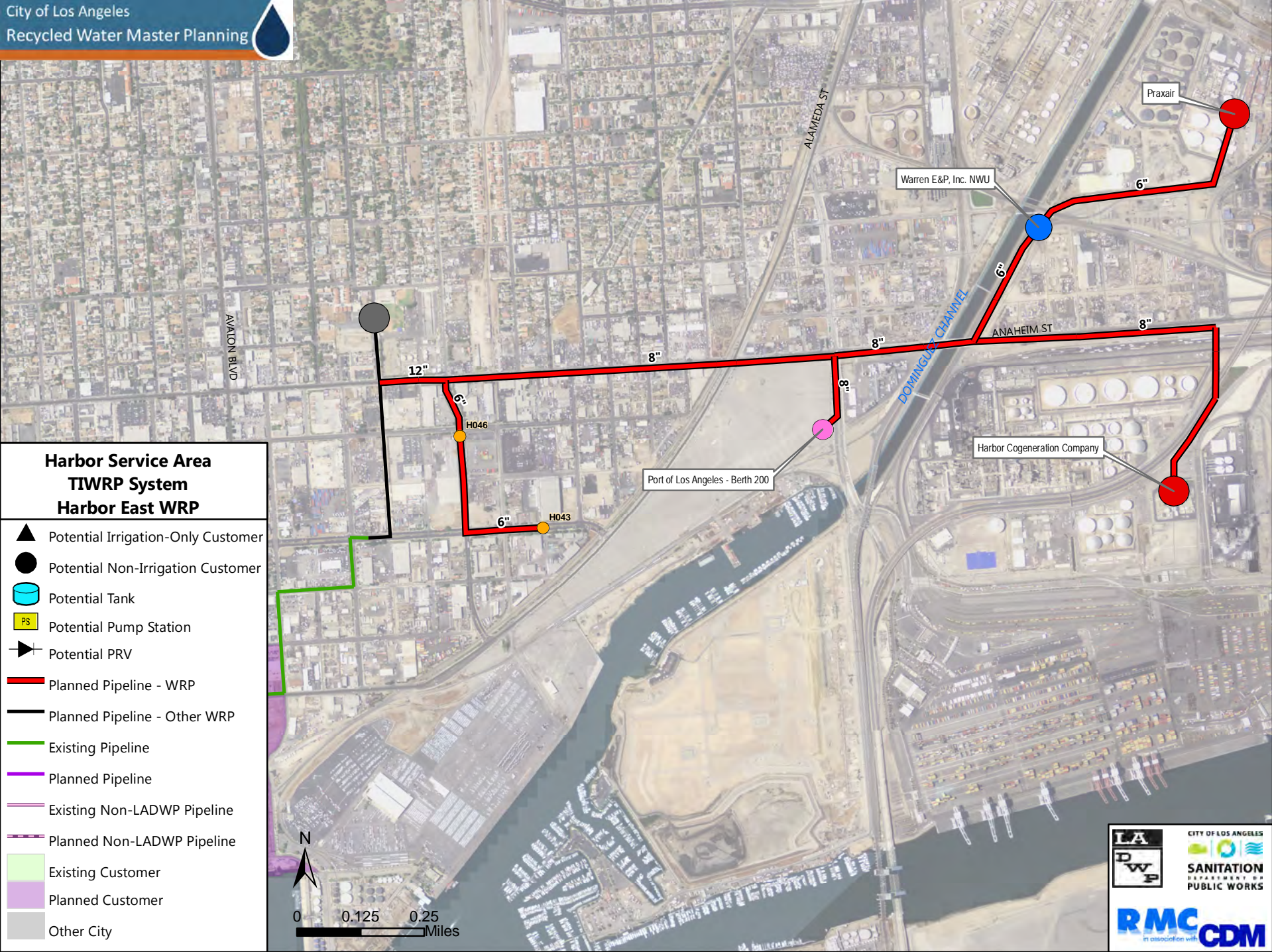
Facilities

- **Crossings:** Service to the three largest customers will require crossing of the Dominguez Channel. LADWP is currently investigating crossing options as part of the Harbor – WBMWD System’s planned project to serve Valero. This WRP uses TIWRP supply while the planned project uses WBMWD CRWRF supply. Each supply has different water quality so a separate crossing would be necessary. Warren E&P identified two idle pipelines (8” and 10”) that cross the channel that may be able to be used for recycled water. The feasibility of this option was not evaluated.
- **Pipelines:** This WRP includes approximately 3.3 miles of 6” to 12” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignment.















Implementation Considerations

A consideration for this WRP is that the peak day demand for the Harbor – TIWRP System WRPs exceeds the available peak season supply from TIWRP so the availability of TIWRP supply and TIWRP Pump Station capacity must be confirmed prior to implementation. This WRP serves the same anchor customers as the Harbor East WRP in the Harbor – WBMWD System and both WRPs were defined so that they could be compared considering unknowns associated with both supplies.

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**Harbor Service Area
TIWRP System
Harbor East WRP**

-  Potential Irrigation-Only Customer
-  Potential Non-Irrigation Customer
-  Potential Tank
-  Potential Pump Station
-  Potential PRV
-  Planned Pipeline - WRP
-  Planned Pipeline - Other WRP
-  Existing Pipeline
-  Planned Pipeline
-  Existing Non-LADWP Pipeline
-  Planned Non-LADWP Pipeline
-  Existing Customer
-  Planned Customer
-  Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

The cost of the Dominguez Channel crossing and potential conversion cost for Praxair need to be addressed to fully evaluate service to the WRP’s three largest customers. As noted above, LADWP is currently investigating crossing options as part of the Harbor – WBMWD System’s planned project to serve Valero but a crossing for this WRP would be a separate pipeline. LADWP’s group addressing the planned channel crossing is aware of the potential opportunity and should continue to consider any potential opportunities for adding a potential crossing to the planned crossing. Also, as noted above, the potential to use one of Warren E&P’s two idle pipelines (8” and 10”) that cross the channel should be further investigated.

Note that three customers, including one anchor customer (Port of LA, Berth 200), could be served without the large cost of a channel crossing so these customers could be served before the crossing issue is resolved. Also, this WRP was defined assuming that it builds off of the Warren E&P WRP but this WRP could move forward prior to implementation of the Warren E&P WRP if necessary by adding the 0.4 miles of 12” pipeline included in that WRP.

Customers

TIWRP System – Harbor East WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
H003	Harbor Cogeneration Company	Industrial	330	0.29	0.38	A	--
H004	Praxair	Industrial	250	0.22	0.29	B	--
H043	E Street Cold Logistics	Industrial	15	0.01	0.02	--	--
H046	Juanita's Foods	Industrial	14	0.01	0.02	--	--
H091	Port of Los Angeles - BERTH 200	Industrial	50	0.04	0.06	--	New ⁵
H093	Warren E&P, Inc. NWU	Industrial	140	0.12	0.16	A	A,B
Total⁶			799	0.71	0.93		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. New development customers do not require conversions so they all received “A” ratings.
6. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Harbor Cogeneration Company:** This power generation company would use recycled water for cooling tower makeup water for an existing facility and a planned facility at an adjacent site to the south. The customer contacted LADWP inquiring about the availability of recycled water and is a willing customer.
- **Port of Los Angeles, Berth 200:** This customer was identified by POLA as part of their redevelopment plans and includes recycled water use for irrigation and dual-plumbing.
- **Praxair:** This air products facility would use recycled water for cooling tower makeup water. However, the customer has water quality concerns, requires prevention of direct

contact between gases and recycled water, and anticipates potential permitting obstacles related to recycled water use with the CDPH, CA Board of Pharmaceuticals, and Federal Drug Administration. Also, they developed a retrofit cost estimate to address water quality and gas/water contact that makes non-potable service prohibitively expensive.

- **Warren E&P, North Wilmington Unit (NWU):** This oil and gas drilling customer would use recycled water for deep well injection to replace oil extraction. Note that there is a second Warren E&P site - the Wilmington Townlot Unit (WTU) - that is associated with the Warren E&P WRP. The customer identified several water quality parameters of concern but TIWRP product is expected to meet them.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
799

WRP: Harbor East

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	6,500	in-diam*LF	\$24	\$ 936,000
8 inch	10,700	in-diam*LF	\$24	\$ 2,054,000
12 inch	700	in-diam*LF	\$20	\$ 168,000
Channel Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 7,008,000
Contingency Costs			30%	\$ 2,102,000
Construction Total				\$ 9,110,000
Implementation Costs			30%	\$ 2,733,000
Total Capital Cost				\$ 11,843,000

Capital Replacement Costs

20-Year Useful Life

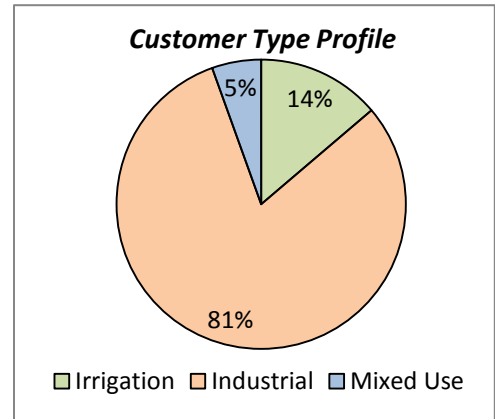
Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs			30%	\$ -
Construction Total				\$ -
Implementation Costs			30%	\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	211,700	kWh	\$0.12	\$ 25,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	17,900	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	799	AFY	\$1,300	\$ 1,039,000
Total Annual O&M				\$ 1,075,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	799	
Water Purchase Escalator	4.0%	Total Yield (AF)	39,948	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 11,843,000		1.00	\$ 11,843,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 1,075,000		49.00	\$ 52,675,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 64,518,000
50-year Project Yield (AF)				39,948
Unit Cost (\$/af)				\$1,620

2.2 Laterals – TIWRP

This WRP defines service to four potential customers within ½ mile of the Harbor – TIWRP System’s existing and planned pipelines, including one anchor customer:

- Harbor Generating Station



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
109	0.10	0.14	\$0.62	\$0.15	\$1,420/AF

Facilities

- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP includes approximately 0.4 miles of 6” to 8” pipe. The utility review was conducted for transmission pipelines but not completed for laterals and there are only laterals in this WRP so there are no review findings.

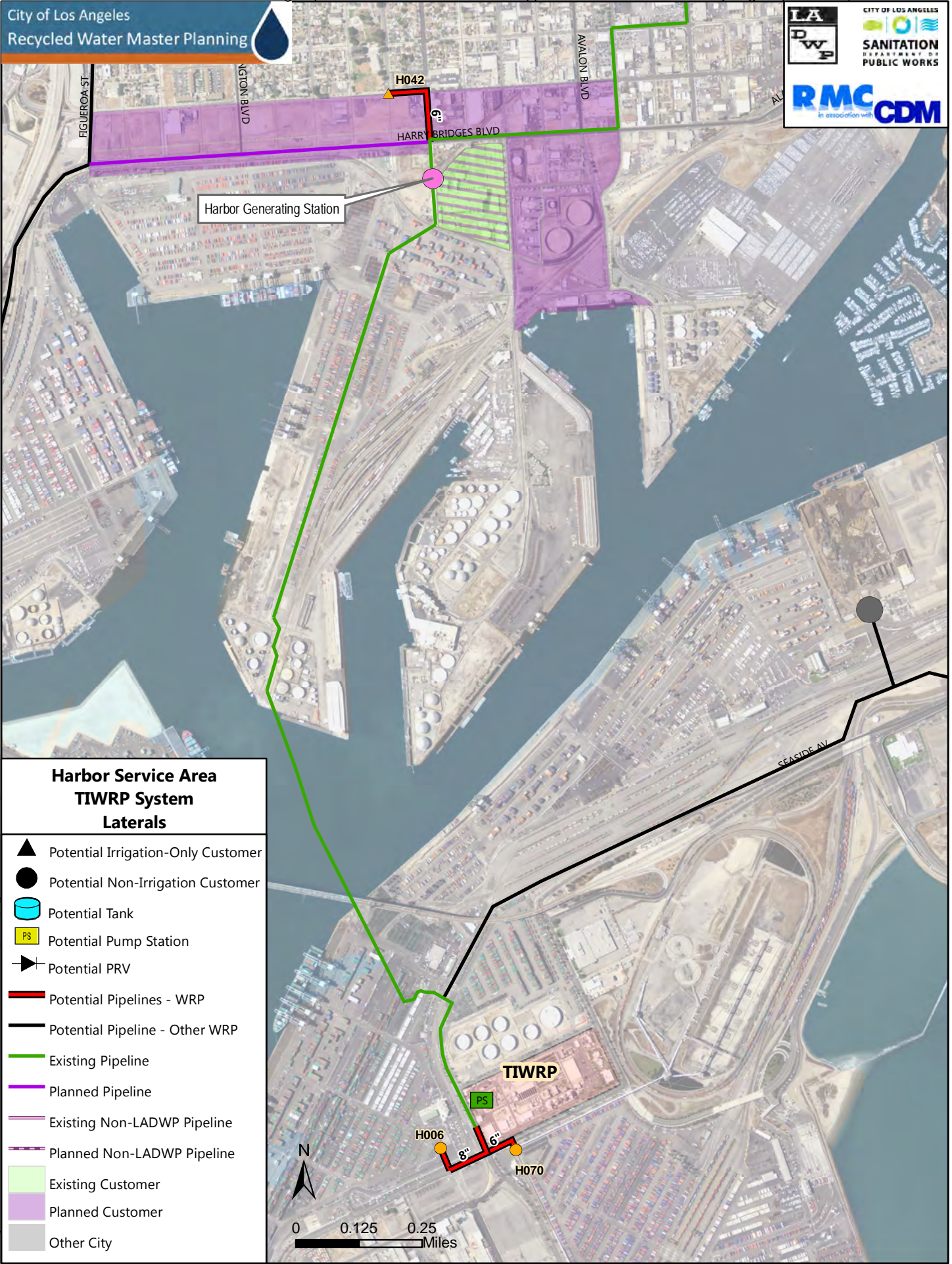
Implementation Considerations

The primary consideration for this WRP is that the peak day demand for the Harbor – TIWRP System WRPs exceeds the available peak season supply from TIWRP so the availability of TIWRP supply and TIWRP Pump Station capacity must be confirmed prior to implementation.

The laterals that make up this WRP can be implemented independently and will be dependent on confirmation of customer’s willingness to use recycled water and a review of on-site conversion requirements. In particular, the Harbor Generating Station’s water quality concerns need to be addressed before recycled water use can increase for this customer, as discussed below.



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Harbor Service Area TIWRP System Laterals

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipelines - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

TIWRP System – Laterals WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
H006	Seaside Transportation Services	Industrial	8	0.01	0.01	--	--
H042	Wilmington Recreation Center	Irrigation	15	0.01	0.03	--	--
H070	American President Line	Mixed-Use	6	0.01	0.01	--	--
H092	Harbor Generating Station	Industrial	80	0.07	0.09	B	--
Total⁵			109	0.10	0.14		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Harbor Generating Station:** This LADWP power generation facility currently uses recycled water for landscape irrigation and plans to use recycled water for cooling tower makeup water (blended with potable water). Potential use is for the remaining potable water used for cooling tower makeup water and potentially for boilers. However, the customer has concerns regarding water quality from the existing TIWRP supply.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
109

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	1,600	in-diam*LF	\$24	\$ 230,000
8 inch	700	in-diam*LF	\$24	\$ 134,000
12 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 364,000
Contingency Costs 30%				\$ 109,000
Construction Total				\$ 473,000
Implementation Costs 30%				\$ 142,000
Total Capital Cost				\$ 615,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

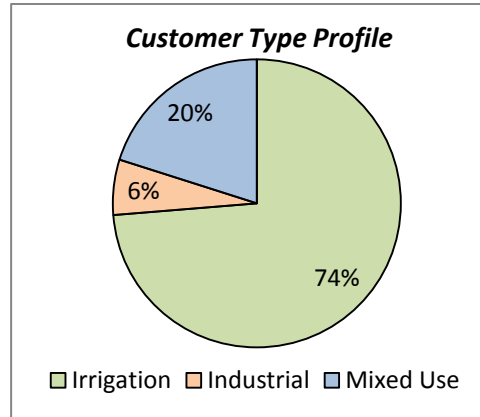
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	29,000	kWh	\$0.12	\$ 3,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	2,300	LF	\$0.60	\$ 1,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	109	AFY	\$1,300	\$ 142,000
Total Annual O&M				\$ 146,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		109
Water Purchase Escalator	4.0%	Total Yield (AF)		5,459
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 615,000		1.00	\$ 615,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 146,000		49.00	\$ 7,154,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 7,769,000
50-year Project Yield (AF)				5,459
Unit Cost (\$/af)				\$1,420

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2.3 Peck Park WRP

This WRP defines service to nine potential customers, including two anchor customers:

- Field of Dreams
- Peck Park



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
194	0.17	0.35	\$5.93	\$0.33	\$2,380/AF

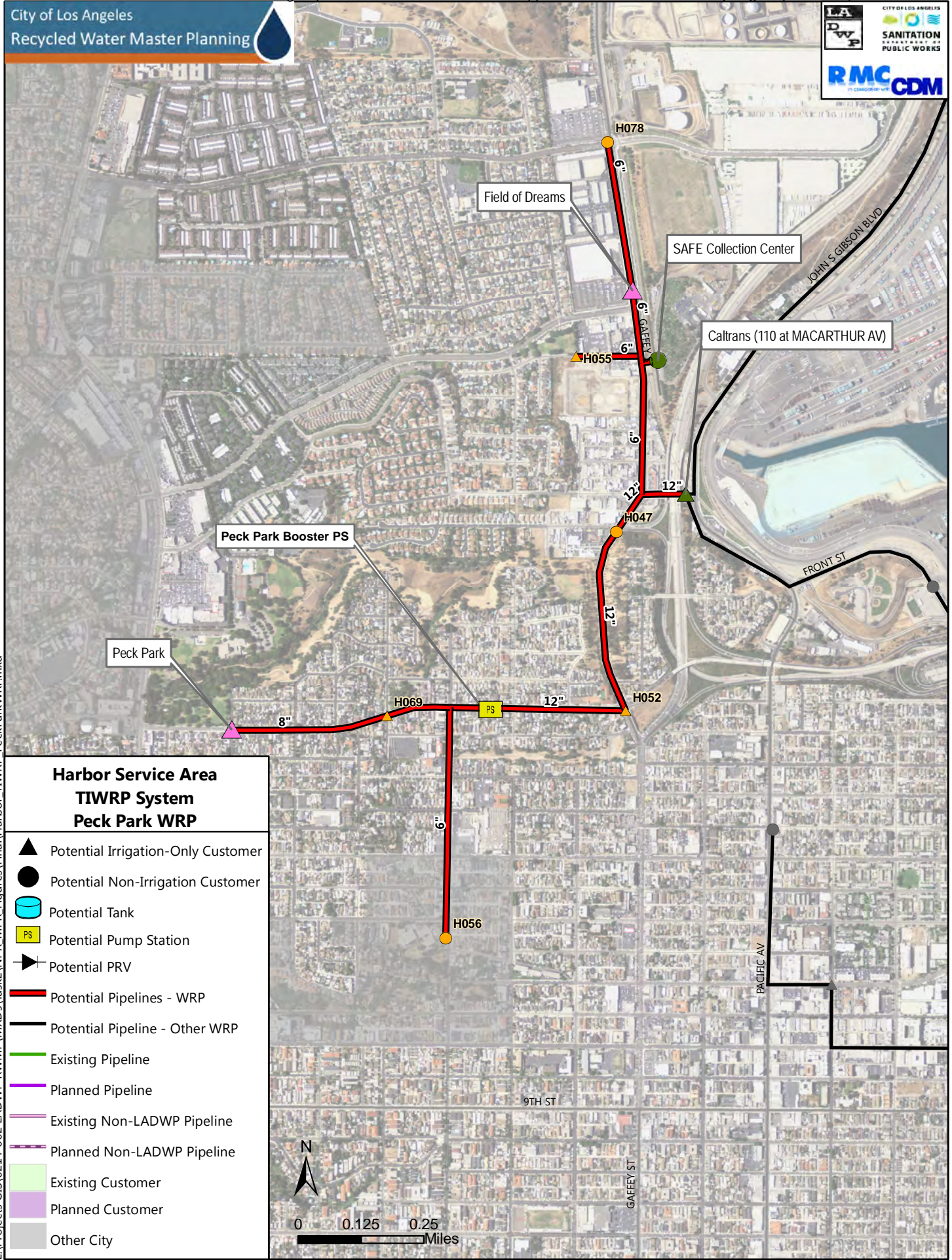
Facilities

- **Peck Park Booster Pump Station:** The existing TIWRP Pump Station cannot provide sufficient service pressure to Peck Park due to the park’s elevation so a booster pump station with 300 ft of head and a capacity of 860 gpm is included.
- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP includes approximately 2.7 miles of 6” to 12” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Channel St at Gaffey St and along Gaffey St at Capitol Dr.

Implementation Considerations

This WRP requires the POLA WRP to be constructed first. Also, the peak day demand for the Harbor - TIWRP System WRPs exceeds the available peak season supply from TIWRP so the availability of TIWRP supply and TIWRP Pump Station capacity must be confirmed prior to implementation.

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**Harbor Service Area
TIWRP System
Peck Park WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipelines - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

TIWRP System – Peck Park WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
H014	Peck Park	Irrigation	70	0.06	0.14	A	--
H017	Field of Dreams	Irrigation	50	0.04	0.10	A	--
H027	SAFE Collection Center	Mixed-Use	26	0.02	0.04	--	--
H047	Car Wash Asset MGMT LLCDBA Jerzy Boy’s Hand Car	Industrial	12	0.01	0.01	--	--
H052	Caltrans (110 at W OLIVER ST)	Irrigation	10	0.01	0.02	--	--
H055	Harbor Highland Park	Irrigation	8	0.01	0.02	--	--
H056	YMCA Los Angeles San Pedro PNSLA Branch	Mixed-Use	8	0.01	0.01	--	--
H069	Rena Park	Irrigation	6	0.01	0.01	--	--
H078	Overton Moore & Assoc Inc.	Mixed-Use	5	0.00	0.01	--	--
Total⁵			194	0.17	0.35		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Field of Dreams:** This City park is interested in converting to recycled water.
- **Peck Park:** This City park has a significant change in elevation (over 250 ft) from the eastern end to the western end so the non-potable conversion needs to consider the irrigation system service connection locations and pressures. The service connection needs must also be coordinated with defining the Peck Park Booster Pump Station. Note that the City is currently implementing the Peck Park Canyon Enhancement project.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
194

WRP: Peck Park

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	860	gpm	formula	\$ 821,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,000	in-diam*LF	\$24	\$ 1,008,000
8 inch	2,000	in-diam*LF	\$24	\$ 384,000
12 inch	5,400	in-diam*LF	\$20	\$ 1,296,000
Construction Subtotal				\$ 3,509,000
Contingency Costs 30%				\$ 1,053,000
Construction Total				\$ 4,562,000
Implementation Costs 30%				\$ 1,369,000
Total Capital Cost				\$ 5,931,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	411,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 411,000
Contingency Costs 30%			\$ 123,000
Construction Total			\$ 534,000
Implementation Costs 30%			\$ 160,000
Total 20-year Capital Cost			\$ 694,000

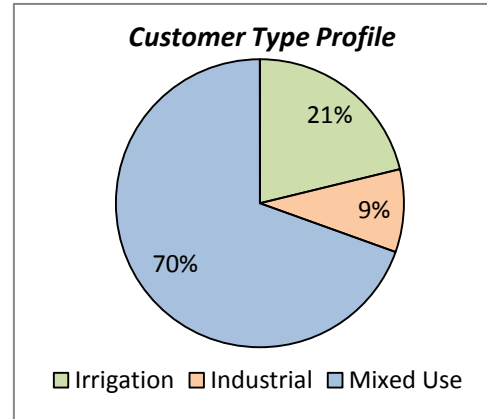
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 821,000	capital cost	5.0%	\$ 41,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	51,400	kWh	\$0.12	\$ 6,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	85,500	kWh	\$0.12	\$ 10,000
Conveyance	14,400	LF	\$0.60	\$ 9,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	194	AFY	\$1,300	\$ 252,000
Total Annual O&M				\$ 328,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		194
Water Purchase Escalator	4.0%	Total Yield (AF)		9,697
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 5,931,000		1.00	\$ 5,931,000
20-Year Capital Costs	\$ 694,000		2.00	\$ 1,388,000
Annual O&M Costs	\$ 328,000		49.00	\$ 16,072,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (347,000)		1.00	\$ (347,000)
Total PV				\$ 23,044,000
50-year Project Yield (AF)				9,697
Unit Cost (\$/af)				\$2,380

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2.4 POLA WRP

This WRP defines service to eight potential customers located southwest of the planned system, including one anchor customer:

- Port of Los Angeles - San Pedro Waterfront Development



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
268	0.24	0.42	\$8.49	\$0.37	\$1,990/AF

Facilities

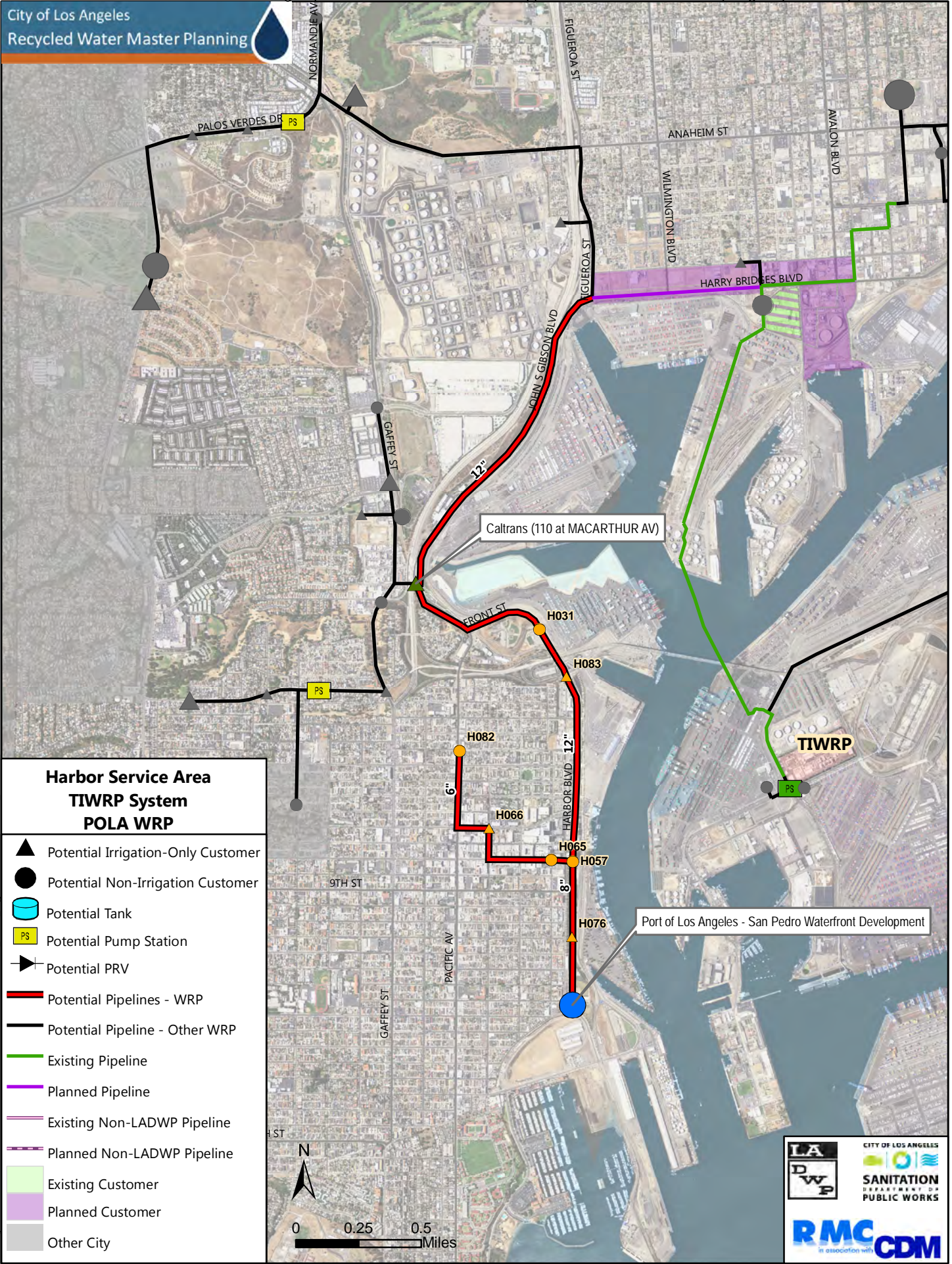
- **Crossings:** The pipeline alignment includes a crossing of the Highway 47 (Vincent Thomas Bridge) at the Harbor Blvd underpass. Since it is an underpass, the crossing could probably be constructed using jack and bore method instead of a more expensive directional drilling method.
- **Pipelines:** This WRP includes approximately 4.4 miles of 6” to 12” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Harbor Blvd at 1st St and along Pacific Ave at Channel St.

Implementation Considerations

This WRP would connect with the Harry Bridges Blvd WRP, which is currently under construction. Plans for POLA San Pedro Waterfront Development, which is the anchor customer for this WRP, are not complete so the exact service connection point(s) are not known at this time. Also, the peak day demand for the Harbor – TIWRP System WRPs exceeds the available peak season supply from TIWRP so the availability of TIWRP supply and TIWRP Pump Station capacity must be confirmed prior to implementation.

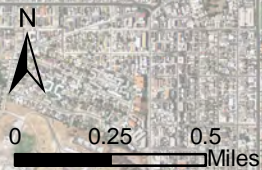
City of Los Angeles
Recycled Water Master Planning

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**Harbor Service Area
TIWRP System
POLA WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipelines - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

TIWRP System – POLA WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
H005	Port of Los Angeles - San Pedro Waterfront Development	Mixed-Use	168	0.15	0.25	A	New ⁵
H020	Caltrans (110 at Macarthur Av)	Irrigation	40	0.04	0.08	--	--
H031	West Basin Container Terminal LLC	Industrial	25	0.02	0.03	--	--
H057	City LA Street Maintenance Fund	Mixed-Use	8	0.01	0.01	--	--
H065	Crowne Plaza Hotel Los Angeles Harbor	Mixed-Use	6	0.01	0.01	--	--
H066	Harbor Tower Retirement Homes	Irrigation	6	0.01	0.01	--	--
H076	San Pedro Plaza	Irrigation	5	0.00	0.01	--	--
H082	Ilja Kim	Mixed-Use	5	0.00	0.01	--	--
H083	Caltrans (47 at N Harbor Bl)	Irrigation	5	0.00	0.01	--	--
Total⁶			268	0.24	0.42		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. New development customers do not require conversions so they all received “A” ratings.
6. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Port of Los Angeles, San Pedro Waterfront Development:** This mixed-use site would use recycled water for dual-plumbing and irrigation. POLA recently designed the San Pedro Waterfront Development and includes recycled water use in the plans.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
268

WRP: POLA

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	4,700	in-diam*LF	\$24	\$ 677,000
8 inch	3,000	in-diam*LF	\$24	\$ 576,000
12 inch	15,700	in-diam*LF	\$20	\$ 3,768,000
Construction Subtotal				\$ 5,021,000
Contingency Costs 30%				\$ 1,506,000
Construction Total				\$ 6,527,000
Implementation Costs 30%				\$ 1,958,000
Total Capital Cost				\$ 8,485,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	71,100	kWh	\$0.12	\$ 9,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	23,400	LF	\$0.60	\$ 14,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	268	AFY	\$1,300	\$ 349,000
Total Annual O&M				\$ 372,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	268	
Water Purchase Escalator	4.0%	Total Yield (AF)	13,419	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 8,485,000		1.00	\$ 8,485,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 372,000		49.00	\$ 18,228,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 26,713,000
50-year Project Yield (AF)				13,419
Unit Cost (\$/af)				\$1,990

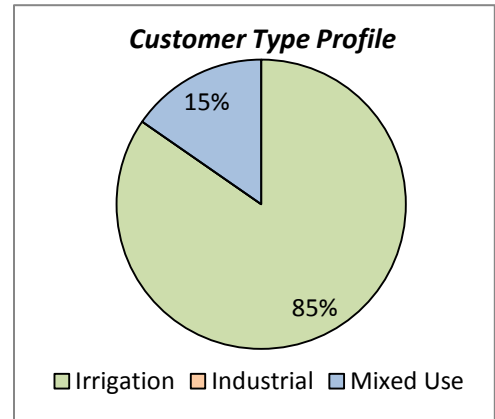
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2.5 Ponte Vista WRP

This WRP defines service to six potential customers located west of the planned system, including two anchor customers:

- Machado Lake
- Ponte Vista

Also, this WRP potentially includes a non-LADWP customer: WBMWD Palos Verdes Customers.



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
281	0.25	0.50	\$7.03	\$0.43	\$2,070/AF

Facilities

- **Ponte Vista Booster Pump Station:** The existing TIWRP Pump Station cannot provide sufficient service pressure to Ponte Vista or Rolling Hills Prep School due to their elevation so a booster pump station with 220 ft of head and a capacity of 600 gpm is included.
- **Crossing:** The pipeline alignment includes a crossing of the 110 Freeway at the Anaheim St underpass. Since it is an underpass, the crossing could probably be constructed using jack and bore method instead of a more expensive directional drilling method.
- **Pipelines:** This WRP includes approximately 3.6 miles of 6” to 8” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignment; however, the proposed segment along Western Ave could not be reviewed because it is along the City border and is not included in the NavigateLA data.

Implementation Considerations

This WRP has several implementation considerations. The timing of this WRP will be driven by the timing of the Machado Lake water quality project and the Ponte Vista development. Also, this WRP would connect with the Harry Bridges Blvd WRP, which is currently under construction. The peak day demand for the Harbor – TIWRP System WRPs exceeds the available peak season supply from TIWRP so the availability of TIWRP supply and TIWRP Pump Station capacity must be confirmed prior to implementation.

In addition, this WRP includes the potential to sell recycled water to WBMWD west of the Harbor Service Area in the eastern Palos Verdes area. As described in the Customers section below, there is up to 950 AFY of potential non-potable demand with an associated peak day demand of 1.9 mgd. Service to these customers must be considered prior to proceeding with this WRP.

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Harbor Service Area TWRP System Ponte Vista WRP

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

TIWRP System – Ponte Vista WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
H007	Machado Lake	Irrigation	140	0.12	0.27	A	--
H012	Ponte Vista	Mixed-Use	100	0.09	0.15	--	New ⁵
H039	Kaiser Hospital (Harbor)	Mixed-Use	20	0.02	0.03	--	--
H048	Rolling Hills Preparatory School	Irrigation	11	0.01	0.02	--	--
H079	Parks and Recreation	Irrigation	5	0.00	0.01	--	--
H084	Caltrans (110 at West)	Irrigation	5	0.00	0.01	--	--
Total⁶			281	0.25	0.50		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. New development customers do not require conversions so they all received “A” ratings.
6. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Machado Lake:** Machado Lake is located within Ken Malloy Harbor Regional Park, which is a planned recycled water customer. City is currently implementing the Machado Lake Ecosystem Water Quality project, which has requested the high quality recycled water from TIWRP.
- **Ponte Vista:** A new residential development that requested recycled water for landscape irrigation and toilet flushing.

In addition, this WRP includes the potential to sell recycled water to WBMWD to west of the Harbor Service Area in the eastern Palos Verdes area. These **WBMWD Palos Verdes Customers** were labeled as “Non-LADWP” since they would not offset LADWP potable demand and the likelihood of service is harder to assess since they are not LADWP customers and interagency agreements are required. WBMWD previously evaluated non-potable service to its wholesale customers in the eastern Palos Verdes area but has not proceeded with service from their Title 22 Distribution System due to lack of cost effectiveness. The Ponte Vista WRP terminates at the City’s border with Ranchos Palos Verdes along Western Avenue and there are four potential WBMWD non-potable customers near this WRP. Green Hills Memorial Park (230 AFY) is located on the other side of Western Ave from Ponte Vista and Rolling Hills Country Club (230 AFY) is located approximately 1 mile further west. Los Angeles County Landfill (300 AFY) and Palos Verdes Golf Club (190 AFY) are located another 2 miles further west. In total, there is 950 AFY of potential non-potable demand with an associated peak day demand of 1.9 mgd.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
281

WRP: Ponte Vista

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	610	gpm	formula	\$ 633,000
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	2,900	in-diam*LF	\$24	\$ 418,000
8 inch	16,200	in-diam*LF	\$24	\$ 3,110,000
12 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 4,161,000
Contingency Costs 30%				\$ 1,248,000
Construction Total				\$ 5,409,000
Implementation Costs 30%				\$ 1,623,000
Total Capital Cost				\$ 7,032,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	317,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 317,000
Contingency Costs 30%			\$ 95,000
Construction Total			\$ 412,000
Implementation Costs 30%			\$ 124,000
Total 20-year Capital Cost			\$ 536,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 633,000	capital cost	5.0%	\$ 32,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	74,600	kWh	\$0.12	\$ 9,000
PS 2 - Electricity	44,900	kWh	\$0.12	\$ 5,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	19,100	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	281	AFY	\$1,300	\$ 366,000
Total Annual O&M				\$ 433,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	281	
Water Purchase Escalator	4.0%	Total Yield (AF)	14,065	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 7,032,000		1.00	\$ 7,032,000
20-Year Capital Costs	\$ 536,000		2.00	\$ 1,072,000
Annual O&M Costs	\$ 433,000		49.00	\$ 21,217,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (268,000)		1.00	\$ (268,000)
Total PV				\$ 29,053,000
50-year Project Yield (AF)				14,065
Unit Cost (\$/af)				\$2,070

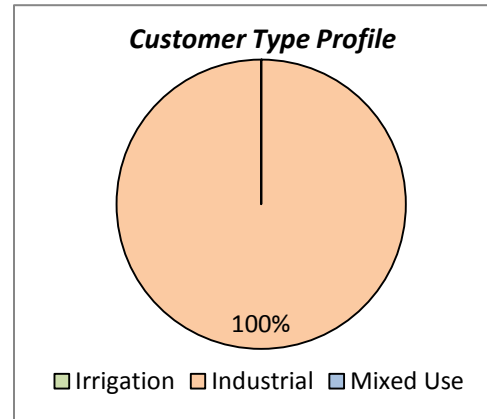
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2.6 SA Recycling WRP

This WRP defines service to one potential customer to the east of TIWRP:

- SA Recycling

Also, this WRP potentially includes a non-LADWP customer: Port of Long Beach.



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
105	0.09	0.12	\$1.85	\$0.15	\$1,710/AF

Facilities

- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP includes approximately 1.4 miles of 6” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Terminal Way at Ferry St.

Implementation Considerations

The primary consideration for this WRP is that the peak day demand for the Harbor - TIWRP System WRPs exceeds the available peak season supply from TIWRP so the availability of TIWRP supply and TIWRP Pump Station capacity must be confirmed prior to implementation.

In addition, this WRP includes the potential to sell recycled water to the Long Beach Water Department to east of the Harbor Service Area in the Port of Long Beach. As described in the Customers section below, there is approximately 2,000 AFY of existing potable demand but a non-potable demand estimate was not produced. Service to the Port of Long Beach must be considered prior to proceeding with this WRP.

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**Harbor Service Area
TIWRP System
SA Recycling WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

TIWRP System – SA Recycling WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Comprehensive
H009	SA Recycling	Industrial	105	0.09	0.12	A	--

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.

The following are considerations for the anchor customer:

- **SA Recycling:** This customer can use recycled water for dust control and wash-down of equipment.

In addition, this WRP includes the potential to sell recycled water to the Long Beach Water Department to east of the Harbor Service Area in the **Port of Long Beach**. This customer was labeled as “Non-LADWP” since it would not offset LADWP potable demand and the likelihood of service is harder to assess since it is not an LADWP customer and interagency agreements are required. Also, the non-potable demand potential has not been evaluated. The existing LADWP connection with the Port of Long Beach is for a backup potable supply. The port’s use of LADWP potable water has averaged 55 AFY in the past three years but the total potable water use in the port is nearly 2,000 AFY of almost exclusively industrial demand. The associated peak day demand for all of the potable water use is 2.3 mgd assuming that the port is exclusively industrial demand (and applying a 1.3 peaking factor). In 2010, Long Beach Water Department took ownership of the port and was not prepared to discuss the non-potable reuse potential yet.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
105

WRP: SA Recycling

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,600	in-diam*LF	\$24	\$ 1,094,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 1,094,000
Contingency Costs 30%				\$ 328,000
Construction Total				\$ 1,422,000
Implementation Costs 30%				\$ 427,000
Total Capital Cost				\$ 1,849,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	27,900	kWh	\$0.12	\$ 3,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	7,600	LF	\$0.60	\$ 5,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	105	AFY	\$1,300	\$ 137,000
Total Annual O&M				\$ 145,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		105
Water Purchase Escalator	4.0%	Total Yield (AF)		5,250
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 1,849,000		1.00	\$ 1,849,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 145,000		49.00	\$ 7,105,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 8,954,000
50-year Project Yield (AF)				5,250
Unit Cost (\$/af)				\$1,710

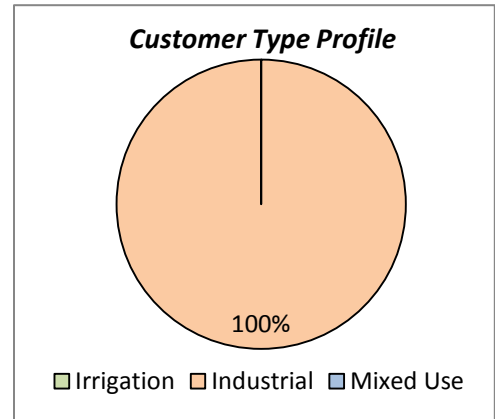
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2.7 Warren E&P WRP

This WRP defines service to one anchor customer located near the existing system:

- Warren E&P - Wilmington Townlot Unit (WTU)

A WRP to serve this customer was also defined for the Harbor – WBMWD System for comparison.



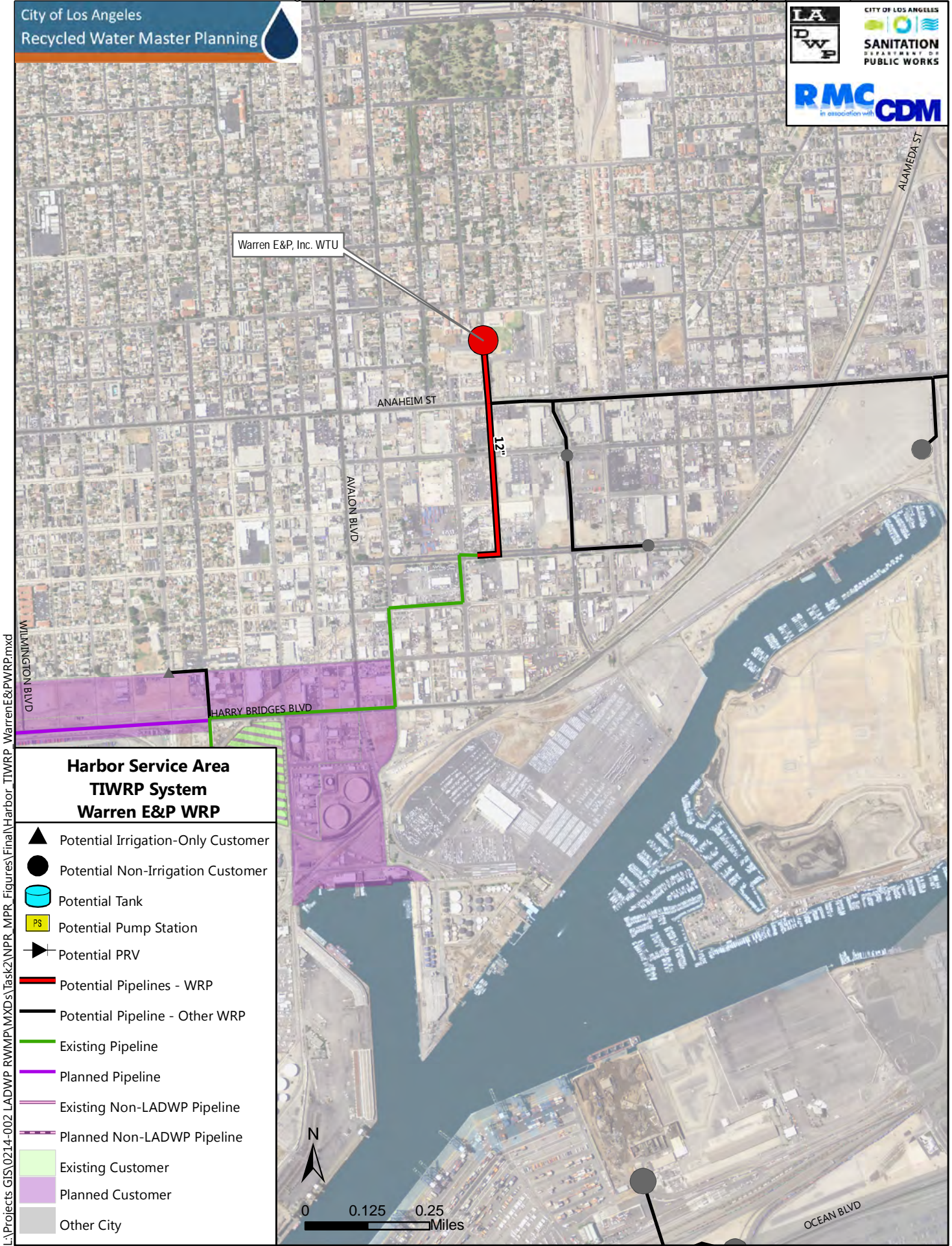
Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
375	0.33	0.44	\$1.01	\$0.50	\$1,370/AF

Facilities















- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP includes approximately 0.5 miles of 12” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignment.

Implementation Considerations

A consideration for this WRP is that the peak day demand for the Harbor – TIWRP System WRPs exceeds the available peak season supply from TIWRP so the availability of TIWRP supply and TIWRP Pump Station capacity must be confirmed prior to implementation. This WRP serves the same customer as the Warren E&P WRP in the Harbor – WBMWD System (Warren E&P) and both WRPs were defined so that they could be compared considering unknowns associated with both supplies. The customer identified several water quality parameters of concern but both TIWRP and WBMWD System supplies are expected to meet them so LADWP’s preference for the supply source will probably be linked with the TIWRP assessment being conducted under the TIWRP Barrier Supplement and NPR Concepts Report for which supply option is most viable and cost effective.



**Harbor Service Area
TIWRP System
Warren E&P WRP**

-  Potential Irrigation-Only Customer
-  Potential Non-Irrigation Customer
-  Potential Tank
-  Potential Pump Station
-  Potential PRV
-  Potential Pipelines - WRP
-  Potential Pipeline - Other WRP
-  Existing Pipeline
-  Planned Pipeline
-  Existing Non-LADWP Pipeline
-  Planned Non-LADWP Pipeline
-  Existing Customer
-  Planned Customer
-  Other City

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Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

TIWRP System – Warren E&P WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
H001	Warren E&P - WTU	Industrial	375	0.33	0.44	A	A,B

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.

The following are considerations for the anchor customer:

- **Warren E&P, Wilmington Townlot Unit (WTU):** Warren E&P, North Wilmington Unit (NWU): This oil and gas drilling customer would use recycled water for deep well injection to replace oil extraction. Note that there is a second Warren E&P site – the North Wilmington Unit (NWU) – that is associated with the Harbor East WRP. The customer identified several water quality parameters of concern but TIWRP product is expected to meet them.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
375

WRP: Warren E&P

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	2,500	in-diam*LF	\$20	\$ 600,000
Construction Subtotal				\$ 600,000
Contingency Costs 30%				\$ 180,000
Construction Total				\$ 780,000
Implementation Costs 30%				\$ 234,000
Total Capital Cost				\$ 1,014,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	99,400	kWh	\$0.12	\$ 12,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	2,500	LF	\$0.60	\$ 2,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	375	AFY	\$1,300	\$ 488,000
Total Annual O&M				\$ 502,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	375
Water Purchase Escalator	4.0%		Total Yield (AF)	18,750
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 1,014,000		1.00	\$ 1,014,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 502,000		49.00	\$ 24,598,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 25,612,000
50-year Project Yield (AF)				18,750
Unit Cost (\$/af)				\$1,370

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3. Harbor – WBMWD System

Overview

The potential Harbor – WBMWD System includes potential WRPs to expand recycled water use from CRWRF, although, the availability of any surplus planned capacity cannot be confirmed. There may be an opportunity to expand CRWRF so defining potential WRPs that could be served by this supply will support this evaluation. Also, there are two potential WRPs, Harbor East and Warren E&P, that are defined as part of both the Harbor – TIWRP System and the Harbor – WBMWD System so that the two supply options can be compared when selecting the potential WRPs to implement for this system.

Harbor – WBMWD System – Summary of WRPs

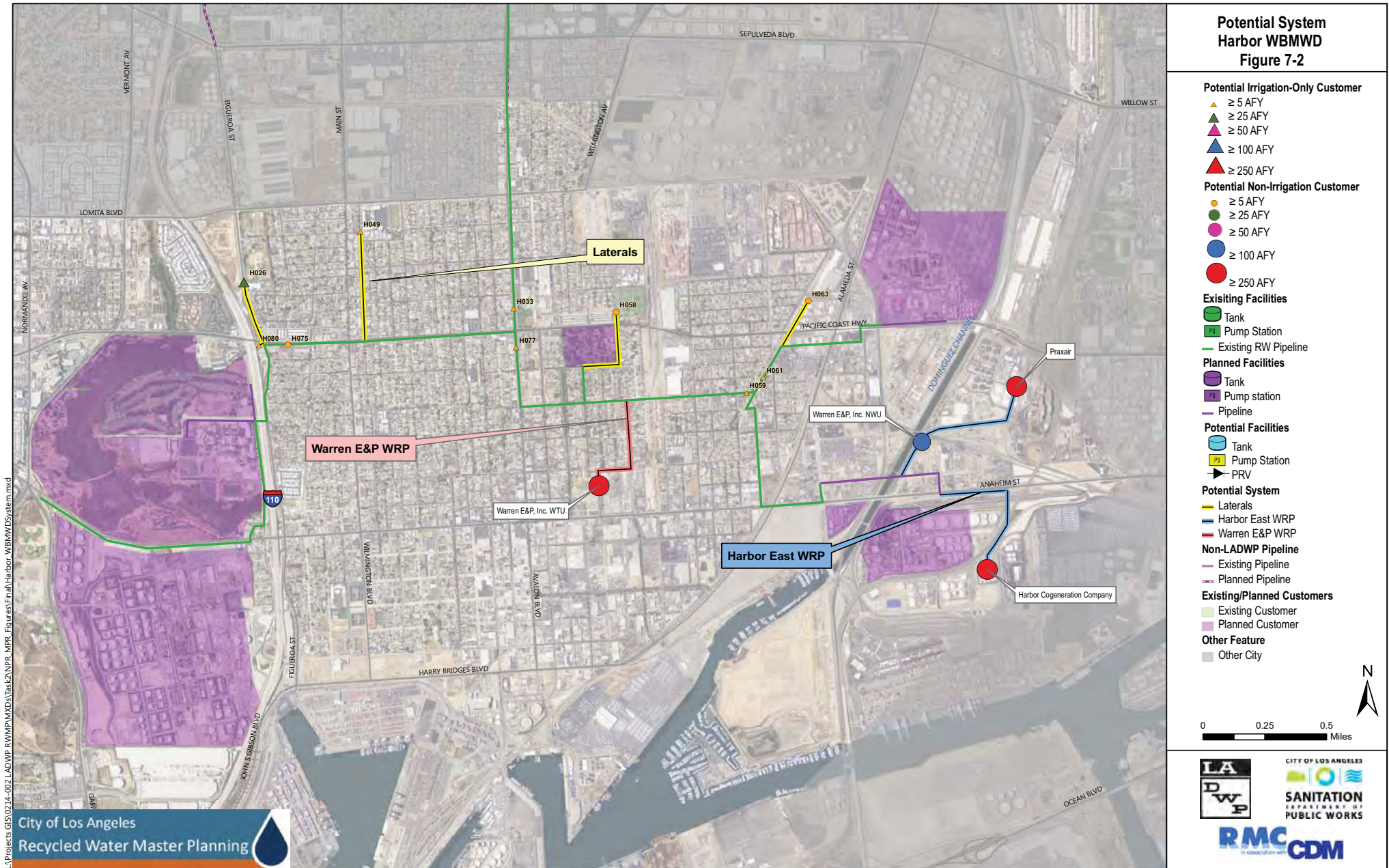
WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Harbor East	720	0.64	0.84	\$2.80	\$0.58	\$1,150
Laterals	104	0.09	0.19	\$1.79	\$0.09	\$1,460
Warren E&P	375	0.33	0.44	\$0.27	\$0.30	\$1,080
Potential Total	1,199	1.07	1.46	\$4.86	\$0.97	\$1,160
Existing System	--	--	--	--	--	--
Planned System	9,300	8.30	12.0	--	--	--
System Total	10,499	9.36	13.46	--	--	--

Note: Harbor East WRP has less demand than the TIWRP System version because it does not include Port of Los Angeles – Berth 200 and two non-anchor customers. Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

The primary consideration for implementation of the Harbor – WBMWD System is the availability of CRWRF supply. The projected peak day demand for the planned system matches the planned CRWRF peak season supply so the availability of surplus capacity from planned appears to be limited. Identification of any surplus will require future monitoring of actual peak day demands. Regarding CRWRF expansion, due to limited available land the ability for further expansion cannot be determined until the planned expansion is further developed (i.e. treatment process and associated footprint).

The number and size of potential WRPs implemented will be dependent on both the plan for TIWRP product water (since the Harbor East WRP and Warren E&P WRP can be served by either TIWRP or WBMWD). The Harbor East WRP in the Harbor-WBMWD System is compelling because there is a possibility that cost of the Dominguez Channel crossing could be shared with the planned crossing to potentially serve Valero. A primary disadvantage however, is that Praxair, a potential customer, and one of the major industrial customers in the Harbor East WRP has water quality needs that may be better served by the TIWRP product, which is more highly treated than the CRWF product. However, Praxair may require further treatment over and above the treatment supplied by either TIWRP or CRWRF.



L:\Projects\GIS\0214-002 LADWP RMP\MapDocs\Task2\NPR_MPR_Figures\Final\Harbor_WBMWDSystem.mxd

Data Sources: USGS, LADWP, ESRI, NAIP Note: Only potential customers ≥ 50 AFY are labeled and potential customers < 50 AFY have IDs shown

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor WBMWD

Annual Yield (AFY)
1,199

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer 1	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	15,600	in-diam*LF	\$24	\$ 2,246,000
8 inch	3,273	in-diam*LF	\$24	\$ 629,000
10 inch	0	in-diam*LF	\$20	\$ -
			Construction Subtotal	\$ 2,875,000
Contingency Costs			30%	\$ 863,000
			Construction Total	\$ 3,738,000
Implementation Costs			30%	\$ 1,121,000
			Total Capital Cost	\$ 4,859,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
			Construction Subtotal
Contingency Costs			30%
			Construction Total
Implementation Costs			30%
			Total 20-year Capital Cost

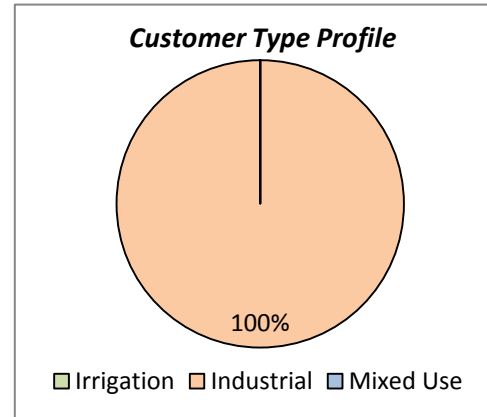
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	18,873	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
			Total Annual O&M	\$ 11,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified	1,199	AFY	\$800	\$ 960,000
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	1,199		Purchase Cost Total	\$ 960,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escal	3.0%		Annual Yield (AFY)	1,199
Water Purchase Escalat	4.0%		Total Yield (AF)	59,938
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 4,859,000		1.00	\$ 4,859,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 11,000		49.00	\$ 539,000
Recycled Water Cost	\$ 960,000		66.73	\$ 64,061,000
Salvage	\$ -		1.00	\$ -
			Total PV	\$ 69,459,000
			50-year Project Yield (AF)	59,938
			Unit Cost (\$/af)	\$1,160

3.1 Harbor East WRP

This WRP defines service to three anchor customers:

- Harbor Cogeneration Company
- Praxair
- Warren E&P – North Wilmington Unit (NWU)

A WRP to serve these potential customers was also defined for the Harbor – TIWRP System for comparison.



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
720	0.64	0.84	\$2.80	\$0.58	\$1,150/AF

Facilities

- **Crossings:** This WRP requires a Dominguez Channel crossing that could potentially be shared with the planned crossing. Also, Warren E&P identified two idles pipelines (8” and 10”) that cross the channel that may be able to be used for recycled water.
- **Pipelines:** This WRP includes approximately 2.0 miles of 6” to 8” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignments.

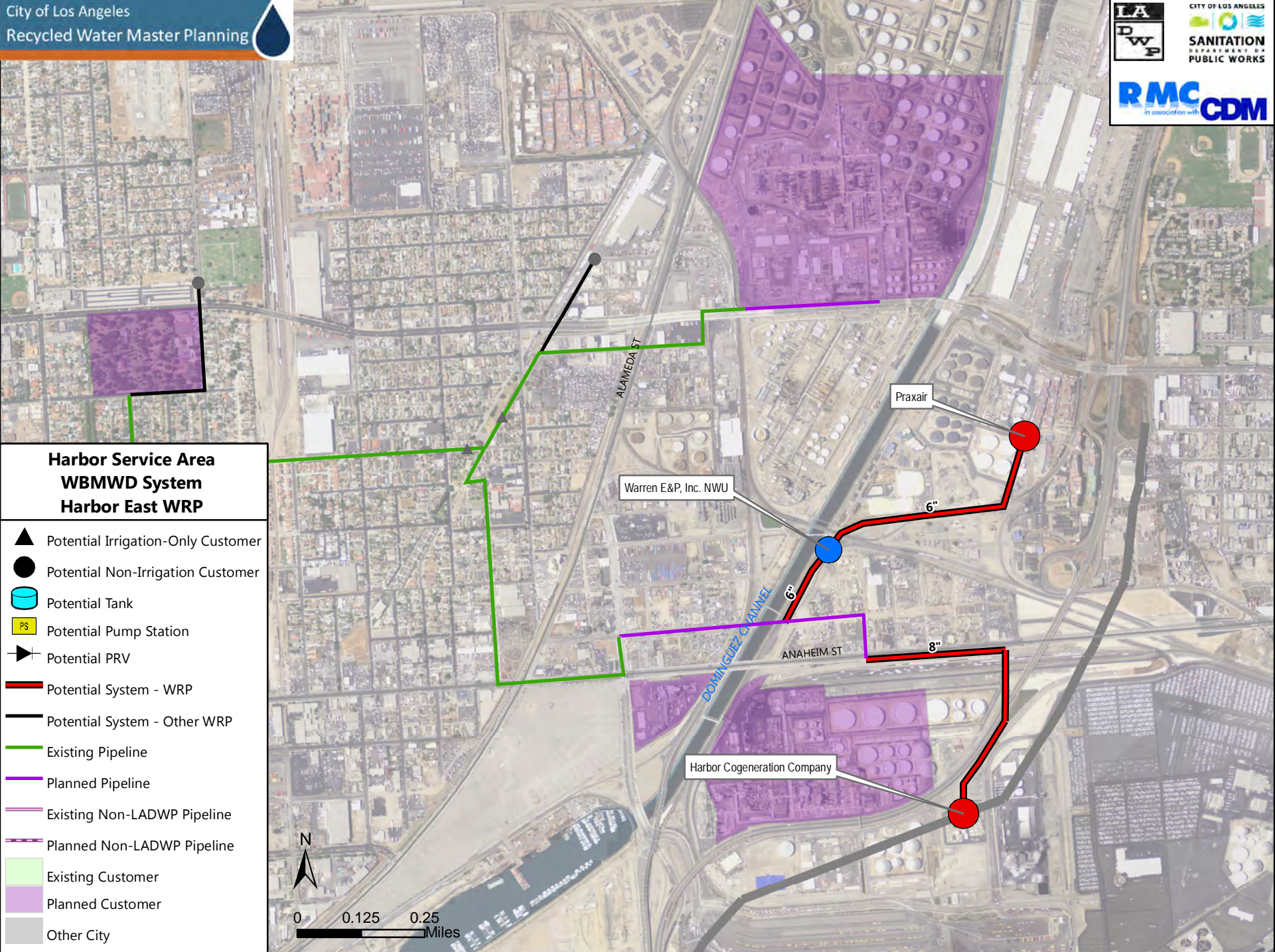
Implementation Considerations

A consideration for this WRP is that the peak day demand for the Harbor – WBMWD System WRPs exceeds the available peak season supply from CRWRF so the availability of CRWRF supply and CRWRF Pump Station capacity must be confirmed prior to implementation. This WRP serves the same anchor customers as the Harbor East WRP in the Harbor – TIWRP System and both WRPs were defined so that they could be compared considering unknowns associated with both supplies.

The potential advantage this WRP compared with the other is that the cost of the Dominguez Channel crossing could potentially be shared with the planned crossing. LADWP’s group addressing the channel crossing for planned service to Valero is aware of the potential opportunity and should continue to consider any potential opportunities for accounting for the potential demand in the planned crossing.

The potential disadvantage of this WRP compared with the other is that Praxair has water quality concerns and the CRWRP product is not as highly treated as TIWRP product. Although, Praxair may require treatment of the TIWRP supply anyway so the disparity in the two source water qualities may not be an issue.

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**Harbor Service Area
WBMWD System
Harbor East WRP**

- ▲ Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- PS Potential Pump Station
- ▶ Potential PRV
- Potential System - WRP
- Potential System - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

WBMWD System – Harbor East WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
H003	Harbor Cogeneration Company	Industrial	330	0.29	0.38	A	--
H004	Praxair	Industrial	250	0.22	0.29	B	--
H093	Warren E&P, Inc. NWU	Industrial	140	0.12	0.16	A	A,B
Total⁵			720	0.64	0.84		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Harbor Cogeneration Company:** This power generation company would use recycled water for cooling tower makeup water for an existing facility and a planned facility at an adjacent site to the south. The customer contacted LADWP inquiring about the availability of recycled water and is a willing customer.
- **Praxair:** This air products facility would use recycled water for cooling tower makeup water. However, the customer has water quality concerns, requires prevention of direct contact between gases and recycled water, and anticipates potential permitting obstacles related to recycled water use with the CDPH, CA Board of Pharmaceuticals, and Federal Drug Administration. Also, they developed a retrofit cost estimate to address water quality and gas/water contact that makes non-potable service prohibitively expensive.
- **Warren E&P, North Wilmington Unit (NWU):** This oil and gas drilling customer would use recycled water for deep well injection to replace oil extraction. Note that there is a second Warren E&P site – the Wilmington Townlot Unit (WTU) – that is associated with the Warren E&P WRP. The customer identified several water quality parameters of concern but TIWRP product is expected to meet them.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor WBMWD

Annual Yield (AFY)
720

WRP: Harbor East

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,126	in-diam*LF	\$24	\$ 1,026,000
8 inch	3,273	in-diam*LF	\$24	\$ 629,000
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 1,655,000
Contingency Costs 30%				\$ 497,000
Construction Total				\$ 2,152,000
Implementation Costs 30%				\$ 646,000
Total Capital Cost				\$ 2,798,000

Capital Replacement Costs

20-Year Useful Life

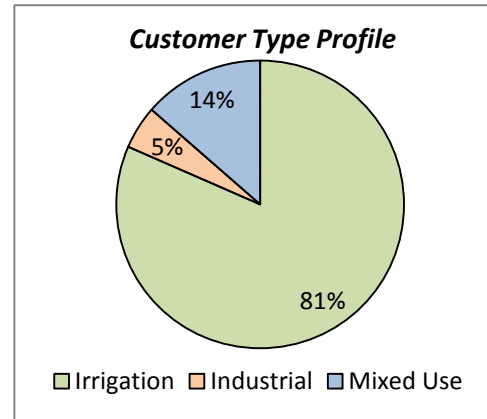
Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	10,399	LF	\$0.60	\$ 6,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 6,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified	720	AFY	\$800	\$ 576,000
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
720		Purchase Cost Total		\$ 576,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	720	
Water Purchase Escalator	4.0%	Total Yield (AF)	36,000	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 2,798,000		1.00	\$ 2,798,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 6,000		49.00	\$ 294,000
Recycled Water Cost	\$ 576,000		66.73	\$ 38,436,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 41,528,000
50-year Project Yield (AF)				36,000
Unit Cost (\$/af)				\$1,150

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3.2 Laterals – WBMWD

This WRP defines service to 10 potential customers but does not have any anchor customers.



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
104	0.09	0.19	\$1.79	\$0.09	\$1,460/AF

Facilities

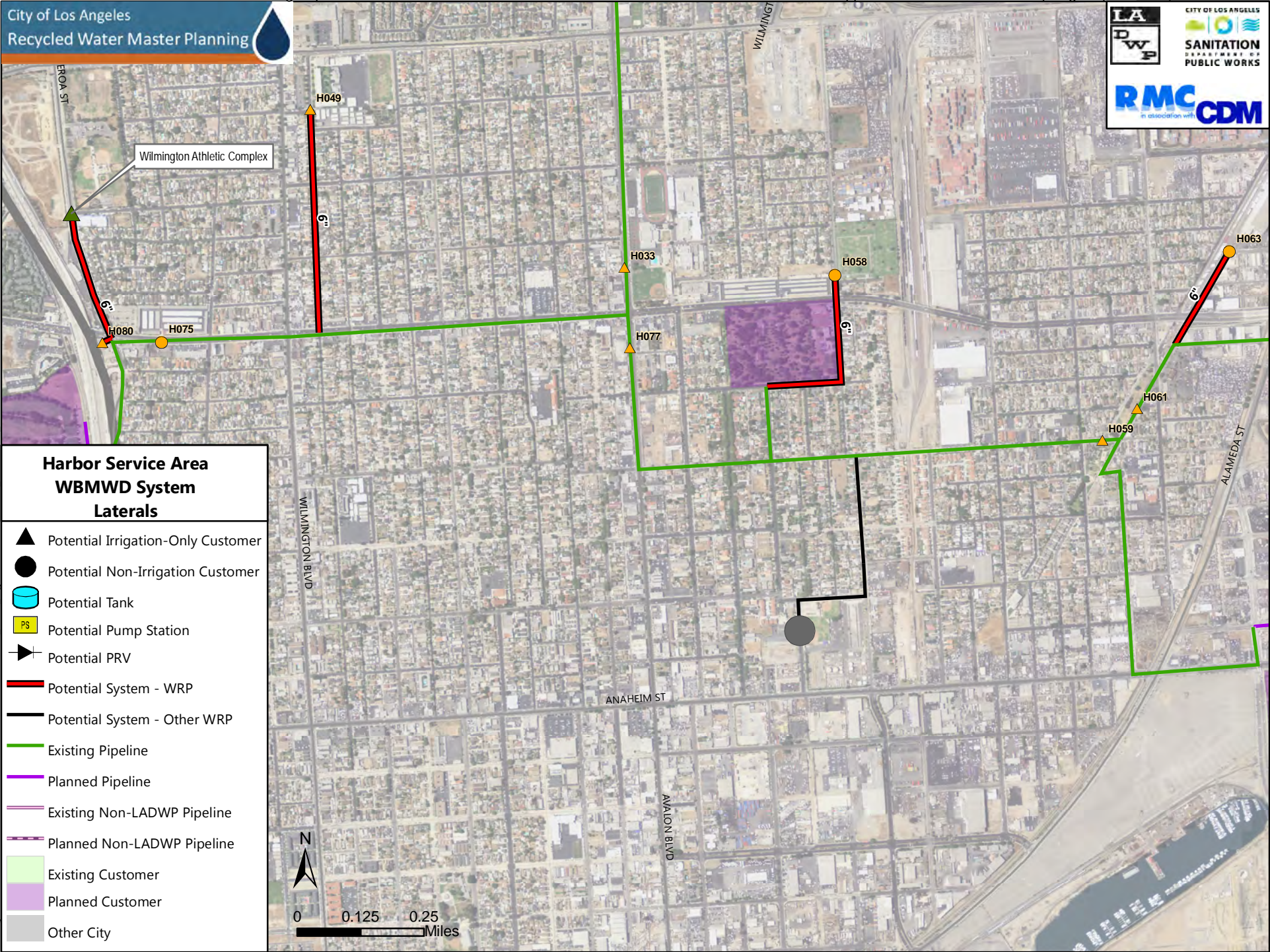
- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP includes approximately 1.4 miles of 6” laterals. The utility review was conducted for transmission pipelines but not completed for laterals so there are no review findings.

Implementation Considerations

The laterals that make up this WRP can be implemented independently and will be dependent on confirmation of customer’s willingness to use recycled water and a review of on-site conversion requirements.

The primary consideration for this WRP is the availability of CRWRF supply.

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**Harbor Service Area
WBMWD System
Laterals**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential System - WRP
- Potential System - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

WBMWD System – Laterals WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
H026	Wilmington Athletic Complex	Irrigation	27	0.02	0.05	--	--
H033	Banning High School	Irrigation	22	0.02	0.04	--	--
H049	Wilmington Middle School	Irrigation	11	0.01	0.02	--	--
H058	Wilmington Cemetery District	Mixed-Use	7	0.01	0.01	--	--
H059	City LA Dept Recreation & Parks	Irrigation	7	0.01	0.01	--	--
H061	East Wilmington Walk-in Park	Irrigation	7	0.01	0.01	--	--
H063	Konoike Pacific Cal Inc	Mixed-Use	7	0.01	0.01	--	--
H075	El Dorado Car Wash	Industrial	5	0.00	0.01	--	--
H077	Karen Fan	Irrigation	5	0.00	0.01	--	--
H080	Caltrans (110 at Pacific Coast Hwy)	Irrigation	5	0.00	0.01	--	--
Total⁵			104	0.09	0.19		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

This WRP does not have any anchor customers. (An anchor customer has recycled water demand of 50 AFY or greater).

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor WBMWD

Annual Yield (AFY)
104

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,349	in-diam*LF	\$24	\$ 1,058,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -

Construction Subtotal	\$ 1,058,000
Contingency Costs 30%	\$ 317,000
Construction Total	\$ 1,375,000
Implementation Costs 30%	\$ 413,000
Total Capital Cost	\$ 1,788,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ -
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal	\$ -
Contingency Costs 30%	\$ -
Construction Total	\$ -
Implementation Costs 30%	\$ -
Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	7,349	LF	\$0.60	\$ 4,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 4,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified	104	AFY	\$800	\$ 84,000
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
104		Purchase Cost Total		\$ 84,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	104	
Water Purchase Escalat	4.0%	Total Yield (AF)	5,188	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 1,788,000		1.00	\$ 1,788,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 4,000		49.00	\$ 196,000
Recycled Water Cost	\$ 84,000		66.73	\$ 5,605,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 7,589,000
50-year Project Yield (AF)				5,188
Unit Cost (\$/af)				\$1,460

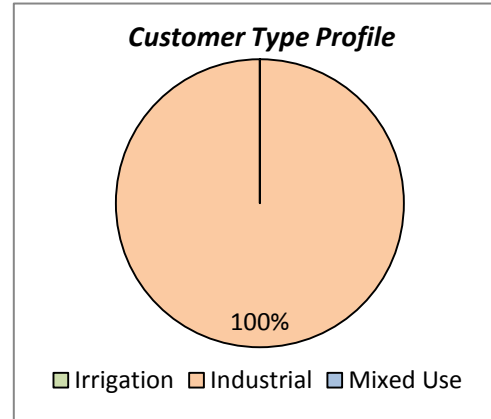
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3.3 Warren E&P WRP

This WRP defines service to one anchor customer located near the existing system:

- Warren E&P – Wilmington Townlot Unit (WTU)

A WRP to serve this customer was also defined for the Harbor – TIWRP System for comparison.



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
375	0.33	0.44	\$0.27	\$0.30	\$1,080/AF

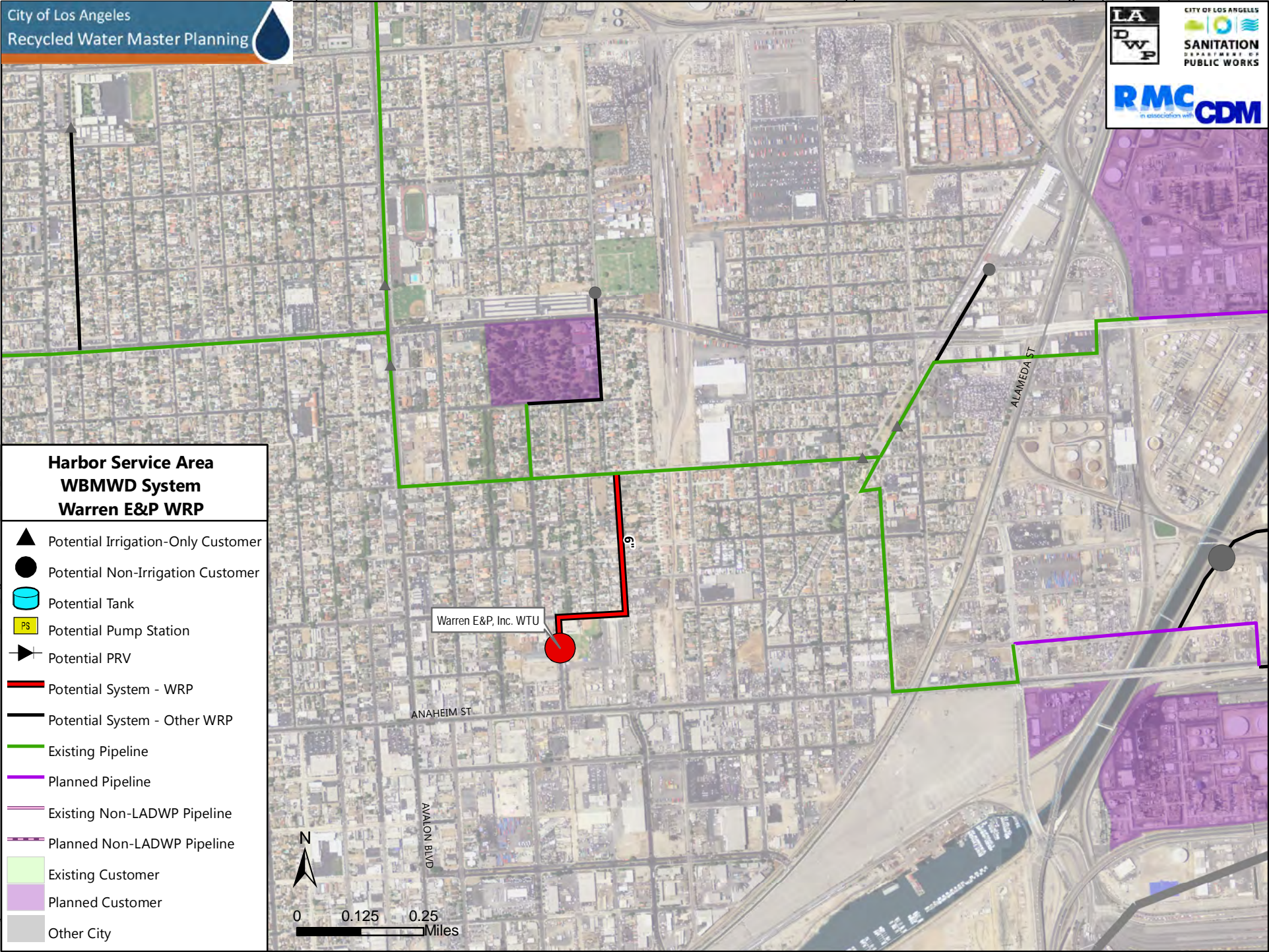
Facilities

- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP includes approximately 0.2 miles of 6” pipe. The utility review was conducted for transmission pipelines but not completed for laterals so there are no review findings.

Implementation Considerations

A consideration for this WRP is that the peak day demand for the Harbor – WBMWD System WRPs exceeds the available peak season supply from CRWRF so the availability of CRWRF supply and CRWRF Pump Station capacity must be confirmed prior to implementation. This WRP serves the same customer as the Warren E&P WRP in the Harbor – TIWRP System (Warren E&P) and both WRPs were defined so that they could be compared considering unknowns associated with both supplies. The customer identified several water quality parameters of concern but both TIWRP and WBMWD System supplies are expected to meet them so LADWP’s preference for the supply source will probably be linked with the TIWRP assessment being conducted under the TIWRP Barrier Supplement and NPR Concepts Report for which supply option is most viable and cost effective.

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**Harbor Service Area
WBMWD System
Warren E&P WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential System - WRP
- Potential System - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

WBMWD System – Warren E&P WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
H001	Warren E&P, Inc. WTU	Industrial	375	0.33	0.44	A	A,B
Total			375	0.33	0.44		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.

The following are considerations for each anchor customer:

- **Warren E&P, Wilmington Townlot Unit (WTU):** Warren E&P, North Wilmington Unit (NWU): This oil and gas drilling customer would use recycled water for deep well injection to replace oil extraction. Note that there is a second Warren E&P site – the North Wilmington Unit (NWU) – that is associated with the Harbor East WRP. The customer identified several water quality parameters of concern but TIWRP product is expected to meet them.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor WBMWD

Annual Yield (AFY)
375

WRP: Warren E&P

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	1,125	in-diam*LF	\$24	\$ 162,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
			Construction Subtotal	\$ 162,000
Contingency Costs			30%	\$ 49,000
			Construction Total	\$ 211,000
Implementation Costs			30%	\$ 63,000
			Total Capital Cost	\$ 274,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
		Construction Subtotal	\$ -
Contingency Costs		30%	\$ -
		Construction Total	\$ -
Implementation Costs		30%	\$ -
		Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	1,125	LF	\$0.60	\$ 1,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 1,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified	375	AFY	\$800	\$ 300,000
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
375		Purchase Cost Total		\$ 300,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		375
Water Purchase Escalat	4.0%	Total Yield (AF)		18,750
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 274,000		1.00	\$ 274,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 1,000		49.00	\$ 49,000
Recycled Water Cost	\$ 300,000		66.73	\$ 20,019,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 20,342,000
50-year Project Yield (AF)				18,750
Unit Cost (\$/af)				\$1,080

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4. Harbor – Gateway System

Overview

The potential Harbor – Gateway System takes advantage of existing WBMWD recycled water infrastructure within the City for LADWP customers that are too far from the City’s reclamation plants. In this case, two potential WRPs were defined around three anchor customers within a cost-effective distance from WBMWD’s Title 22 system.

Harbor – Gateway System – Summary of WRPs

WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Roosevelt	123	0.11	0.22	\$2.70	\$0.10	\$1,470
Swisstex	523	0.47	0.61	\$3.52	\$0.39	\$1,120
Total	645	0.58	0.83	\$6.21	\$0.48	\$1,180

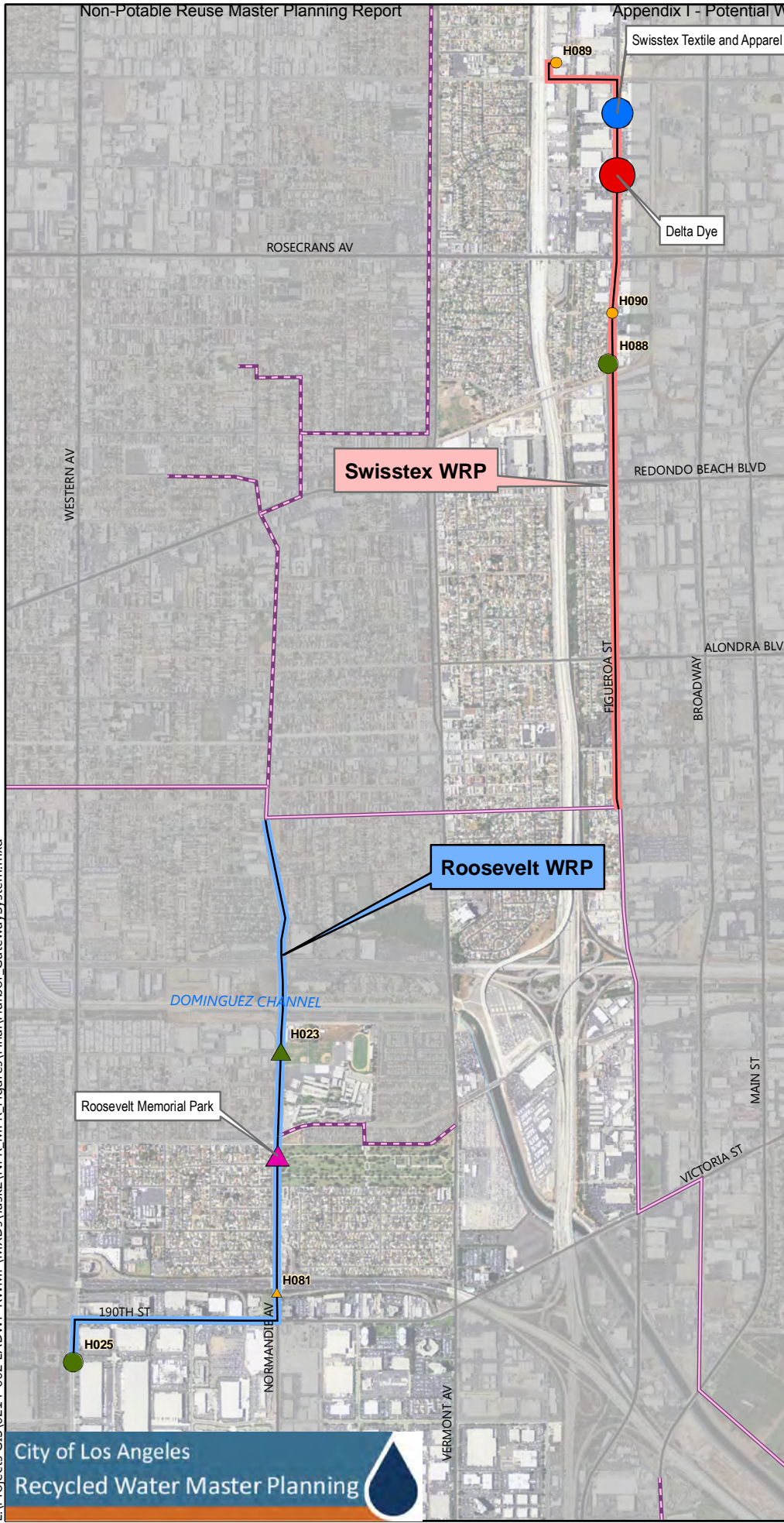
Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

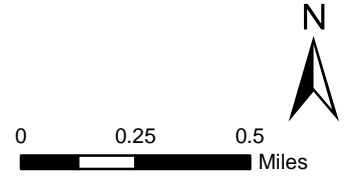
Each WRP in this system can be implemented independently so the primary consideration for each WRP is the anchor customer’s commitment to use recycled water. Also, the availability of supply and conveyance capacity from WBMWD must be confirmed prior to implementation. WBMWD has plans to potentially use all remaining treatment capacity at ELWRF so the availability of supply from WBMWD in the future is not guaranteed. A potential challenge to this WRP is that the WBMWD recycled water distribution system may have hydraulic restrictions which prevent it delivering the additional supply for these potential WRPs.

Potential System Harbor Gateway Figure 7-3

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- Potential Irrigation-Only Customer**
 - ▲ ≥ 5 AFY
 - ▲ ≥ 25 AFY
 - ▲ ≥ 50 AFY
 - ▲ ≥ 100 AFY
 - ▲ ≥ 250 AFY
- Potential Non-Irrigation Customer**
 - ≥ 5 AFY
 - ≥ 25 AFY
 - ≥ 50 AFY
 - ≥ 100 AFY
 - ≥ 250 AFY
- Existing Facilities**
 - Tank
 - PS Pump Station
 - Pipeline
- Planned Facilities**
 - Tank
 - PS Pump station
 - Pipeline
- Potential Facilities**
 - Tank
 - PS Pump Station
 - ▶ PRV
- Potential System**
 - Roosevelt WRP
 - Swisstex WRP
- Non-LADWP Pipeline**
 - Existing Pipeline
 - Planned Pipeline
- Existing/Planned Customers**
 - Existing Customer
 - Planned Customer
- Other Feature**
 - Other City



Data Sources: USGS, LADWP, ESRI, NAIP Note: Only potential customers ≥ 50 AFY are labeled and potential customers <50 AFY have IDs shown

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor Gateway

Annual Yield (AFY)
645

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer 1	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	12,015	in-diam*LF	\$24	\$ 1,730,000
8 inch	10,131	in-diam*LF	\$24	\$ 1,945,000
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 3,675,000
Contingency Costs 30%				\$ 1,103,000
Construction Total				\$ 4,778,000
Implementation Costs 30%				\$ 1,433,000
Total Capital Cost				\$ 6,211,000

Capital Replacement Costs

20-Year Useful Life

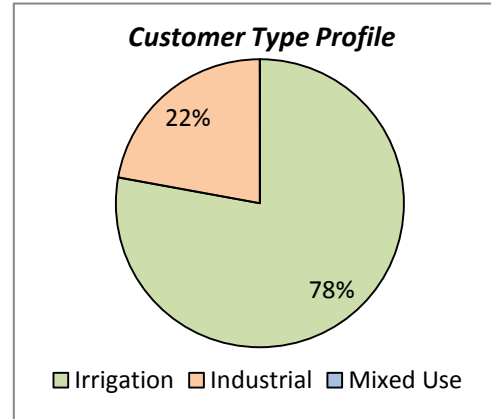
Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	22,146	LF	\$0.60	\$ 13,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
			Total Annual O&M	\$ 13,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	645	AFY	\$728	\$ 470,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	645		Purchase Cost Total	\$ 470,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	645
Water Purchase Escalator	4.0%		Total Yield (AF)	32,257
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 6,211,000		1.00	\$ 6,211,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 13,000		49.00	\$ 637,000
Recycled Water Cost	\$ 470,000		66.73	\$ 31,363,000
Salvage	\$ -		1.00	\$ -
			Total PV	\$ 38,211,000
			50-year Project Yield (AF)	32,257
			Unit Cost (\$/af)	\$1,180

4.1 Roosevelt WRP

This WRP defines service to four potential customers located south of the existing WBMWD recycled system in the Gateway area of the City, including one anchor customer:

- Roosevelt Memorial Park



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
123	0.11	0.22	\$2.70	\$0.10	\$1,470/AF

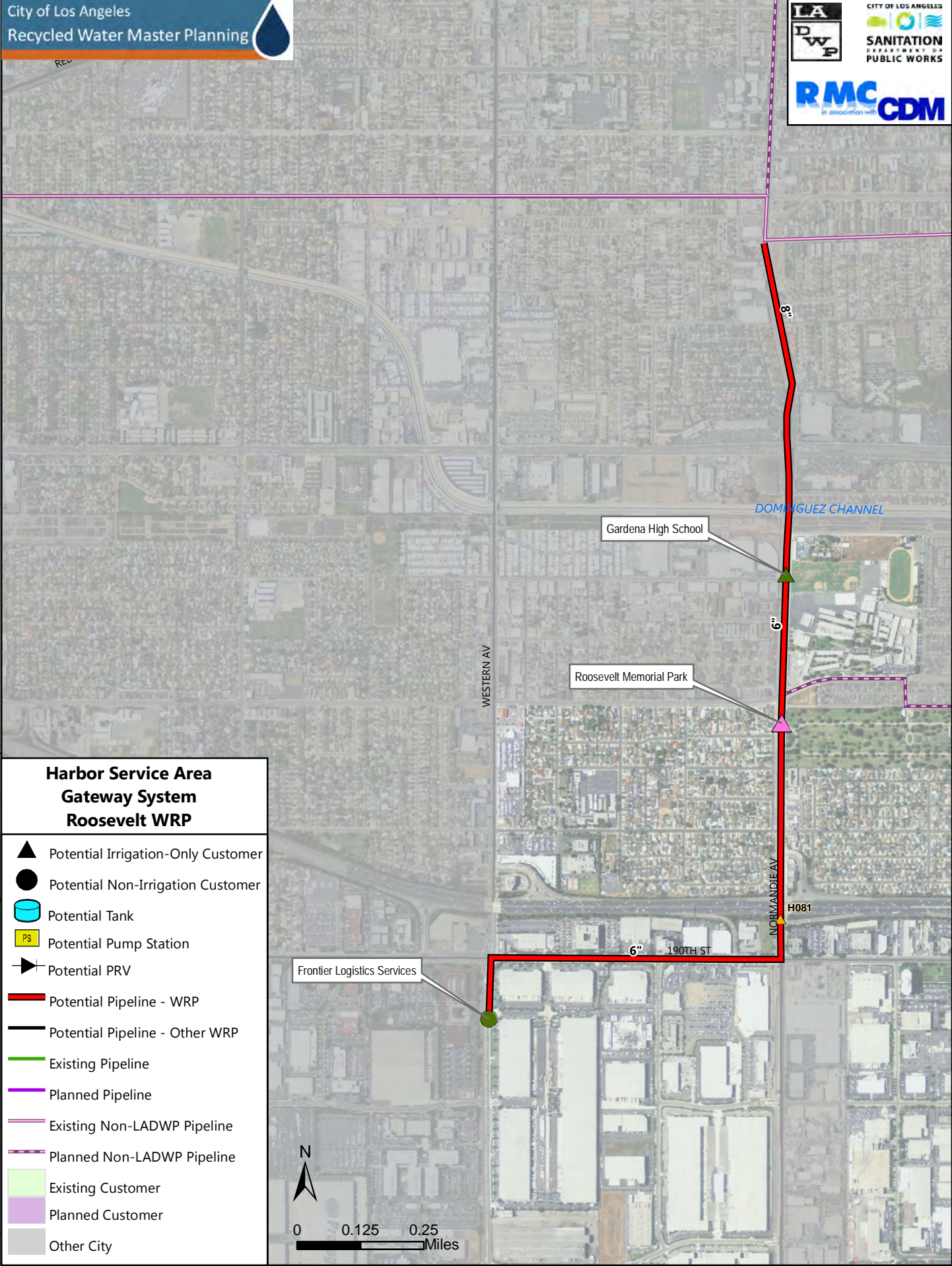
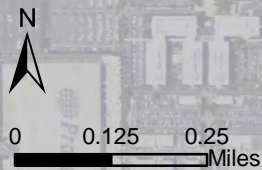
Facilities

- **WBMWD Connection:** This WRP requires a connection with the existing WBMWD Title 22 Distribution System along W 168th St at S Figueroa St.
- **Crossings:** A crossing of I-405 at the Normandie Ave underpass is required to serve Frontier Logistics but is not necessary for the WRP’s other customers.
- **Pipelines:** This WRP includes approximately 1.9 miles of 6” to 8” pipe. The utility review was conducted for transmission pipelines but not completed for laterals and only laterals are included in this WRP so there are no review findings.

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Harbor Service Area Gateway System Roosevelt WRP

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

Gateway System – Roosevelt WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
H015	Roosevelt Memorial Park	Irrigation	60	0.05	0.12	B	--
H023	Gardena High School	Irrigation	30	0.03	0.06	--	--
H025	Frontier Logistics Services	Industrial	27	0.02	0.03	--	--
H081	Caltrans (405 at Normandie Ave)	Irrigation	5	0.00	0.01	--	--
Total⁵			123	0.11	0.22		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Roosevelt Memorial Park:** LADWP received a Letter of Intent from Roosevelt on June 1, 2010 that states their commitment to using recycled water. However, an issue that must be addressed by all cemeteries is use of recycled in hose bibs across the site because recent CDPH decisions dictate that the hose bibs must remain on potable water, which requires a separate potable water system and significantly increases the cost of the non-potable conversion.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor Gateway

Annual Yield (AFY)
123

WRP: Roosevelt

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	6,407	in-diam*LF	\$24	\$ 923,000
8 inch	3,506	in-diam*LF	\$24	\$ 673,000
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 1,596,000
Contingency Costs 30%				\$ 479,000
Construction Total				\$ 2,075,000
Implementation Costs 30%				\$ 623,000
Total Capital Cost				\$ 2,698,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

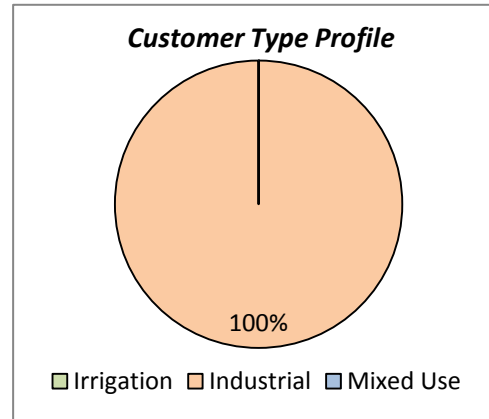
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	9,913	LF	\$0.60	\$ 6,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 6,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	123	AFY	\$728	\$ 90,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
123		Purchase Cost Total		\$ 90,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		123
Water Purchase Escalator	4.0%	Total Yield (AF)		6,127
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 2,698,000		1.00	\$ 2,698,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 6,000		49.00	\$ 294,000
Recycled Water Cost	\$ 90,000		66.73	\$ 6,006,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 8,998,000
50-year Project Yield (AF)				6,127
Unit Cost (\$/af)				\$1,470

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4.2 Swisstex WRP

This WRP defines service to four potential customers located north of the existing WBMWD recycled system in the Gateway area of Los Angeles, including two anchor customers:

- Delta Dye
- Swisstex Textile and Apparel



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
523	0.47	0.61	\$3.52	\$0.39	\$1,120/AF

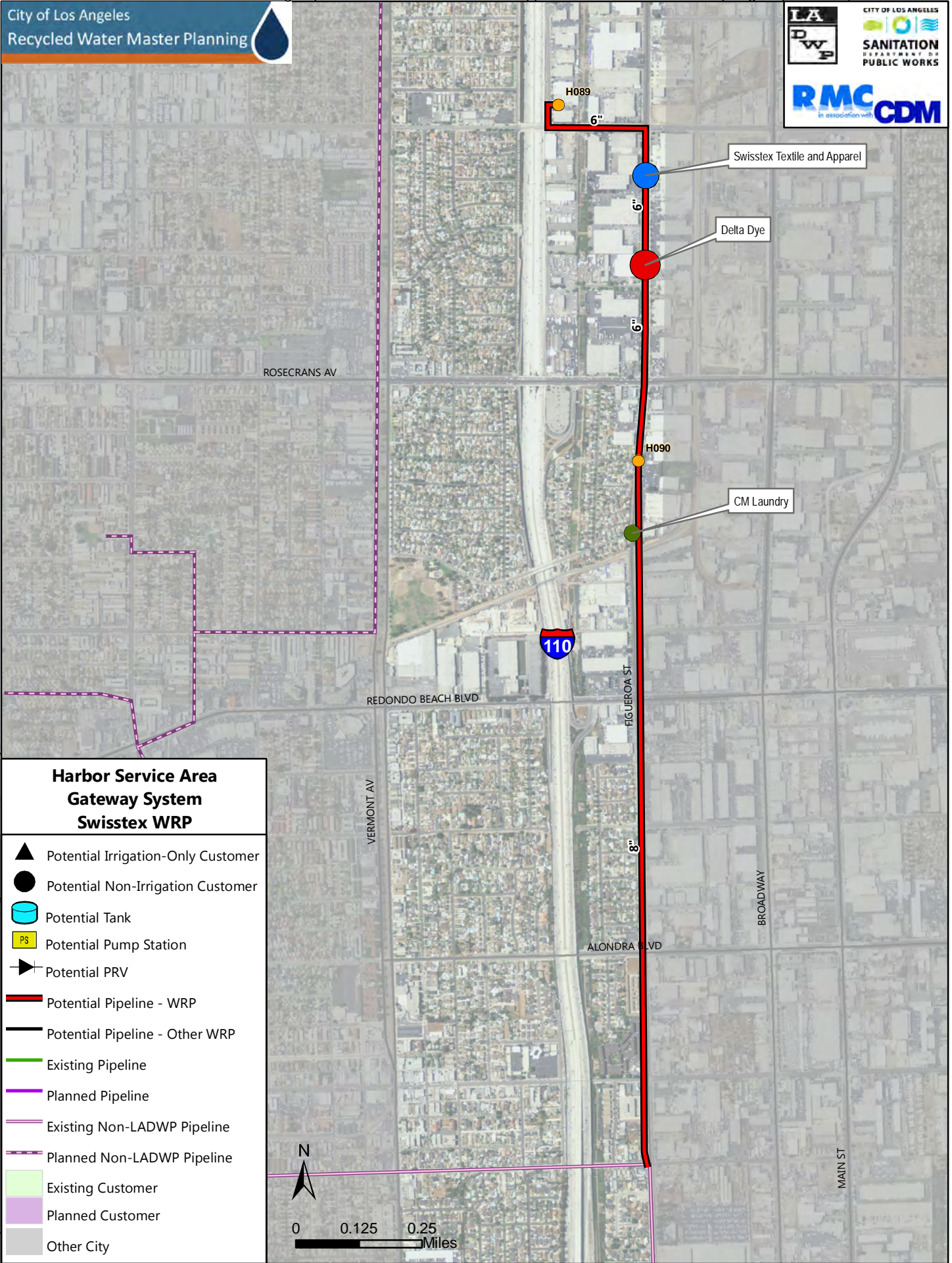
Facilities

- **WBMWD Connection:** This WRP requires a connection with the existing WBMWD Title 22 Distribution System along W 168th St at S Normandie Ave.
- **Crossings:** This WRP has no are no major crossings.
- **Pipelines:** This WRP includes approximately 2.31miles of 6” to 8” pipe. The utility review was conducted for transmission pipelines but not completed for laterals and there are only laterals in this WRP so there are no review findings.

Implementation Considerations

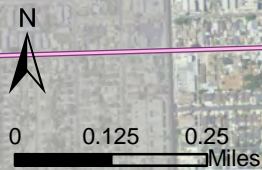
The two anchor customers for this WRP, Delta Dye and Swisstex, would use recycled water from dyeing operations and boiler feed but, as noted in the customer discussion, Swisstex has water quality concerns and would like an on-site potable backup. Delta Dye has indicated that their conversion is dependent on Swisstex’ decision. The potable backup will add some cost to the conversion but can be addressed. The water quality issues are not in LADWP’s control since the recycled water supply for this WRP is the Edward Little Water Reclamation Facility. The addition of on-site water treatment to address water quality issues would likely make this WRP uneconomical.

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**Harbor Service Area
Gateway System
Swisstex WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

Gateway System – Swisstex WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
H085	Delta Dye	Industrial	270	0.24	0.31	B	B,C
H086	Swisstex Textile and Apparel	Industrial	180	0.16	0.21	B	C,B
H088	CM Laundry	Industrial	35	0.03	0.04	--	--
H089	Final Touch Dyeing and Finishing	Industrial	20	0.02	0.02	--	--
H090	Designed Metal Connections	Industrial	18	0.02	0.02	--	--
Total⁵			523	0.47	0.61		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Delta Dyeing:** This customer's non-potable use is for dyeing of textiles and boiler-feed operations. Customer has potential water quality concerns but indicated conversion is dependent upon Swisstex converting.
- **Swisstex:** This customer's non-potable use is for dyeing of textiles and boiler-feed operations. Swisstex has concerns with water quality and system reliability. WBMWD is investigating water quality issues from ELWRF, which may address the water quality concerns, and system reliability could be addressed with an on-site potable water backup. Installation of an air-gap connection and new recycled water / potable backup storage tank increase the conversion costs.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor Gateway

Annual Yield (AFY)
523

WRP: Swisstex

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	5,608	in-diam*LF	\$24	\$ 808,000
8 inch	6,625	in-diam*LF	\$24	\$ 1,272,000
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 2,080,000
Contingency Costs 30%				\$ 624,000
Construction Total				\$ 2,704,000
Implementation Costs 30%				\$ 811,000
Total Capital Cost				\$ 3,515,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	12,233	LF	\$0.60	\$ 7,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 7,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	523	AFY	\$728	\$ 381,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
523		Purchase Cost Total		\$ 381,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	523
Water Purchase Escalator	4.0%		Total Yield (AF)	26,131
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 3,515,000		1.00	\$ 3,515,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 7,000		49.00	\$ 343,000
Recycled Water Cost	\$ 381,000		66.73	\$ 25,424,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 29,282,000
50-year Project Yield (AF)				26,131
Unit Cost (\$/af)				\$1,120

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5. Metro – LAGWRP System

Overview

The potential Metro – LAGWRP System maximizes the use of existing recycled water from LAGWRP through cost effective expansion opportunities. LADWP’s allotment from LAGWRP is 9 mgd. The system’s planned peak day demand is estimated to use all of LADWP’s allotment. Supplementing the system with potable water to meet peak day demands would allow for increased recycled water use throughout most of the year while still meeting peak day demands and staying within LADWP’s LAGWRP allotment. Also, the USC WRP is defined as part of the LAGWRP System and the CBMWD System so that it can be compared when selecting the WRP to implement for this system.

Metro – LAGWRP System – Summary of WRPs

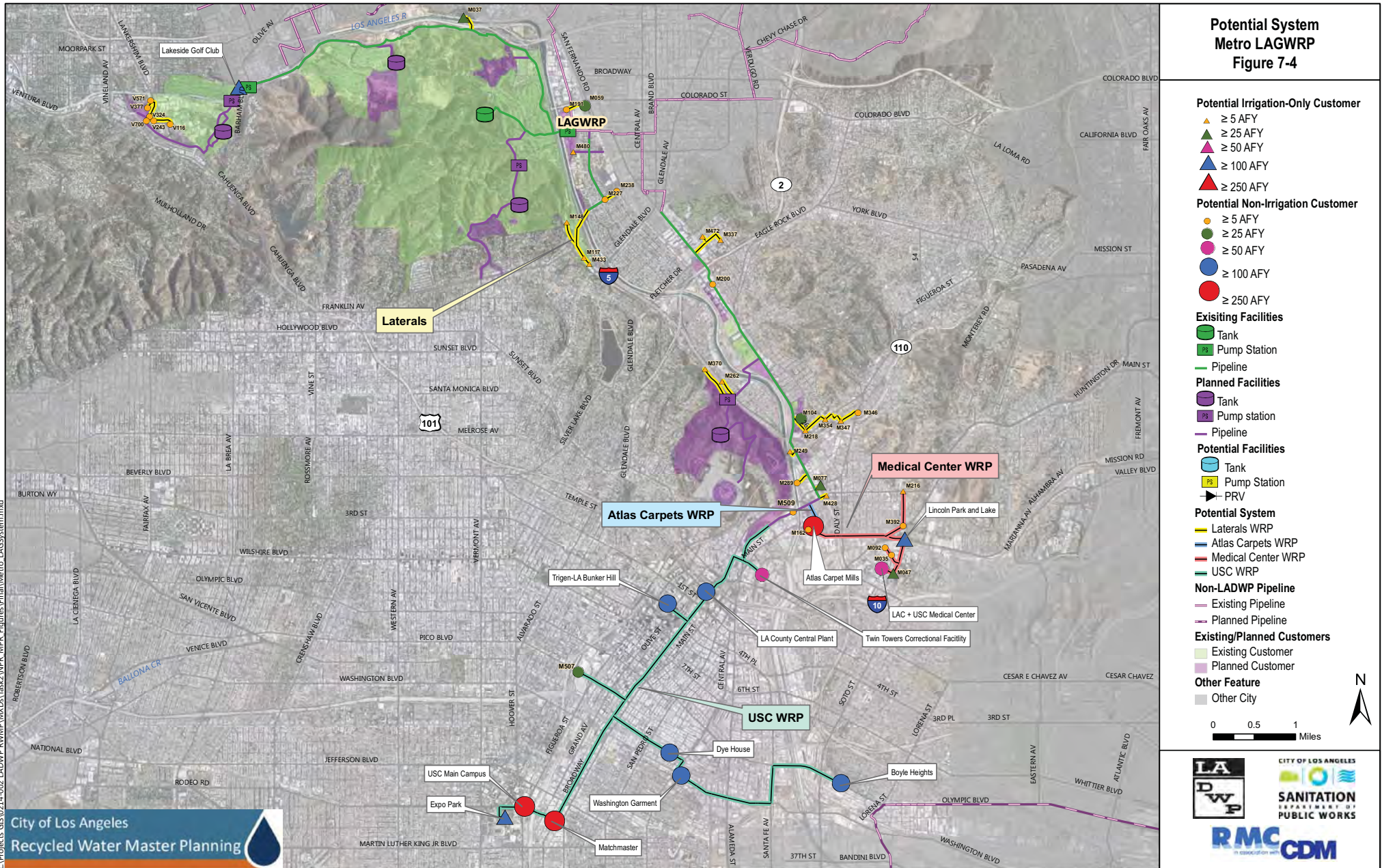
WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Atlas Carpets	310	0.28	0.36	\$0.84	\$0.02	\$130
Laterals	565	0.50	1.00	\$6.35	\$0.07	\$340
Medical Center	264	0.24	0.47	\$3.96	\$0.03	\$400
USC	2,345	2.09	3.09	\$30.99	\$0.20	\$350
Potential Total	3,485	3.11	4.92	\$42.14	\$0.32	\$330
Existing System	2,430	2.17	4.77	--	--	--
Planned System	2,370	2.12	4.56	--	--	--
System Total	8,285	7.40	14.25	--	--	--

Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

The primary consideration for this system is the availability of supply during the peak season. The available peak season supply needs to be confirmed based on actual peak day demands observed once the planned potential WRPs are implemented. Also, using potable water to supplement during peak periods should be considered.

The Atlas Carpet WRP and each lateral associated with the Laterals WRP can be implemented independently and will be dependent on confirmation of customer’s ability to use recycled water and a review of on-site conversion requirements. The Medical Center WRP builds off the Atlas Carpets WRP so it is dependent on its implementation.



DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
3,485

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	34,534	in-diam*LF	\$24	\$ 4,973,000
8 inch	13,318	in-diam*LF	\$24	\$ 2,557,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	21,496	in-diam*LF	\$20	\$ 5,159,000
16 inch	29,155	in-diam*LF	\$18	\$ 8,397,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
River Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 24,936,000
Contingency Costs 30%				\$ 7,481,000
Construction Total				\$ 32,417,000
Implementation Costs 30%				\$ 9,725,000
Total Capital Cost				\$ 42,142,000

Capital Replacement Costs

20-Year Useful Life

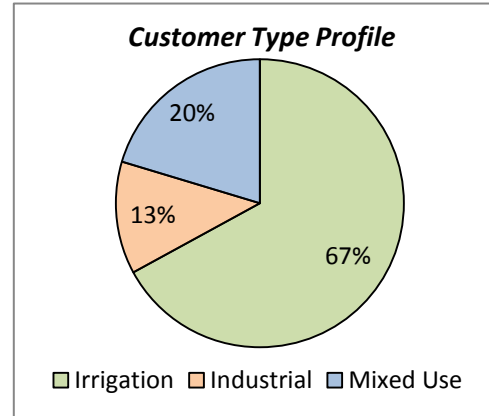
Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ -
Contingency Costs 30%			\$ -
Construction Total			\$ -
Implementation Costs 30%			\$ -
Total 20-year Capital Cost			\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	2,093,700	kWh	\$0.12	\$ 251,000
PS 2 - Electricity	100,700	kWh	\$0.12	\$ 12,000
Conveyance	98,503	LF	\$0.60	\$ 59,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
			Total Annual O&M	\$ 322,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
			Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	3,485
Water Purchase Escalator	4.0%		Total Yield (AF)	174,231
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 42,142,000		1.00	\$ 42,142,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 322,000		49.00	\$ 15,778,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
			Total PV	\$ 57,920,000
			50-year Project Yield (AF)	174,231
			Unit Cost (\$/af)	\$330

5.1 Atlas Carpets WRP

This WRP defines service to one anchor customer located near the existing system:

- Atlas Carpet Mills



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
310	0.28	0.36	\$0.84	\$0.02	\$130/AF

Facilities

- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP includes approximately 0.3 miles of 8” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignments.

Implementation Considerations

The primary consideration for this WRP is the availability of LAGWRP supply.

Customers

LAGWRP System – Atlas WRP Potential Customers

ID	Name	Type of Use	Annual Demand		Peak Day Demand	Conversion Rating	
			(AFY)	(MGD)	(MGD)	Initial ¹	Comprehensive ²
M003	Atlas Carpet Mills	Industrial	310	0.28	0.36	A	A,A

Notes:

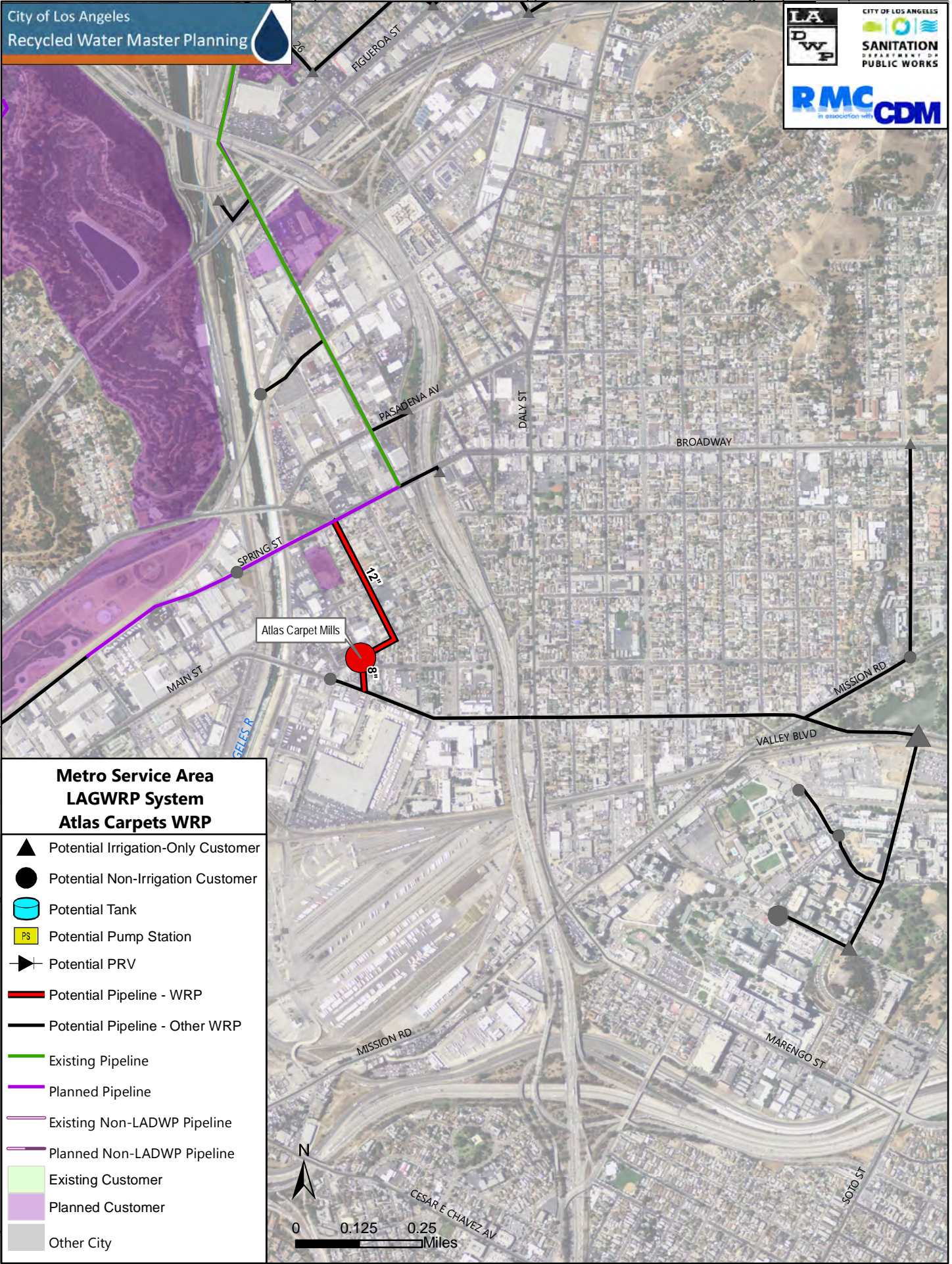
1. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
2. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.

The following are considerations for the anchor customer:

- **Atlas Carpet Mills:** This customer’s non-potable uses include dyeing of carpets and boiler-feed operations. This site manager is interested in potentially converting to recycled water based on his positive previous experience at Tuftex (in Santa Fe Springs, CA; CBMWD). Although the timing of conversion is potentially 5 to 10 years out, this would work because it would give the customer time to complete any internal projects and upgrades in preparation for conversion to recycled water.



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**Metro Service Area
LAGWRP System
Atlas Carpets WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



0 0.125 0.25 Miles

Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
310

WRP: Atlas Carpets

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	356	in-diam*LF	\$24	\$ 68,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	1,792	in-diam*LF	\$20	\$ 430,000
Construction Subtotal				\$ 498,000
Contingency Costs 30%				\$ 149,000
Construction Total				\$ 647,000
Implementation Costs 30%				\$ 194,000
Total Capital Cost				\$ 841,000

Capital Replacement Costs

20-Year Useful Life

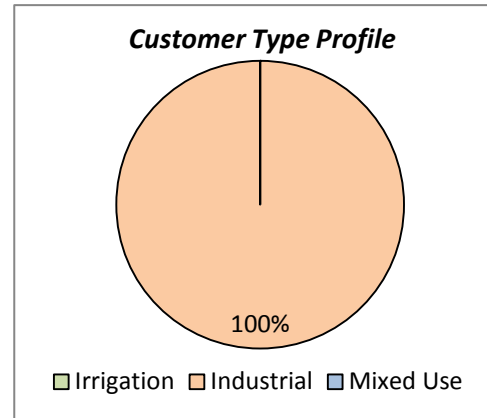
Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	186,300	kWh	\$0.12	\$ 22,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	2,148	LF	\$0.60	\$ 1,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 23,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		310
Water Purchase Escalator	4.0%	Total Yield (AF)		15,500
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 841,000		1.00	\$ 841,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 23,000		49.00	\$ 1,127,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 1,968,000
50-year Project Yield (AF)				15,500
Unit Cost (\$/af)				\$130

5.2 Laterals - LAGWRP

This WRP defines service to 31 potential customers from extensions off of the existing and planned system, including one anchor customer (that is also an existing customer):

- Lakeside Golf Club



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
565	0.50	1.00	\$6.35	\$0.07	\$340/AF

Facilities

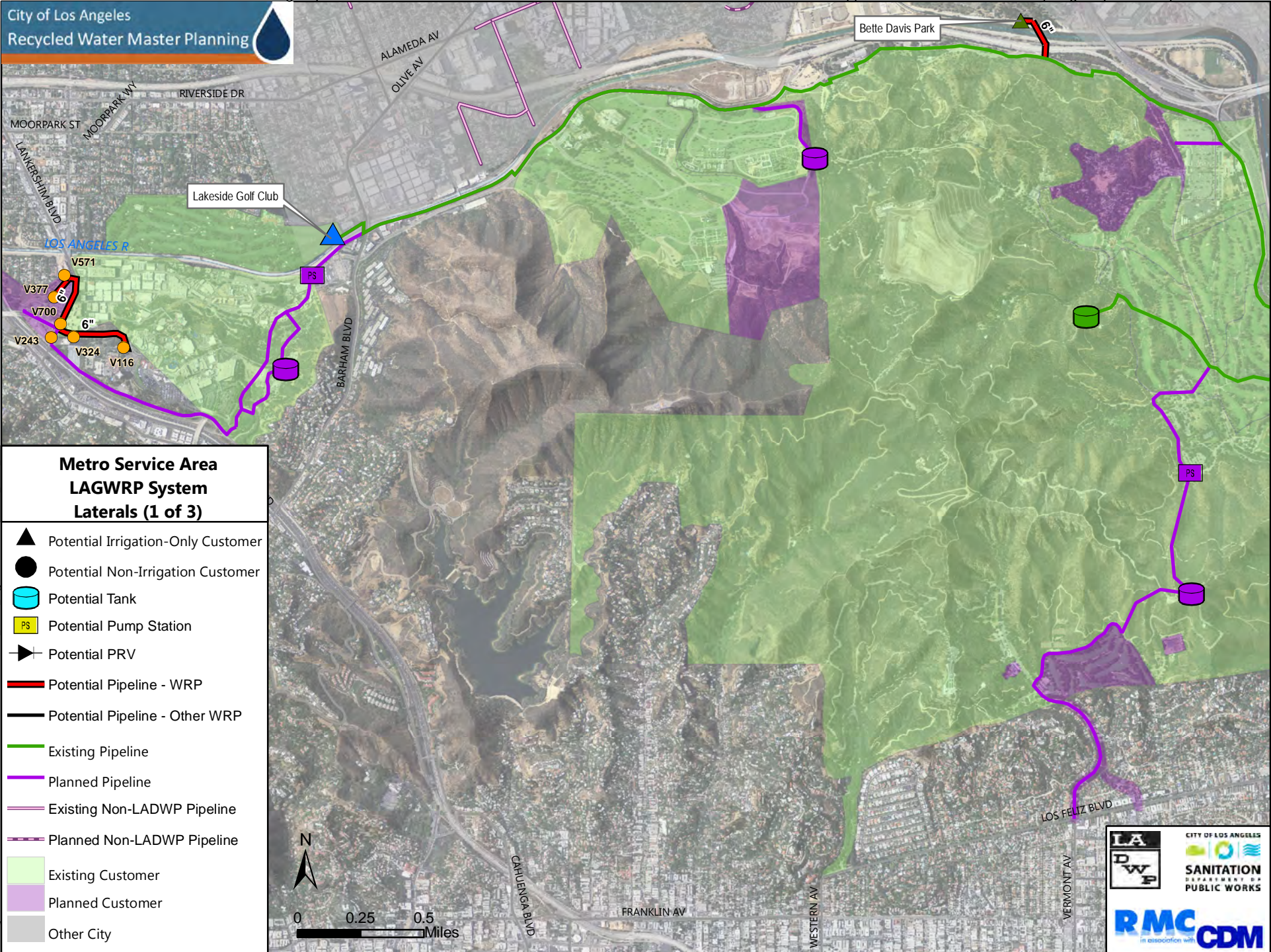
- **Crossings:** This WRP includes one crossing of the Los Angeles River and I-5 at the Los Feliz Blvd bridge to serve two customers. The crossing would only be cost effective if the bridge can be used to avoid a trenchless crossing under the river and interstate.
- **Pipelines:** This WRP includes approximately 5.4 miles of 6" pipe. The utility review was conducted for transmission pipelines but not completed for laterals so there are no review findings.

Implementation Considerations

The primary consideration for this WRP is the availability of LAGWRP supply.

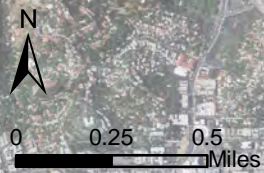
The laterals that make up this WRP can be implemented independently and will be dependent on confirmation of customer’s willingness to use recycled water and a review of on-site conversion requirements.

City of Los Angeles
Recycled Water Master Planning



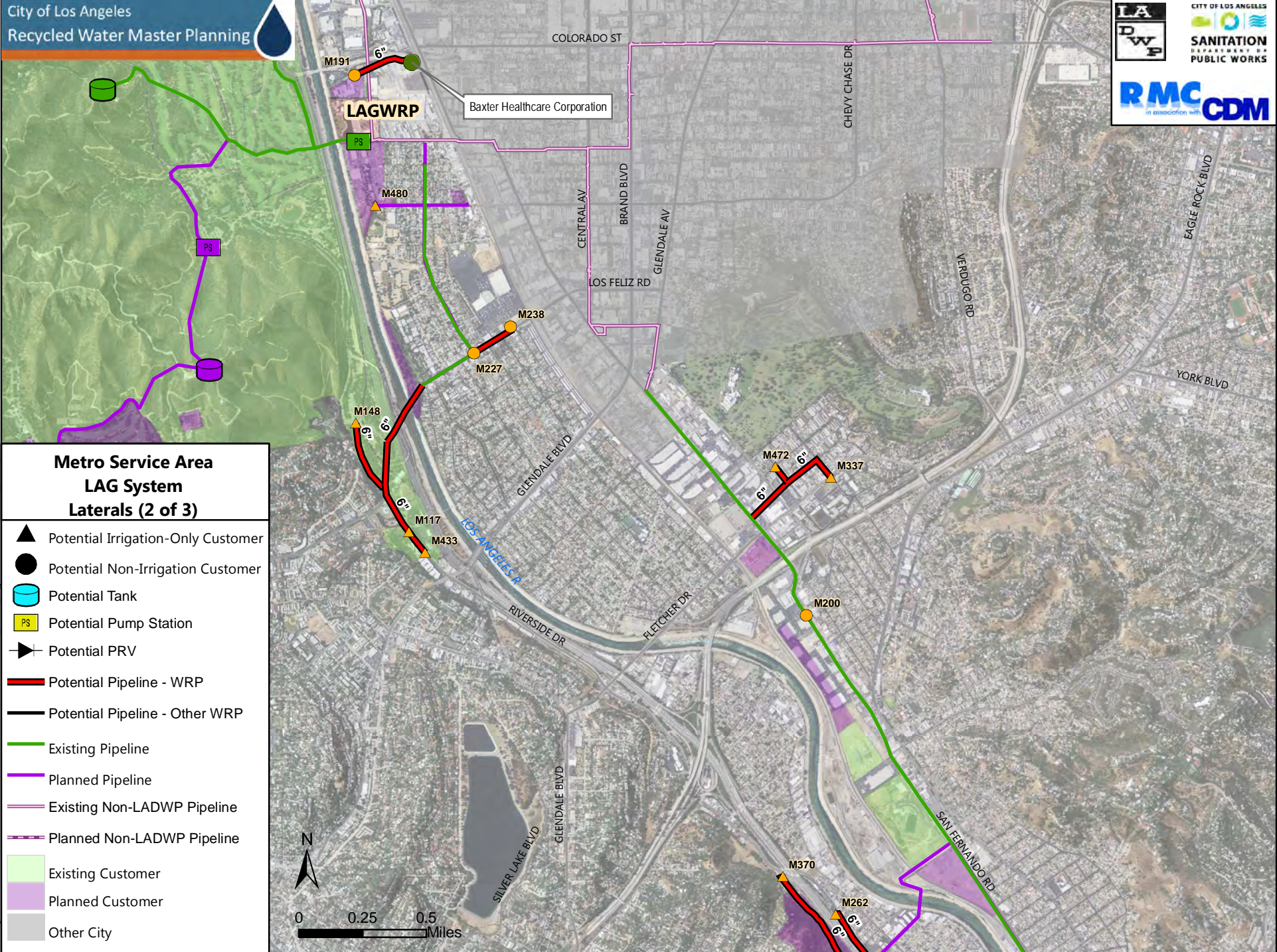
**Metro Service Area
LAGWRP System
Laterals (1 of 3)**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



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Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.



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Metro Service Area LAG System Laterals (2 of 3)

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

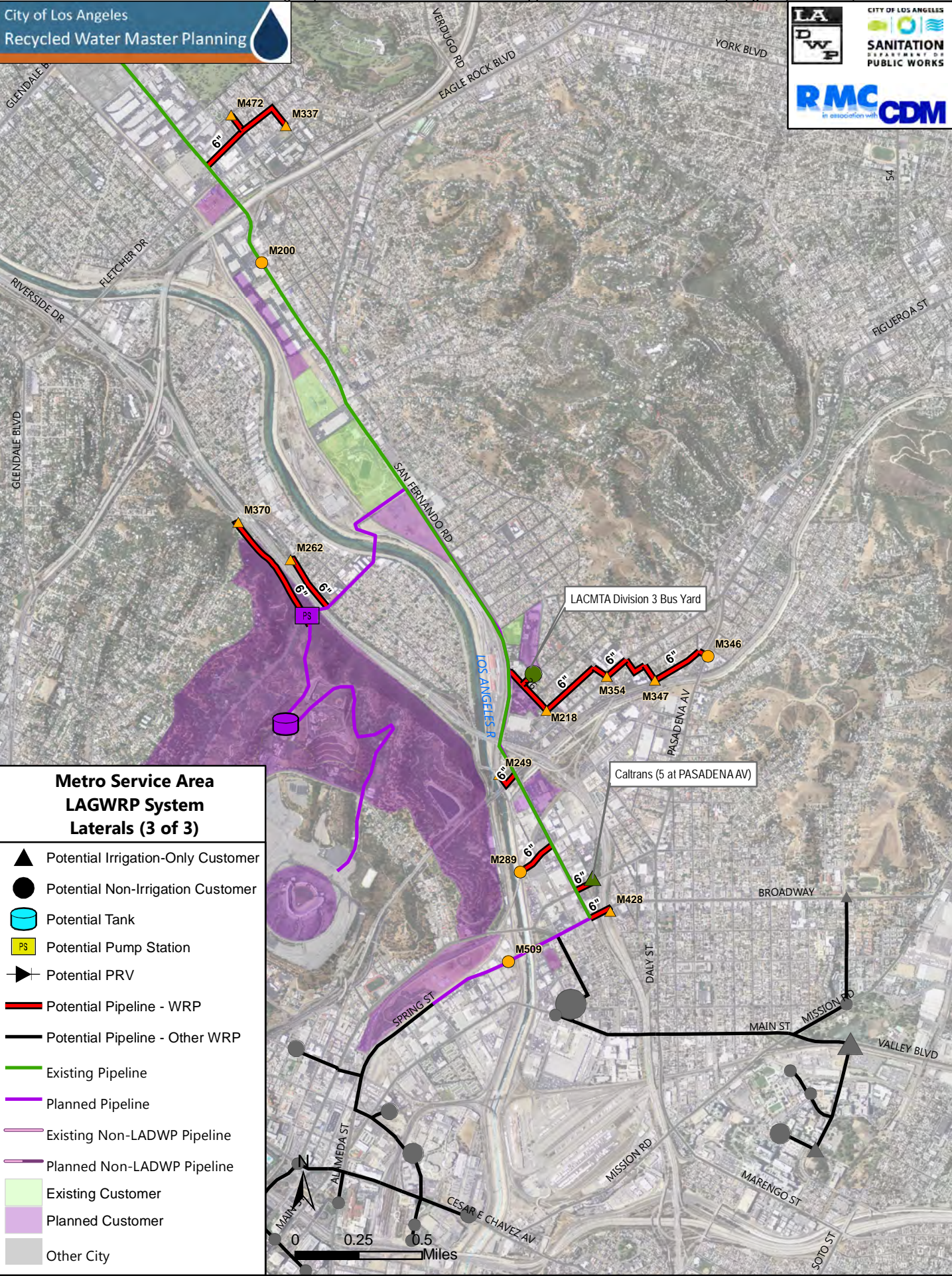
Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

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**Metro Service Area
LAGWRP System
Laterals (3 of 3)**

- ▲ Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- PS Potential Pump Station
- ▶ Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

0 0.25 0.5 Miles



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

LAGWRP System – Laterals WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand			Peak Day Conversion Rating	
			(AFY)	(MGD)	(MGD)	Initial ³	Compre- hensive ⁴
M037	Bette Davis Park	Irrigation	30	0.03	0.06	A	--
M059	Baxter Healthcare Corporation	Industrial	32	0.03	0.04	--	--
M077	Caltrans (5 at PASADENA AV)	Irrigation	25	0.02	0.05	--	--
M104	LACMTA Division 3 Bus Yard	Mixed-Use	33	0.03	0.05	--	--
M117	William Mulholland Memorial	Irrigation	19	0.02	0.04	--	--
M148	Tregnan Golf Academy	Irrigation	15	0.01	0.03	A	--
M191	Sterer Engineering and Manufacturing	Industrial	11	0.01	0.01	--	--
M200	Valley Plating Works	Mixed-Use	11	0.01	0.02	--	--
M218	Mountains Recreation & Conservation Authority	Irrigation	10	0.01	0.02	--	--
M227	Los Feliz Car Wash	Industrial	10	0.01	0.01	--	--
M238	Costco	Mixed-Use	9	0.01	0.01	--	--
M249	Caltrans (110 at N FIGUEROA ST)	Irrigation	9	0.01	0.02	--	--
M262	Caltrans (5 at DALLAS ST)	Irrigation	9	0.01	0.02	--	--
M289	NEIS - Humboldt ATF (planned)	Industrial	8	0.01	0.01	--	--
M337	Washington Irving Junior High School	Irrigation	7	0.01	0.01	--	--
M346	JSL Foods	Industrial	7	0.01	0.01	--	--
M347	Caltrans (110 at LORETO ST)	Irrigation	7	0.01	0.01	--	--
M354	Nightingale High School #8264	Irrigation	7	0.01	0.01	--	--
M370	Caltrans (5 at STADIUM WY)	Irrigation	7	0.01	0.01	--	--
M428	Caltrans (5 at N BROADWAY)	Irrigation	6	0.01	0.01	--	--
M433	Griffith Park Recreation Center	Irrigation	6	0.01	0.01	--	--
M472	Family Park	Irrigation	5	0.00	0.01	--	--
M480	BSS Urban Forestry	Irrigation	5	0.00	0.01	--	--
M489	Lakeside Golf Club	Mixed-Use	200	0.18	0.39	--	--
M509	LACMTA Division 21 Pasadena Gold Line Yard (Midway)	Mixed-Use	6	0.01	0.01	--	--
V116	Sun Hill Properties Inc	Mixed-Use	25	0.02	0.04	--	--
V243	Sheraton Universal Hotel	Mixed-Use	13	0.01	0.02	--	--
V324	Universal City Plaza	Mixed-Use	11	0.01	0.02	--	--
V377	LACMTA	Mixed-Use	9	0.01	0.01	--	--
V571	WM CITY VIEW LOFTS LLC	Mixed-Use	7	0.01	0.01	--	--
V700	LACMTA	Irrigation	6	0.01	0.01	--	--
Total⁵			565	0.50	1.00		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and

conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.

5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Lakeside Golf Club:** This customer is an existing recycled water customer but still uses potable water for part of their irrigation uses so the potential demand estimate is for their full conversion to recycled water.

The following customers were initially considered anchor customers but were removed from consideration:

- **Ferraro Soccer Field:** This customer is located close to an existing recycled water pipeline but would require a significant trenchless crossing to provide service since it is surrounded by the Los Angeles River, I-5, and 134-Freeway.
- **Technicolor Corp:** Non-potable uses include flush-out film developing piping, cooling towers, boilers, and some irrigation. However, the initial conversion rating was “C” because the company was not supportive of recycled water use for non-irrigation uses and is planning to move out of the City.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
565

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	26,094	in-diam*LF	\$24	\$ 3,758,000
8 inch	0	in-diam*LF	\$24	\$ -
Construction Subtotal				\$ 3,758,000
Contingency Costs 30%				\$ 1,127,000
Construction Total				\$ 4,885,000
Implementation Costs 30%				\$ 1,466,000
Total Capital Cost				\$ 6,351,000

Capital Replacement Costs

20-Year Useful Life

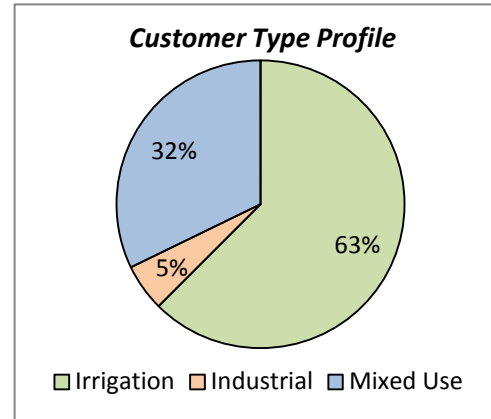
Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	339,600	kWh	\$0.12	\$ 41,000
PS 2 - Electricity	100,700	kWh	\$0.12	\$ 12,000
Conveyance	26,094	LF	\$0.60	\$ 16,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 69,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	565	
Water Purchase Escalat	4.0%	Total Yield (AF)	28,256	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 6,351,000		1.00	\$ 6,351,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 69,000		49.00	\$ 3,381,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 9,732,000
50-year Project Yield (AF)				28,256
Unit Cost (\$/af)				\$340

5.3 Medical Center WRP

This WRP defines service to eight potential customers located east of the Atlas WRP, including two anchor customers:

- Lincoln Park and Lake
- LAC + USC Medical Center



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
264	0.24	0.47	\$3.96	\$0.03	\$400

Facilities

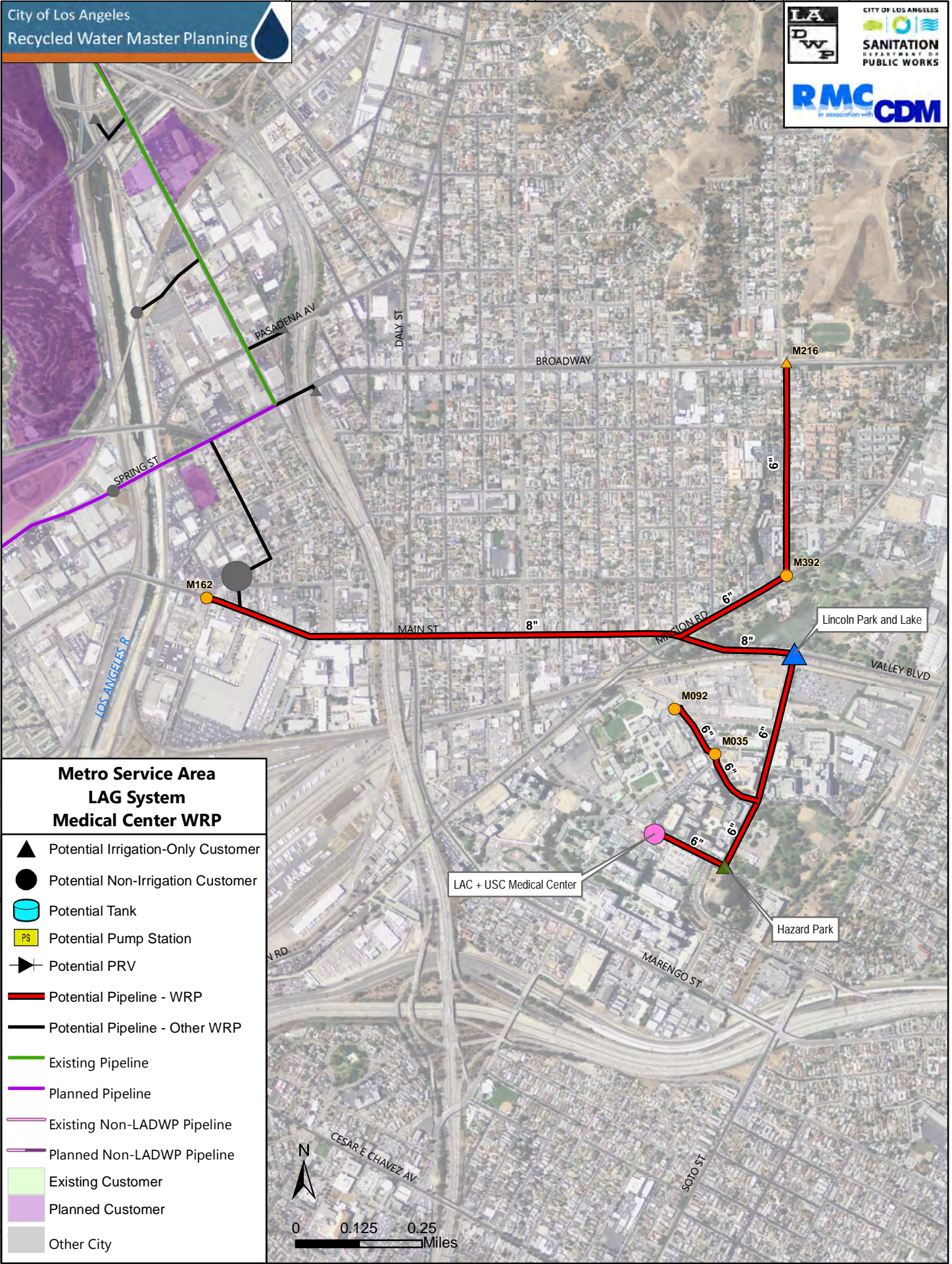
- **Crossings:** This WRP crosses I-5 at Alhambra Ave in parallel to a railroad crossing under the interstate.
- **Pipelines:** This WRP includes approximately 1.2 miles of 6” to 8” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignments.

Implementation Considerations

Implementation of the first portion of the WRP to Lincoln Park may be economical on its own but any service to LA County General Hospital and USC Hospital will require on-site conversion assessment prior to proceeding with that portion of the WRP.

The primary consideration for this WRP is the availability of LAGWRP supply.

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**Metro Service Area
LAG System
Medical Center WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

LAGWRP System – Medical Center WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
M016	Lincoln Park and Lake	Irrigation	115	0.10	0.23	A ⁵	--
M017	LAC + USC Medical Center	Mixed-Use	50	0.04	0.08	B	--
M035	USC Health Sciences Campus	Mixed-Use	5	0.00	0.01	--	--
M047	Hazard Park	Irrigation	40	0.04	0.08	--	--
M092	LA County Juvenile	Mixed-Use	24	0.02	0.04	--	--
M162	CEMEX (Transit Mixed Concrete)	Industrial	14	0.01	0.02	--	--
M216	LINCOLN HIGH SCH #8730	Irrigation	10	0.01	0.02	--	--
M392	CRI-HELP INC	Mixed-Use	6	0.01	0.01	--	--
Total⁶			264	0.24	0.47		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. This customer received an "A" for conversion of park irrigation demands by the ability to use recycled water for supplemental lake supply could not be resolved.
6. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **LA County General Hospital:** This customer is located on same site as USC University Hospital and has potential recycled water use for cooling tower make-up water.
- **Lincoln Park and Lake:** Lincoln Park has potential recycled water use for both irrigation and lake maintenance; however, RAP staff expressed hesitation to using recycled water for the lake for aesthetic reasons (i.e. algae) and for potential TMDL compliance issues. The park's irrigation system was recently fully replaced so conversion for irrigation should be relatively simple.
- **USC University Hospital:** This customer is located on same site as LA County General Hospital and has potential recycled water for cooling tower make-up water.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
264

WRP: Medical Center

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	8,440	in-diam*LF	\$24	\$ 1,215,000
8 inch	5,869	in-diam*LF	\$24	\$ 1,127,000
Construction Subtotal				\$ 2,342,000
Contingency Costs 30%				\$ 703,000
Construction Total				\$ 3,045,000
Implementation Costs 30%				\$ 914,000
Total Capital Cost				\$ 3,959,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

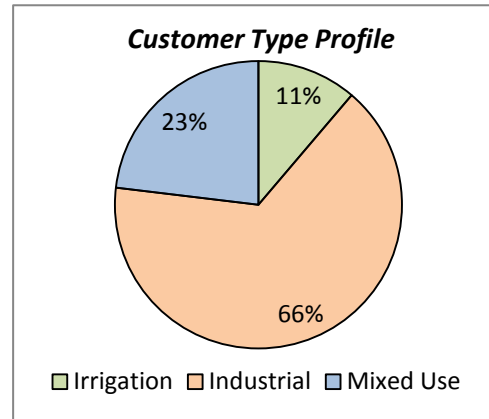
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	159,000	kWh	\$0.12	\$ 19,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	14,308	LF	\$0.60	\$ 9,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 28,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	264	
Water Purchase Escalator	4.0%	Total Yield (AF)	13,224	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 3,959,000		1.00	\$ 3,959,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 28,000		49.00	\$ 1,372,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 5,331,000
50-year Project Yield (AF)				13,224
Unit Cost (\$/af)				\$400

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5.4 USC WRP

This WRP defines service 10 potential customers located south of Downtown LA, including 9 anchor customers:

- Boyle Heights Development
- (The) Dye House
- Exposition Park
- Los Angeles County Central Plant
- Matchmaster
- Trigen-LA Bunker Hill
- Twin Towers Correctional Facility
- USC Main Campus
- Washington Garment



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
2,345	2.09	3.09	\$30.99	\$0.20	\$350

Facilities

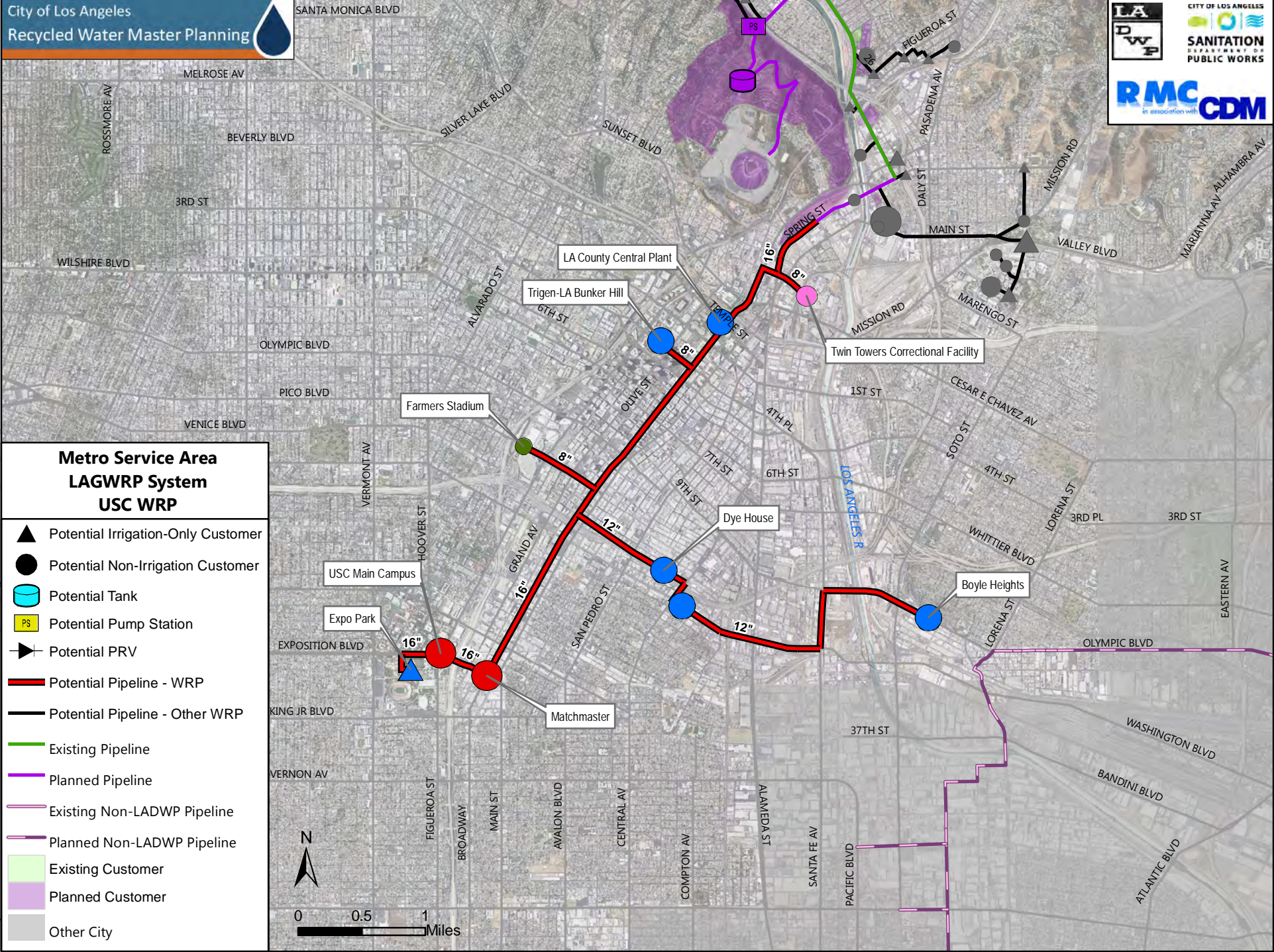
- **Crossings:** This WRP crosses the Los Angeles River at the E Olympic Blvd bridge, US-101 at the N Hill Street underpass, I-110 at the Exposition Blvd underpass, and I-10 at the Broadway underpass and S Central Ave underpass. Also, there is a 132" diameter sewer line crossing at Santa Fe Ave and Vermont Ave.
- **Pipelines:** This WRP includes approximately 11 miles of 8" to 16" pipe. The utility review conducted using NavigateLA revealed potential "crowding" along the proposed alignment due to existing utilities along Santa Fe Ave at Olympic Blvd and at Washington Blvd; along Washington Blvd at Central Ave; along 16th St at San Pedro St and Main St; along Broadway at Alpine St, 6th St, 8th St, and Jefferson Blvd; along Alameda St at Vignes St; and along Exposition Blvd at Trousdale Pkwy and Figueroa St.

Implementation Considerations

The customer base for this WRP has a large industrial component that historically can be more challenging to connect and has a more uncertain long-term viability. The customer conversion evaluation effort eliminated several industrial customers from consideration but the two largest customers in the WRP – Matchmaster and USC have both indicated they are supportive of the use of recycled water.

Service to some of the customers associated with this WRP from a new satellite treatment plant near USC was evaluated in the USC / Exposition Park Satellite Assessment TM (NPR Report Appendix H); however, expansion of the existing non-potable system as proposed in this WRP was found to be more cost effective than construction and operation of a new satellite treatment plant.

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**Metro Service Area
LAGWRP System
USC WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

LAGWRP System – USC WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	(MGD)	Initial ³	Compre-hensive ⁴
M001	Matchmaster	Industrial	800	0.71	0.93	A	A,A
M002	USC Main Campus	Mixed-Use	530	0.47	0.80	A	A,B
M011	Washington Garment	Industrial	120	0.11	0.14	C	--
M012	Dye House, the	Industrial	140	0.12	0.16	A	A,A
M022	Expo Park	Irrigation	140	0.12	0.27	B	--
M006	LA County Central Plant	Industrial	230	0.21	0.27	A	A,A
M018	Trigen-LA Bunker Hill	Industrial	100	0.09	0.12	B	A,A
M019	Twin Towers Correctional Facility	Industrial	95	0.08	0.11	B	A,A
M506	Boyle Heights Development	Mixed-Use	150	0.13	0.23	--	New ⁵
M507	Farmers Stadium	Mixed-Use	40	0.04	0.06	--	New ⁵
Total⁶			2,345	2.09	3.09		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. New development customers do not require conversions so they all received “A” ratings.
6. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Boyle Heights Development:** Customer is a proposed mixed-use community project that includes 69 acres of residential and office land uses. An LADWP Water Supply Assessment was completed for the project in December 2009. The project’s draft EIR includes provisions for recycled water.
- **(The) Dye House:** Non-potable use is for textile dyeing and boiler-feed operations but the customer has concerns with levels of chlorine in recycled water which could be detrimental to the dyeing operations. This concern can adequately be addressed by adding a de-chlorination station onsite.
- **Exposition Park:** The customer is supportive of converting to recycled water for landscape irrigation and would consider for cooling towers. Portions of the site are owned by the City, County, and State and funding is an issue for them. Currently, portions of the irrigation system are being replaced, which will facilitate conversion, but remaining portions are old and undocumented, which will complicate conversion.
- **LA County Central Plant:** This customer’s potential non-potable use is for cooling tower make-up water. The facility has existing chemical treatment that can be modified to mitigate any water quality concerns and they would be willing to use recycled water.

- **Matchmaster:** Non-potable use is for textile dyeing process and boiler-feed operations. The customer indicated they will consider converting to recycled water and provided a Letter of Intent to Use Recycled Water to LADWP on December 15, 2010.
- **Trigen LA Bunker-Hill:** This customer's potential non-potable use is for cooling tower make-up water and landscape irrigation. Potable water is already connected via an air-gap connection and will serve as a back-up water supply to the cooling tower sump.
- **Twin Towers Correctional Facility:** This customer's potential non-potable use is cooling tower make-up water. Potable water is already connected via an air-gap connection and will serve as a back-up water supply to the cooling tower sump.
- **USC Main Campus:** Non-potable uses are for irrigation, cooling tower make-up, and, dual-plumbing for future development. USC has begun installing recycled water piping throughout the campus as ongoing water system upgrades are made.
- **Washington Garment:** The customer is a textile dyeing facility but was not receptive to the potential use of recycled water onsite so it received a "C" initial conversion rating. However, they should be contacted if this WRP proceeds forward since Matchmaster's commitment to use recycled water may change their initial opinion.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
2,345

WRP: USC

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Treatment				
LAG Expansion Option 1		mgd		
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	7,093	in-diam*LF	\$24	\$ 1,362,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	19,704	in-diam*LF	\$20	\$ 4,729,000
16 inch	29,155	in-diam*LF	\$18	\$ 8,397,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
River Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 18,338,000
Contingency Costs 30%				\$ 5,501,000
Construction Total				\$ 23,839,000
Implementation Costs 30%				\$ 7,152,000
Total Capital Cost				\$ 30,991,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	1,409,000	kWh	\$0.12	\$ 169,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	55,953	LF	\$0.60	\$ 34,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 203,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	2,345	
Water Purchase Escalator	4.0%	Total Yield (AF)	117,250	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 30,991,000		1.00	\$ 30,991,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 203,000		49.00	\$ 9,947,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 40,938,000
50-year Project Yield (AF)				117,250
Unit Cost (\$/af)				\$350

6. Metro – CBMWD System

Overview

The potential Metro – CBMWD System provides a large recycled water supply to customers south of the terminus of the LAGWRP System since existing supplies may be limited from LAGWRP. The area generally covers Downtown and south and west of Downtown. In particular, the two largest potential anchor customers for the USC WRP, USC and Matchmaster, have identified recycled water demands in excess of 1,300 AFY.

The system’s recycled water source is up to 4 mgd from SJCWRP from a connection to CBMWD’s planned recycled water system expansion near the City of Vernon, referred to as the Southeast Water Reliability Project (SWRP) Phase II. Therefore, the system is dependent on implementation of SWRP Phase II as well as a guaranteed annual minimum purchase from LADWP. Also, the USC WRP is defined as part of the LAGWRP System and the CBMWD System so that it can be compared when selecting the WRP to implement for this system.

Metro – CBMWD System – Summary of WRPs

WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Downtown	884	0.79	1.18	\$24.32	\$0.65	\$1,500
Echo Park	282	0.25	0.51	\$7.23	\$0.19	\$1,380
LAGWRP Conn.	60	0.05	0.07	\$3.01	\$0.04	\$1,860
USC	2,605	2.33	3.50	\$32.24	\$1.34	\$930
Total	3,831	3.42	5.27	\$66.80	\$2.22	\$1,110

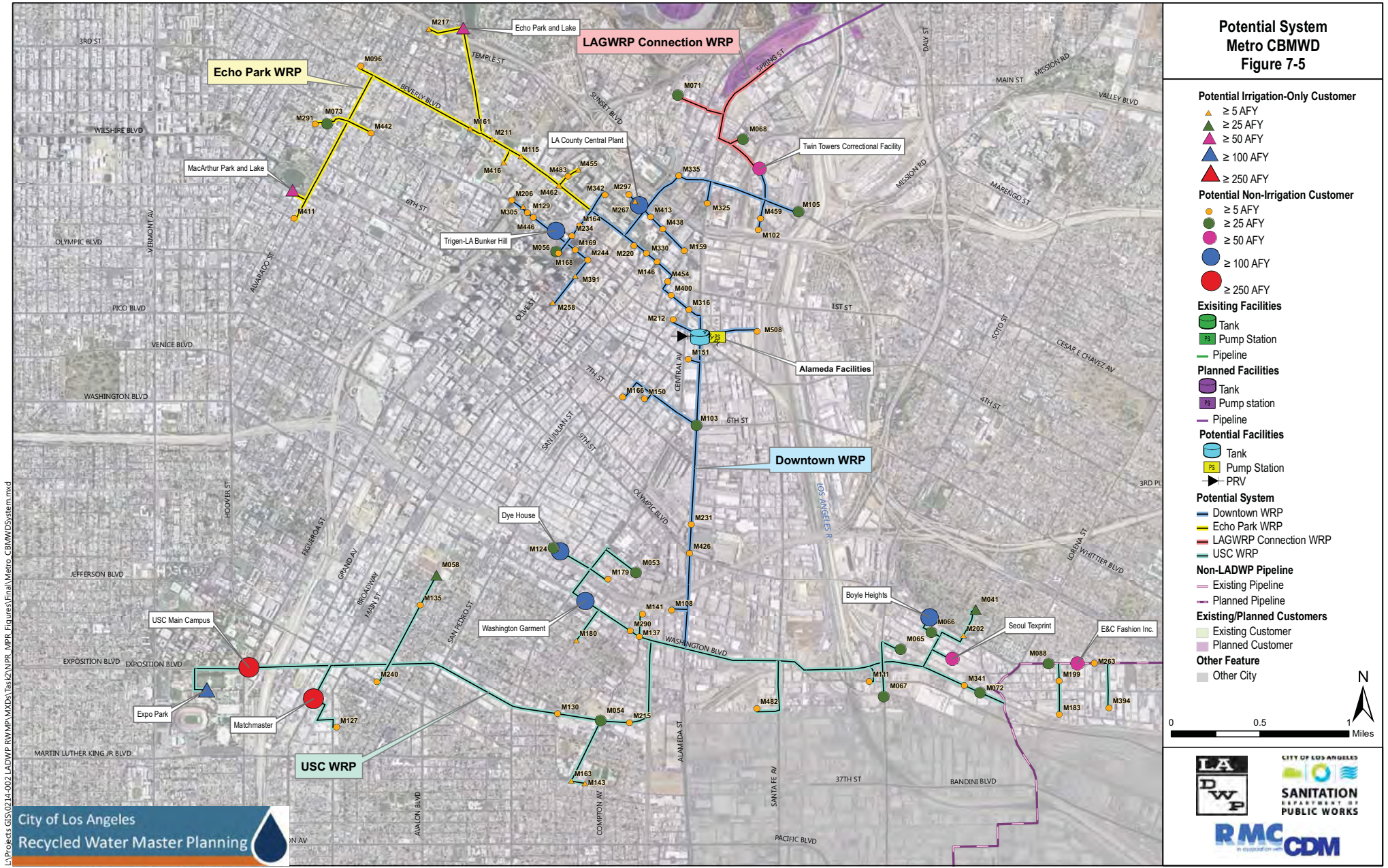
Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

The primary considerations for this system are its dependence on CBMWD to construct SWRP Phase II and the associated need for LADWP to commit to a minimum recycled water purchase to support the CBMWD project’s implementation. The USC WRP is the first WRP for the Metro – CBMWD System and includes the connection to the CBMWD recycled water system. The Downtown WRP builds off the USC WRP and the remaining two potential WRPs independently build off the Downtown WRP.

The customer base for the USC and Downtown WRPs have large industrial components that historically can be more challenging to connect and have a more uncertain long-term viability. The customer conversion evaluation effort eliminated several industrial customers from consideration but the two largest customers in the USC WRP, i.e. Matchmaster and USC, have indicated they are supportive of the use of recycled water. All three anchor customers in the Downtown WRP, i.e. LA County Central Plant, Trigen-LA Bunker Hill, and Twin Towers Correctional Facility, had “A” conversion ratings. The planned “Clean Tech Corridor”¹ is located adjacent to the Downtown WRP so potential service is noted but non-potable service needs (demand, water quality, and pressure) are not known at this point.

¹ For additional information, refer to <http://mayor.lacity.org/Issues/CleanTech/index.htm>



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DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
3,831

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.8	MG	\$4,000,000	\$ 3,200,000
Pump Station				
PS 1 at Downtown	1,900	gpm	formula	\$ 1,498,000
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	40,965	in-diam*LF	\$24	\$ 5,899,000
8 inch	23,931	in-diam*LF	\$24	\$ 4,595,000
10 inch	1,831	in-diam*LF	\$20	\$ 366,000
12 inch	4,947	in-diam*LF	\$20	\$ 1,187,000
16 inch	18,018	in-diam*LF	\$18	\$ 5,189,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	24,054	in-diam*LF	\$18	\$ 8,660,000
24 inch	12,450	in-diam*LF	\$16	\$ 4,781,000
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
River Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 39,525,000
Contingency Costs 30%				\$ 11,858,000
Construction Total				\$ 51,383,000
Implementation Costs 30%				\$ 15,415,000
Total Capital Cost				\$ 66,798,000

Capital Replacement Costs

20-Year Useful Life

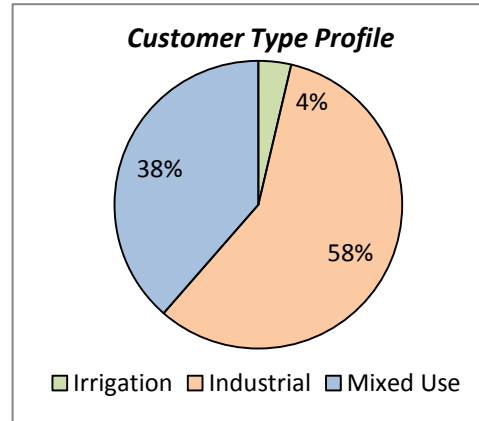
Storage	10%	\$	320,000
Pump Station	50%	\$	749,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	150,000
Construction Subtotal			\$ 1,219,000
Contingency Costs 30%			\$ 366,000
Construction Total			\$ 1,585,000
Implementation Costs 30%			\$ 476,000
Total 20-year Capital Cost			\$ 2,061,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 1,498,000	capital cost	5.0%	\$ 75,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	367,600	kWh	\$0.12	\$ 44,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	126,197	LF	\$0.60	\$ 76,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
			Total Annual O&M	\$ 300,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	3,831	AFY	\$500	\$ 1,916,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	3,831		Purchase Cost Total	\$ 1,916,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	3,831
Water Purchase Escalator	4.0%		Total Yield (AF)	191,552
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 66,798,000		1.00	\$ 66,798,000
20-Year Capital Costs	\$ 2,061,000		2.00	\$ 4,122,000
Annual O&M Costs	\$ 300,000		49.00	\$ 14,700,000
Recycled Water Cost	\$ 1,916,000		66.73	\$ 127,855,000
Salvage	\$ (1,030,500)		1.00	\$ (1,031,000)
			Total PV	\$ 212,444,000
			50-year Project Yield (AF)	191,552
			Unit Cost (\$/af)	\$1,110

6.1 Downtown WRP

This WRP defines service to 41 potential customers located north of the USC WRP, including 3 anchor customers:

- LA County Central Plant
- Trigen-LA Bunker Hill
- Twin Towers Correctional Facility



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
884	0.79	1.18	\$24.32	\$0.65	\$1,500

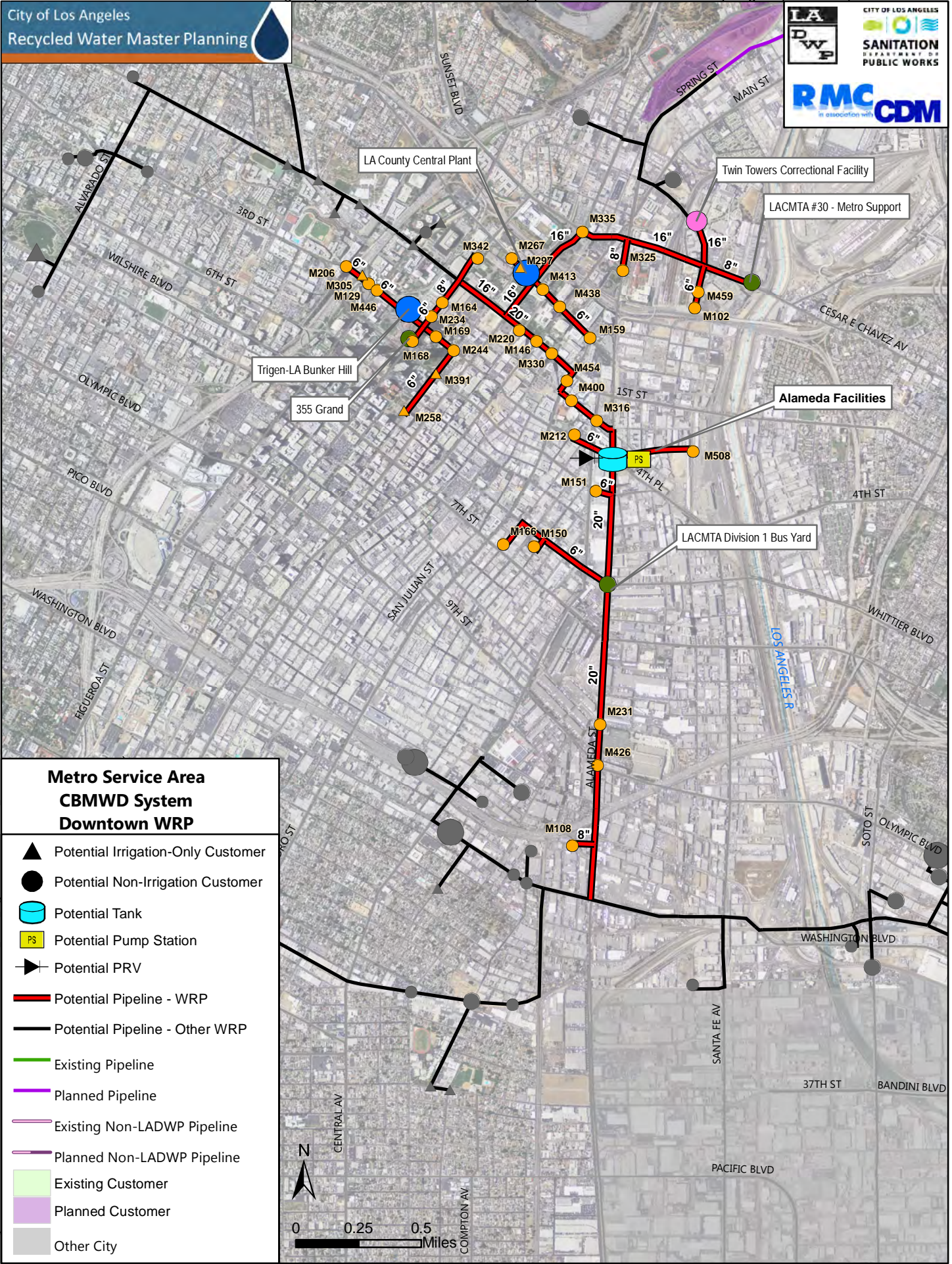
Facilities

- **Alameda PRV, Tank, and Pump Station:** This WRP requires a PRV, storage tank, and pump station combination to create an adequate new pressure zone from the USC WRP. The new pressure zone includes the Echo Park and LAGWRP Connection WRPs as well so the facilities size is based on service to all three WRPs. A 20" PRV is required to break the pressure provided from the CBMWD Connection. The 0.8 MG tank with a ground elevation of 300 ft and overflow elevation of 330 ft serves as a wet well to the pump station. The pump station has two duty pumps (plus one standby) each with a capacity of 950 gpm at 250 ft head. All the facilities should be co-located. The facilities are assumed to be located anywhere along the Alameda St alignment between the connection with the USC WRP at E Washington St and Temple St. A specific site was not identified to accommodate all three facilities.
- **Crossings:** This WRP crosses I-10 at the Alameda St underpass. Service to the Twin Tower Correctional Facility requires crossing Hwy-101 at the Broadway overpass and railroad tracks near Union Station. The Hwy-101 crossing could either be a large trenchless crossing under the highway or attached to the overpass bridge. There are no underpasses in vicinity of this crossing location that would present a potentially less expensive trenchless crossing. The railroad crossing could be avoided by crossing Hwy-101 closer to the Los Angeles River but would require more pipe.
- **Pipelines:** This WRP includes approximately 7.2 miles of 6" to 20" pipe. The utility review conducted using NavigateLA revealed potential "crowding" along the proposed alignment due to existing utilities along 1st St at Hill St.

Implementation Considerations

This WRP is dependent on implementation of the USC WRP to provide the recycled water supply from CBMWD. All three of the WRP's anchor customers rate an "A" for conversion but all are located at the northern end of the system so the full WRP needs to be constructed, including the Alameda PRV/Tank/Pump Station facilities to serve any substantial customers.

City of Los Angeles
Recycled Water Master Planning



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Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers**CBMWD System – Downtown WRP Potential Customers**

ID ¹	Name ²	Type of Use	Annual Demand			Peak Day	Conversion Rating
			(AFY)	(MGD)	(MGD)	Initial ³	Compre- hensive ⁴
M006	LA County Central Plant	Industrial	230	0.21	0.27	A	A,A
M018	Trigen-LA Bunker Hill	Industrial	100	0.09	0.12	B	A,A
M019	Twin Towers Correctional Facility	Industrial	95	0.08	0.11	B	A,A
M056	355 Grand	Mixed-Use	34	0.03	0.05	--	--
M102	LACMTA	Mixed-Use	20	0.02	0.03	--	--
M103	LACMTA Division 1 Bus Yard	Mixed-Use	31	0.03	0.05	--	--
M105	LACMTA #30 - Metro Support Services	Mixed-Use	39	0.03	0.06	--	--
M108	Blue Beacon	Industrial	20	0.02	0.02	--	--
M129	Marriot Hotel	Mixed-Use	17	0.02	0.03	--	--
M146	Kyoto Grand Hotel and Gardens	Mixed-Use	15	0.01	0.02	--	--
M150	Kleen Kraft Services	Industrial	15	0.01	0.02	--	--
M151	LA Cold Storage	Industrial	15	0.01	0.02	--	--
M159	Federal Building	Mixed-Use	14	0.01	0.02	--	--
M164	Museum of Contemporary Art (MOCA)	Mixed-Use	13	0.01	0.02	--	--
M166	Peter's Garment Dyeing	Industrial	13	0.01	0.02	--	--
M168	350 Grand	Mixed-Use	13	0.01	0.02	--	--
M169	Omni Hotel	Mixed-Use	13	0.01	0.02	--	--
M206	LAUSD Central Administration Building	Mixed-Use	11	0.01	0.02	--	--
M212	Little Tokyo Towers	Mixed-Use	10	0.01	0.02	--	--
M220	LA Times Newspaper	Mixed-Use	10	0.01	0.02	--	--
M231	LA Times Newspaper	Mixed-Use	10	0.01	0.01	--	--
M234	Grand Promenade	Mixed-Use	10	0.01	0.01	--	--
M244	Grand Center Square	Mixed-Use	9	0.01	0.01	--	--
M258	Pershing Square	Irrigation	9	0.01	0.02	--	--
M267	Los Angeles County Offices	Mixed-Use	9	0.01	0.01	--	--
M297	Cathedral of LA	Irrigation	8	0.01	0.02	--	--
M305	Caltrans (110 at W ST)	Irrigation	8	0.01	0.02	--	--
M316	Honda Plaza	Mixed-Use	8	0.01	0.01	--	--
M325	Union Station	Mixed-Use	7	0.01	0.01	--	--
M330	Caltrans - Offices	Mixed-Use	7	0.01	0.01	--	--
M335	Chinese Committee on Aging of LA	Mixed-Use	7	0.01	0.01	--	--
M342	LA County Music Center	Mixed-Use	7	0.01	0.01	--	--
M391	Bunker Hill Park	Irrigation	6	0.01	0.01	--	--
M400	American Commercial Equities Three	Mixed-Use	6	0.01	0.01	--	--
M413	Criminal Justice Center	Mixed-Use	6	0.01	0.01	--	--
M426	Forever 21 Logistics LLC	Mixed-Use	6	0.01	0.01	--	--
M438	General Services Admin Finance Div	Mixed-Use	6	0.01	0.01	--	--
M446	World Trade Center	Mixed-Use	6	0.00	0.01	--	--
M454	Miyako Hotels & Resorts	Mixed-Use	5	0.00	0.01	--	--
M459	City LA Bureau Public Buildings	Mixed-Use	5	0.00	0.01	--	--
M508	LACMTA Div. 20 Red Line Main Yard	Mixed-Use	10	0.01	0.02	--	--
Total⁵			884	0.79	1.18		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **LA County Central Plant:** This customer's potential non-potable use is for cooling tower make-up water. The facility has existing chemical treatment that can be modified to mitigate any water quality concerns and they would be willing to use recycled water.
- **Trigen LA Bunker-Hill:** This customer's potential non-potable use is for cooling tower make-up water and landscape irrigation. Potable water is already connected via an air-gap connection and will serve as a back-up water supply to the cooling tower sump.
- **Twin Towers Correctional Facility:** This customer's potential non-potable use is cooling tower make-up water. Potable water is already connected via an air-gap connection and will serve as a back-up water supply to the cooling tower sump.

In addition, the Clean Tech Corridor² is planned between the proposed WRP pipeline alignment along Alameda St and the Los Angeles River. The potential non-potable demands could not be estimated at the time the Plan was developed but the re-development of this area could increase non-potable demand and improve the cost effectiveness of the Downtown WRP.

² The Clean Tech "Corridor will consist of three anchors: The Clean Tech Manufacturing Center, the Cornfields Arroyo Seco Plan and the Clean Tech Research Center. The Clean Tech Corridor will support the entire value chain of the green economy, including research and development, technology design and prototyping, small business incubation, and full-scale manufacturing and assembly of environmentally friendly technologies. These physical plants will create direct employment for researchers, designers and workers, while also triggering growth in indirect green jobs like legal services, accounting and environmental consulting."
<http://mayor.lacity.org/Issues/CleanTech/index.htm>

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
884

WRP: Downtown

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.8	MG	\$4,000,000	\$ 3,200,000
Pump Station				
PS 1 at Downtown (65%)	1,900	gpm	formula	\$ 973,700
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	15,352	in-diam*LF	\$24	\$ 2,211,000
8 inch	3,513	in-diam*LF	\$24	\$ 675,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	7,325	in-diam*LF	\$18	\$ 2,110,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	13,675	in-diam*LF	\$18	\$ 4,923,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 14,392,700
Contingency Costs	30%	\$ 4,318,000
Construction Total		\$ 18,710,700
Implementation Costs	30%	\$ 5,613,000
Total Capital Cost		\$ 24,323,700

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 320,000
Pump Station	50%	\$ 487,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

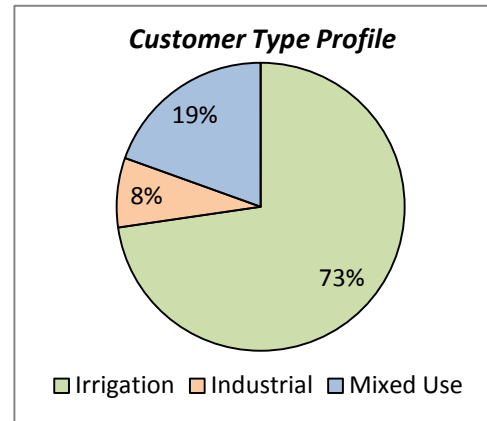
Construction Subtotal		\$ 807,000
Contingency Costs	30%	\$ 242,000
Construction Total		\$ 1,049,000
Implementation Costs	30%	\$ 315,000
Total 20-year Capital Cost		\$ 1,364,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 973,700	capital cost	5.0%	\$ 49,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	251,000	kWh	\$0.12	\$ 30,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	39,866	LF	\$0.60	\$ 24,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 208,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	884	AFY	\$500	\$ 443,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
884		Purchase Cost Total		\$ 443,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escala	3.0%	Annual Yield (AFY)	884	
Water Purchase Escalator	4.0%	Total Yield (AF)	44,222	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 24,323,700		1.00	\$ 24,324,000
20-Year Capital Costs	\$ 1,364,000		2.00	\$ 2,728,000
Annual O&M Costs	\$ 208,000		49.00	\$ 10,192,000
Recycled Water Cost	\$ 443,000		66.73	\$ 29,561,000
Salvage	\$ (682,000)		1.00	\$ (682,000)
Total PV				\$ 66,123,000
50-year Project Yield (AF)				44,222
Unit Cost (\$/af)				\$1,500

6.2 Echo Park WRP

This WRP defines service to 15 potential customers located west of the Downtown WRP, including two anchor customers:

- MacArthur Park and Lake
- Echo Park and Lake



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
282	0.25	0.51	\$7.23	\$0.19	\$1,380

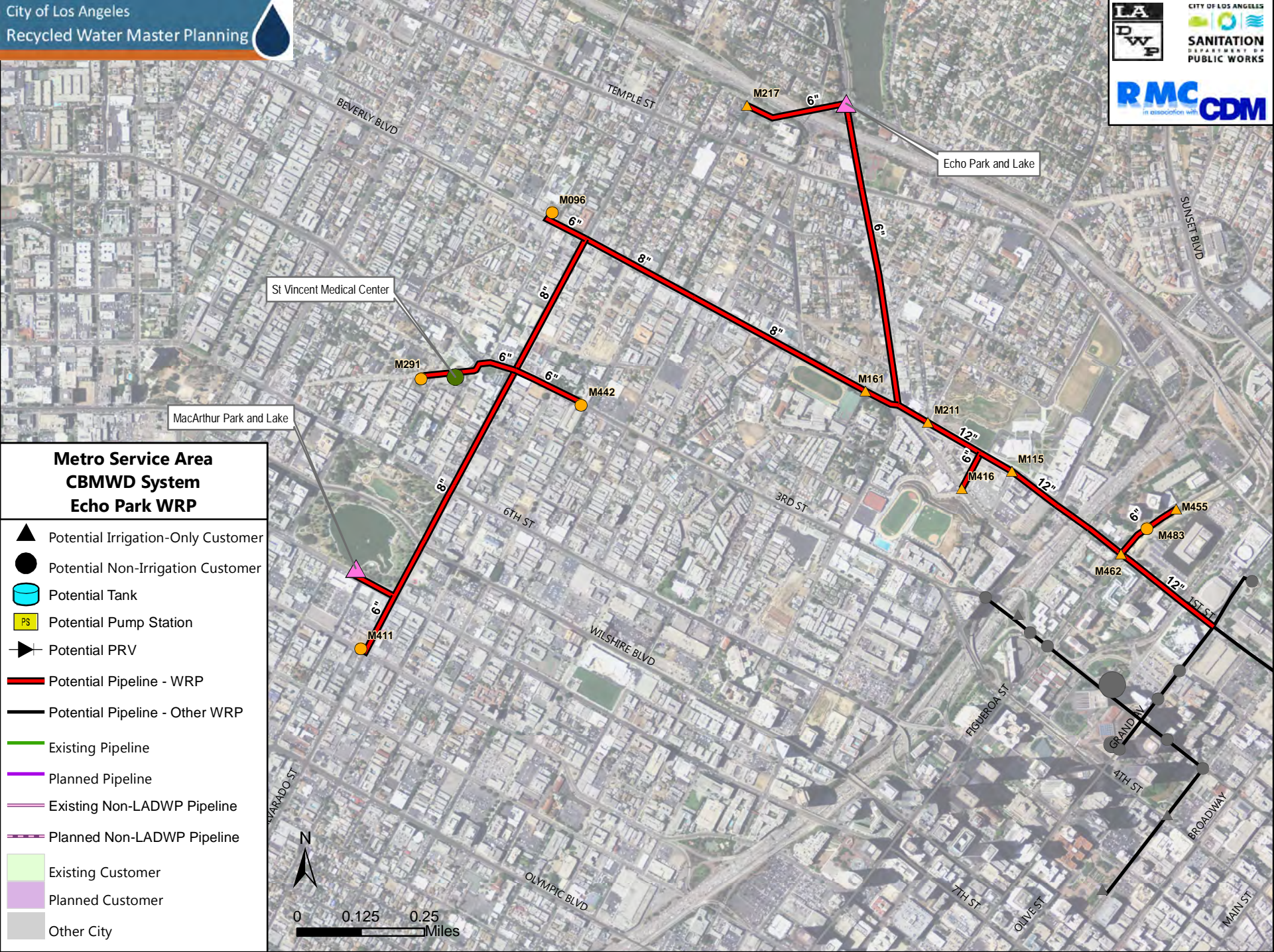
Facilities

- **Alameda PRV, Tank, and Pump Station:** This WRP does not have any pump station or tanks but capacity for this WRP is included in the Alameda Pump Station and Tank, which were described for the Downtown WRP.
- **Crossings:** This WRP crosses 110-Fwy at the W 1st St underpass and service to Echo Park and Lake requires a crossing of 101-Fwy at the Glendale Blvd underpass.
- **Pipelines:** This WRP includes approximately 4.0 miles of 6” to 12” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignments.

Implementation Considerations

This WRP is dependent on implementation of the USC and Downtown WRPs to provide the recycled water supply from CBMWD and the Alameda PRV/Tank/Pump Station facilities (part of the Downtown WRP) to provide adequate pressure. The WRP’s two anchor customers both had recent changes to the parks that reduced irrigation demand so their demands will need to be reevaluated. Also, the use of recycled water as a supplemental lake supply needs to be evaluated for Echo Park & Lake and MacArthur Park & Lake prior to implementation of this WRP. This WRP has a low chance of implementation until these two issues are resolved.

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**Metro Service Area
CBMWD System
Echo Park WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

CBMWD System – Echo Park WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
M020	MacArthur Park and Lake	Irrigation	85	0.08	0.17	A ⁵	--
M039	Echo Park and Lake	Irrigation	50	0.04	0.10	A ⁵	--
M073	St Vincent Medical Center	Mixed-Use	30	0.03	0.05	--	--
M096	S&H Wash and Dry	Industrial	22	0.02	0.03	--	--
M115	Central LA High School #11	Irrigation	19	0.02	0.04	--	--
M161	Belmont High School #8543	Irrigation	14	0.01	0.03	--	--
M211	Vista Hermosa Natural Park	Irrigation	11	0.01	0.02	--	--
M217	Caltrans (101 at Bonnie Brae St)	Irrigation	10	0.01	0.02	--	--
M291	HSIEN T HSU	Mixed-Use	8	0.01	0.01	--	--
M411	Rose M Park Corp	Mixed-Use	6	0.01	0.01	--	--
M416	Central LA High School #10	Irrigation	6	0.01	0.01	--	--
M442	Nutel Motel	Mixed-Use	6	0.01	0.01	--	--
M455	Bunker Hill Tower Apartments	Irrigation	5	0.00	0.01	--	--
M462	Promenade Tower Apartments	Irrigation	5	0.00	0.01	--	--
M483	City of LA Public Works	Mixed-Use	5	0.00	0.01	--	--
Total⁶			282	0.25	0.51		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. These customers received an "A" for conversion of park irrigation demands but the ability to use recycled water for supplemental lake supply could not be resolved.
6. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Echo Park and Lake:** The Echo Park Lake Rehabilitation Project is currently being implemented by the City. The project will reduce the use of potable water used to supplement lake water and reduce the landscape irrigation demands. However, the use of recycled water in the lake is subject to a review of potential impacts, such as aesthetic issues (i.e. algae) and potential TMDL compliance issues.
- **MacArthur Park and Lake:** MacArthur Park has potential recycled water use for both irrigation and lake maintenance and would have the same potential lake issues as Echo Park Lake. Also, a large portion of the park was converted to artificial turf in the last few years so more recent water use should be reviewed to update the non-potable demand estimate.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
282

WRP: Echo Park

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.0	MG	\$0	\$ -
Pump Station				
PS 1 at Downtown (30%)	1,900	gpm	formula	\$ 449,400
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	8,538	in-diam*LF	\$24	\$ 1,230,000
8 inch	8,053	in-diam*LF	\$24	\$ 1,546,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	4,375	in-diam*LF	\$20	\$ 1,050,000
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal	\$ 4,275,400
Contingency Costs 30%	\$ 1,283,000
Construction Total	\$ 5,558,400
Implementation Costs 30%	\$ 1,668,000
Total Capital Cost	\$ 7,226,400

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 225,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

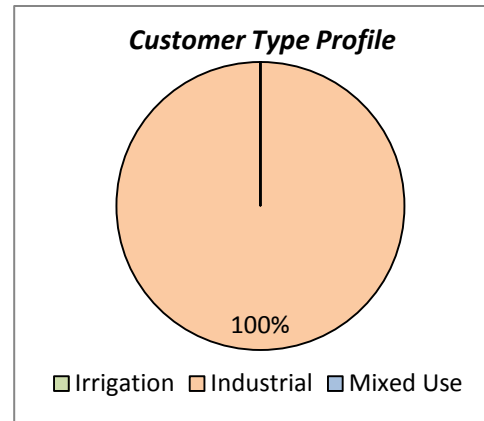
Construction Subtotal	\$ 225,000
Contingency Costs 30%	\$ 68,000
Construction Total	\$ 293,000
Implementation Costs 30%	\$ 88,000
Total 20-year Capital Cost	\$ 381,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 449,400	capital cost	5.0%	\$ 22,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	96,200	kWh	\$0.12	\$ 12,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	20,967	LF	\$0.60	\$ 13,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 47,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	282	AFY	\$500	\$ 141,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
282		Purchase Cost Total		\$ 141,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalat	3.0%		Annual Yield (AFY)	282
Water Purchase Escalator	4.0%		Total Yield (AF)	14,086
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 7,226,400		1.00	\$ 7,226,000
20-Year Capital Costs	\$ 381,000		2.00	\$ 762,000
Annual O&M Costs	\$ 47,000		49.00	\$ 2,303,000
Recycled Water Cost	\$ 141,000		66.73	\$ 9,409,000
Salvage	\$ (190,500)		1.00	\$ (191,000)
Total PV				\$ 19,509,000
50-year Project Yield (AF)				14,086
Unit Cost (\$/af)				\$1,380

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6.3 LAGWRP Connection WRP

This WRP has two potential customers but no anchor customers. The intent of this WRP is to connect the CBMWD and LAGWRP systems.



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
60	0.05	0.07	\$3.01	\$0.04	\$1,860

Facilities

- Alameda PRV, Tank, and Pump Station:** This WRP does not have any pump station or tanks but capacity for this WRP is included in the Alameda Pump Station and Tank, which were described for the Downtown WRP.
- Crossings:** This WRP would require a railroad crossing just north of Twin Towers Correctional Facility. An alternate route along Alameda St would avoid the crossing but require more pipe.
- Pipelines:** This WRP includes approximately 1.2 miles of 6” to 16” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignments.

Implementation Considerations

This WRP is dependent on implementation of the USC and Downtown WRPs to provide the recycled water supply from CBMWD and the Alameda PRV/Tank/Pump Station facilities (part of the Downtown WRP) to provide adequate pressure. If conveyance of LAGWRP recycled water is considered, the available capacity in the LAGWRP - Metro System would need to be reviewed.

Customers

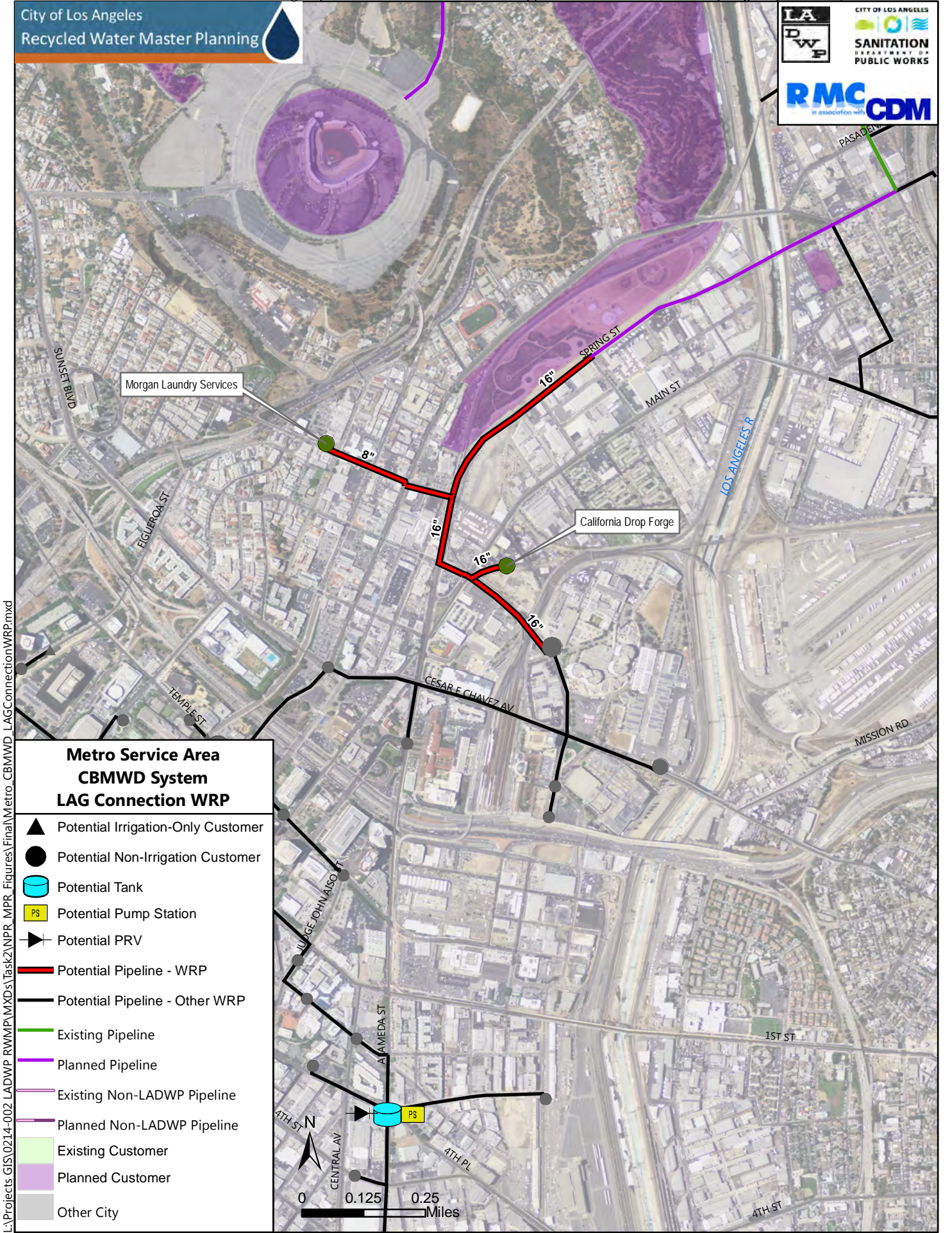
CBMWD System – LAGWRP Connection WRP Potential Customers

ID ¹	Name	Type of Use	Annual Demand		Peak Day Demand	Conversion Rating	
			(AFY)	(MGD)	(MGD)	Initial	Comprehensive
M068	California Drop Forge	Industrial	30	0.03	0.03	--	--
M071	Morgan Laundry Services	Industrial	30	0.03	0.03	--	--
Total			60	0.05	0.07		

Notes:

- Table is sorted by the customer’s ID from the database and GIS.

This WRP has no anchor customers.



**Metro Service Area
CBMWD System
LAG Connection WRP**

- ▲ Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- PS Potential Pump Station
- ▶ Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

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Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
60

WRP: LAG Connection

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.0	MG	\$0	\$ -
Pump Station				
PS 1 at Downtown (5%)	1,900	gpm	formula	\$ 74,900
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	1,532	in-diam*LF	\$24	\$ 294,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	4,904	in-diam*LF	\$18	\$ 1,412,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 1,780,900
Contingency Costs	30%	\$ 534,000
Construction Total		\$ 2,314,900
Implementation Costs	30%	\$ 694,000
Total Capital Cost		\$ 3,008,900

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 37,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

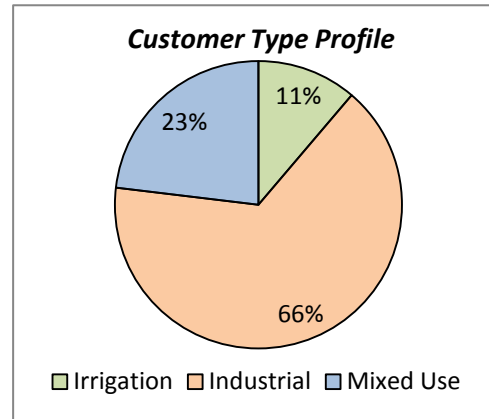
Construction Subtotal		\$ 37,000
Contingency Costs	30%	\$ 11,000
Construction Total		\$ 48,000
Implementation Costs	30%	\$ 14,000
Total 20-year Capital Cost		\$ 62,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 74,900	capital cost	5.0%	\$ 4,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	20,500	kWh	\$0.12	\$ 2,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	6,436	LF	\$0.60	\$ 4,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 10,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	60	AFY	\$500	\$ 30,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
60		Purchase Cost Total		\$ 30,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	60	
Water Purchase Escalat	4.0%	Total Yield (AF)	3,000	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 3,008,900		1.00	\$ 3,009,000
20-Year Capital Costs	\$ 62,000		2.00	\$ 124,000
Annual O&M Costs	\$ 10,000		49.00	\$ 490,000
Recycled Water Cost	\$ 30,000		66.73	\$ 2,002,000
Salvage	\$ (31,000)		1.00	\$ (31,000)
Total PV				\$ 5,594,000
50-year Project Yield (AF)				3,000
Unit Cost (\$/af)				\$1,860

6.4 USC WRP

This WRP defines service 38 potential customers located south of Downtown LA, including eight anchor customers:

- Boyle Heights Development
- (The) Dye House
- E&C Fashion Inc.
- Exposition Park
- Matchmaster
- Seoul Texprint
- USC Main Campus
- Washington Garment

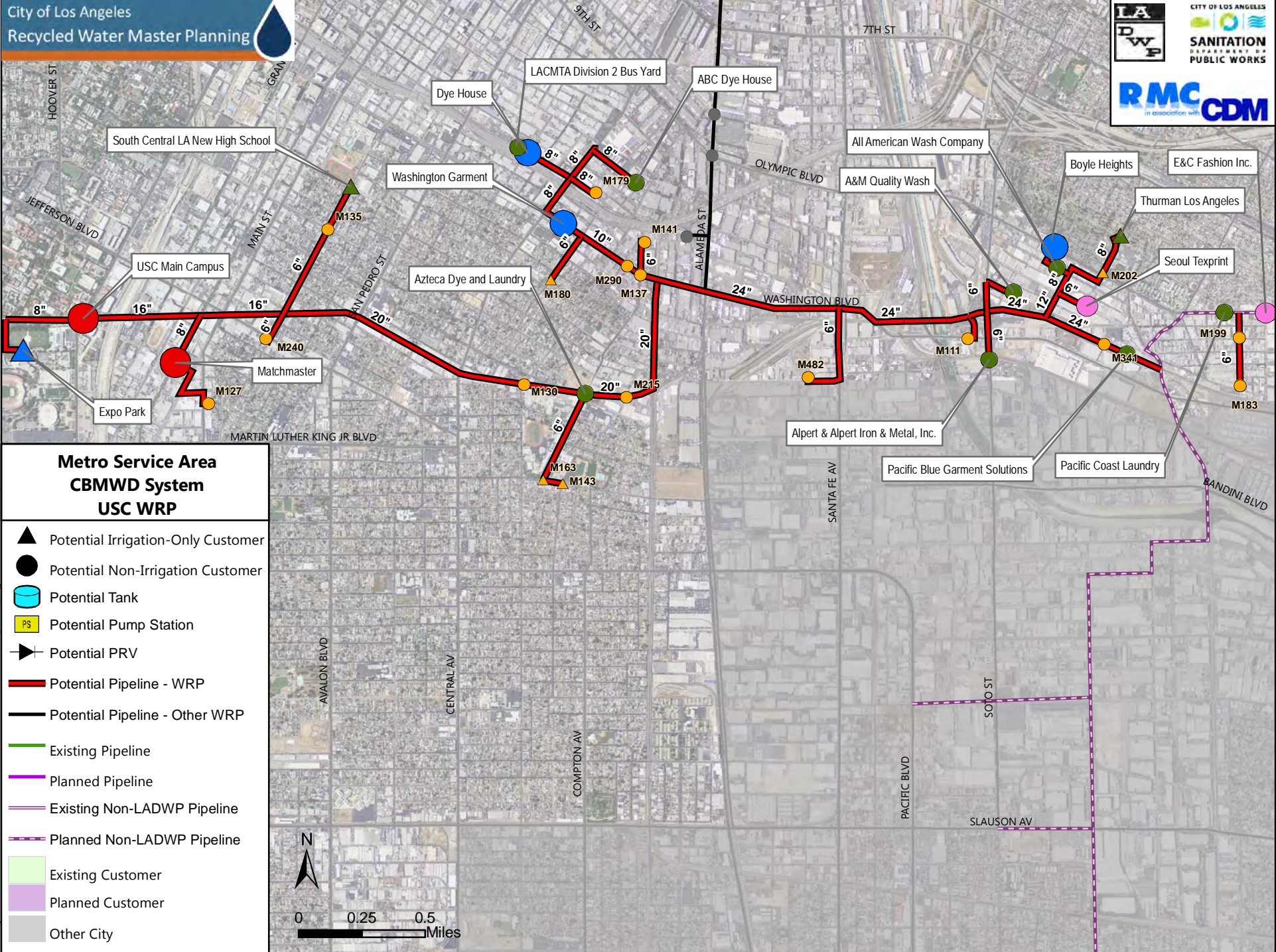


Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
2,605	2.33	3.50	\$32.24	\$1.34	\$930

Facilities

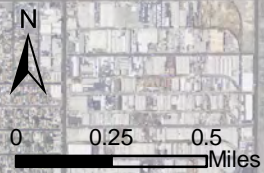
- **CBMWD Connection:** This WRP requires a connection with the planned CBMWD recycled water system at the corner of E Washington Blvd and Downey Rd. CBMWD’s Southeast Water Reliability Project Phase 2 is the planned system. Also, there are seven potential non-potable customers, including E&C Fashion, located east of Downey Rd along E Olympic Blvd that could be served directly off of the planned CBMWD system.
- **Crossings:** This WRP crosses the Los Angeles River at the E Washington Blvd bridge, I-110 at the Exposition Blvd underpass, and I-10 at the S Central Ave underpass; although, the I-10 crossing could be coordinated with I-10 crossing at Alameda St as part of the Downtown WRP. Also, there is a 132” diameter sewer line crossing at Santa Fe Ave along Washington Blvd.
- **Pipelines:** This WRP includes approximately 11 miles of 6” to 24” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Exposition Blvd at Normandie Ave and at Vermont Ave.

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**Metro Service Area
CBMWD System
USC WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Implementation Considerations

The USC WRP is the first WRP for the system and includes the connection to the CBMWD recycled water system. The supply for this system is dependent on the implementation of CBMWD's Southeast Water Reliability Project and LADWP will have to make a firm financial commitment to CBMWD, such as take-or-pay commitment or capital contribution to construction, to support its implementation.

Also, the customer base has a large industrial component that historically can be more challenging to connect and has a more uncertain long-term viability. The customer conversion evaluation effort eliminated several industrial customers from consideration but the two largest customers in the WRP - Matchmaster and USC have both indicated they are supportive of the use of recycled water.

The third largest customer, E&C Fashion, is located along the proposed CBMWD system pipeline and could be served with recycled water once the system is constructed regardless of whether the rest of the WRP is implemented.

Service to some of the customers associated with this WRP from a new satellite treatment plant near USC was evaluated in the USC / Exposition Park Satellite Assessment TM (NPR Report Appendix H); however, expansion of the existing non-potable system as proposed in this WRP was found to be more cost effective than construction and operation of a new satellite treatment plant.

Customers

CBMWD System – USC WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	(MGD)	Initial ³	Compre- hensive ⁴
M001	Matchmaster	Industrial	800	0.71	0.93	A	A,A
M002	USC Main Campus	Mixed-Use	530	0.47	0.80	A	A,B
M011	Washington Garment	Industrial	120	0.11	0.14	C	--
M012	Dye House, the	Industrial	140	0.12	0.16	A	A,A
M014	E&C Fashion Inc.	Industrial	90	0.08	0.10	B	A,A
M022	Expo Park	Irrigation	140	0.12	0.27	B	--
M029	Seoul Texprint	Industrial	64	0.06	0.07	--	--
M041	Thurman Los Angeles	Irrigation	49	0.04	0.10	--	--
M053	ABC Dye House	Industrial	35	0.03	0.04	--	--
M054	Azteca Dye and Laundry	Industrial	35	0.03	0.04	--	--
M058	South Central LA New High School	Irrigation	33	0.03	0.06	--	--
M065	A&M Quality Wash	Industrial	30	0.03	0.03	--	--
M066	All American Wash Company	Industrial	30	0.03	0.03	--	--
M067	Alpert & Alpert Iron & Metal, Inc.	Industrial	30	0.03	0.03	--	--
M072	Pacific Blue Garment Solutions	Industrial	30	0.03	0.03	--	--
M088	Pacific Coast Laundry	Industrial	25	0.02	0.03	--	--
M111	Associated Ready Mix Concrete	Industrial	19	0.02	0.02	--	--
M124	LACMTA Division 2 Bus Yard	Mixed-Use	31	0.03	0.05	--	--
M127	Classy Dyeing and Finishing	Industrial	17	0.02	0.02	--	--
M130	Garment Dyeing Co.	Industrial	17	0.02	0.02	--	--
M135	Car Wash	Industrial	16	0.01	0.02	--	--
M137	Nestle USA Inc	Industrial	16	0.01	0.02	--	--
M141	Domestic Linen Supply	Industrial	15	0.01	0.02	--	--
M143	Ross Snyder Recreation Center	Irrigation	15	0.01	0.03	--	--
M163	Jefferson High School #8714	Irrigation	14	0.01	0.03	--	--
M179	Victory Dye House	Industrial	12	0.01	0.01	--	--
M180	Central Recreation Center	Irrigation	12	0.01	0.02	--	--
M183	Aps Finishing	Industrial	12	0.01	0.01	--	--
M199	CA Electroplating	Industrial	11	0.01	0.01	--	--
M202	Costello Recreation Center	Irrigation	11	0.01	0.02	--	--
M215	Silla America	Mixed-Use	10	0.01	0.02	--	--
M240	Maple Dye Inc	Industrial	9	0.01	0.01	--	--
M263	Brite Plating Co	Industrial	9	0.01	0.01	--	--
M290	Dye & Wash Tech	Industrial	8	0.01	0.01	--	--
M341	Aztlan Cold Storage	Industrial	7	0.01	0.01	--	--
M394	Centennial Mills Div of Adm Milling	Mixed-Use	6	0.01	0.01	--	--
M482	25th Street Recycling	Industrial	5	0.00	0.01	--	--
M506	Boyle Heights Development	Mixed-Use	150	0.13	0.23	--	New ⁵
Total⁶			2,605	2.33	3.50		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.

3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. New development customers do not require conversions so they all received "A" ratings.
6. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Boyle Heights Development:** Customer is a proposed mixed-use community project that includes 69 acres of residential and office land uses. An LADWP Water Supply Assessment was completed for the project in December 2009. The project's draft EIR includes provisions for recycled water.
- **(The) Dye House:** Non-potable use is for textile dyeing and boiler-feed operations but the customer has concerns with levels of chlorine in recycled water which could be detrimental to the dyeing operations. This concern can adequately be addressed by adding a de-chlorination station onsite.
- **E&C Fashion / Pacific Concept Laundry / Atomic Denim:** Non-potable use is for boiler-feeds and the textile dyeing processes. Non-potable service can be provided simply with an air-gap into their existing process water storage tanks.
- **Exposition Park:** The customer is supportive of converting to recycled water for landscape irrigation and would consider for cooling towers. Portions of the site are owned by the City, County, and State and funding is an issue for them. Currently, portions of the irrigation system are being replaced, which will facilitate conversion, but remaining portions are old and undocumented, which will complicate conversion.
- **Matchmaster:** Non-potable use is for textile dyeing process and boiler-feed operations. The customer indicated they will consider converting to recycled water and provided a Letter of Intent to Use Recycled Water to LADWP on December 15, 2010.
- **Seoul Textprint:** This customer was not evaluated because the initial demand estimate was less than 75 AFY and it did not make up the top 50% of demands for this WRP. They should be contacted if this WRP proceeds forward.
- **USC Main Campus:** Non-potable uses are for irrigation, cooling tower make-up, and, dual-plumbing for future development. USC has begun installing recycled water piping throughout the campus as ongoing water system upgrades are made.
- **Washington Garment:** The customer is a textile dyeing facility but was not receptive to the potential use of recycled water onsite so it received a "C" initial conversion rating. However, they should be contacted if this WRP proceeds forward since Matchmaster's commitment to use recycled water may change their initial opinion.

The following customers were initially considered anchor customers but were removed from consideration:

- **American Textile / Republic Uniforms** This customer is a commercial laundry facility with two Los Angeles locations. Per communications with the customer, this customer is not receptive to using recycled water in their laundry operations because they do not have a large water use and most of their laundry operation is for hospital whites.

- **Coca-Cola Bottling (Coke):** The majority of Coke's potable water demand is for domestic purposes in their bottled beverage services and, it is not known at this time if Coke operates cooling towers with potential for non-potable use.
- **Garment Industry Laundry:** The customer was eliminated as a potential anchor customer due to water quality concerns but specific constituents of concern were not identified.
- **Universal Dyeing and Printing:** Non-potable uses are for printing and manmade fiber and silk broadwoven fabrics dyeing. The customer's water quality representative was not interested in receiving recycled water.
- **U.S. Filter:** The customer is a chemical feed equipment manufacturer that uses potable water for resin regeneration of large industrial tanks. They were eliminated as a potential anchor customer due to type of water use and had specific concerns with water quality.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
2,605

WRP: USC

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.0	MG	\$0	\$ -
Pump Station				
PS 1 at Downtown	0	gpm	formula	\$ -
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	17,074	in-diam*LF	\$24	\$ 2,459,000
8 inch	10,833	in-diam*LF	\$24	\$ 2,080,000
10 inch	1,831	in-diam*LF	\$20	\$ 366,000
12 inch	572	in-diam*LF	\$20	\$ 137,000
16 inch	5,789	in-diam*LF	\$18	\$ 1,667,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	10,379	in-diam*LF	\$18	\$ 3,736,000
24 inch	12,450	in-diam*LF	\$16	\$ 4,781,000
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
River Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 19,076,000
Contingency Costs 30%				\$ 5,723,000
Construction Total				\$ 24,799,000
Implementation Costs 30%				\$ 7,440,000
Total Capital Cost				\$ 32,239,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal		\$	-
Contingency Costs 30%		\$	-
Construction Total		\$	-
Implementation Costs 30%		\$	-
Total 20-year Capital Cost		\$	-

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	58,928	LF	\$0.60	\$ 35,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 35,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	2,605	AFY	\$500	\$ 1,303,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
2,605		Purchase Cost Total		\$ 1,303,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	2,605	
Water Purchase Escalat	4.0%	Total Yield (AF)	130,243	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 32,239,000		1.00	\$ 32,239,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 35,000		49.00	\$ 1,715,000
Recycled Water Cost	\$ 1,303,000		66.73	\$ 86,949,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 120,903,000
50-year Project Yield (AF)				130,243
Unit Cost (\$/af)				\$930

7. Valley – DCTWRP AWP System

Overview

The potential Valley – DCTWRP AWP System defines small potential expansions from the existing / planned system to maximize the use of DCTWRP effluent. The system's supply will be AWP water from DCTWRP once the Valley GWR Project is implemented. No supply will be available for potential NPR customers if the 30,000 AFY GWR Project is implemented and approximately 14 mgd of effluent would be available if only the 15,000 AFY GWR Project is implemented. Therefore, the potential system was limited to customers in proximity to the existing / planned system.

Valley – DCTWRP AWP System – Summary of WRPs

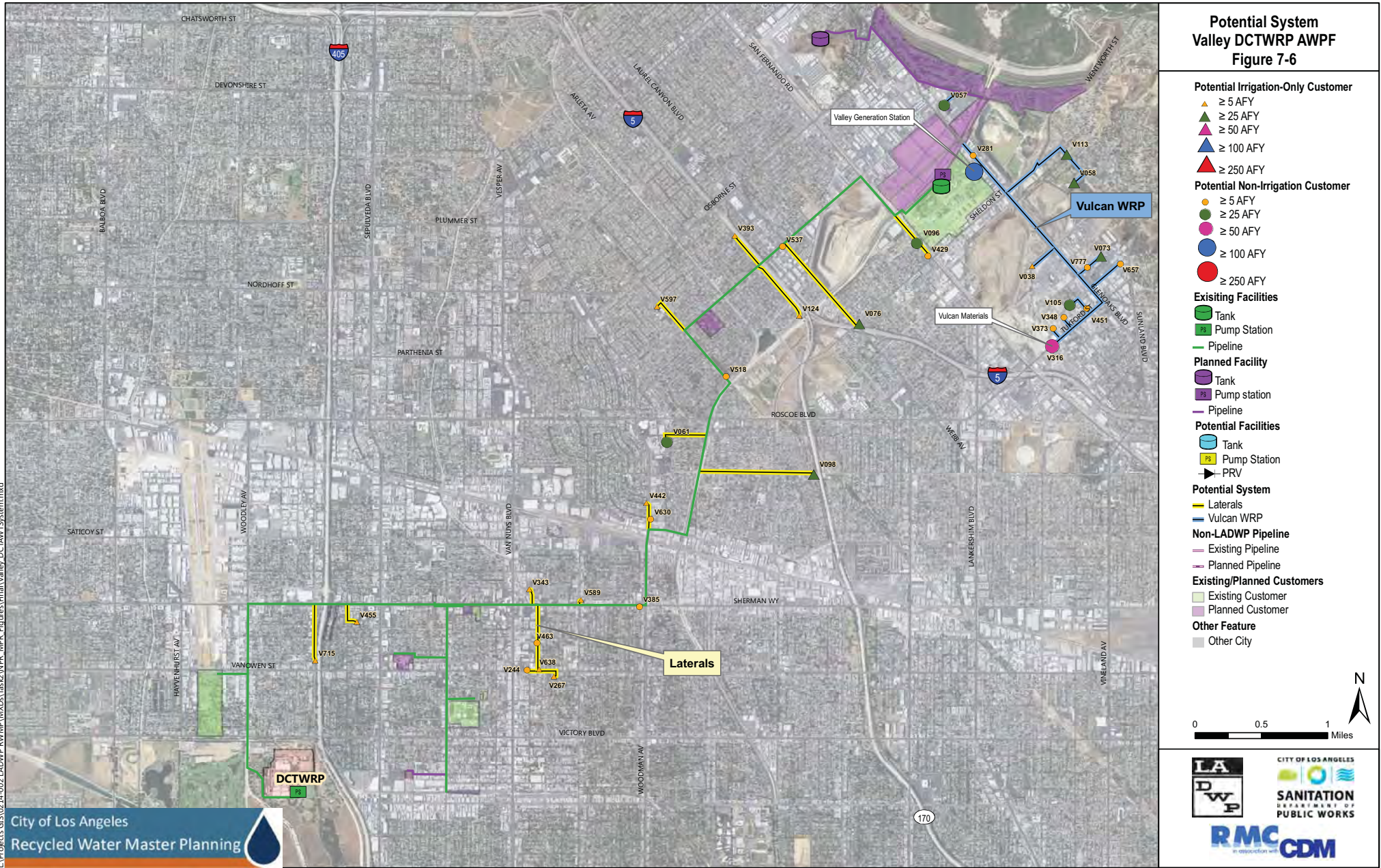
WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost	O&M Cost	Unit Lifecycle Cost
Laterals	438	0.39	0.68	\$6.99	\$0.05	\$420
Vulcan	296	0.27	0.47	\$8.47	\$0.08	\$870
Total	734	0.66	1.15	\$15.46	\$0.13	\$600
Existing System	2,298	2.05	2.83			
Planned System	671	0.60	1.26			
System Total	3,703	3.31	5.24			

Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

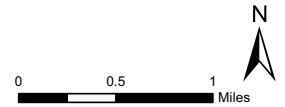
The primary consideration for this system is the availability of DCTWRP AWP supply and the potential impact from the use of this supply on the Valley GWR Project yield.

The potential WRPs (and individual laterals within the Laterals WRP) can be implemented independently and will be dependent on confirmation of customer's willingness to use recycled water and a review of on-site conversion requirements. The Vulcan WRP can be supplied with recycled water from the DCTWRP AWP System, DCTWRP T22 System, or Burbank System depending on the supply that is conveyed to the Hansen Tank.



Potential System Valley DCTWRP AWWP Figure 7-6

- Potential Irrigation-Only Customer**
 - ▲ ≥ 5 AFY
 - ▲ ≥ 25 AFY
 - ▲ ≥ 50 AFY
 - ▲ ≥ 100 AFY
 - ▲ ≥ 250 AFY
- Potential Non-Irrigation Customer**
 - ≥ 5 AFY
 - ≥ 25 AFY
 - ≥ 50 AFY
 - ≥ 100 AFY
 - ≥ 250 AFY
- Existing Facilities**
 - Tank
 - PS Pump Station
 - Pipeline
- Planned Facility**
 - Tank
 - PS Pump station
 - Pipeline
- Potential Facilities**
 - Tank
 - PS Pump Station
 - ▶ PRV
- Potential System**
 - Laterals
 - Vulcan WRP
- Non-LADWP Pipeline**
 - Existing Pipeline
 - Planned Pipeline
- Existing/Planned Customers**
 - Existing Customer
 - Planned Customer
- Other Feature**
 - Other City



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Data Sources: USGS, LADWP, ESRI, NAIP Note: Only potential customers ≥ 50 AFY are labeled and potential customers <50 AFY have IDs shown

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley DCTWRP AWP

Annual Yield (AFY)
734

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Hansen PS Exp.	320	gpm	formula	\$ 388,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	39,400	in-diam*LF	\$24	\$ 5,674,000
8 inch	4,500	in-diam*LF	\$24	\$ 864,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	7,700	in-diam*LF	\$18	\$ 2,218,000
Construction Subtotal				\$ 9,144,000
Contingency Costs 30%				\$ 2,743,000
Construction Total				\$ 11,887,000
Implementation Costs 30%				\$ 3,566,000
Total Capital Cost				\$ 15,453,000

Capital Replacement Costs

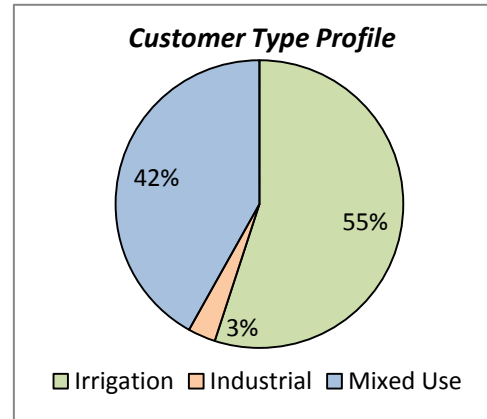
20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	194,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 194,000
Contingency Costs 30%			\$ 58,000
Construction Total			\$ 252,000
Implementation Costs 30%			\$ 76,000
Total 20-year Capital Cost			\$ 328,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 388,000	capital cost	5.0%	\$ 19,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	149,500	kWh	\$0.12	\$ 18,000
PS 2 - Electricity	391,100	kWh	\$0.12	\$ 47,000
Conveyance	51,600	LF	\$0.60	\$ 31,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
DCT AWT O&M	734	AFY	\$0	\$ -
			Total Annual O&M	\$ 125,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
			Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	734
Water Purchase Escalator	4.0%		Total Yield (AF)	36,713
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 15,453,000		1.00	\$ 15,453,000
20-Year Capital Costs	\$ 328,000		2.00	\$ 656,000
Annual O&M Costs	\$ 125,000		49.00	\$ 6,125,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (164,000)		1.00	\$ (164,000)
			Total PV	\$ 22,070,000
			50-year Project Yield (AF)	36,713
			Unit Cost (\$/af)	\$600

7.1 Laterals - DCTWRP AWPf

This WRP defines service to 21 potential customers but does not have any anchor customers.



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
438	0.39	0.68	\$6.99	\$0.05	\$420

Facilities

- **Crossings:** This WRP does not have any major crossings.
- **Pipelines:** This WRP includes approximately 5.4 miles of 6” pipe. The utility review was conducted for transmission pipelines but not completed for laterals so there are no review findings.

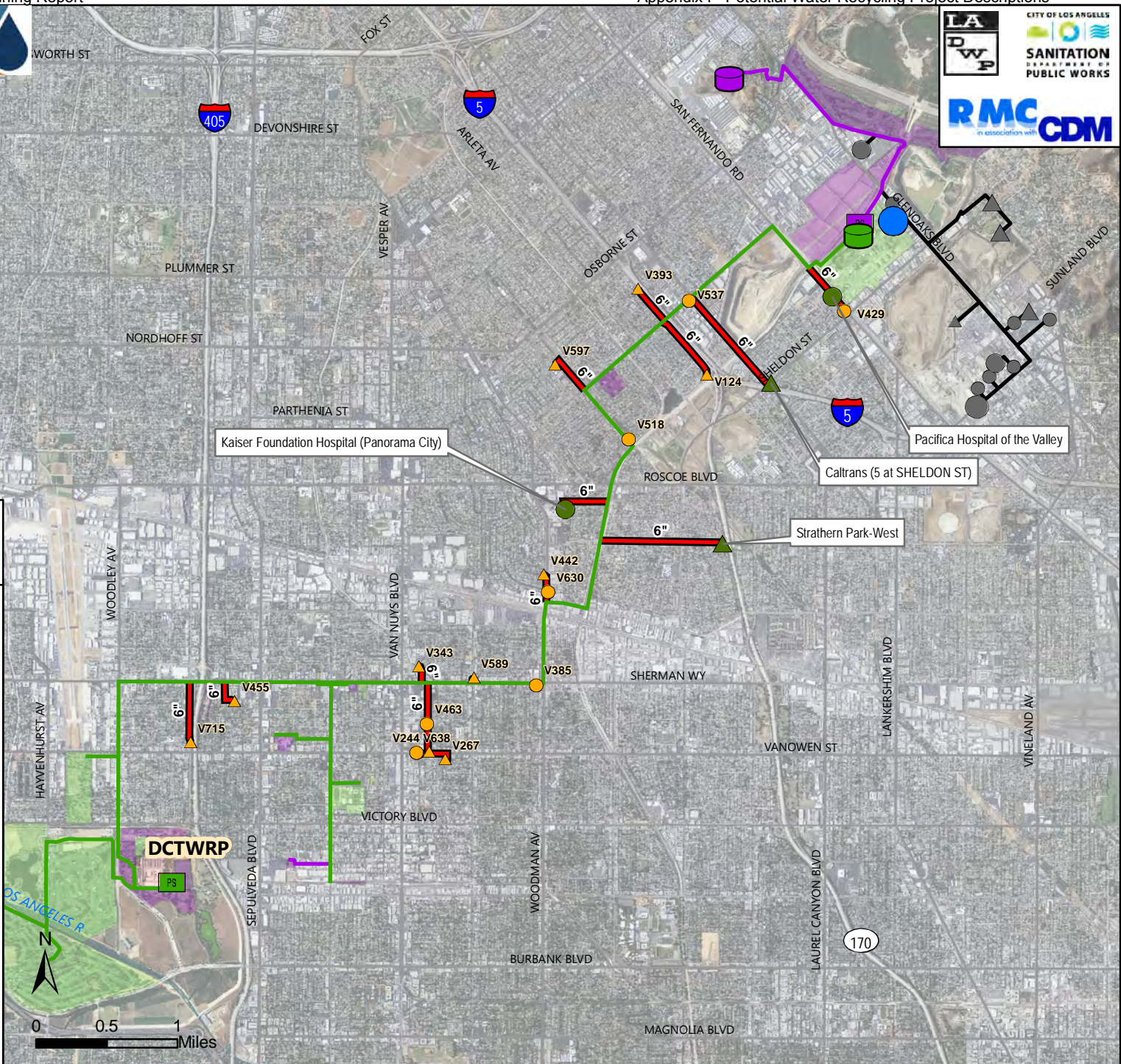
Implementation Considerations

The primary consideration for this WRP is the availability of DCTWRP AWPf supply and the potential impact from the use of this supply for this WRP on the Valley GWR Project yield. The laterals that make up this WRP can be implemented independently and will be dependent on confirmation of customer’s willingness to use recycled water and a review of on-site conversion requirements.

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Valley Service Area DCTWRP AWT System Laterals

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

DCTWRP AWP System – Laterals WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
V061	Kaiser Foundation Hospital (Panorama City)	Mixed-Use	41	0.03	0.07	--	--
V076	Caltrans (5 at SHELDON ST)	Irrigation	34	0.03	0.07	--	--
V096	Pacifica Hospital of the Valley	Mixed-Use	30	0.03	0.04	--	--
V098	Strathern Park-West	Irrigation	29	0.03	0.06	--	--
V124	Caltrans (170 at TONOPAH ST)	Irrigation	23	0.02	0.05	--	--
V244	East Valley Animal Shelter	Mixed-Use	13	0.01	0.02	--	--
V267	Palisades Park	Irrigation	13	0.01	0.02	--	--
V343	Walnut Gardens	Irrigation	10	0.01	0.02	--	--
V385	Byung Chon Choi DBA Lucy's Laundrymat	Industrial	9	0.01	0.01	--	--
V393	Caltrans (5 at SHARP AV)	Irrigation	9	0.01	0.02	--	--
V429	The Halyard Co	Mixed-Use	9	0.01	0.01	--	--
V442	Sunset Pointe Apartments	Irrigation	8	0.01	0.02	--	--
V455	San Regis Apartments	Irrigation	8	0.01	0.02	--	--
V463	Plaza Residential Enterprises, Inc.	Mixed-Use	8	0.01	0.01	--	--
V518	Cirilo Gutierrez	Mixed-Use	7	0.01	0.01	--	--
V537	Karapet DishGrikyan DBA Far East Petroleum	Mixed-Use	7	0.01	0.01	--	--
V589	Pinecrest School	Irrigation	7	0.01	0.01	--	--
V597	Canterbury Ave Elementary School	Irrigation	6	0.00	0.01	--	--
V630	Woodman Ave Corp	Mixed-Use	6	0.00	0.01	--	--
V638	Van Nuys Recreations Center	Irrigation	6	0.00	0.01	--	--
V715	Caltrans (405 at HASKELL AV)	Irrigation	5	0.00	0.01	--	--
V787	Valley Generation Station	Industrial	150	0.13	0.17	B	--
Total⁵			438	0.39	0.69		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

This WRP does not have any anchor customers. (An anchor customer has a recycled water demand of 50 AFY or greater).

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley DCTWRP AWP

Annual Yield (AFY)
438

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Hansen PS Exp.	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	28,700	in-diam*LF	\$24	\$ 4,133,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
Construction Subtotal				\$ 4,133,000
Contingency Costs 30%				\$ 1,240,000
Construction Total				\$ 5,373,000
Implementation Costs 30%				\$ 1,612,000
Total Capital Cost				\$ 6,985,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

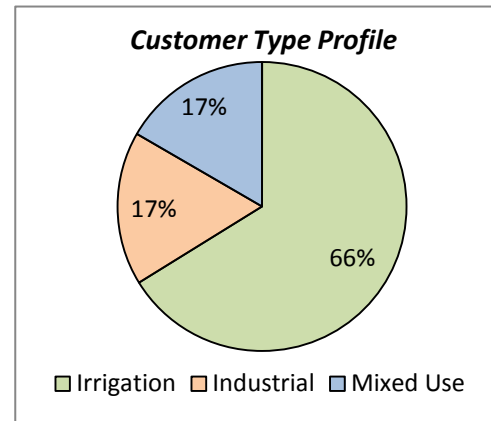
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	233,500	kWh	\$0.12	\$ 28,000
Conveyance	28,700	LF	\$0.60	\$ 17,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
DCT AWT O&M	438	AFY	\$0	\$ -
Total Annual O&M				\$ 45,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		438
Water Purchase Escalator	4.0%	Total Yield (AF)		21,921
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 6,985,000		1.00	\$ 6,985,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 45,000		49.00	\$ 2,205,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 9,190,000
50-year Project Yield (AF)				21,921
Unit Cost (\$/af)				\$420

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7.2 Vulcan WRP

This WRP defines service to 13 potential customers located southeast of the Hansen Tank, including one anchor customer:

- Vulcan Materials



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
296	0.27	0.47	\$8.47	\$0.08	\$870

Facilities

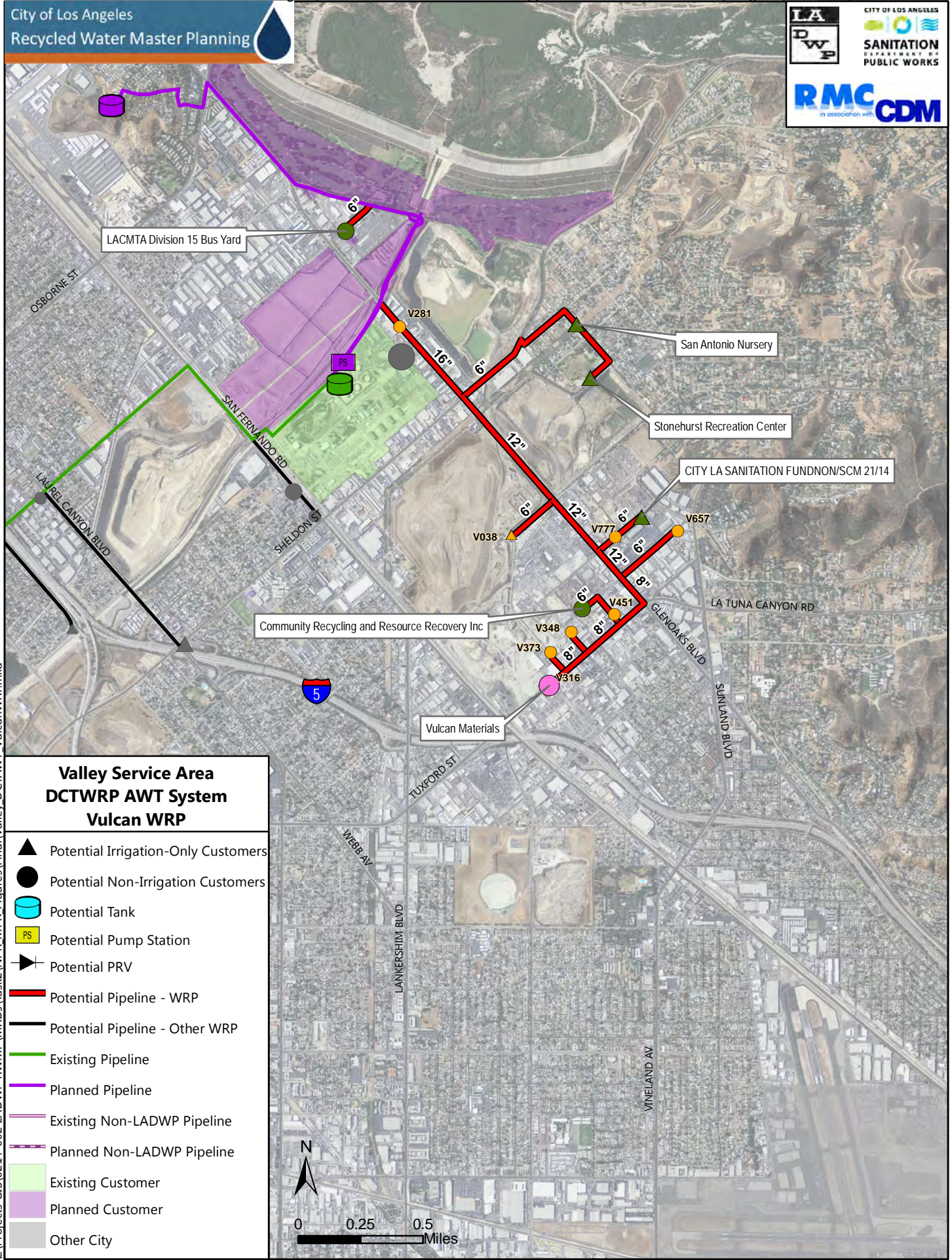
- **Hansen Dam Pump Station:** This WRP would expand the capacity of this planned pump station by 920 gpm. This pump station feeds the planned Garber Tank.
- **Crossings:** This WRP does not have any major crossings.
- **Pipelines:** This WRP includes approximately 4.3 miles of 6” to 16” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed alignments.

Implementation Considerations

The primary consideration for this WRP is the availability of DCTWRP AWPf supply and the potential impact from the use of this supply for this WRP on the Valley GWR Project yield. Also, service conditions to Vulcan Materials should be reviewed to determine potential service connections with low pressure requirements.

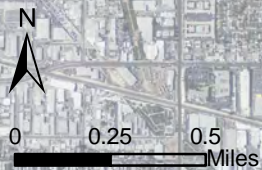
This WRP could be supplied with recycled water from the DCTWRP AWPf System, DCTWRP T22 System, or Burbank System. The only potential difference in the Vulcan WRP between the different systems is that the Hansen Connection WRP, which is associated with the DCTWRP T22 System and Burbank System, could serve Vulcan Materials directly along San Fernando Rd. Removal of Vulcan Materials from the Vulcan WRP would reduce the extent of the WRP. The cost effectiveness of the WRP should be re-examined without its largest customer – Vulcan Materials.

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**Valley Service Area
DCTWRP AWT System
Vulcan WRP**

- Potential Irrigation-Only Customers
- Potential Non-Irrigation Customers
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown

Customers

DCTWRP AWP System – Vulcan WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
V002	Vulcan Materials	Industrial	51	0.05	0.06	A	A,B
V038	Bradley Landfill	Irrigation	12	0.01	0.02	A	A,A
V057	LACMTA Division 15 Bus Yard	Mixed-Use	42	0.04	0.07	--	--
V058	Stonehurst Recreation Center	Irrigation	43	0.04	0.08	--	--
V073	City of LA Sanitation Fundnon/ Community Recycling and Resource	Irrigation	35	0.03	0.07	--	--
V105	Recovery Inc	Mixed-Use	27	0.02	0.04	--	--
V113	San Antonio Nursery	Irrigation	25	0.02	0.05	--	--
V281	Alert Plating Co	Industrial	12	0.01	0.01	--	--
V316	Angelus Block Co.	Mixed-Use	11	0.01	0.02	--	--
V348	Skyline Concrete Sales Co.	Industrial	10	0.01	0.01	--	--
V373	Associated Ready Mixed Concrete	Industrial	10	0.01	0.01	--	--
V451	Rocco Cordola DBA Cordola Marble	Mixed-Use	8	0.01	0.01	--	--
V657	Linen Party Rental	Industrial	6	0.01	0.01	--	--
V777	American Waste Industry	Industrial	5	0.00	0.01	--	--
Total⁵			296	0.27	0.47		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Vulcan Materials:** Recycled water can be used for dust control at each of Vulcan Material’s four pits. There is potential to use recycled water for rock washing, which occurs at the Sheldon Pit, dependent upon permitting for incidental groundwater recharge. The Boulevard Pit could be served off the existing DCTWRP AWP System along Branford St or San Fernando Rd. The Sun Valley Pit, which has the largest dust control demand, could be served by the Hansen Connection WRP, which is associated with the DCTWRP T22 System and Burbank System, along San Fernando Rd.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley DCTWRP AWP

Annual Yield (AFY)
296

WRP: Vulcan

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Hansen PS Exp.	320	gpm	formula	\$ 388,000
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	10,700	in-diam*LF	\$24	\$ 1,541,000
8 inch	4,500	in-diam*LF	\$24	\$ 864,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	7,700	in-diam*LF	\$18	\$ 2,218,000
Construction Subtotal				\$ 5,011,000
Contingency Costs 30%				\$ 1,503,000
Construction Total				\$ 6,514,000
Implementation Costs 30%				\$ 1,954,000
Total Capital Cost				\$ 8,468,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	194,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 194,000
Contingency Costs 30%			\$ 58,000
Construction Total			\$ 252,000
Implementation Costs 30%			\$ 76,000
Total 20-year Capital Cost			\$ 328,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 388,000	capital cost	5.0%	\$ 19,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	149,500	kWh	\$0.12	\$ 18,000
PS 2 - Electricity	157,600	kWh	\$0.12	\$ 19,000
Conveyance	22,900	LF	\$0.60	\$ 14,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
DCT AWT O&M	296	AFY	\$0	\$ -
Total Annual O&M				\$ 80,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		296
Water Purchase Escalator	4.0%	Total Yield (AF)		14,792
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 8,468,000		1.00	\$ 8,468,000
20-Year Capital Costs	\$ 328,000		2.00	\$ 656,000
Annual O&M Costs	\$ 80,000		49.00	\$ 3,920,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (164,000)		1.00	\$ (164,000)
Total PV				\$ 12,880,000
50-year Project Yield (AF)				14,792
Unit Cost (\$/af)				\$870

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8. Valley – DCTWRP T22 System

Overview

The potential Valley – DCTWRP T22 System includes potential WRPs with the consideration that no potential WRPs may be implemented if the 30,000 AFY GWR Project is implemented since no surplus flow is projected if the project is implemented. If only the 15,000 AFY GWR Project is implemented, approximately 14 mgd of effluent would be available from DCTWRP to implement the WRPs. Considering the supply situation, three WRPs (Pierce College, Hansen Connection, and Vulcan) were defined as part of more than one system and can be compared when selecting the WRPs to implement for each system.

Valley – DCTWRP T22 System – Summary of WRPs

WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Braemar	707	0.63	1.36	\$21.32	\$0.18	\$920
Knollwood	1,074	0.96	2.09	\$35.12	\$0.45	\$1,170
Laterals	195	0.17	0.37	\$4.51	\$0.03	\$660
Pierce College	261	0.23	0.40	\$7.80	\$0.04	\$790
Reseda	88	0.08	0.17	\$9.80	\$0.02	\$2,480
VA Hospital	1,177	1.05	1.87	\$32.44	\$0.20	\$750
Potential Total	3,502	3.13	6.26	\$110.95	\$0.92	\$950
Existing System	1,690	1.51	3.32			
Planned System	688	0.61	1.35			
System Total	5,880	5.25	10.93			

Note: In addition to this system, the Pierce College WRP is considered in the Las Virgenes System. Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

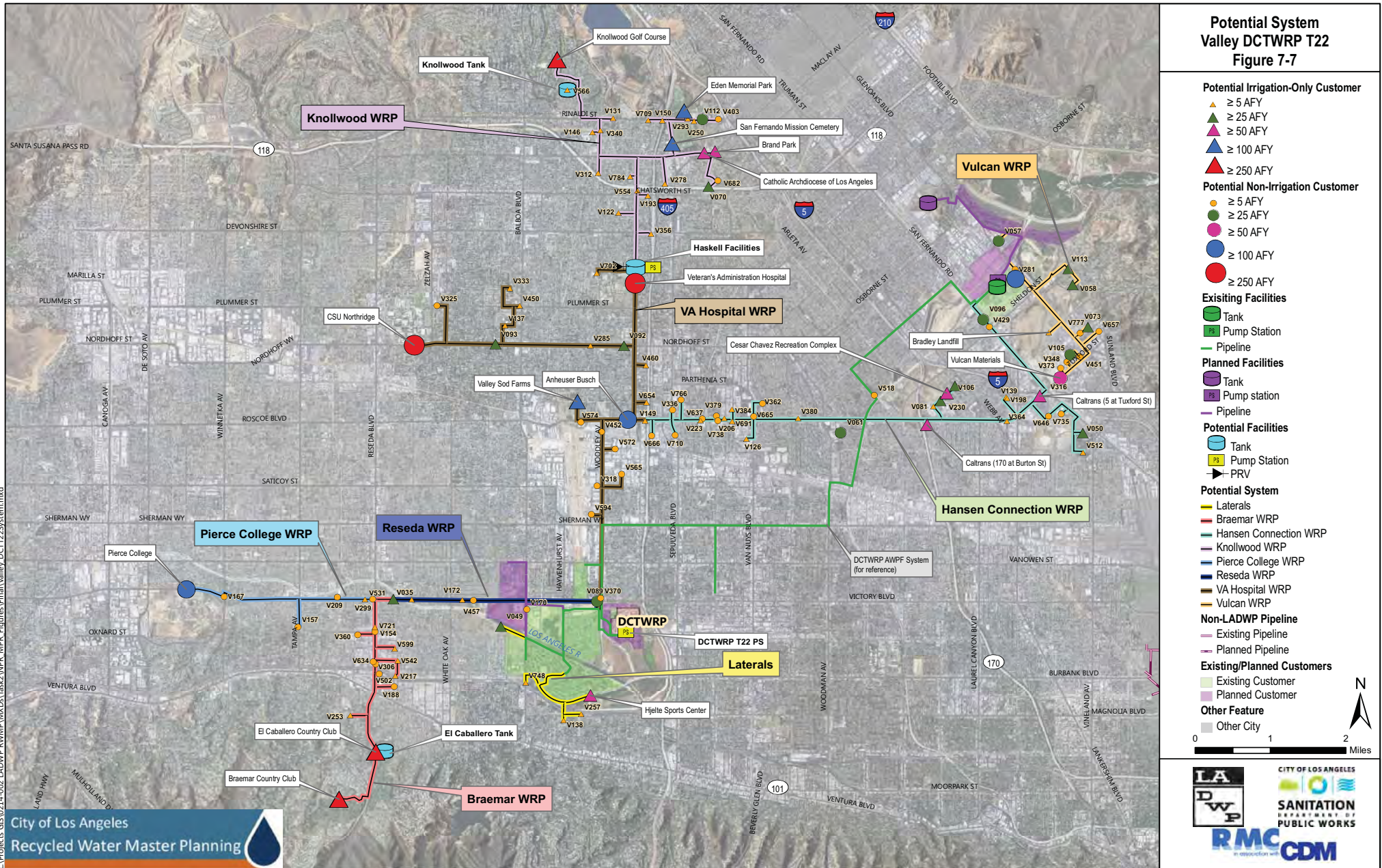
Implementation Considerations

The primary consideration for this system is the availability of supply from DCTWRP and the potential impact from the use of this supply on the Valley GWR Project yield.

The Braemar WRP is required to implement the Pierce College WRP and the VA Hospital WRP is required to implement the Knollwood, Hansen Connection, and Vulcan WRPs. The Braemar and VA Hospital WRPs can be implemented independently. The Braemar WRP is required to implement the DCTWRP T22 Laterals WRP and serve existing / planned customers in the Sepulveda Basin area (adjacent to DCTWRP) because the El Caballero Tank, which is part of the Braemar WRP, is necessary to manage the system's peak hour pumping requirements to avoid an extremely large DCTWRP T22 Pump Station. Any alternative system approach without a tank is described in the following section.

Limited DCTWRP T22 System

The GWR Project includes AWPf treatment capacity for existing and planned DCTWRP customers. This system would serve existing and planned customers in the Sepulveda Basin area with DCTWRP tertiary effluent instead of AWPf water. Implementation of this system would avoid the need for this AWPf O&M necessary to produce AWPf water for the existing and planned Sepulveda Basin customers. The system is proposed to include only an alternate version of the Reseda WRP and the existing and planned Sepulveda Basin customers.



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Data Sources: USGS, LADWP, ESRI, NAIP Note: Only potential customers ≥ 50 AFY are labeled and customers < 50 AFY have IDs shown

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
3,502

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	2.5	MG	\$2,000,000	\$ 5,000,000
Tank 2 at Haskell	1.0	MG	\$3,000,000	\$ 3,000,000
Tank 3 at Knollwood	1.25	MG	\$3,000,000	\$ 3,750,000
Pump Station				
PS 1 - New DCTWRP T22	8,800	gpm	formula	\$ 4,790,000
PS 2 - Haskell	1,700	gpm	formula	\$ 1,377,000
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	20	LS	\$350,000	\$ 350,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	48,900	in-diam*LF	\$24	\$ 7,042,000
8 inch	5,600	in-diam*LF	\$24	\$ 1,075,000
12 inch	25,200	in-diam*LF	\$20	\$ 6,048,000
16 inch	43,100	in-diam*LF	\$18	\$ 12,413,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	33,100	in-diam*LF	\$18	\$ 11,916,000
24 inch	16,900	in-diam*LF	\$16	\$ 6,490,000
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Bridge Crossing		LS	\$1,540,000	\$1,540,000
Construction Subtotal				\$ 65,651,000
Contingency Costs 30%				\$ 19,695,000
Construction Total				\$ 85,346,000
Implementation Costs 30%				\$ 25,604,000
Total Capital Cost				\$ 110,950,000

Capital Replacement Costs

20-Year Useful Life

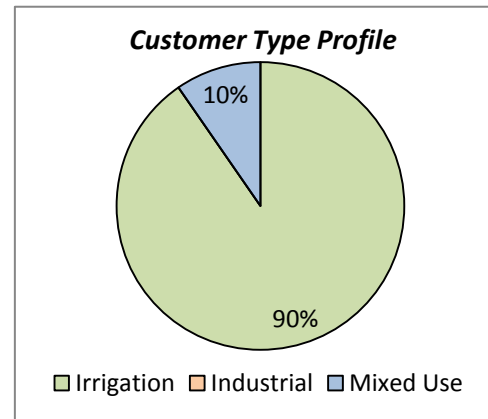
Storage	10%	\$	1,175,000
Pump Station	50%	\$	3,084,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	175,000
Construction Subtotal			\$ 4,434,000
Contingency Costs 30%			\$ 1,330,000
Construction Total			\$ 5,764,000
Implementation Costs 30%			\$ 1,729,000
Total 20-year Capital Cost			\$ 7,493,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	3	LS	\$75,000	\$ 225,000
Pump Station				
Maintenance	\$ 6,167,000	capital cost	5.0%	\$ 308,000
Maintenance	2	LS	\$10,000	\$ 20,000
PS 1 - Electricity	1,625,800	kWh	\$0.12	\$ 195,000
PS 2 - Electricity	366,700	kWh	\$0.12	\$ 44,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	177,100	LF	\$0.60	\$ 106,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 918,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	3,502
Water Purchase Escalator	4.0%		Total Yield (AF)	175,083
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 110,950,000		1.00	\$ 110,950,000
20-Year Capital Costs	\$ 7,493,000		2.00	\$ 14,986,000
Annual O&M Costs	\$ 918,000		49.00	\$ 44,982,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (3,746,500)		1.00	\$ (3,747,000)
Total PV				\$ 167,171,000
50-year Project Yield (AF)				175,083
Unit Cost (\$/af)				\$950

8.1 Braemar WRP

This WRP defines service to 13 potential customers located west and southwest of DCT, including two anchor customers:

- Braemar Country Club
- El Caballero Club

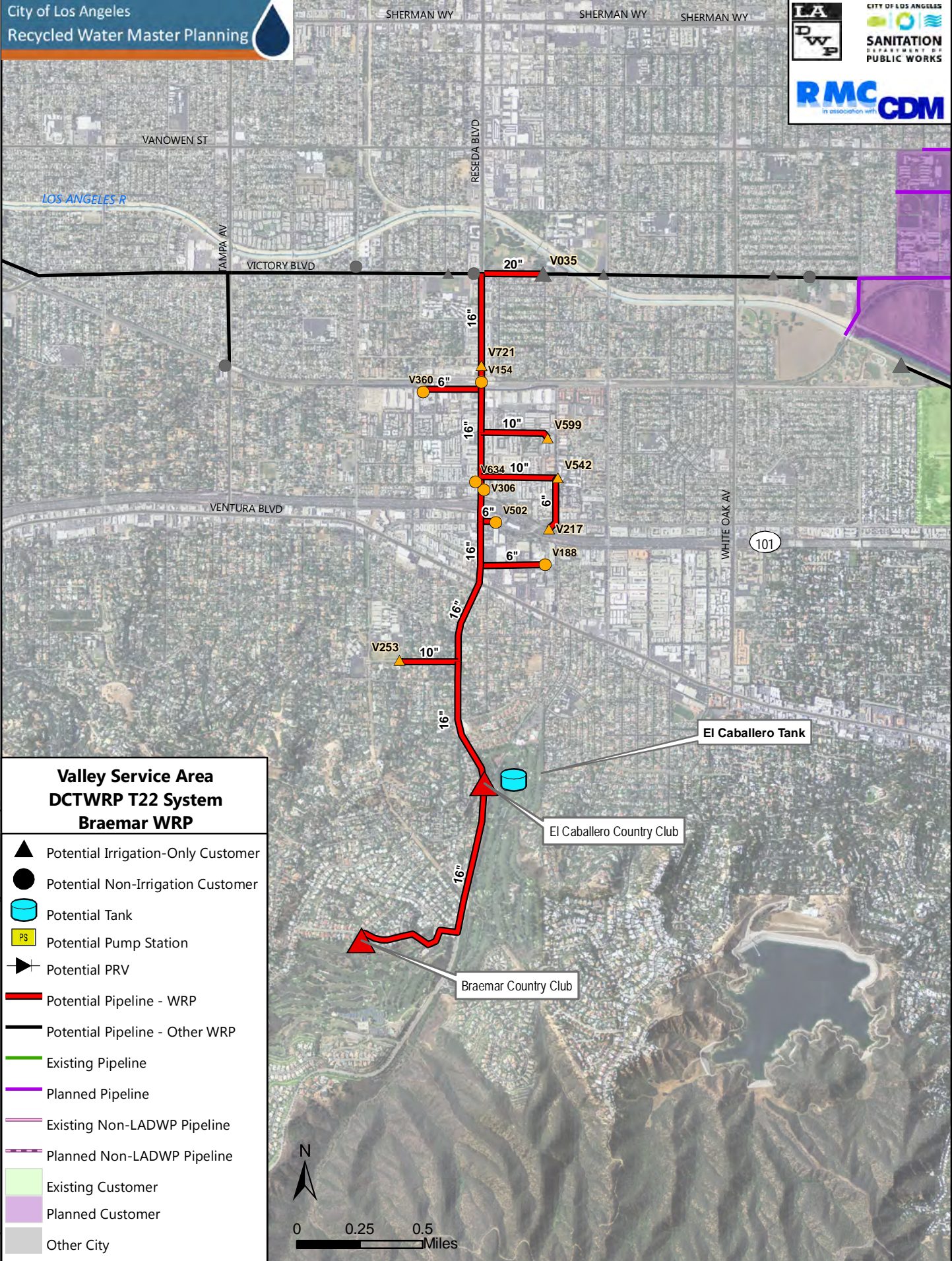


Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
707	0.63	1.36	\$21.32	\$0.18	\$920

Facilities

The DCTWRP T22 System requires a new pump station at DCTWRP (with two pumps plus one standby each with a capacity of 4,400 gpm at 340 ft head) to supply DCTWRP tertiary product and replace the Balboa Pump Station once it is dedicated to the DCTWRP AWP System. Also, the system includes a new floating tank to replace Hansen Tank so the El Caballero Tank, which is part of this WRP, serves this role. The tank helps to manage the system’s peak hour pumping requirements, particularly for the large existing and planned irrigation customers in the Sepulveda Basin. Therefore, both the Braemar WRP (El Caballero Tank) and Reseda WRP (DCTWRP T22 Pump Station) must be implemented at the same time to be able to continue serving existing and planned customers and to expand service to potential customers.

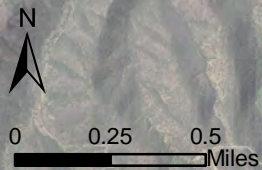
- **DCTWRP T22 Pump Station:** This WRP would use 1,800 gpm (approximately 20% of the capacity) of this new pump station.
- **El Caballero Tank:** The tank is 2.5 MG with a ground elevation of 940 ft and overflow elevation of 970 ft. The El Caballero Country Club was selected as a potential location since it is the only customer near the western portion of the system that is located at the desired elevation and may have a location on the course for the tank. However, an exact site for the tank was not evaluated. The tank is part of this WRP but would also be required for the Reseda WRP and the total capacity is based on implementation of the three DCTWRP T22 WRPs located to the west of DCT: Reseda, Braemar, and Pierce College.
- **Crossings:** This WRP includes a crossing of Hwy-101 at the Reseda Blvd underpass and across the Orange Line Busway.
- **Pipelines:** This WRP includes approximately 5.6 miles of 6” to 20” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Victory Blvd at Reseda Blvd and along Reseda Blvd at Ventura Blvd and at Burbank Blvd.



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**Valley Service Area
DCTWRP T22 System
Braemar WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown

Implementation Considerations

The primary consideration for this system is the availability of supply from DCTWRP and its impact on the Valley GWR Project yield. Also, this WRP is required to implement the Reseda WRP and serve existing / planned customers in the Sepulveda Basin area (adjacent to DCT) because the El Caballero Tank, which is part of the Braemar WRP, helps to manage the system’s peak hour pumping requirements.

Customers

DCTWRP T22 System – Braemar WRP Potential Customers

ID ¹	Name	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ²	Compre-hensive ³
V003	Braemar Country Club	Irrigation	300	0.27	0.59	A	A,A
V005	El Caballero Country Club	Irrigation	290	0.26	0.57	A	B,B
V154	LACMTA	Mixed-Use	19	0.02	0.03	--	--
V188	Providence Tarzana Medical Center	Mixed-Use	16	0.01	0.02	--	--
V217	Caltrans (101 at Etiwanda Ave)	Irrigation	15	0.01	0.03	--	--
V253	Portola Middle School	Irrigation	13	0.01	0.03	--	--
V306	Mariner Post Acute Net Debtor in Possession	Mixed-Use	11	0.01	0.02	--	--
V360	Tarzana Treatment Center Inc	Mixed-Use	10	0.01	0.02	--	--
V502	George E Moss	Mixed-Use	8	0.01	0.01	--	--
V542	California Village Place HOA	Irrigation	7	0.01	0.01	--	--
V599	Tarzana Plaza HOA	Irrigation	6	0.01	0.01	--	--
V634	Summerville at Cobbco Inc. at Tarzana	Mixed-Use	6	0.01	0.01	--	--
V721	Tarzana Five LLC	Irrigation	5	0.00	0.01	--	--
Total⁴			707	0.63	1.36		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
3. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
4. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Braemar Country Club:** Customer has existing irrigation storage ponds and pump station allowing recycled water to be blended with potable water to adequately address any water quality concerns.
- **El Caballero Country Club:** Customer has water quality concerns that could be addressed through: 1) site-specific soil and water quality analysis; 2) on-site blending with potable water requiring a new irrigation storage pond; 3) on-site treatment; or 4) modification of on-site piping and/or greens.

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
707

WRP: Braemar

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	2.5	MG	\$2,000,000	\$ 5,000,000
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (20%)	8,800	gpm	formula	\$ 968,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	4,200	in-diam*LF	\$24	\$ 605,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	16,500	in-diam*LF	\$18	\$ 4,752,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	1,200	in-diam*LF	\$18	\$ 432,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 12,617,000
Contingency Costs	30%	\$ 3,785,000
Construction Total		\$ 16,402,000
Implementation Costs	30%	\$ 4,921,000
Total Capital Cost		\$ 21,323,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 500,000
Pump Station	50%	\$ 484,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 984,000
Contingency Costs	30%	\$ 295,000
Construction Total		\$ 1,279,000
Implementation Costs	30%	\$ 384,000
Total 20-year Capital Cost		\$ 1,663,000

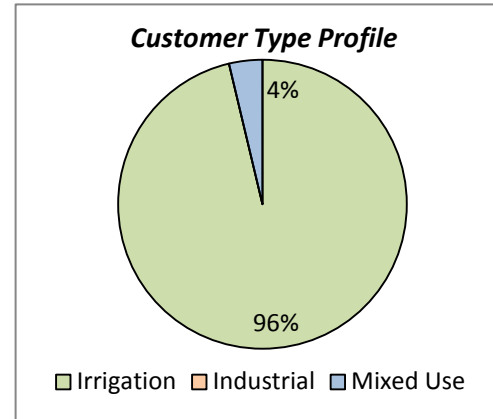
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 968,000	capital cost	5.0%	\$ 48,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	328,500	kWh	\$0.12	\$ 39,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	26,200	LF	\$0.60	\$ 16,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 178,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	707
Water Purchase Escalator	4.0%		Total Yield (AF)	35,370
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 21,323,000		1.00	\$ 21,323,000
20-Year Capital Costs	\$ 1,663,000		2.00	\$ 3,326,000
Annual O&M Costs	\$ 178,000		49.00	\$ 8,722,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (831,500)		1.00	\$ (832,000)
Total PV				\$ 32,539,000
50-year Project Yield (AF)				35,370
Unit Cost (\$/af)				\$920

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8.2 Knollwood WRP

This WRP defines service to 24 potential customers located north of DCTWRP in the northern half of the San Fernando Valley, including five anchor customers:

- Brand Park
- Catholic Archdiocese of LA
- Eden Memorial Park
- Knollwood Golf Course
- San Fernando Mission Cemetery

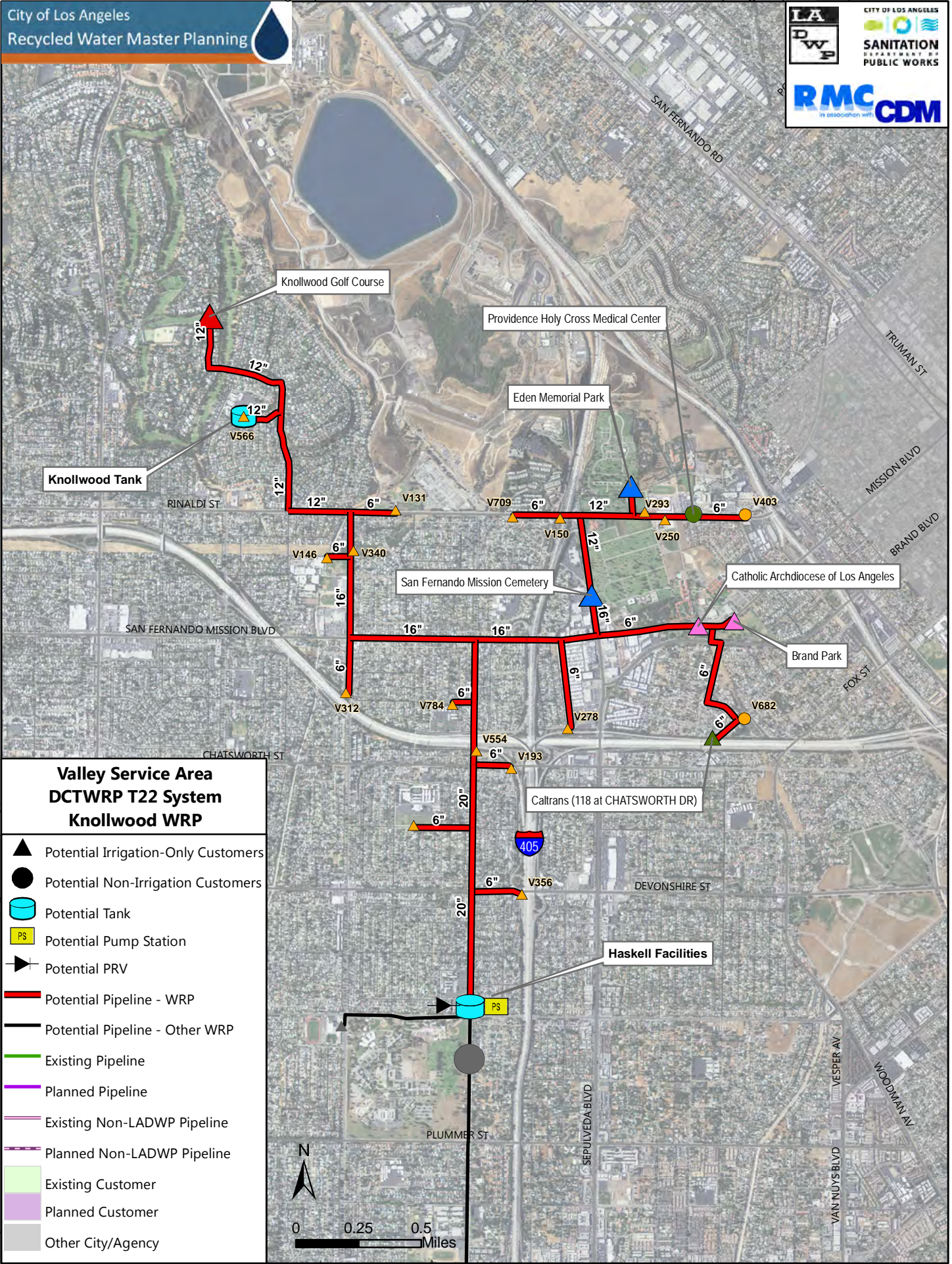


Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
1,074	0.96	2.09	\$35.12	\$0.45	\$1,170

Facilities

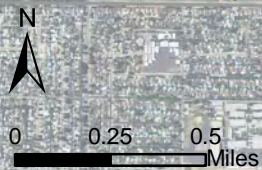
- **DCTWRP T22 Pump Station:** This WRP would use 2,600 gpm (approximately 30% of the capacity) of this new pump station.
- **Haskell PRV, Tank, and Pump Station:** This WRP requires a PRV, storage tank, and pump station combination to create a new pressure zone from the VA Hospital WRP to provide adequate customer service pressures. A 20" PRV is required to break the pressure provided from the DCTWRP T22 Pump Station and the 1.0 MG tank with a ground elevation of 900 ft and overflow elevation of 930 ft serves as a wet well to the pump station. The pump station has two pumps (plus one standby) each with a capacity of 850 gpm at 250 ft head. All the facilities should be co-located. The facilities are assumed to be located somewhere near VA Hospital but a specific site was not identified to accommodate all three facilities.
- **Knollwood Tank:** This WRP requires a tank to provide floating head. The tank volume is 1.25 MG with a ground elevation of 1,155 ft and overflow elevation of 1,185 ft and provides floating head to the pressure zone created by the Haskell facilities. The tank is assumed to be located somewhere near Knollwood Golf Course but a specific site was not identified.
- **Crossings:** This WRP include a crossing of Hwy-118 at the Haskell Ave underpass and is required to serve all of the WRP's anchor customers. Also, a crossing of I-405 at the San Fernando Mission Blvd underpass is required to serve all of the WRP's anchor customers other than Knollwood Golf Course.
- **Pipelines:** This WRP includes approximately 8.8 miles of 6" to 20" pipe. The utility review conducted using NavigateLA revealed potential "crowding" along the proposed alignment due to existing utilities along Haskell Ave at Lassen St and at Devonshire St; and along Rinaldi St at Woodley Ave.

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**Valley Service Area
DCTWRP T22 System
Knollwood WRP**

- Potential Irrigation-Only Customers
- Potential Non-Irrigation Customers
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City/Agency



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown

Implementation Considerations

This WRP is dependent on implementation of the VA Hospital WRP to provide the recycled water supply from DCTWRP. The primary consideration for this WRP is the availability of supply from DCTWRP and its impact on the Valley GWR Project yield.

Customers

DCTWRP T22 System – Knollwood WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
V010	Knollwood Golf Course	Irrigation	280	0.25	0.55	A	A,A
V015	Eden Memorial Park	Irrigation	225	0.20	0.44	B	B,A
V017	San Fernando Mission Cemetery	Irrigation	200	0.18	0.39	B	A,A
V042	Brand Park	Irrigation	50	0.04	0.10	--	--
V043	Catholic Archdiocese of LA	Irrigation	50	0.04	0.10	--	--
V070	Caltrans (118 at Chatsworth Dr)	Irrigation	36	0.03	0.07	--	--
V112	Providence Holy Cross Medical Center	Mixed-Use	25	0.02	0.04	--	--
V122	Geo K Porter Junior High	Irrigation	23	0.02	0.05	--	--
V131	Granada Hills Little League	Irrigation	22	0.02	0.04	--	--
V146	Kennedy High School	Irrigation	20	0.02	0.04	--	--
V150	Caltrans (405 at RINALDI ST)	Irrigation	20	0.02	0.04	--	--
V193	Caltrans (405 at Chatsworth St)	Irrigation	16	0.01	0.03	--	--
V250	Forneris Farms	Irrigation	13	0.01	0.03	--	--
V278	Caltrans (118 at BERMUDA ST)	Irrigation	12	0.01	0.02	--	--
V293	Alemany H.S. Sports Fields	Irrigation	11	0.01	0.02	--	--
V312	Caltrans (118 at WOODLEY AV)	Irrigation	11	0.01	0.02	--	--
V340	Pedro Perez DBA EP Nursery	Irrigation	10	0.01	0.02	--	--
V356	Caltrans (405 at Devonshire St)	Irrigation	10	0.01	0.02	--	--
V403	Hemo Dialysis Corp. Holy Cross Renal Center	Mixed-Use	9	0.01	0.01	--	--
V554	Caltrans (118 at HASKELL AV)	Irrigation	7	0.01	0.01	--	--
V566	Knollwood Elementary School	Irrigation	7	0.01	0.01	--	--
V682	Norman Mori	Mixed-Use	6	0.01	0.01	--	--
V709	Granada HOA	Irrigation	6	0.00	0.01	--	--
V784	Haskell Ave Elem School	Irrigation	5	0.00	0.01	--	--
Total⁵			1,074	0.96	2.09		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Brand Park:** This City park is interested in converting to recycled water.
- **Catholic Archdiocese of Los Angeles:** This customer includes several sites in the area surrounding the San Fernando Mission, including San Fernando Mission Cemetery, Bishop Alemany High School, Forneris Farms, and the mission itself. The cemetery was defined as a separate customer due to its large demand. Also, Forneris Farms and the high school's athletic fields (which are separated from the school grounds) are in the database as individual customers.

All of these sites associated with the archdiocese are shown in the San Fernando Mission Cemetery Conversion TM. The figure shows approximately 10 acres of undeveloped land that will be developed in the future but was not included in the demand estimate because the future use is unknown.

- **Eden Memorial Park:** The customer is interested in using recycled water for irrigation but the layout of the irrigation lines at the cemetery would require the addition of potable water lines to wash stations throughout the site and to onsite fire hydrants. Also, financing for the conversion project may be difficult due to the fact the site is owned by a company headquartered outside of California and the budget approval process is cumbersome.
- **Knollwood Golf Course:** This customer is owned by Los Angeles County and operated by American Golf Corporation. Knollwood is very interested in receiving recycled water to help reduce costs and drought-proof supply. American Golf Corporation stated that they have no water quality concerns with the current recycled water quality and have experience using recycled water at other golf courses.
- **San Fernando Mission Cemetery:** The customer is interested in using recycled water. However, an issue that must be addressed by all cemeteries is use of recycled in hose bibs across the site. Recent CDPH decisions dictate that the hose bibs must remain on potable water, which significantly increases the cost of the non-potable conversion.

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
1,074

WRP: Knollwood

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	1.0	MG	\$3,000,000	\$ 3,000,000
Tank 3 at Knollwood	1.25	MG	\$3,000,000	\$ 3,750,000
Pump Station				
PS 1 - New DCTWRP T22 (31%)	8,800	gpm	formula	\$ 1,469,000
PS 2 - Haskell	1,700	gpm	formula	\$ 1,377,000
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	20	LS	\$350,000	\$ 350,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	18,900	in-diam*LF	\$24	\$ 2,722,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	9,800	in-diam*LF	\$20	\$ 2,352,000
16 inch	10,000	in-diam*LF	\$18	\$ 2,880,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	8,000	in-diam*LF	\$18	\$ 2,880,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 20,780,000
Contingency Costs	30%	\$ 6,234,000
Construction Total		\$ 27,014,000
Implementation Costs	30%	\$ 8,104,000
Total Capital Cost		\$ 35,118,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 675,000
Pump Station	50%	\$ 1,423,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

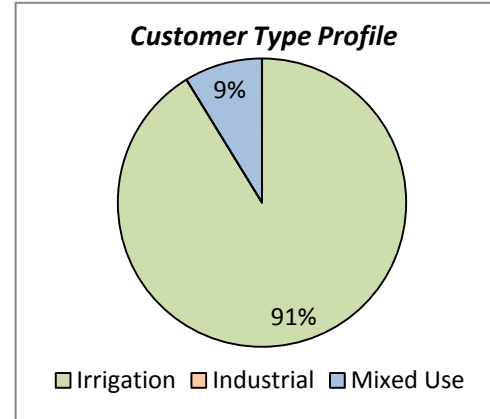
Construction Subtotal		\$ 2,098,000
Contingency Costs	30%	\$ 629,000
Construction Total		\$ 2,727,000
Implementation Costs	30%	\$ 818,000
Total 20-year Capital Cost		\$ 3,545,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	2	LS	\$75,000	\$ 150,000
Pump Station				
Maintenance	\$ 2,846,000	capital cost	5.0%	\$ 142,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	498,700	kWh	\$0.12	\$ 60,000
PS 2 - Electricity	366,700	kWh	\$0.12	\$ 44,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	46,700	LF	\$0.60	\$ 28,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 454,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	1,074
Water Purchase Escalator	4.0%		Total Yield (AF)	53,701
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 35,118,000		1.00	\$ 35,118,000
20-Year Capital Costs	\$ 3,545,000		2.00	\$ 7,090,000
Annual O&M Costs	\$ 454,000		49.00	\$ 22,246,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (1,772,500)		1.00	\$ (1,773,000)
Total PV				\$ 62,681,000
50-year Project Yield (AF)				53,701
Unit Cost (\$/af)				\$1,170

8.3 Laterals – DCTWRP T22

This WRP defines service to six potential customers located in the vicinity of the Sepulveda Flood Control Basin, including one anchor customer:

- Hjelte Sports Center



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
195	0.17	0.37	\$4.51	\$0.03	\$660

Facilities

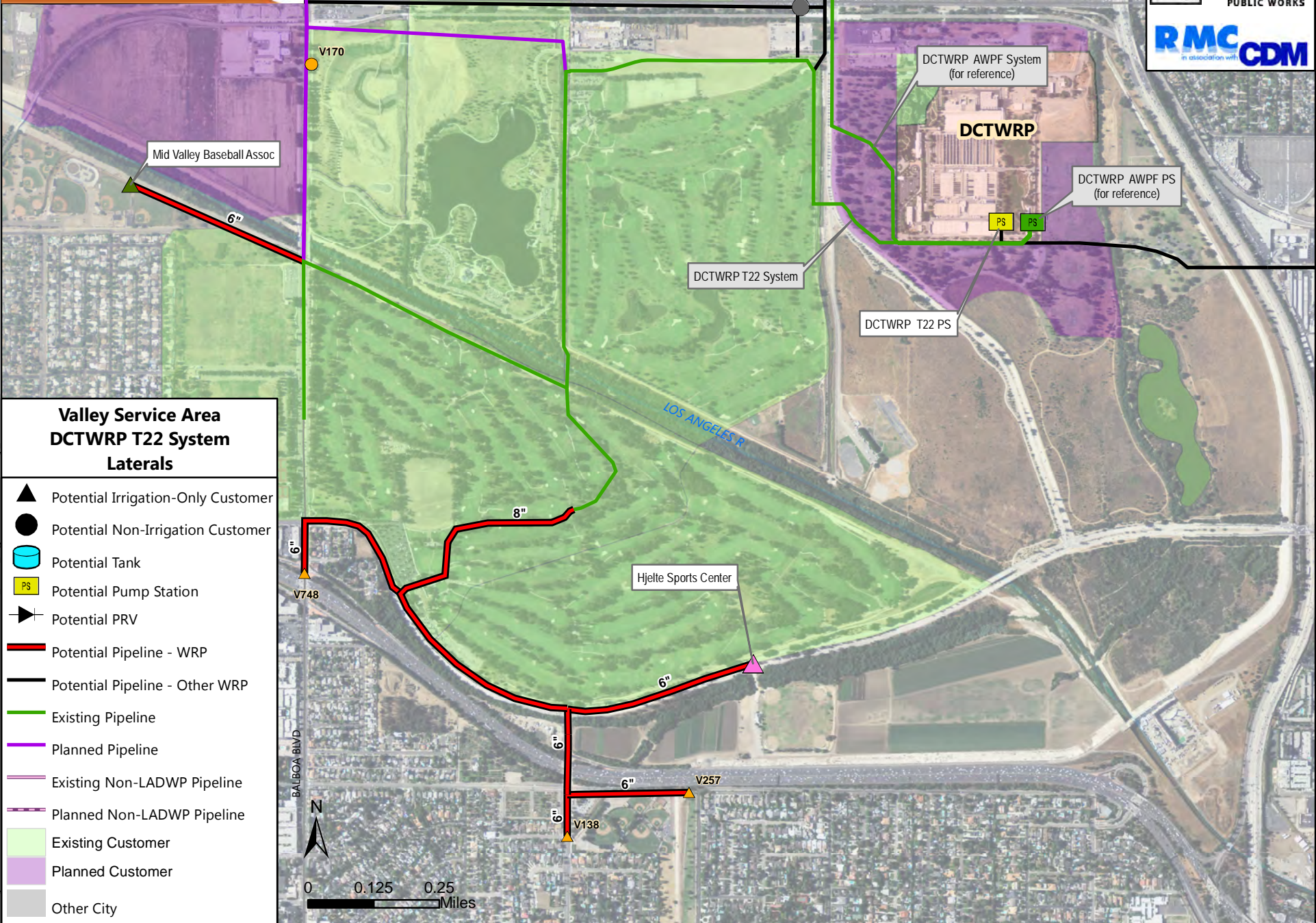
- **DCTWRP T22 Pump Station:** This WRP would use 400 gpm (approximately 5% of the capacity) of this new pump station.
- **El Caballero Tank:** This tank is part of the Braemar WRP but customers associated with this WRP would use some capacity of the 2.5 MG tank to help reduce the system’s peak hour pump requirements.
- **Crossings:** A crossing of Hwy-101 at the Hayvenhurst Ave underpass is necessary to serve several small (< 25 AFY) irrigation customers on the south side of Hwy-101.
- **Pipelines:** This WRP includes approximately 2.4 miles of 6” to 20” pipe. The utility review was conducted for transmission pipelines but not completed for laterals so there are no review findings.

Implementation Considerations

The primary consideration for this system is the availability of supply from DCTWRP and its impact on the Valley GWR Project yield. Also, this WRP depends on the El Caballero Tank, which is part of the Braemar WRP, because it is necessary to manage the system’s peak hour pumping requirements to avoid an extremely large DCTWRP T22 Pump Station.

The laterals that make up this WRP can be implemented independently and will be dependent on confirmation of customer’s willingness to use recycled water and a review of on-site conversion requirements.

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**Valley Service Area
DCTWRP T22 System
Laterals**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

DCTWRP T22 System- Laterals WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
V028	Hjelte Sports Center	Industrial	90	0.08	0.18	A	--
V049	Mid Valley Baseball Assoc	Irrigation	48	0.04	0.09	--	--
V138	Encino Baseball Inc.	Mixed-Use	21	0.02	0.04	--	--
V170	LACMTA	Irrigation	17	0.02	0.03	--	--
V257	Libbit Park	Irrigation	13	0.01	0.03	--	--
V748	Caltrans (101 at BALBOA BL)	Mixed-Use	5	0.00	0.01	--	--
Total⁵			195	0.17	0.37		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Hjelte Sports Center:** This City park includes four baseball fields. City Recreation and Parks Department is a willing recycled water customer but this customer was not evaluated individually.

Also, the following customer was initially considered an anchor customer but was removed from consideration:

- **Tapia Brothers:** The customer operates a produce market on Havenhurst Ave and agricultural fields on either side of Hjelte Sports Center. The customer was not interested in using recycled water.

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
195

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (6%)	8,800	gpm	formula	\$ 266,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	6,300	in-diam*LF	\$24	\$ 907,000
8 inch	4,400	in-diam*LF	\$24	\$ 845,000
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	1,800	in-diam*LF	\$18	\$ 648,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal	\$ 2,666,000
Contingency Costs 30%	\$ 800,000
Construction Total	\$ 3,466,000
Implementation Costs 30%	\$ 1,040,000
Total Capital Cost	\$ 4,506,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 133,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal	\$ 133,000
Contingency Costs 30%	\$ 40,000
Construction Total	\$ 173,000
Implementation Costs 30%	\$ 52,000
Total 20-year Capital Cost	\$ 225,000

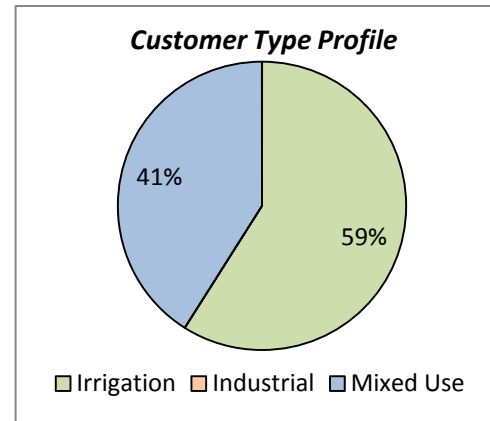
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 266,000	capital cost	5.0%	\$ 13,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	90,400	kWh	\$0.12	\$ 11,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	12,500	LF	\$0.60	\$ 8,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 32,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	195
Water Purchase Escalator	4.0%		Total Yield (AF)	9,735
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 4,506,000		1.00	\$ 4,506,000
20-Year Capital Costs	\$ 225,000		2.00	\$ 450,000
Annual O&M Costs	\$ 32,000		49.00	\$ 1,568,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (112,500)		1.00	\$ (113,000)
Total PV				\$ 6,411,000
50-year Project Yield (AF)				9,735
Unit Cost (\$/af)				\$660

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8.4 Pierce College WRP

This WRP defines service to six potential customers located to the west of the Braemar WRP, including one anchor customer:

- Pierce College



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
261	0.23	0.40	\$7.80	\$0.04	\$790

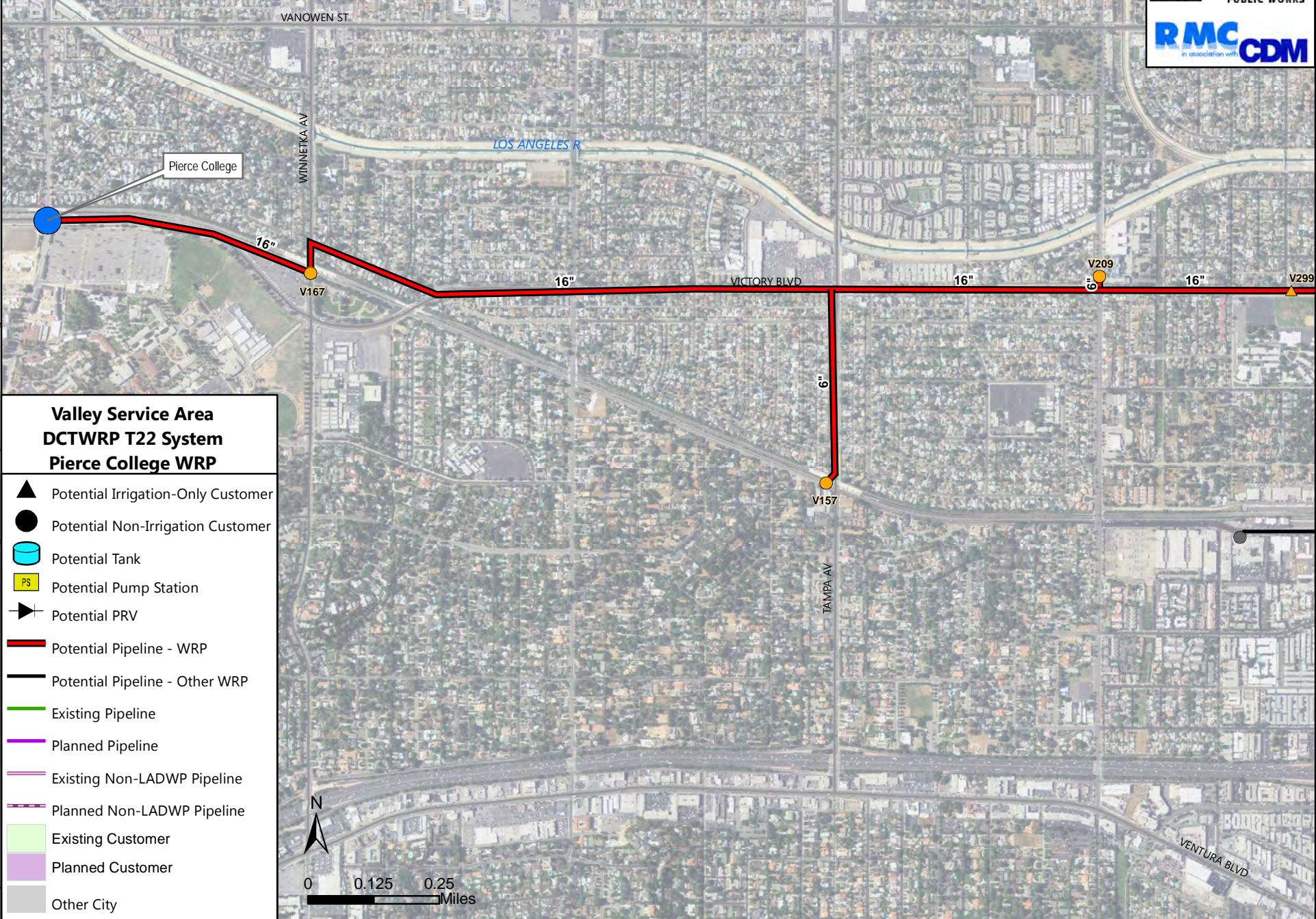
Facilities

- **DCTWRP T22 Pump Station:** This WRP would use 400 gpm (approximately 5% of the capacity) of this new pump station.
- **El Caballero Tank:** This tank is part of the Braemar WRP but customers associated with this WRP would use some capacity of the 2.5 MG tank to help reduce the system’s peak hour pump requirements.
- **Crossings:** This WRP includes a crossing of the Orange Line Busway.
- **Pipelines:** This WRP includes approximately 3.0 miles of 6” to 20” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Victory Blvd at Wilbur Ave.

Implementation Considerations

The primary consideration for this system is the availability of supply from DCTWRP and its impact on the Valley GWR Project yield. This WRP is dependent on implementation of the Braemar WRP to provide the recycled water supply from DCTWRP. Service to this WRP’s anchor customer, LA Pierce College, could also be provided as part of the Las Virgenes System; however, the primary consideration for both of these systems is the availability of supply for LA Pierce College. The use of DCTWRP T22 supply for this WRP may impact the Valley GWR Project yield.

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**Valley Service Area
DCTWRP T22 System
Pierce College WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

DCTWRP T22 System – Pierce College WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
V011	Pierce College	Mixed-Use	190	0.17	0.29	A	A,A
V157	LACMTA	Mixed-Use	19	0.02	0.03	--	--
V167	LACMTA	Mixed-Use	18	0.02	0.03	--	--
V209	Jewish Home for the Aging	Mixed-Use	15	0.01	0.02	--	--
V299	Sequoia JR High #8368	Irrigation	11	0.01	0.02	--	--
V531	Robert Hart	Mixed-Use	7	0.01	0.01	--	--
Total⁵			261	0.23	0.40		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Pierce College:** Recycled water can be used for irrigation and in cooling towers. Pierce College has already installed 'purple-pipe' identification on all of its irrigation system in preparation for receiving recycled water.

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
261

WRP: Pierce College

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (7%)	8,800	gpm	formula	\$ 357,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	2,100	in-diam*LF	\$24	\$ 302,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	13,600	in-diam*LF	\$18	\$ 3,917,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	100	in-diam*LF	\$18	\$ 36,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 4,612,000
Contingency Costs	30%	\$ 1,384,000
Construction Total		\$ 5,996,000
Implementation Costs	30%	\$ 1,799,000
Total Capital Cost		\$ 7,795,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 179,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 179,000
Contingency Costs	30%	\$ 54,000
Construction Total		\$ 233,000
Implementation Costs	30%	\$ 70,000
Total 20-year Capital Cost		\$ 303,000

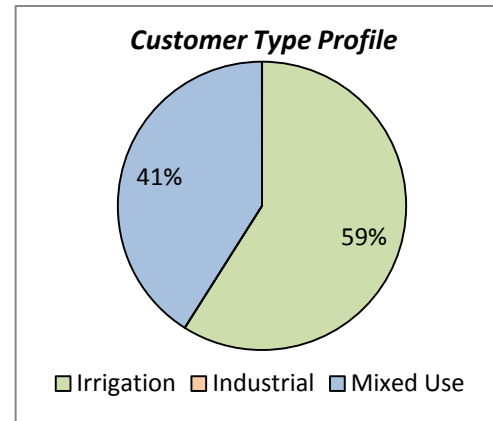
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 357,000	capital cost	5.0%	\$ 18,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	121,100	kWh	\$0.12	\$ 15,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	15,800	LF	\$0.60	\$ 9,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 42,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	261
Water Purchase Escalator	4.0%		Total Yield (AF)	13,034
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations			<u>PV Factor</u>	
Initial Capital Cost	\$ 7,795,000		1.00	\$ 7,795,000
20-Year Capital Costs	\$ 303,000		2.00	\$ 606,000
Annual O&M Costs	\$ 42,000		49.00	\$ 2,058,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (151,500)		1.00	\$ (152,000)
Total PV				\$ 10,307,000
50-year Project Yield (AF)				13,034
Unit Cost (\$/af)				\$790

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8.5 Reseda WRP

This WRP defines service to four potential customer located west of DCTWRP, including one anchor customer:

- Reseda Park



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
88	0.08	0.17	\$9.80	\$0.02	\$2,480

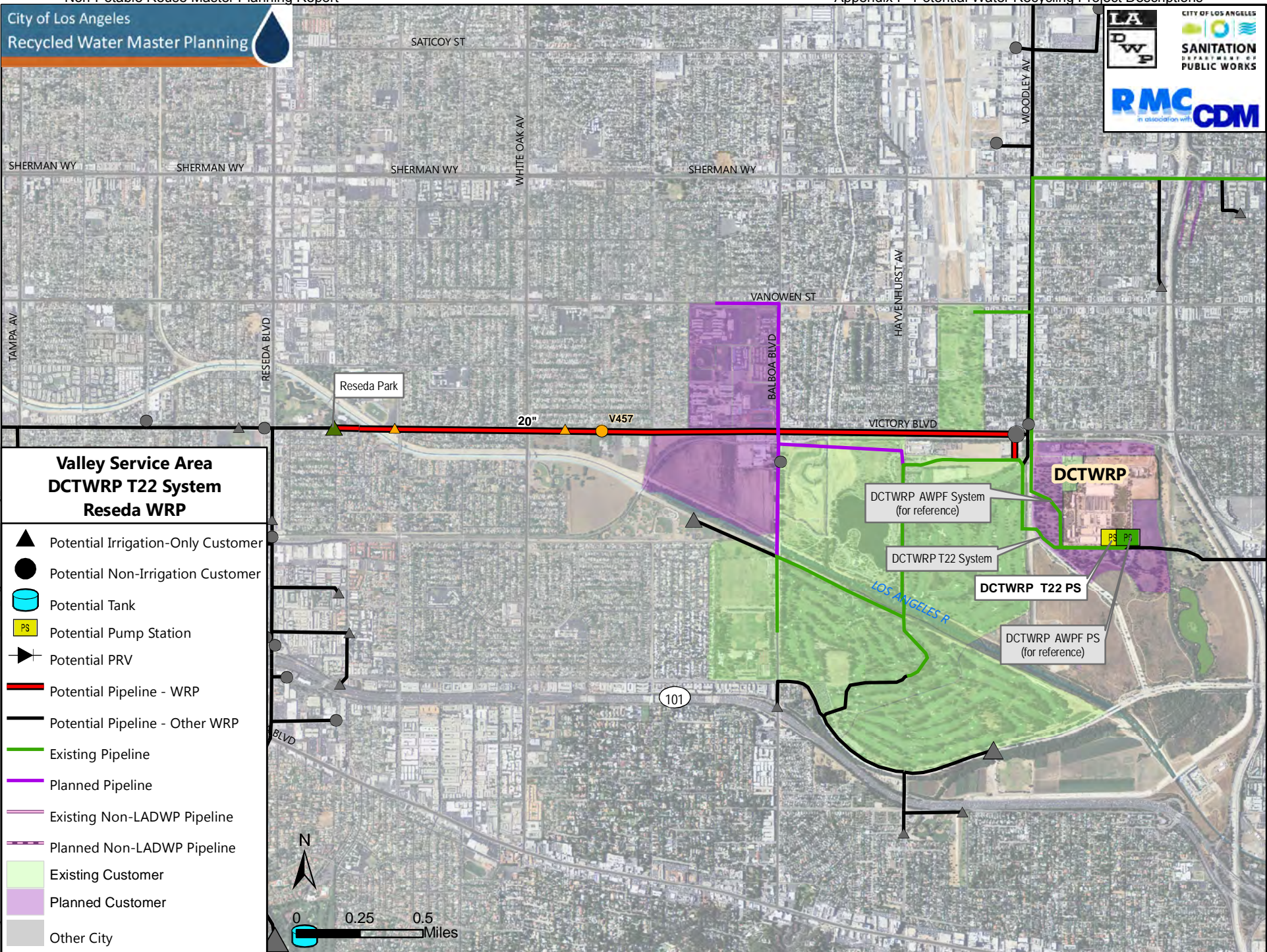
Facilities

- **Crossings:** This WRP includes a crossing of the Los Angeles River and a flood control channel adjacent to Petit Ave.
- **Pipelines:** This WRP includes approximately 3.0 miles of 12” pipe. The utility review conducted using NavigateLA reveal potential “crowding” along the proposed alignment due to existing utilities along Victory Blvd at Balboa Blvd, Louise Ave, White Oak Ave, Lindley Ave, and Etiwanda Ave.

Implementation Considerations

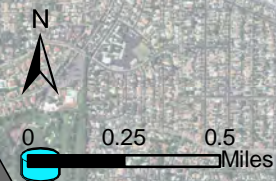
The primary consideration for this system is the availability of supply from DCTWRP and its impact on the Valley GWR Project yield.

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**Valley Service Area
DCTWRP T22 System
Reseda WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

DCTWRP T22 System – Reseda WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
V035	Reseda Park	Irrigation	40	0.04	0.09	--	--
V129	Reseda High School	Irrigation	22	0.02	0.04	--	--
V172	Sepulveda Basin Dog Park	Irrigation	17	0.01	0.03	--	--
V457	ONEGENERATION	Mixed-Use	8	0.01	0.01	--	--
Total⁵			88	0.08	0.17		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Reseda Park:** Recycled water can be used for irrigation.

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
88

WRP: Reseda

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (3%)	8,800	gpm	formula	\$ 120,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	11,500	in-diam*LF	\$18	\$ 4,140,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Bridge Crossing		LS	\$1,540,000	\$1,540,000
Construction Subtotal				\$ 5,800,000
Contingency Costs 30%				\$ 1,740,000
Construction Total				\$ 7,540,000
Implementation Costs 30%				\$ 2,262,000
Total Capital Cost				\$ 9,802,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	\$ -
Pump Station	50%	\$	60,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 60,000
Contingency Costs 30%			\$ 18,000
Construction Total			\$ 78,000
Implementation Costs 30%			\$ 23,000
Total 20-year Capital Cost			\$ 101,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 120,000	capital cost	5.0%	\$ 6,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	40,700	kWh	\$0.12	\$ 5,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	11,500	LF	\$0.60	\$ 7,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 18,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	88
Water Purchase Escalator	4.0%		Total Yield (AF)	4,377
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 9,802,000		1.00	\$ 9,802,000
20-Year Capital Costs	\$ 101,000		2.00	\$ 202,000
Annual O&M Costs	\$ 18,000		49.00	\$ 882,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (50,500)		1.00	\$ (51,000)
Total PV				\$ 10,835,000
50-year Project Yield (AF)				4,377
Unit Cost (\$/af)				\$2,480

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8.6 Reseda WRP (Limited DCT T22 System)

The 15,000 AFY GWR Project (Phase 1) includes AWPf treatment capacity for existing and planned DCTWRP customers. The Limited DCTWRP T22 System proposes to serve existing and planned customers in the Sepulveda Basin area with DCTWRP tertiary effluent instead of AWPf water. In addition, the Reseda WRP customers described in the previous section are included in the system, which includes one anchor customer:

- Reseda Park

	Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
Reseda WRP	88	0.08	0.17	\$17.34	\$0.40	N/A
System Total	2,473	2.21	3.93	\$17.34	(\$0.73)	(\$2,640)

Note: System Total includes existing and planned customers currently proposed to be included in the DCTWRP AWPf System and includes avoided AWPf O&M costs that result from the Limited DCTWRP System.

Facilities

The Reseda WRP in the Limited DCTWRP T22 System would be similar to the Reseda WRP described in the previous section except that it would not be operated with a tank in the system. Therefore, the DCTWRP T22 Pump Station associated with this scenario would be larger than in the previous section. The potential pump station has two pumps (plus one standby) each with a capacity of 5,100 gpm at 280 ft head.

Implementation Considerations

Producing 2.13 mgd of AWPf product requires 2.70 mgd of tertiary water and the 0.57 mgd (634 AFY) of DCTWRP tertiary effluent that was AWPf concentrate would now be available for additional NPR or treatment by the AWPf to increase the Valley GWR Project yield. The Reseda WRP requires 88 AFY so 546 AFY of tertiary water would be available for GWR, which would result in 430 AFY of AWPf product water.

Customers

Sepulveda Basin Customers ¹	Type of Use	Annual Demand (AFY)	Annual Demand (mgd)	Peak Day Demand (mgd)
Sepulveda Basin Existing Customers (5) ¹	Irrigation	1,690	1.51	3.32
Sepulveda Basin Planned Customers (7) ²	Irrigation	695	0.62	0.44
Reseda WRP Potential Customers (4) ³	Irrigation	88	0.08	0.17
Total		2,473	2.21	3.93

1. Existing customers are Anthony C. Beilenson Park, Balboa Municipal Golf Course, Balboa Sports Complex, Encino Municipal Golf Course, and Woodley Lakes Municipal Golf Course.
2. Planned customers are California Air National Guard, Birmingham High School, High Tech High School, Mulholland Middle School, Sepulveda Basin Sports Complex, Valley Alternative High School, and Woodley Park/Cricket Fields.
3. See previous section for customer information.

Cost Estimate

Implementation of this system avoids the need for 2.13 mgd (average annual demand of existing and planned Sepulveda Basin customers) of AWPF production capacity; however, the AWPF design capacity would not be reduced because the facility will be constructed in 5 mgd increments. Implementation of this system avoids the O&M costs to produce 2.13 mgd of AWPF water. The AWPF O&M cost estimate for average annual AWPF production of 32.1 mgd is \$17.0 M, which is approximately equivalent to \$530,000 per mgd of average annual production. Therefore, the proposed system would avoid approximately \$1.1 M in annual O&M. The present value of the avoided AWPF cost is greater than the present value of the potential NPR system costs and would result in a net benefit to LADWP of \$11.5 M (50-year present value).

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: LIMITED Valley DCTWRP T22

Annual Yield (AFY)
88

WRP: Reseda (in Limited System)

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Treatment				
AWPF (Avoided Cost)	0	mgd	\$ 8,965,000	\$ -
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22	10,200	gpm	formula	\$ 5,358,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch		in-diam*LF	\$24	\$ -
8 inch		in-diam*LF	\$24	\$ -
12 inch	14,000	in-diam*LF	\$20	\$ 3,360,000
16 inch		in-diam*LF	\$18	\$ -
18 inch		in-diam*LF	\$18	\$ -
20 inch		in-diam*LF	\$18	\$ -
24 inch		in-diam*LF	\$16	\$ -
30 inch		in-diam*LF	\$16	\$ -
36 inch		in-diam*LF	\$16	\$ -
Bridge Crossing	1	LS	\$1,540,000	\$ 1,540,000
Construction Subtotal				\$ 10,258,000
Contingency Costs 30%				\$ 3,077,000
Construction Total				\$ 13,335,000
Implementation Costs 30%				\$ 4,001,000
Total Capital Cost				\$ 17,336,000

Capital Replacement Costs

20-Year Useful Life

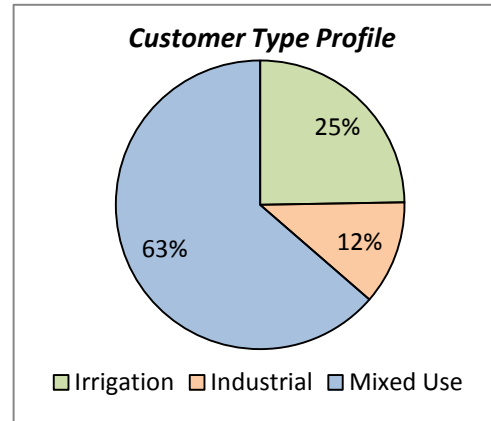
Storage	10%	\$	\$ -
Pump Station	50%	\$	2,679,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 2,679,000
Contingency Costs 30%			\$ 804,000
Construction Total			\$ 3,483,000
Implementation Costs 30%			\$ 1,045,000
Total 20-year Capital Cost			\$ 4,528,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
AWPF (Avoided Cost)	2.13	mgd	\$529,600	\$ (1,128,000)
Storage		LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 5,358,000	capital cost	5.0%	\$ 268,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	946,200	kWh	\$0.12	\$ 114,000
Conveyance	14,000	LF	\$0.60	\$ 8,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ (728,000)
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escala	3.0%		Annual Yield (AFY)	88
Water Purchase Escalator	4.0%		Total Yield (AF)	4,377
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations			<u>PV Factor</u>	
Initial Capital Cost	\$ 17,336,000		1.00	\$ 17,336,000
20-Year Capital Costs	\$ 4,528,000		2.00	\$ 9,056,000
Annual O&M Costs	\$ (728,000)		49.00	\$ (35,672,000)
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (2,264,000)		1.00	\$ (2,264,000)
Total PV				\$ (11,544,000)
Project Yield (AFY)				4,377
Unit Cost (\$/af)				-\$2,640

8.7 VA Hospital WRP

This WRP defines service to 23 potential customers located north of DCT, including four anchor customers:

- Anheuser Busch
- CSU Northridge
- Valley Sod Farms
- Veterans Admin. Hospital



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
1,177	1.05	1.87	\$32.44	\$0.20	\$750

Facilities

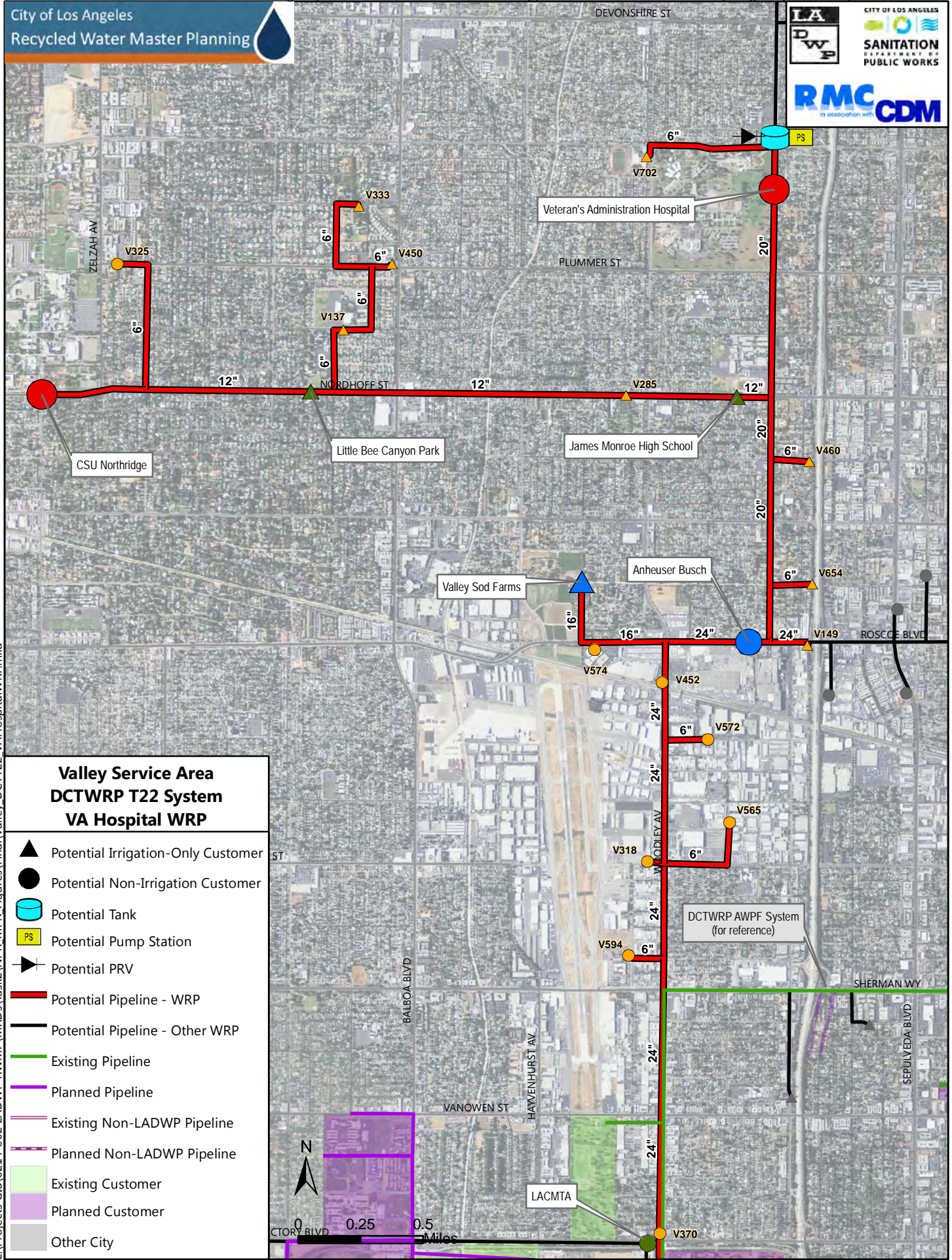
- **DCTWRP T22 Pump Station:** This WRP would use 2,600 gpm (approximately 30% of the capacity) of this new pump station.
- **Crossings:** This WRP include a crossing of Amtrak/Metrolink tracks at the Woodley Ave surface crossing and is required to serve most of the WRP’s anchor customers. Also, service to CSUN requires a crossing of the Bull Creek concrete channel at Nordhoff St
- **Pipelines:** This WRP includes approximately 12.3 miles of 6” to 24” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Woodley Ave at Vanowen St, at Sherman Way, and Roscoe Blvd; and along Roscoe Blvd at Woodley Ave and at Haskell Ave.

Implementation Considerations

The primary consideration for this WRP is the availability of supply from DCTWRP and its impact on the Valley GWR Project yield.

Also, two customers included as part of this WRP could be included as part of the Reseda WRP since they are located close to both WRPs: LACMTA (Customer ID V089) and Woodley Enterprises (V370).

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**Valley Service Area
DCTWRP T22 System
VA Hospital WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown

Customers

DCTWRP T22 System – VA Hospital WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
V006	Valley Sod Farms	Irrigation	140	0.12	0.27	A	A,A
V008	CSU Northridge	Mixed-Use	340	0.30	0.52	A	A,B
V009	Veterans Administration Hospital	Mixed-Use	320	0.29	0.49	A	A,A
V024	Anheuser Busch	Industrial	130	0.12	0.15	B	--
V089	LACMTA	Mixed-Use	30	0.03	0.05	--	--
V092	James Monroe High School	Irrigation	30	0.03	0.06	--	--
V093	Little Bee Canyon Park	Irrigation	30	0.03	0.06	--	--
V137	Oliver Wendell Holmes Middle School	Irrigation	21	0.02	0.04	--	--
V149	Caltrans (405 at ROSCOE BL)	Irrigation	20	0.02	0.04	--	--
V285	Nordhoff Recreation Center	Irrigation	12	0.01	0.02	--	--
V318	Van Nuys Airport	Mixed-Use	11	0.01	0.02	--	--
V325	Angelinos Productions	Mixed-Use	11	0.01	0.02	--	--
V333	Highland Hall School	Irrigation	10	0.01	0.02	--	--
V370	WOODLEY ENTERPRISES LLC	Mixed-Use	10	0.01	0.01	--	--
V450	St Nicholas Greek Orthodox Church	Irrigation	8	0.01	0.02	--	--
V452	Yoel y Wazana DBA Micro Solutions	Mixed-Use	8	0.01	0.01	--	--
V460	Caltrans (405 at RAYEN ST)	Irrigation	8	0.01	0.02	--	--
V565	Pet Orphans of Southern California	Mixed-Use	7	0.01	0.01	--	--
V572	LA Brea Bakery	Industrial	7	0.01	0.01	--	--
V574	MGA Entertainment Inc.	Mixed-Use	7	0.01	0.01	--	--
V594	Airtel Hotel Plaza	Mixed-Use	6	0.01	0.01	--	--
V654	Caltrans (405 at CHASE ST)	Irrigation	6	0.01	0.01	--	--
V702	LA Baptist City Mission Society	Irrigation	6	0.01	0.01	--	--
Total⁵			1,177	1.05	1.87		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Anheuser Busch:** This customer has one of LADWP's largest potable demands (over 4,000 AFY) used for production of beverage products but the potential for recycled water use is limited to cooling towers and boiler-feed operations. They have indicated they may be able to use recycled water but a concern is public perception of recycled water use at their facility and potential confusion that it is being used to produce their beverage products.
- **CSU-Northridge (CSUN):** Recycled water use is for irrigation and cooling towers. They are willing users of recycled water and have taken a proactive 'green' approach to their campus operations.
- **Valley Sod Farms Inc.:** This customer is a private company that grows sod and edible crops. The site is made up of three distinct sections and there are unique land areas that should be excluded as part of this conversion. (See Customer TM for further details). Valley Sod Farm leases land from the Van Nuys Airport and lies within the airport's approach area which restricts the area to non-intensive uses that provide a maximum concentration of 10 persons per acre so it is assumed no development can occur on this land and that Valley Sod Farm will remain as is for an indefinite period of time.
- **Veterans Administration - Sepulveda Campus:** Recycled water can be used for cooling towers and irrigation of the ball fields, golf course, and other landscaped areas. The irrigation system is looped within the site and a cross-connection test conducted a couple of years ago by LADWP Water Conservation Group confirmed that the irrigation system was completely separate from the internal domestic loop. The customer indicated they will consider recycled water use.

The following customer was initially considered anchor customers but was removed from consideration:

- **Superior Industries International:** manufacturer of aluminum wheels for the automobile industry. Per communications with Superior Industries it was indicated that site activities have changed in recent years and not enough non-potable water use remains to justify conversions.

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
1,177

WRP: VA Hospital

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (34%)	8,800	gpm	formula	\$ 1,611,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	17,200	in-diam*LF	\$24	\$ 2,477,000
8 inch	1,300	in-diam*LF	\$24	\$ 250,000
12 inch	15,400	in-diam*LF	\$20	\$ 3,696,000
16 inch	3,100	in-diam*LF	\$18	\$ 893,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	10,500	in-diam*LF	\$18	\$ 3,780,000
24 inch	16,900	in-diam*LF	\$16	\$ 6,490,000
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 19,197,000
Contingency Costs	30%	\$ 5,759,000
Construction Total		\$ 24,956,000
Implementation Costs	30%	\$ 7,487,000
Total Capital Cost		\$ 32,443,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 806,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 806,000
Contingency Costs	30%	\$ 242,000
Construction Total		\$ 1,048,000
Implementation Costs	30%	\$ 314,000
Total 20-year Capital Cost		\$ 1,362,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 1,611,000	capital cost	5.0%	\$ 81,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	546,600	kWh	\$0.12	\$ 66,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	64,400	LF	\$0.60	\$ 39,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 196,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	1,177
Water Purchase Escalator	4.0%		Total Yield (AF)	58,864
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 32,443,000		1.00	\$ 32,443,000
20-Year Capital Costs	\$ 1,362,000		2.00	\$ 2,724,000
Annual O&M Costs	\$ 196,000		49.00	\$ 9,604,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (681,000)		1.00	\$ (681,000)
Total PV				\$ 44,090,000
50-year Project Yield (AF)				58,864
Unit Cost (\$/af)				\$750

9. Valley – Burbank System

Overview

The potential Valley – Burbank System includes potential WRPs to maximize the use of Burbank’s recycled water system capacity that is available to LADWP. Burbank can supply up to 3.8 mgd of peak day flow from the Studio District Extension, which is the primary connection point with LADWP. There are also three other smaller connections included in the Laterals WRP.

Valley – Burbank System – Summary of WRPs

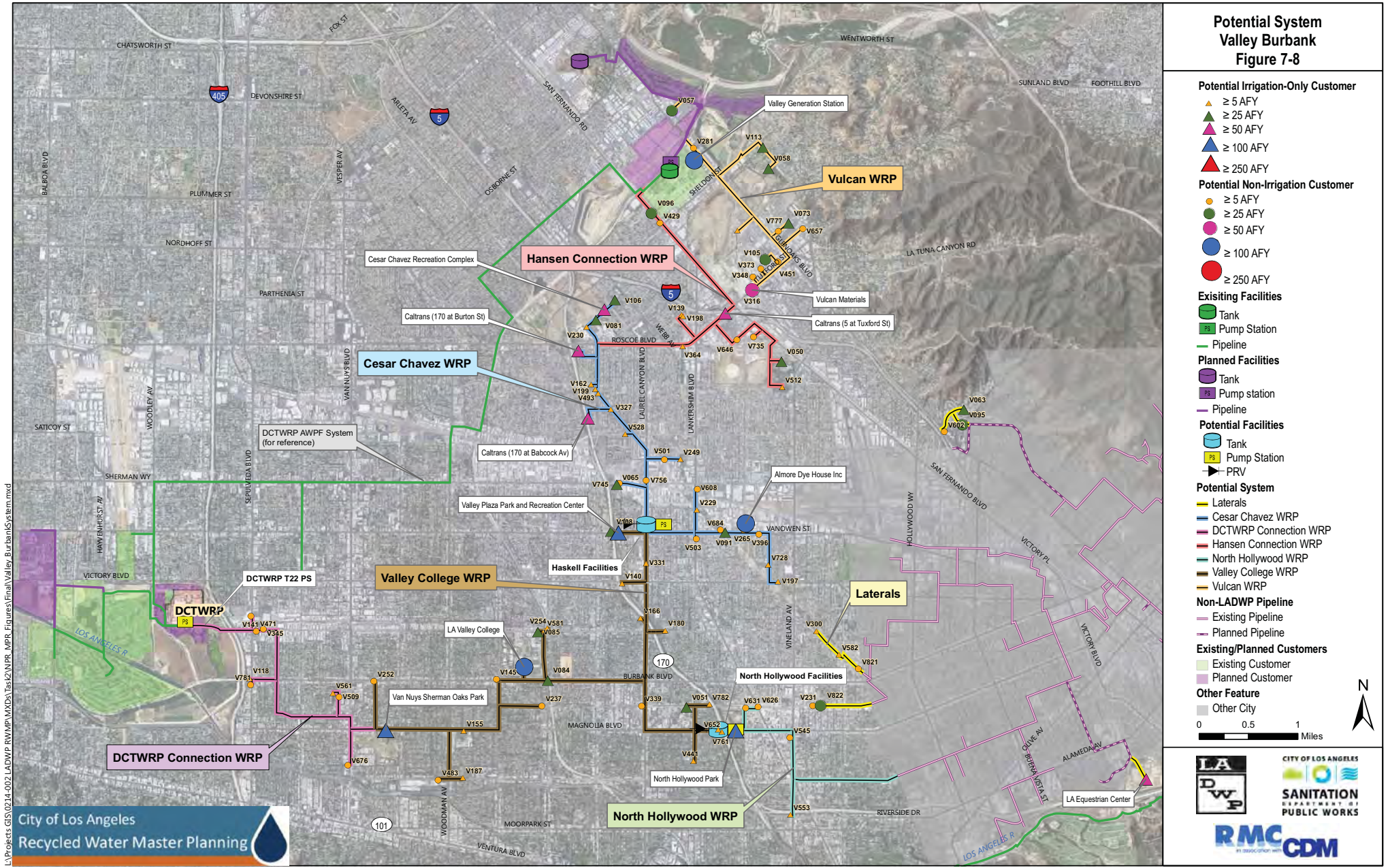
WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Cesar Chavez	767	0.69	1.29	\$20.11	\$0.27	\$930
Laterals	233	0.21	0.43	\$2.80	\$0.01	\$270
North Hollywood	137	0.12	0.26	\$7.74	\$0.01	\$1,210
Valley College	670	0.60	1.24	\$23.00	\$0.20	\$1,010
Total	1,808	1.61	3.23	\$53.66	\$0.48	\$910

Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

The City has already committed funds for the Burbank Recycled Water system to be built out to the City border with Burbank in the southeastern portion of the San Fernando Valley. The largest connection is from the Studio District Extension. The Burbank Laterals WRP includes three other smaller connections with Burbank’s recycled water system: Equestrian Center, Valhalla, and Northern.

The North Hollywood WRP is the first WRP for this system followed by the Valley College WRP. The Cesar Chavez and DCTWRP Connection WRPs independently build off the Valley College WRP. The Hansen Connection WRP builds off the Cesar Chavez WRP. A new pressure zone is necessary beyond the North Hollywood WRP so only this WRP and the Burbank Laterals WRP can be implemented without a large capital investment.



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Data Sources: USGS, LADWP, ESRI, NAIP Note: Only potential customers ≥ 50 AFY are labeled and potential customers < 50 AFY have IDs shown

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
1,808

WRP: All

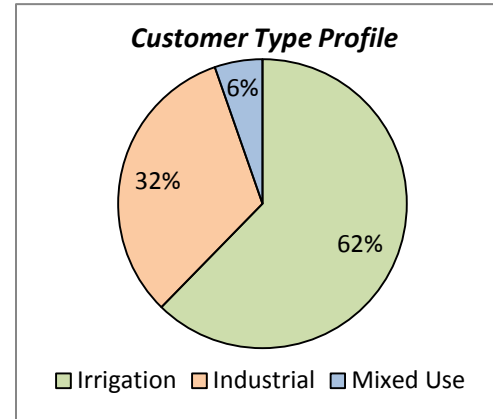
Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood	1.0	MG	\$3,000,000	\$ 3,000,000
Tank 2 at Valley Plaza	0.5	MG	\$4,000,000	\$ 2,000,000
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood	1,500	gpm	formula	\$ 1,252,000
PS 2 - Valley Plaza	780	gpm	formula	\$ 763,000
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	16	LS	\$350,000	\$ 350,000
PRV 2 - Valley Plaza	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	45,900	in-diam*LF	\$24	\$ 6,610,000
8 inch	14,700	in-diam*LF	\$24	\$ 2,822,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	37,900	in-diam*LF	\$20	\$ 9,096,000
16 inch	19,300	in-diam*LF	\$18	\$ 5,558,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Construction Subtotal				\$ 31,751,000
Contingency Costs 30%				\$ 9,525,000
Construction Total				\$ 41,276,000
Implementation Costs 30%				\$ 12,383,000
Total Capital Cost				\$ 53,659,000
Capital Replacement Costs				
20-Year Useful Life				
Storage			10%	\$ 500,000
Pump Station			50%	\$ 1,008,000
Conveyance			0%	\$ -
Pressure Reducing Stations			50%	\$ 325,000
Construction Subtotal				\$ 1,833,000
Contingency Costs 30%				\$ 550,000
Construction Total				\$ 2,383,000
Implementation Costs 30%				\$ 715,000
Total 20-year Capital Cost				\$ 3,098,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	2	LS	\$75,000	\$ 150,000
Pump Station				
Maintenance	\$ 2,015,000	capital cost	5.0%	\$ 101,000
Maintenance	2	LS	\$10,000	\$ 20,000
PS 1 - Electricity	549,600	kWh	\$0.12	\$ 66,000
PS 2 - Electricity	293,500	kWh	\$0.12	\$ 35,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	117,800	LF	\$0.60	\$ 71,000
Pressure Reducing Stations	2	station(s)	\$20,000	\$ 40,000
			Total Annual O&M	\$ 483,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	1,808	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	1,808		Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	1,808
Water Purchase Escalator	4.0%		Total Yield (AF)	90,380
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 53,659,000		1.00	\$ 53,659,000
20-Year Capital Costs	\$ 3,098,000		2.00	\$ 6,196,000
Annual O&M Costs	\$ 483,000		49.00	\$ 23,667,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (1,549,000)		1.00	\$ (1,549,000)
			Total PV	\$ 81,973,000
			50-year Project Yield (AF)	90,380
			Unit Cost (\$/af)	\$910

9.1 Cesar Chavez WRP

This WRP defines service to 35 potential customers, including four anchor customers:

- Almore Dye House Inc
- Caltrans (170 at Burton St)
- Caltrans (170 at Sherman Way)
- Cesar Chavez Recreation Center



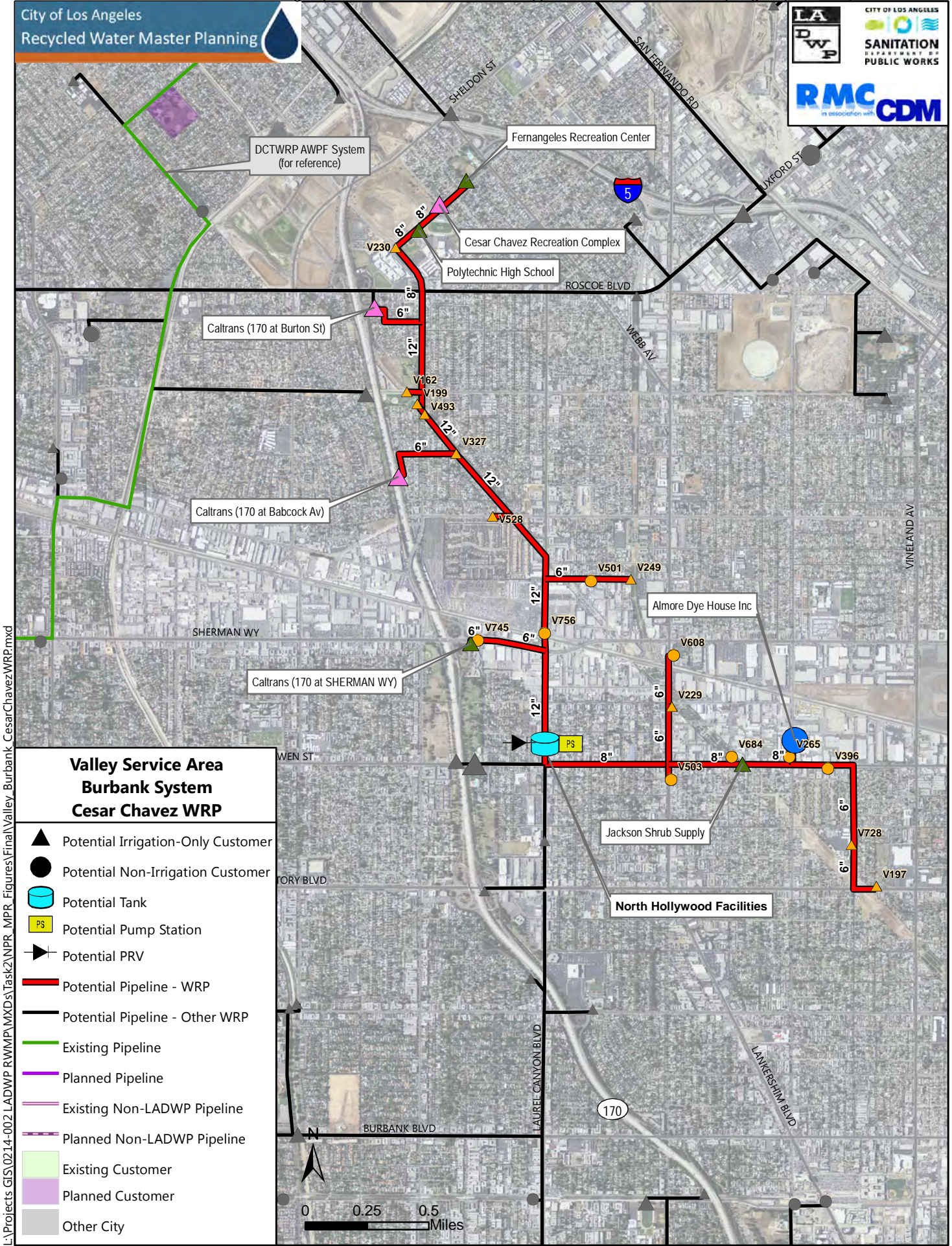
Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
767	0.69	1.29	\$20.11	\$0.27	\$930

Facilities

- **Valley Plaza PRV, Tank, and Pump Station:** The Cesar Chavez WRP requires a PRV, storage tank, and pump station combination to create a new pressure zone from the Valley College WRP to provide adequate customer service pressures. A 12" PRV is required to break the pressure provided from the Burbank Connection. The 0.5 MG tank with a ground elevation of 700 ft and overflow elevation of 730 ft serves as a wet well for the pump station. The pump station has two pumps (plus one standby) each with 260 ft head at 280 gpm. All the facilities should be co-located. The facilities are assumed to be located near Valley Plaza Park but a specific site was not identified to accommodate all three facilities.
- **Crossings:** A crossing of Amtrak/MetroLink tracks at the Laurel Canyon Blvd underpass is required to serve most of the WRP's anchor customers, with the exception of Almore Dye House. Also, a crossing of Hwy-170 at Strathern St underpass is required to serve Strathern Park West.
- **Pipelines:** This WRP includes approximately 6.6 miles of 6" to 12" pipe. The utility review conducted using NavigateLA revealed potential "crowding" along the proposed alignment due to existing utilities along Vanowen St at Lankershim Blvd and at Tujunga Ave.

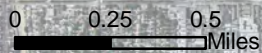
Implementation Considerations

This WRP requires the construction of the Valley College and North Hollywood WRPs. Many of the customers located along the northern half of this WRP could also be served from the existing 54" pipeline that forms the backbone of the DCTWRP AWPf System. A decision between the two approaches of supplying either DCTWRP AWPf product water or Burbank tertiary water needs to be made before proceeding with this WRP.



**Valley Service Area
Burbank System
Cesar Chavez WRP**

- ▲ Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- PS Potential Pump Station
- ▶ Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



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Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown

Customers

Burbank System – Cesar Chavez WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
V013	Almore Dye House Inc	Industrial	230	0.21	0.27	C	--
V025	Caltrans (170 at Burton St)	Irrigation	50	0.04	0.10	A	--
V027	Cesar Chavez Rec. Complex	Irrigation	90	0.08	0.18	A	--
V033	Caltrans (170 at Babcock Av)	Irrigation	60	0.05	0.12	A	A,A
V065	Caltrans (170 at Sherman Way)	Irrigation	38	0.03	0.07	--	--
V081	Polytechnic High School	Irrigation	33	0.03	0.07	--	--
V091	Jackson Shrub Supply	Irrigation	30	0.03	0.06	--	--
V098	Strathern Park-West	Irrigation	29	0.03	0.06	--	--
V106	Fernangeles Recreation Center	Irrigation	26	0.02	0.05	--	--
V162	Little League	Irrigation	18	0.02	0.04	--	--
V197	Victory/Vineland Park	Irrigation	16	0.01	0.03	--	--
V199	Strathern Park	Irrigation	16	0.01	0.03	--	--
V229	Green Set	Irrigation	14	0.01	0.03	--	--
V230	East Valley High School	Irrigation	14	0.01	0.03	--	--
V249	Canyon Way Nursery	Irrigation	13	0.01	0.03	--	--
V265	Universal Garment Wash & Dye	Industrial	13	0.01	0.01	--	--
V327	Green Spot Nursery (Site 1)	Irrigation	11	0.01	0.02	--	--
V396	Dan Carasso	Mixed-Use	9	0.01	0.01	--	--
V493	Nursery Los Pinos	Irrigation	8	0.01	0.01	--	--
V501	Gonzalo Ambrosio	Mixed-Use	8	0.01	0.01	--	--
V503	Garegin Gezalyan	Mixed-Use	7	0.01	0.01	--	--
V528	Briarcliffe North Patiohomes	Irrigation	7	0.01	0.01	--	--
V608	Kaiser Permanente	Mixed-Use	6	0.01	0.01	--	--
V684	Gary W Jackson	Mixed-Use	6	0.01	0.01	--	--
V728	Fair Ave Elem School	Irrigation	5	0.00	0.01	--	--
V745	12300 Sherman Way, LLC	Mixed-Use	5	0.00	0.01	--	--
V756	Cal Apple Products Inc.	Industrial	5	0.00	0.01	--	--
Total⁵			767	0.69	1.29		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Almore Dye House:** Recycled water use is for textile dyeing. The customer has indicated concern over water quality impacts on their existing operations.
- **Caltrans (170 at Burton St) and Caltrans (170 at Sherman Way):** Caltrans is a willing recycled water customer but individual Caltrans sites were not evaluated as part of the NPR Master Planning process.
- **Sheldon Arleta Landfill / Cesar Chavez Recreation Complex:** The landfill was recently capped and the Caesar Chavez Recreation Complex is currently being constructed.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
767

WRP: Cesar Chavez

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood (50%)	1.0	MG	\$3,000,000	\$ 1,500,000
Tank 2 at Valley Plaza	0.5	MG	\$4,000,000	\$ 2,000,000
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood (50%)	1,500	gpm	formula	\$ 626,000
PS 2 - Valley Plaza	780	gpm	formula	\$ 763,000
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	0	LS	\$0	\$ -
PRV 2 - Valley Plaza	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	12,900	in-diam*LF	\$24	\$ 1,858,000
8 inch	10,400	in-diam*LF	\$24	\$ 1,997,000
12 inch	11,900	in-diam*LF	\$20	\$ 2,856,000
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 11,900,000
Contingency Costs	30%	\$ 3,570,000
Construction Total		\$ 15,470,000
Implementation Costs	30%	\$ 4,641,000
Total Capital Cost		\$ 20,111,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 350,000
Pump Station	50%	\$ 695,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 1,045,000
Contingency Costs	30%	\$ 314,000
Construction Total		\$ 1,359,000
Implementation Costs	30%	\$ 408,000
Total 20-year Capital Cost		\$ 1,767,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 1,389,000	capital cost	5.0%	\$ 69,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	293,500	kWh	\$0.12	\$ 35,000
PS 2 - Electricity	293,500	kWh	\$0.12	\$ 35,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	35,200	LF	\$0.60	\$ 21,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 265,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	767	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
767		Purchase Cost Total		\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	767	
Water Purchase Escalator	4.0%	Total Yield (AF)	38,374	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 20,111,000		1.00	\$ 20,111,000
20-Year Capital Costs	\$ 1,767,000		2.00	\$ 3,534,000
Annual O&M Costs	\$ 265,000		49.00	\$ 12,985,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (883,500)		1.00	\$ (884,000)
Total PV				\$ 35,746,000
50-year Project Yield (AF)				38,374
Unit Cost (\$/af)				\$930

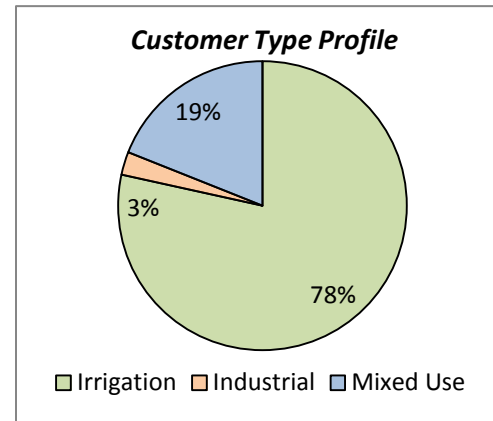
9.2 Laterals – Burbank

This WRP defines service to nine potential customers through three distinct interconnection points off of the following Burbank pipelines:

- LA Equestrian Center Extension
- Northern Extension
- Valhalla Extension

The extensions were identified in the Burbank Recycled Water Master Plan (KJ, 2007). Descriptions for each of the three interconnection points follow. The only anchor customer included in any of these extensions is:

- Los Angeles Equestrian Center



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
233	0.21	0.43	\$2.80	\$0.01	\$270

LA Equestrian Center

Burbank’s LA Equestrian Center Extension is the last extension phasing identified in the Burbank Recycled Water Master Plan. It was identified as a cost effective extension but the LA Equestrian Center, which is located in the LADWP service area, is the only anchor customer for the extension. Currently, the equestrian center is being supplied with water paid by the City of Los Angeles Department of Recreation and Parks until the year 2025.

The LA Equestrian Center has an estimated annual average demand of 70 AFY and is the only potential non-potable customer for LADWP off of this extension. There would be a potential to extend a pipeline east from the equestrian center to Bette Davis Park and Sonora Picnic Area (estimated annual average demand of 30 AFY).

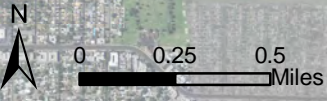
Northern Extension

Burbank’s Northern Extension is currently in final design and construction is expected to be completed by the end of 2012. This extension accounts for non-potable service to Woodbury University, which is an LADWP customer. Woodbury University staff are willing to consider using recycled water and are excited about the potential costs savings.

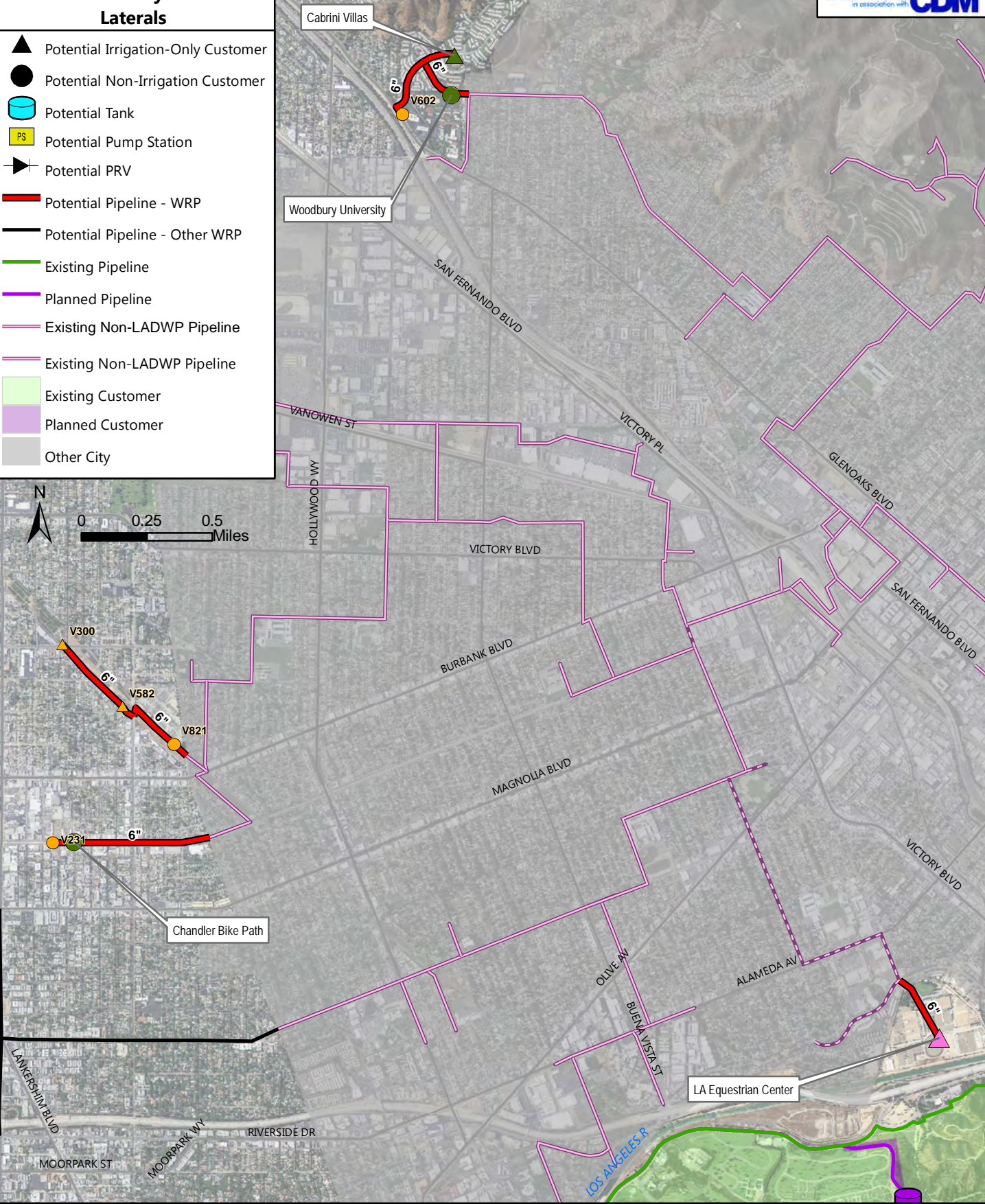
Another potential customer is the Cabrini Villas, which are private apartment homes managed through a home-owners-association and are located to the immediate north of Woodbury University. This customer has the potential for non-potable irrigation of median and parkway areas. In addition, Villa Cabrini Park is located at the end of Cabrini Drive within the apartment complex. If a customer service lateral pipeline is installed along Scott Road, it should take into account the potential additional non-potable demands in the area.

Valley Service Area Burbank System Laterals

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



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Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown

Valhalla Extension

Construction of Burbank's Valhalla Extension was completed in 2011. It terminates at Burbank Blvd and Rose St at Burbank's Whitnall Highway Park near the City border. The City has agreed to pay Burbank to upsize pipelines in a portion of the Valhalla System from 8" to 12" to increase the flow available to LADWP throughout the year. BWP estimated that the upsize would allow for up to 200 gpm of flow during the day and 750 gpm of flow during the night with an associated service pressure of 110 psi during the day and 95 psi at night.

Four potential LADWP non-potable customers were identified near the interconnection: 1) Whitnall Highway Power Line Right-of-Way; 2) Whitnall Highway Dog Park; 3) Chandler Blvd Bike Path; and 4) City Street Services Yard (on Chandler Blvd).

Customers

Burbank System – Laterals WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
M027	LA Equestrian Center	Irrigation	70	0.06	0.14	--	--
V063	Cabrini Villas	Irrigation	40	0.04	0.08	--	--
V095	Woodbury University	Mixed-Use	30	0.03	0.05	--	--
V231	City LA Street Maintenance	Mixed-Use	14	0.01	0.02	--	--
V300	Green Set	Irrigation	11	0.01	0.02	--	--
V582	Whitnall Highway Dog Park	Irrigation	10	0.01	0.02	--	--
V602	Executive Software Properties	Industrial	6	0.01	0.01	--	--
V821	Whitnall Highway Power Line R/W	Irrigation	21	0.02	0.04	--	--
V822	Chandler Bike Path	Irrigation	30	0.03	0.06	--	--
Total⁵			233	0.21	0.43		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **LA Equestrian Center:** Currently, the equestrian center is being supplied with water paid by the City of Los Angeles Department of Recreation and Parks until the year 2025.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
233

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood	0.0	MG	\$0	\$ -
Tank 2 at Valley Plaza	0.0	MG	\$0	\$ -
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood	0	gpm	formula	\$ -
PS 2 - Valley Plaza	0	gpm	formula	\$ -
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	0	LS	\$0	\$ -
PRV 2 - Valley Plaza	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	11,500	in-diam*LF	\$24	\$ 1,656,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Construction Subtotal				\$ 1,656,000
Contingency Costs 30%				\$ 497,000
Construction Total				\$ 2,153,000
Implementation Costs 30%				\$ 646,000
Total Capital Cost				\$ 2,799,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

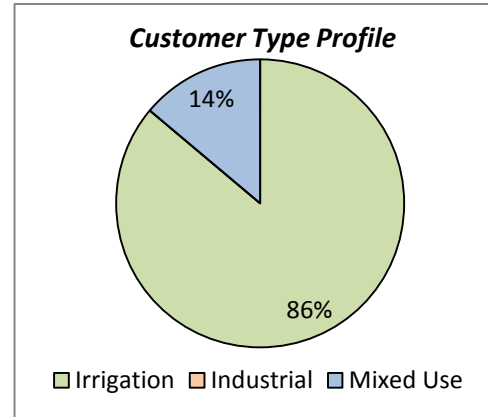
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	11,500	LF	\$0.60	\$ 7,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 7,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	233	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
		233	Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	233	
Water Purchase Escalator	4.0%	Total Yield (AF)	11,643	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 2,799,000		1.00	\$ 2,799,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 7,000		49.00	\$ 343,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 3,142,000
50-year Project Yield (AF)				11,643
Unit Cost (\$/af)				\$270

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9.3 North Hollywood WRP

This WRP defines service to six potential customers, including one anchor customer:

- North Hollywood Park



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
137	0.12	0.26	\$7.74	\$0.01	\$1,210

Facilities

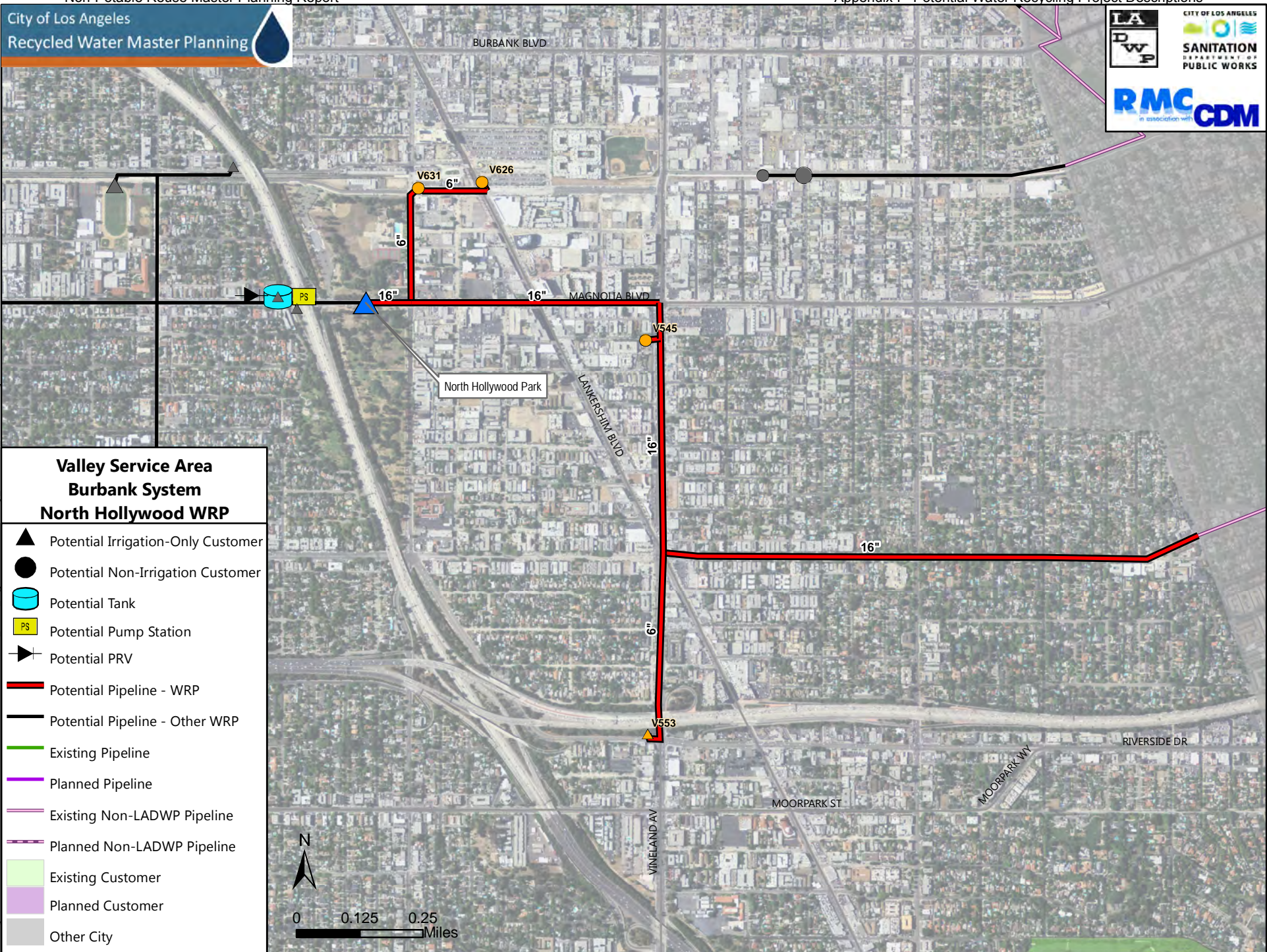
- **Burbank Connection:** This WRP requires a connection with Burbank’s Studio District Extension terminus at Verdugo Ave and Clybourn Ave. The extension is currently under construction and is expected to be completed in 2011. The City has agreed to pay Burbank to upsize pipelines in a portion of the Studio District System to 16” to increase the flow available to LADWP throughout the year. BWP estimated that the upsize would allow for up to 2,430 gpm of flow during the day and 2,000 gpm of flow during the night with an associated service pressure of 93 psi during the day and 83 psi at night.
- **Crossings:** This WRP does not have any major crossings; however, a portion of North Hollywood Park is located on the west side of Hwy-170 and Central Branch Tujunga Wash (which parallels the highway) and would require a crossing at Magnolia Blvd. This crossing is also required for the Valley College WRP so it is assumed the crossing would not occur until the Valley College WRP is implemented.
- **Pipelines:** This WRP includes approximately 3.4 miles of 6” to 16” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Camarillo Ave at Vineland St (and includes Lankershim Blvd).

Implementation Considerations

Burbank’s Studio District Extension is currently under construction and is expected to be completed in 2012 and the City has already committed funds to Burbank so that recycled water can be provided to the City from Burbank.

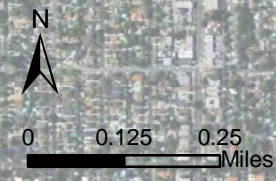
If the DCTWRP Connection WRP, which would connect the Burbank supply with DCT, is implemented, pipelines in this WRP that support east-west flow would require upsizing to at least 24” to maximize the potential for supply conveyance.

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**Valley Service Area
Burbank System
North Hollywood WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

Burbank System – North Hollywood WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
V021	North Hollywood Park	Irrigation	100	0.09	0.20	A	A,B
V545	City LA Street Maintenance	Mixed-Use	7	0.01	0.01	--	--
V553	Caltrans (134 at VINELAND AV)	Irrigation	7	0.01	0.01	--	--
V626	LACMTA	Mixed-Use	6	0.01	0.01	--	--
V631	LACMTA	Mixed-Use	6	0.01	0.01	--	--
V652	Caltrans (170 at Magnolia Blvd)	Irrigation	6	0.01	0.01	--	--
V761	Oakwood School	Irrigation	5	0.00	0.01	--	--
Total⁵			137	0.12	0.26		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **North Hollywood Park:** The park is divided into three separate areas divided by Magnolia Blvd and Hwy-170 and requires three recycled water service connections. The smallest of the three areas is located on the western side of Hwy-170, which requires a crossing of the highway at Magnolia Blvd. This crossing is also required for the Valley College WRP so it is assumed the crossing would not occur until the Valley College WRP is implemented and, therefore, this portion of the park would not be served until then.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
137

WRP: North Hollywood

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood	0.0	MG	\$0	\$ -
Tank 2 at Valley Plaza	0.0	MG	\$0	\$ -
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood	0	gpm	formula	\$ -
PS 2 - Valley Plaza	0	gpm	formula	\$ -
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	0	LS	\$0	\$ -
PRV 2 - Valley Plaza	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	4,200	in-diam*LF	\$24	\$ 605,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	13,800	in-diam*LF	\$18	\$ 3,974,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
			Construction Subtotal	\$ 4,579,000
			Contingency Costs 30%	\$ 1,374,000
			Construction Total	\$ 5,953,000
			Implementation Costs 30%	\$ 1,786,000
			Total Capital Cost	\$ 7,739,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-

			Construction Subtotal	\$ -
			Contingency Costs 30%	\$ -
			Construction Total	\$ -
			Implementation Costs 30%	\$ -
			Total 20-year Capital Cost	\$ -

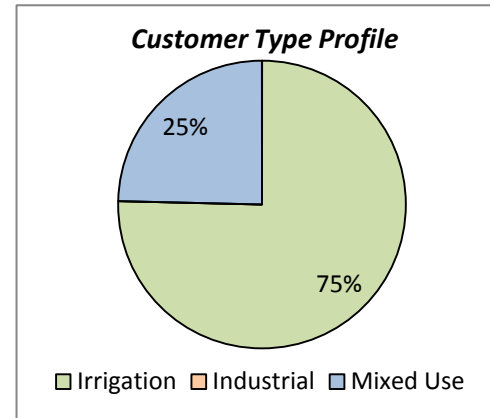
Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	18,000	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 11,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	137	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
		137	Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	137	
Water Purchase Escalator	4.0%	Total Yield (AF)	6,868	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 7,739,000		1.00	\$ 7,739,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 11,000		49.00	\$ 539,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 8,278,000
50-year Project Yield (AF)				6,868
Unit Cost (\$/af)				\$1,210

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9.4 Valley College WRP

This WRP defines service to 19 potential customers, including three anchor customers:

- LA Valley College
- Valley Plaza Park and Recreation Center
- Van Nuys Sherman Oak Park



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
670	0.60	1.24	\$23.00	\$0.20	\$1,010

Facilities

- **North Hollywood PRV, Tank, and Pump Station:** The Valley College WRP requires a PRV, storage tank, and pump station combination to create a new pressure zone from the North Hollywood WRP to provide adequate customer service pressures. A 16" PRV is required to break the pressure provided from the Burbank Connection and the 1.0 MG tank with a ground elevation of 625 ft and overflow elevation of 655 ft serves as a wet well to the pump station. The pump station has two pumps (plus one standby) each with 280 ft head at 750 gpm. All the facilities should be co-located. The facilities are assumed to be located near North Hollywood Park but a specific site was not identified to accommodate all three facilities.
- **Crossings:** This WRP includes two crossings of Hwy-170 and Central Branch Tujunga Wash (which parallels the highway) and a crossing of the Tujunga Wash. The first Hwy-170 and Central Branch Tujunga Wash crossing is at the Magnolia Blvd underpass by North Hollywood Park. The second Hwy-170 and Central Branch Tujunga Wash crossing is at the Laurel Canyon Blvd underpass by Valley Plaza Park and is required to serve Valley Plaza Park. The Tujunga Wash crossing is at Burbank Blvd just to the east of Valley College
- **Pipelines:** This WRP includes approximately 10.1 miles of 6" to 16" pipe. The utility review conducted using NavigateLA revealed potential "crowding" along the proposed alignment due to existing utilities along Laurel Canyon Blvd at Magnolia Blvd, at Burbank Blvd, at Oxnard Blvd, and at Victory Blvd.

Also, the Orange Line Busway parallels much of the east-west pipelines between North Hollywood Park and Van Nuys / Sherman Oaks Park. There may be some cost savings to installing the recycled water pipeline in this corridor instead of public streets (such as Magnolia Blvd and Burbank Blvd). However, disruption to Orange Line service may not be acceptable.

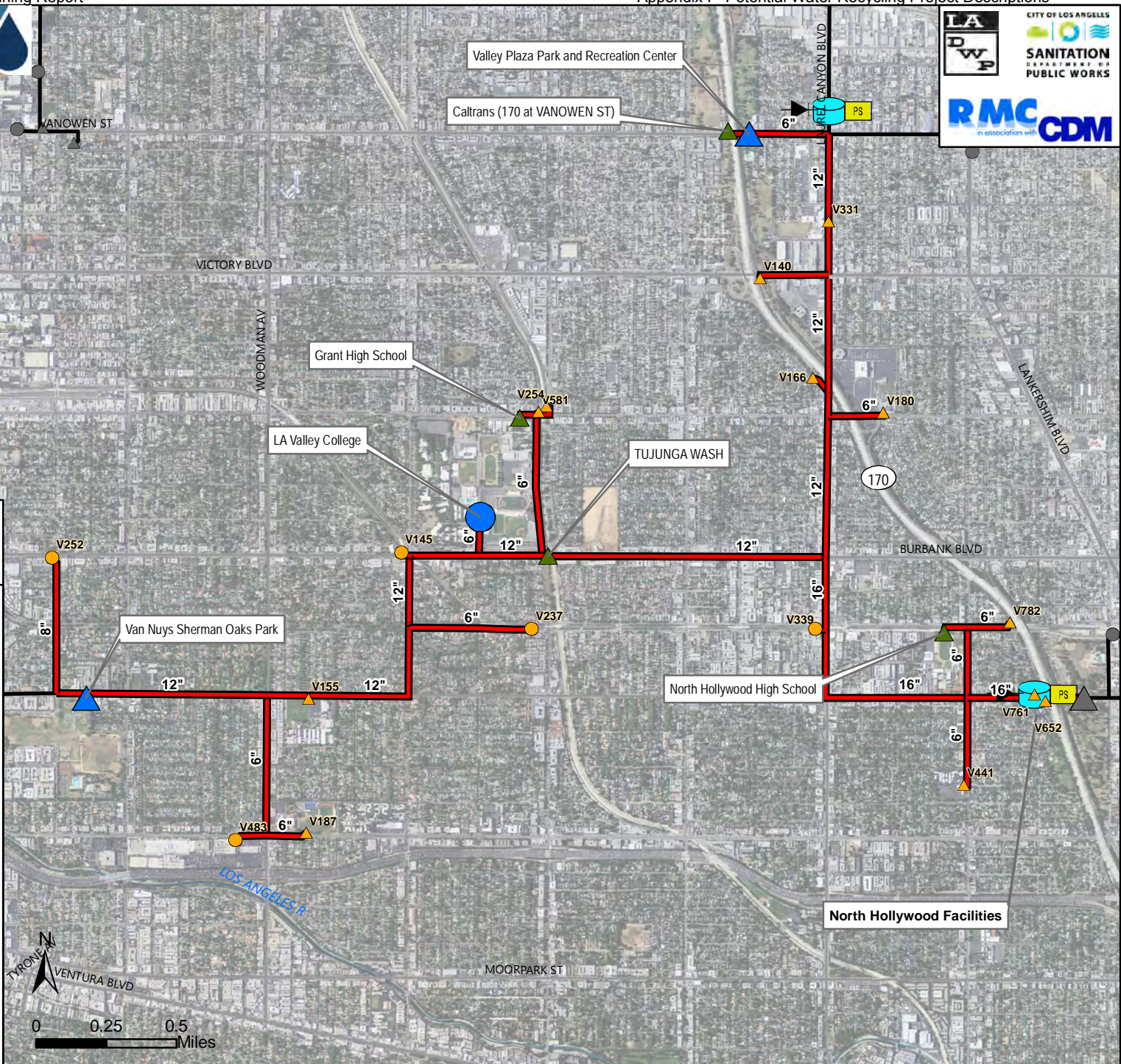
City of Los Angeles
Recycled Water Master Planning



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**Valley Service Area
Burbank System
Valley College WRP**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Implementation Considerations

This WRP requires the construction of the North Hollywood WRP. As noted for the North Hollywood WRP, the Burbank supply is expected to be available in 2012 and the City has already committed funds to Burbank. Also, LADWP's interest in a future interconnection of the Burbank supply with DCTWRP would require upsizing pipelines in the North Hollywood WRP and Valley College WRP that support east-west flow to at least 24" to maximize the potential for supply conveyance.

Customers

Burbank System – Valley College WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Comprehensive ⁴
V019	Valley Plaza Park and Rec Center	Irrigation	130	0.12	0.26	A	A,B
V031	Van Nuys Sherman Oaks Park	Irrigation	105	0.09	0.21	A	A,A
V032	LA Valley College	Mixed-Use	100	0.09	0.15	A	A,B
V051	North Hollywood High School	Irrigation	46	0.04	0.09	--	--
V084	TUJUNGA WASH	Irrigation	32	0.03	0.06	--	--
V085	Grant High School	Irrigation	31	0.03	0.06	--	--
V108	Caltrans (170 at VANOWEN ST)	Irrigation	26	0.02	0.05	--	--
V140	Caltrans (170 at VICTORY BL)	Irrigation	21	0.02	0.04	--	--
V145	LACMTA	Mixed-Use	20	0.02	0.03	--	--
V155	Millikan Jr. High	Irrigation	19	0.02	0.04	--	--
V166	Caltrans (170 at Westpark Dr)	Irrigation	18	0.02	0.04	--	--
V180	Emmanuel Lutheran Church	Irrigation	17	0.01	0.03	--	--
V187	Notre Dame High School	Irrigation	16	0.01	0.03	--	--
V237	LACMTA	Mixed-Use	14	0.01	0.02	--	--
V252	UNITY REAL EST	Mixed-Use	13	0.01	0.02	--	--
V254	MOUNTAINS RECREATION & CONSERVATION AUTHORITY	Irrigation	13	0.01	0.03	--	--
V331	East Valley Middle School	Irrigation	10	0.01	0.02	--	--
V339	LACMTA	Mixed-Use	10	0.01	0.02	--	--
V441	Colfax Avenue Elementary School	Irrigation	8	0.01	0.02	--	--
V483	Sherman Oaks Fashion Square	Mixed-Use	8	0.01	0.01	--	--
V581	MOUNTAINS RECREATION & CONSERVATION AUTHORITY	Irrigation	7	0.01	0.01	--	--
V782	Caltrans (170 at Chandler Blvd)	Irrigation	5	0.00	0.01	--	--
Total⁵			670	0.60	1.24		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.

5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **LA Valley College:** Potential uses are for irrigation and cooling towers. Many irrigated fields are being converted to artificial turf or parking lots but the campus will still have a long-term non-potable demand of 65 AFY.
- **Valley Plaza Park and Recreation Center:** The park is divided into seven separate areas divided by Hwy-170, Vanowen St and Victory Blvd and requires six recycled water service connections. Three of the seven areas are located on the western side of Hwy-170, which requires a crossing of the highway at the Vanowen St underpass.
- **Van Nuys Sherman Oak Park:** This City park is a willing recycled water customer for irrigation.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
670

WRP: Valley College

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood (50%)	1.0	MG	\$3,000,000	\$ 1,500,000
Tank 2 at Valley Plaza	0.0	MG	\$0	\$ -
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood (50%)	1,500	gpm	formula	\$ 626,000
PS 2 - Valley Plaza	0	gpm	formula	\$ -
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	16	LS	\$350,000	\$ 350,000
PRV 2 - Valley Plaza	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	17,400	in-diam*LF	\$24	\$ 2,506,000
8 inch	4,300	in-diam*LF	\$24	\$ 826,000
12 inch	25,900	in-diam*LF	\$20	\$ 6,216,000
16 inch	5,500	in-diam*LF	\$18	\$ 1,584,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Construction Subtotal				\$ 13,608,000
Contingency Costs 30%				\$ 4,082,000
Construction Total				\$ 17,690,000
Implementation Costs 30%				\$ 5,307,000
Total Capital Cost				\$ 22,997,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 150,000
Pump Station	50%	\$ 313,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 463,000
Contingency Costs 30%		\$ 139,000
Construction Total		\$ 602,000
Implementation Costs 30%		\$ 181,000
Total 20-year Capital Cost		\$ 783,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 626,000	capital cost	5.0%	\$ 31,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	256,200	kWh	\$0.12	\$ 31,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	53,100	LF	\$0.60	\$ 32,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 199,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	670	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
670		Purchase Cost Total		\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	670	
Water Purchase Escalator	4.0%	Total Yield (AF)	33,495	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 22,997,000		1.00	\$ 22,997,000
20-Year Capital Costs	\$ 783,000		2.00	\$ 1,566,000
Annual O&M Costs	\$ 199,000		49.00	\$ 9,751,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (391,500)		1.00	\$ (392,000)
Total PV				\$ 33,922,000
50-year Project Yield (AF)				33,495
Unit Cost (\$/af)				\$1,010

10. Valley – Las Virgenes System

Overview

The potential Valley – Las Virgenes System includes potential WRPs to provide an alternative recycled water supply from DCTWRP for potential customers in the western San Fernando Valley. The system and potential WRPs are compared with serving similar customers from DCTWRP but the supply limitations and distance from DCTWRP lower the likelihood that many western San Fernando Valley customers will receive DCTWRP supplies. The Pierce College WRP is defined as part of this system and the Valley – DCTWRP T22 System so that they can be compared when selecting the potential WRPs to implement for each system.

Valley – Las Virgenes System – Summary of WRPs

WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Pierce College	666	0.59	1.04	\$10.98	\$0.36	\$1,030
Woodland Hills	288	0.26	0.56	\$12.68	\$0.16	\$1,590
Total	954	0.85	1.60	\$23.66	\$0.51	\$1,200

Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

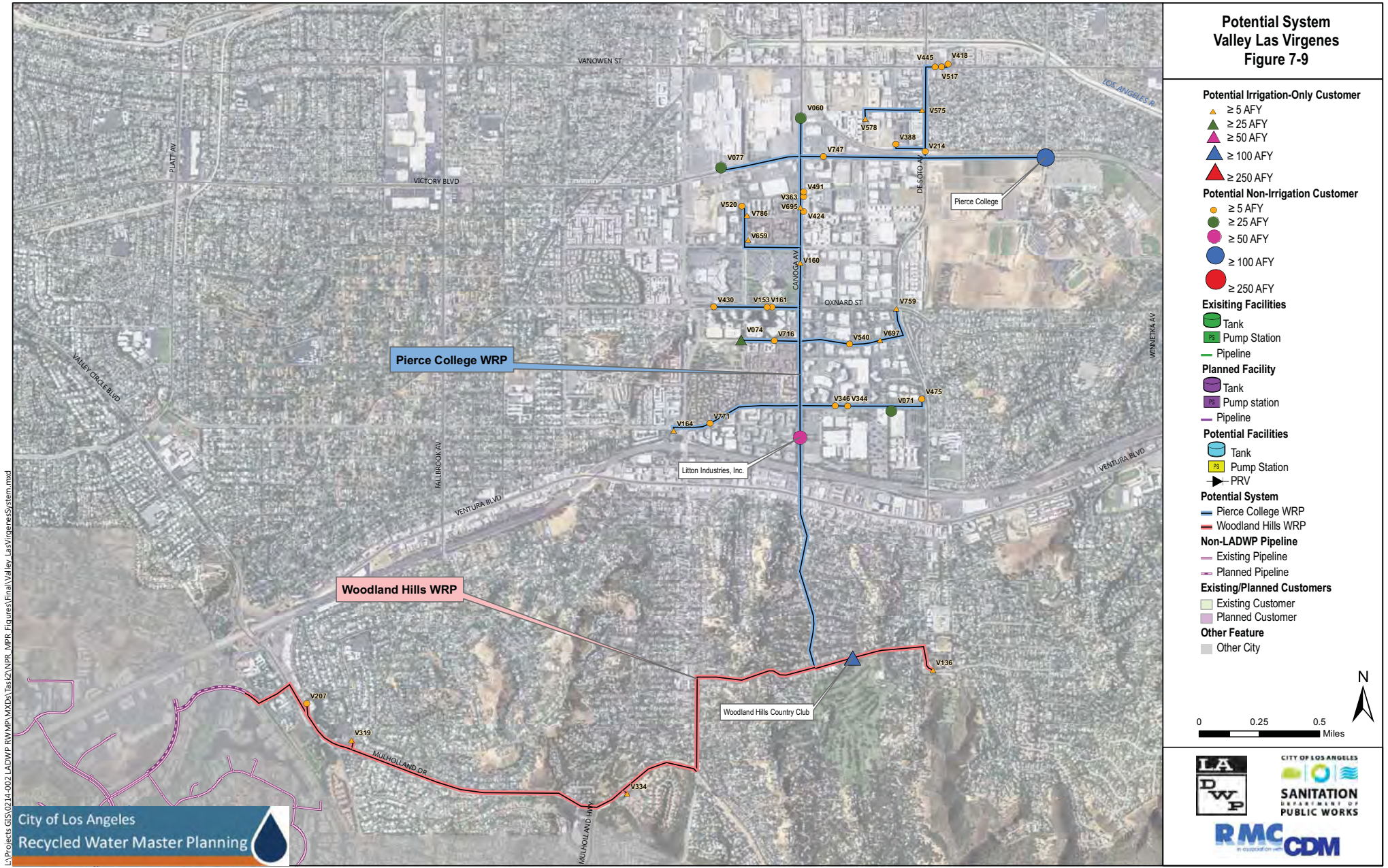
Las Virgenes Municipal Water District determined that some upgrades to their recycled water system would allow for service to customers associated with the Woodland Hills WRP. Furthermore, LVMWD has additional supplies available during off-peak periods but use of these flows would require some type of seasonal storage, making service to the Pierce College WRP customers not as cost effective. The cost of this storage has not yet been determined.

The Woodland Hills Country Club is the anchor customer for the Woodland Hills WRP. As such, any potential questions related to water quality must be addressed before this WRP can be implemented. The Pierce College WRP requires the Woodland Hills WRP to be constructed first. Also, service to its anchor customer, Pierce College, could also be provided as part of the DCTWRP T22 System.

Facilities

The system will rely on the pressure provided by LVMWD at the City border and does not need any additional pressure increases since customers are either at the elevation (approximately 950 ft) or below the elevation on the floor of the Valley.

The LVMWD Connection between LADWP and the LVMWD recycled water system is located at the City's border along El Canon Ave by the Motion Picture and Television Hospital. Receipt of up to 0.5 mgd requires approximately \$3.5 million in upgrades to LVMWD recycled water system, including a new pipeline to get to the City's border and a pipeline to parallel a portion of their existing system.



DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Las Virgenes

Annual Yield (AFY)
954

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer 1	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	24,700	in-diam*LF	\$24	\$ 3,557,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	16,700	in-diam*LF	\$20	\$ 3,340,000
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	16,100	in-diam*LF	\$18	\$ 4,637,000
Las Virgenes Pipelines				\$ 2,464,500
			Construction Subtotal	\$ 13,998,500
Contingency Costs			30%	\$ 4,200,000
			Construction Total	\$ 18,198,500
Implementation Costs			30%	\$ 5,460,000
			Total Capital Cost	\$ 23,658,500

Capital Replacement Costs

20-Year Useful Life

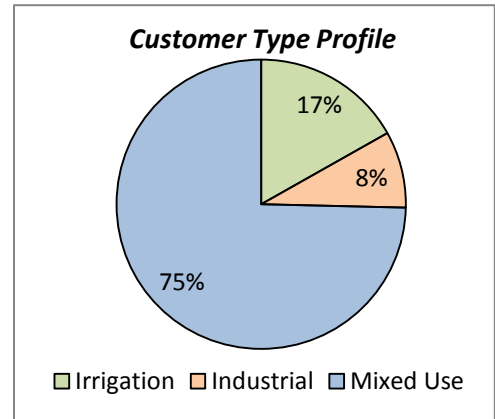
Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
			Construction Subtotal	\$ -
Contingency Costs			30%	\$ -
			Construction Total	\$ -
Implementation Costs			30%	\$ -
			Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	57,500	LF	\$0.60	\$ 35,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
			Total Annual O&M	\$ 35,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD	954	AFY	\$500	\$ 478,000
	954		Purchase Cost Total	\$ 478,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	954
Water Purchase Escalator	4.0%		Total Yield (AF)	47,711
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 23,658,500		1.00	\$ 23,659,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 35,000		49.00	\$ 1,715,000
Recycled Water Cost	\$ 478,000		66.73	\$ 31,897,000
Salvage	\$ -		1.00	\$ -
			Total PV	\$ 57,271,000
			50-year Project Yield (AF)	47,711
			Unit Cost (\$/af)	\$1,200

10.1 Pierce College WRP

This WRP defines service to 34 potential customers, including two anchor customers:

- Litton Industries
- Pierce College



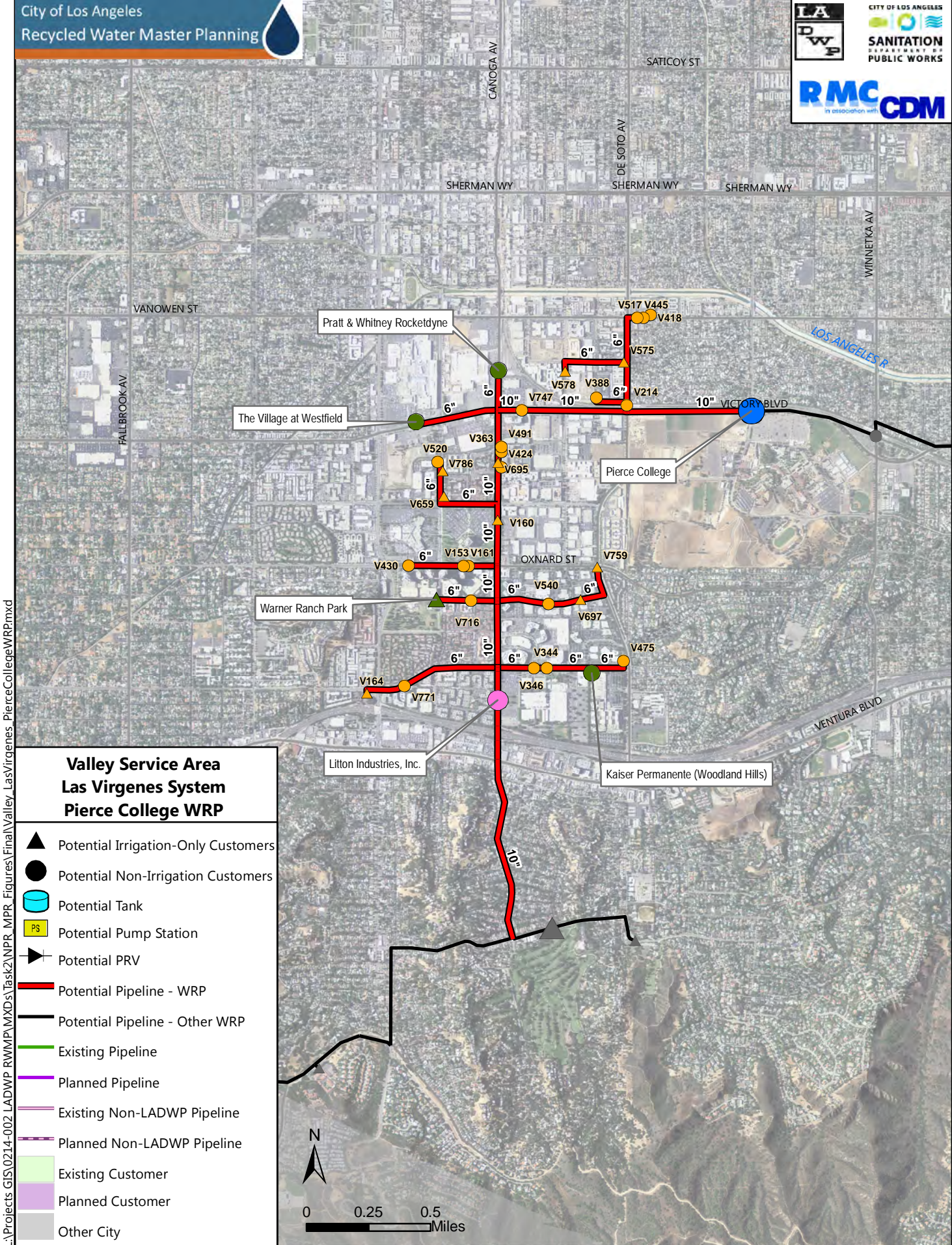
Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
666	0.59	1.04	\$10.98	\$0.36	\$1,030

Facilities

- **Crossings:** This WRP requires crossing Hwy-101 at the Topanga Canyon Blvd underpass to serve all identified customers.
- **Pipelines:** This WRP includes approximately 7.3 miles of 6” to 10” pipe. The utility review conducted using NavigateLA revealed potential “crowding” along the proposed alignment due to existing utilities along Canoga Blvd at Burbank Blvd.

Implementation Considerations

This WRP is dependent on implementation of the Woodland Hills WRP to provide the recycled water supply from LVMWD. Service to this WRP’s anchor customer, Pierce College, could also be provided as part of the DCTWRP T22 System; however, the primary consideration for both of these systems is the availability of supply for Pierce College. LVMWD has not evaluated the availability of their recycled water supply beyond service to the Woodland Hills WRP customers.



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Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown

Customers

Las Virgenes System – Pierce College WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Comprehensive ⁴
V011	Pierce College	Mixed-Use	190	0.17	0.29	A	A,A
V040	Litton Industries, Inc.	Mixed-Use	75	0.07	0.11	A	--
V060	Pratt & Whitney Rocketdyne	Industrial	41	0.04	0.05	B	--
V071	Kaiser Permanente (Woodland Hills)	Mixed-Use	35	0.03	0.05	--	--
V074	Warner Ranch Park	Irrigation	34	0.03	0.07	--	--
V077	The Village at Westfield	Mixed-Use	34	0.03	0.05	--	--
V153	Blue Cross of California	Mixed-Use	19	0.02	0.03	--	--
V160	Warner Woodlands Townhomes	Irrigation	19	0.02	0.04	--	--
V161	DOUGLAS EMMETT REALTY FUND	Mixed-Use	19	0.02	0.03	--	--
V164	Warner Village III Condominiums	Irrigation	18	0.02	0.04	--	--
V214	LACMTA	Mixed-Use	15	0.01	0.02	--	--
V344	Health Net of California	Mixed-Use	10	0.01	0.02	--	--
V346	Hines Warner Center	Mixed-Use	10	0.01	0.02	--	--
V363	L.A.FITNESS INTERNATIONAL,LLC	Mixed-Use	10	0.01	0.01	--	--
V388	AMERICANA INDEPENDENCE LTD	Mixed-Use	9	0.01	0.01	--	--
V418	CHAN SOO KIM DBASANTA FE	Industrial	9	0.01	0.01	--	--
V424	Douglas Emmett Realty	Mixed-Use	9	0.01	0.01	--	--
V430	Warner Center Marriot	Mixed-Use	8	0.01	0.01	--	--
V445	STEVE NEEDLEMAN DBA KIDS FROM THE VALLEY III	Mixed-Use	8	0.01	0.01	--	--
V475	CARR NP PROPERTIES L.L.C.	Mixed-Use	8	0.01	0.01	--	--
V491	Hilton Woodland Hills	Mixed-Use	8	0.01	0.01	--	--
V517	IGE INC	Industrial	7	0.01	0.01	--	--
V520	21st Century Insurance Company	Mixed-Use	7	0.01	0.01	--	--
V540	ZENITH INS CO ATTN: FACILITIES	Mixed-Use	7	0.01	0.01	--	--
V575	Americana Warner Center Apts	Irrigation	7	0.01	0.01	--	--
V578	Warner Center	Irrigation	7	0.01	0.01	--	--
V659	PAUL B MORGEN	Irrigation	6	0.01	0.01	--	--
V695	REFUND ARBORS APARTMENTS	Irrigation	6	0.01	0.01	--	--
V697	WEN-ER FARMS LLC	Irrigation	6	0.01	0.01	--	--
V716	WATERFORD WARNER CENTER LLC	Mixed-Use	5	0.00	0.01	--	--
V747	DOUGLAS EMMETT REALTY FUND	Mixed-Use	5	0.00	0.01	--	--
V759	EQUITY RESIDENTIAL PROPERTIES	Irrigation	5	0.00	0.01	--	--
V771	WARNER GATEWAY PRTNR	Mixed-Use	5	0.00	0.01	--	--
V786	Union Towers Management	Irrigation	5	0.00	0.01	--	--
Total⁵			666	0.59	1.04		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.

4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Litton Industries:** This customer has indicated they are very interested in using recycled water use for irrigation and their four cooling towers.
- **Pierce College:** Recycled water can be used for irrigation and in cooling towers. Pierce College has already installed ‘purple-pipe’ identification on all of its irrigation system in preparation for receiving recycled water.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Las Virgenes

Annual Yield (AFY)
666

WRP: Pierce College

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	21,900	in-diam*LF	\$24	\$ 3,154,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	16,700	in-diam*LF	\$20	\$ 3,340,000
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
Las Virgenes Pipelines				

Construction Subtotal	\$ 6,494,000
Contingency Costs 30%	\$ 1,948,000
Construction Total	\$ 8,442,000
Implementation Costs 30%	\$ 2,533,000
Total Capital Cost	\$ 10,975,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ -
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

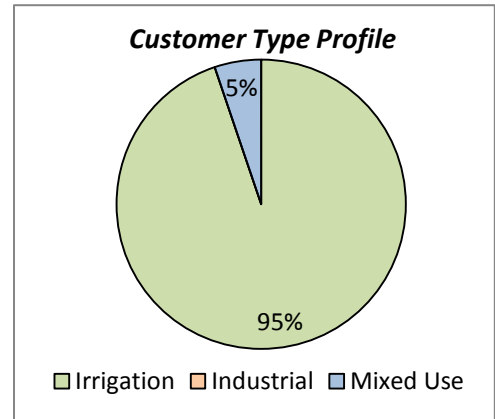
Construction Subtotal	\$ -
Contingency Costs 30%	\$ -
Construction Total	\$ -
Implementation Costs 30%	\$ -
Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	38,600	LF	\$0.60	\$ 23,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 23,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD	666	AFY	\$500	\$ 334,000
	666		Purchase Cost Total	\$ 334,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		666
Water Purchase Escalator	4.0%	Total Yield (AF)		33,317
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 10,975,000		1.00	\$ 10,975,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 23,000		49.00	\$ 1,127,000
Recycled Water Cost	\$ 334,000		66.73	\$ 22,288,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 34,390,000
50-year Project Yield (AF)				33,317
Unit Cost (\$/af)				\$1,030

10.2 Woodland Hills WRP

This WRP defines service to five potential customers, including one anchor customer:

- Woodland Hills Country Club



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
288	0.26	0.56	\$12.68	\$0.16	\$1,590

Facilities

- **LVMWD Connection:** This WRP connects to the LVMWD recycled water system at the City’s border along El Canon Ave by the Motion Picture and Television Hospital. Receipt of up to 0.5 mgd requires approximately \$3.5 million in upgrades to LVMWD recycled water system, which includes a new pipeline to get to the City’s border and a pipeline to parallel a portion of their existing system.
- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP has approximately 3.6 miles of 6” to 16” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed pipelines.

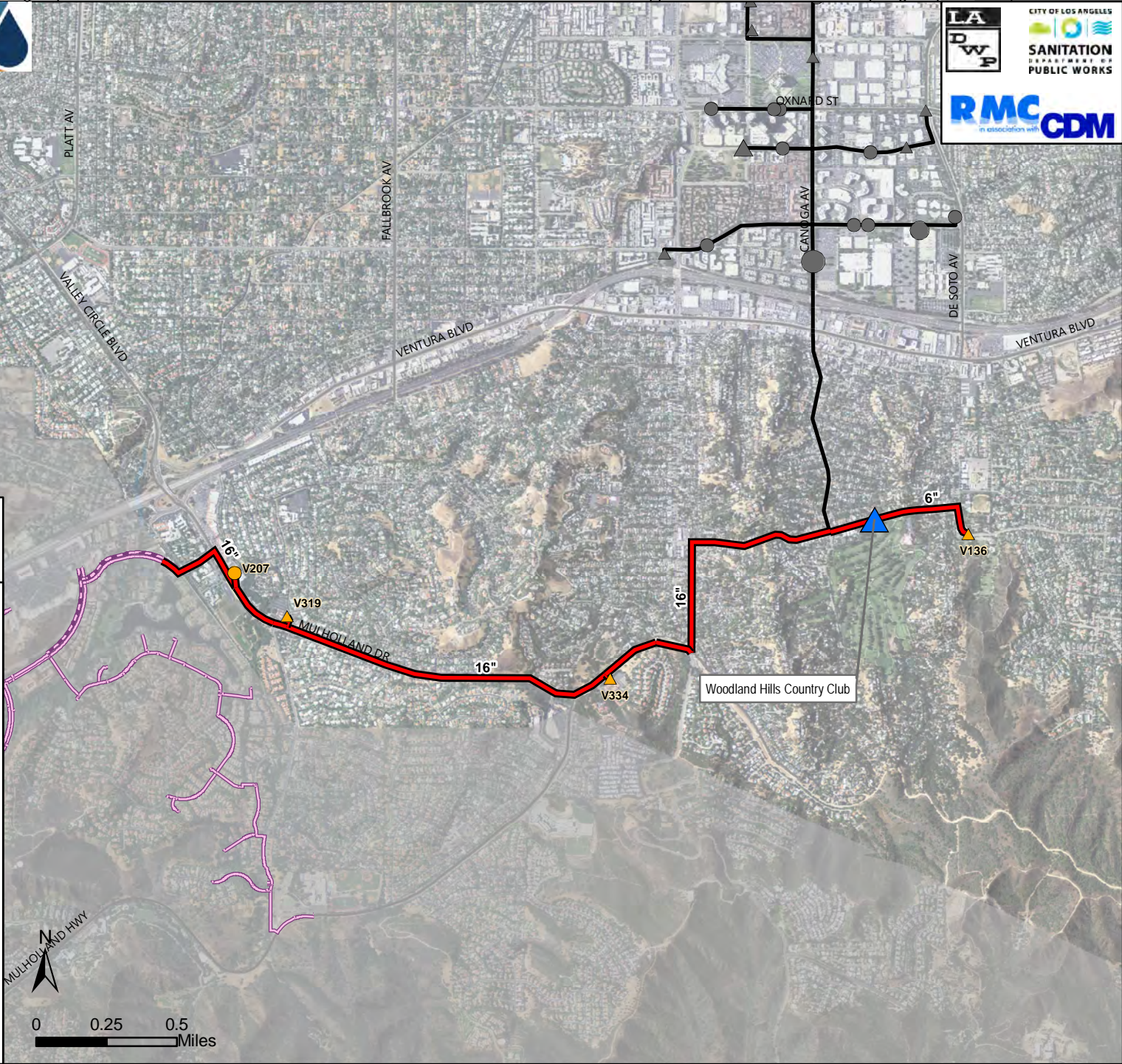
Implementation Considerations

The Woodland Hills Country Club is the anchor customer for this system so any water quality concerns they may have need to be addressed before this WRP can be implemented.

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Valley Service Area Las Virgenes System Woodland Hills WRP

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

Las Virgenes System – Woodland Hills WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre- hensive ⁴
V014	Woodland Hills Country Club	Irrigation	230	0.21	0.45	A	B,B
V136	Serrania Avenue Park	Irrigation	21	0.02	0.04	--	--
V207	Motion Picture and Television Fund Hospital	Mixed-Use	15	0.01	0.02	--	--
V319	Corp Presiding Bishop Church of J.C.L.D.S	Irrigation	11	0.01	0.02	--	--
V334	Roman Catholic Archbishop of LA	Irrigation	10	0.01	0.02	--	--
Total⁵			288	0.26	0.56		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Woodland Hills Country Club:** The customer has raised concern about water quality needs associated with maintenance impacts, particularly to their greens.

There is also an agricultural field along the western side of Mulholland Drive and south of the Motion Picture and Television Hospital but the owner could not be identified.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Las Virgenes

Annual Yield (AFY)
288

WRP: Woodland Hills

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	2,800	in-diam*LF	\$24	\$ 403,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	16,100	in-diam*LF	\$18	\$ 4,637,000
Las Virgenes Pipelines				\$ 2,464,500
			Construction Subtotal	\$ 7,504,500
Contingency Costs			30%	\$ 2,251,000
			Construction Total	\$ 9,755,500
Implementation Costs			30%	\$ 2,927,000
			Total Capital Cost	\$ 12,682,500

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
			Construction Subtotal	\$ -
Contingency Costs			30%	\$ -
			Construction Total	\$ -
Implementation Costs			30%	\$ -
			Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	18,900	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 11,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD	288	AFY	\$500	\$ 144,000
288		Purchase Cost Total		\$ 144,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	288
Water Purchase Escalator	4.0%		Total Yield (AF)	14,394
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 12,682,500		1.00	\$ 12,683,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 11,000		49.00	\$ 539,000
Recycled Water Cost	\$ 144,000		66.73	\$ 9,609,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 22,831,000
50-year Project Yield (AF)				14,394
Unit Cost (\$/af)				\$1,590

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11. Westside – Westside System

Overview

The potential Westside – Westside System includes potential WRPs to build off the existing system. The system expands the existing Westside System using recycled water produced by WBMWD at their ELWRF in El Segundo.

Westside – Westside System – Summary of WRPs

WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Laterals	390	0.35	0.61	\$5.23	\$0.30	\$1,280
Penmar	177	0.16	0.35	\$10.63	\$0.14	\$2,240
Potential Total	568	0.51	0.96	\$15.87	\$0.44	\$2,860
Existing System	880	0.79	1.72	--	--	--
Planned System	610	0.54	0.91	--	--	--
System Total	2,058	1.84	3.59	--	--	--

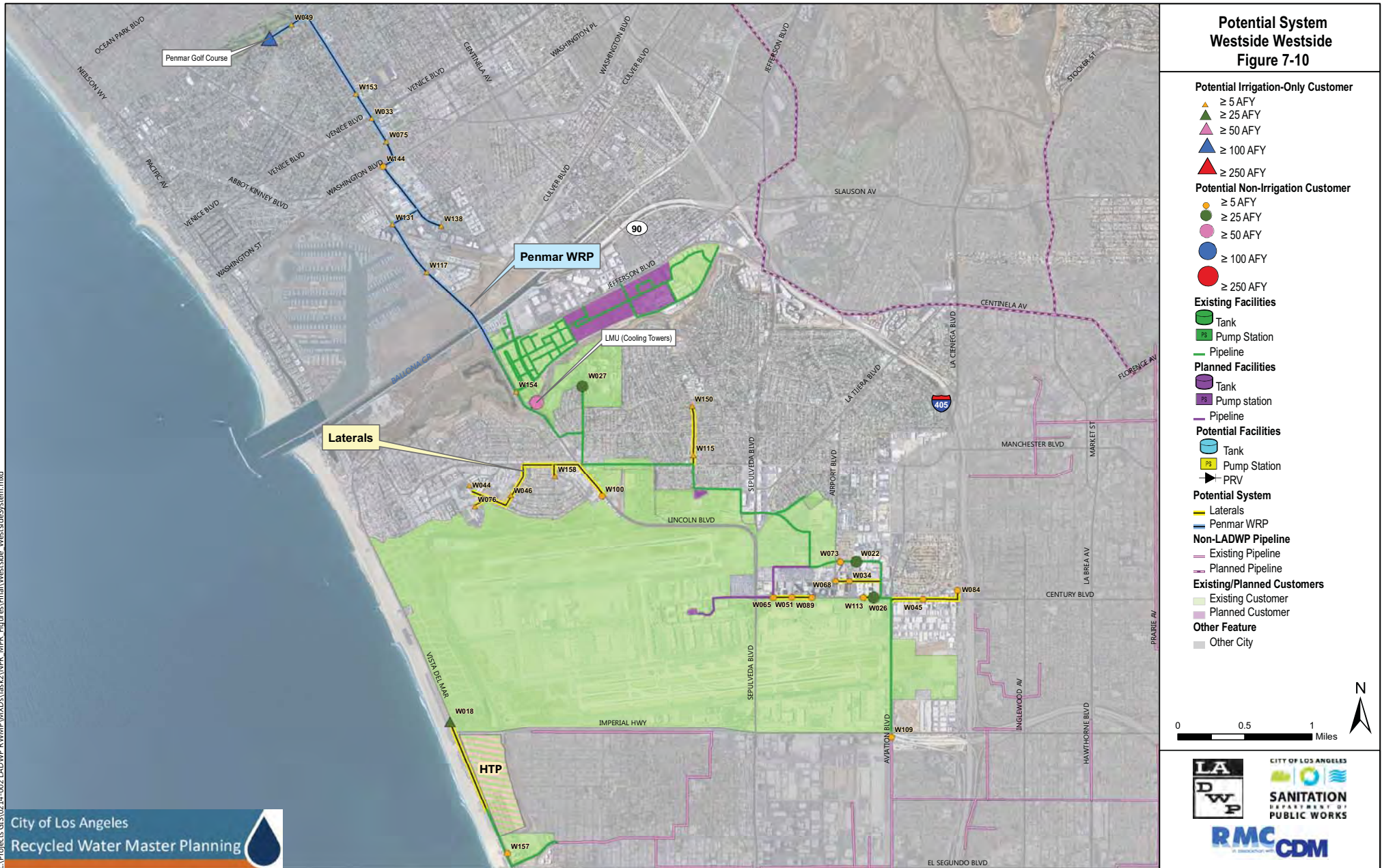
Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

The system's primary issue is water age. LADWP is currently addressing this and recommendations are included in the *Existing System Improvement Project Recommendations TM* (NPR Report Appendix K). One part of the solution to water age issues is the addition of customers to increase flow through the pipes and, in particular, to add customers at the end of the system. Therefore, LADWP should consider prioritizing the customers at the northern end of this WRP. Also, the availability of additional supply and conveyance capacity from WBMWD must be confirmed prior to implementation. The availability of additional supply from WBMWD in the future is not ensured since WBMWD has plans to potentially use all remaining treatment capacity at ELWRF. The WBMWD recycled water distribution system has some potential hydraulic capacity limitations.

The Penmar WRP and each lateral associated with the Laterals WRP can be implemented independently and will be dependent on confirmation of customer's ability to use recycled water and a review of their on-site conversion requirements.

The primary implementation consideration for the Penmar WRP is that the Penmar Water Quality Improvement Project (Penmar WQIP) is currently being implemented by the City's Bureau of Sanitation to serve non-potable water to the WRP's two anchor customers: Penmar Golf Course and Penmar Recreation Center. The project proposes to reuse dry weather stormwater for irrigation at these sites. Therefore, these customers' recycled water demand estimates will need to be reduced based on the amount of non-potable demand that is met by the Penmar WQIP. Then, the cost effectiveness of the WRP must then be revisited with the new recycled water demand estimate.



DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westside

Annual Yield (AFY)
568

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	21,500	in-diam*LF	\$24	\$ 3,096,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	19,800	in-diam*LF	\$20	\$ 4,752,000
River Crossing		LS	\$1,540,000	\$1,540,000
			Construction Subtotal	\$ 9,388,000
Contingency Costs			30%	\$ 2,816,000
			Construction Total	\$ 12,204,000
Implementation Costs			30%	\$ 3,661,000
			Total Capital Cost	\$ 15,865,000

Capital Replacement Costs

20-Year Useful Life

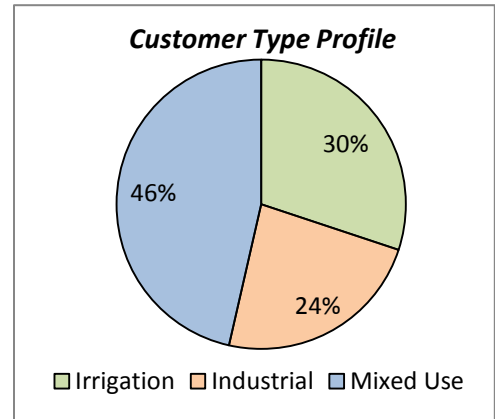
Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
			Construction Subtotal
Contingency Costs			30%
			Construction Total
Implementation Costs			30%
			Total 20-year Capital Cost

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	41,300	LF	\$0.60	\$ 25,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
			Total Annual O&M	\$ 25,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	568	AFY	\$728	\$ 414,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	568		Purchase Cost Total	\$ 414,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	568
Water Purchase Escalator	4.0%		Total Yield (AF)	28,378
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 15,865,000		1.00	\$ 15,865,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 25,000		49.00	\$ 1,225,000
Recycled Water Cost	\$ 414,000		66.73	\$ 27,626,000
Salvage	\$ -		1.00	\$ -
			Total PV	\$ 44,716,000
			50-year Project Yield (AF)	28,378
			Unit Cost (\$/af)	\$1,580

11.1 Laterals – Westside

This WRP defines service to 24 potential customers within ½ mile of the Westside – Westside System’s existing pipelines, including one anchor customer:

- Loyola Marymount University



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
390	0.35	0.61	\$5.23	\$0.30	\$1,270

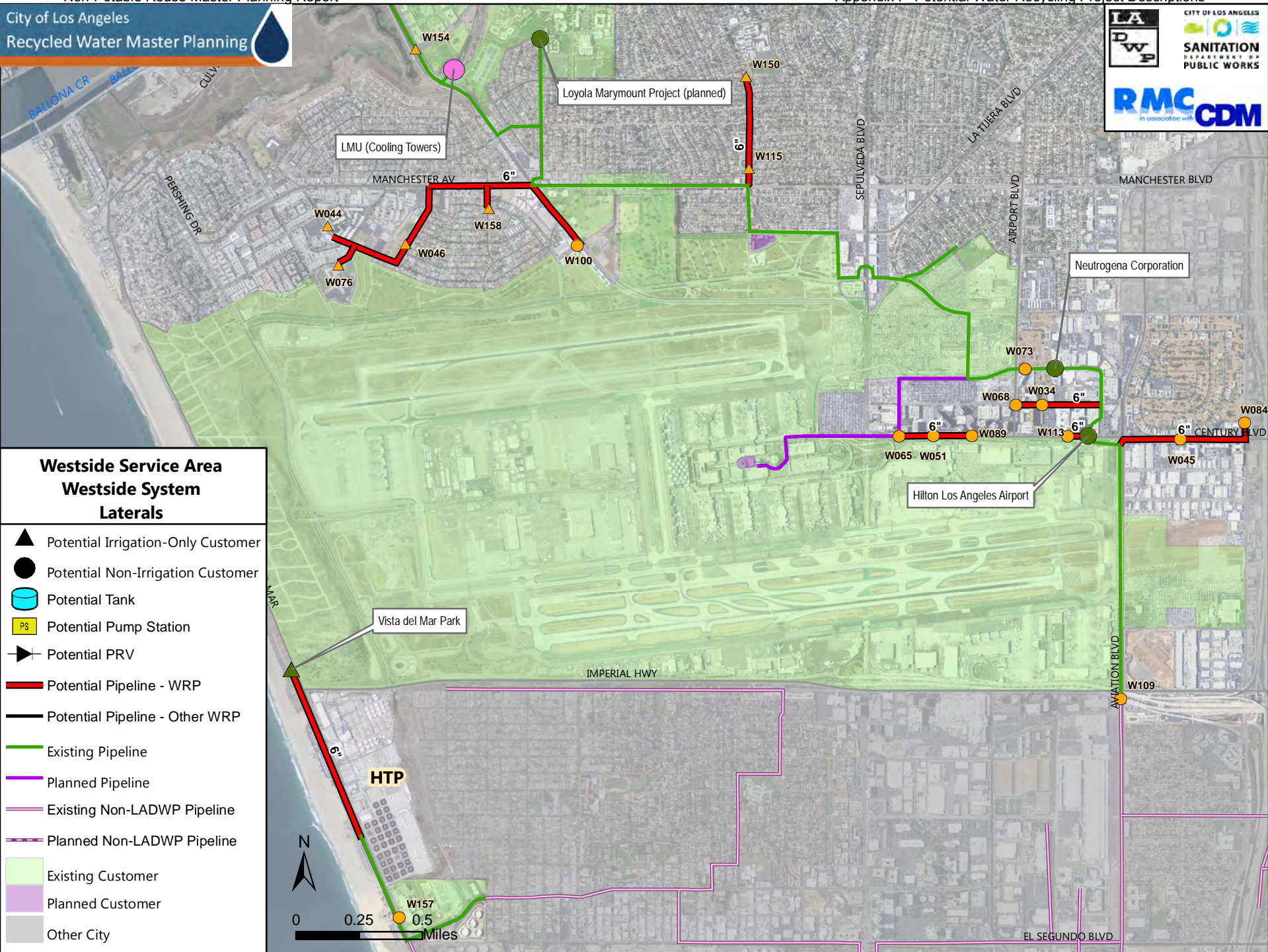
Facilities

- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP has approximately 4.1 miles of 6” pipe. The utility review was conducted for transmission pipelines but not completed for laterals so there are no review findings.

Implementation Considerations

The primary issue with this WRP is resolving the water age issues in the system. LADWP is currently addressing the issue and recommendations are included in the *Existing System Improvement Project Recommendations TM* (NPR Report Appendix K). One part of the solution to water age issues is the addition of customers to increase flow through the pipes and, in particular, customers at the end of the system. Therefore, LADWP may want to consider prioritizing the customers at the northern end of this WRP.

Also, the availability of supply and conveyance capacity from WBMWD must be confirmed prior to implementation. The availability of supply from WBMWD in the future is not guaranteed until LADWP requests and acquires this supply since WBMWD has plans to potentially use all remaining treatment capacity at ELWRF.



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**Westside Service Area
Westside System
Laterals**

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City

Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

Customers

Westside System – Laterals WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
W015	LMU (Cooling Towers)	Industrial	50	0.04	0.06	--	--
W018	Vista del Mar Park	Irrigation	49	0.04	0.10	--	--
W022	Neutrogena Corporation	Industrial	37	0.03	0.04	--	--
W026	Hilton Los Angeles Airport	Mixed-Use	27	0.02	0.04	--	--
W027	Loyola Marymount Project	Mixed-Use	25	0.02	0.04	--	--
W034	Marriot Hotel (West LA)	Mixed-Use	22	0.02	0.03	--	--
W044	Cross Creek Village HOA	Irrigation	18	0.02	0.04	--	--
W045	Westin Hotel	Mixed-Use	18	0.02	0.03	--	--
W046	Westchester High School	Irrigation	17	0.02	0.03	--	--
W051	Sheraton Gateway Hotel	Mixed-Use	16	0.01	0.02	--	--
W065	Radisson Hotel LAX	Mixed-Use	12	0.01	0.02	--	--
W068	Blue Oval Car Rental	Mixed-Use	12	0.01	0.02	--	--
W073	Renaissance Hotel	Mixed-Use	11	0.01	0.02	--	--
W076	St. Bernard High School	Irrigation	11	0.01	0.02	--	--
W084	Holiday Inn - LAX	Mixed-Use	9	0.01	0.01	--	--
W089	Crowne Plaza Hotel (LAX)	Mixed-Use	9	0.01	0.01	--	--
W100	EQUITY RESIDENTIAL PROP	Mixed-Use	8	0.01	0.01	--	--
W109	LACMTA Division 22 Green Line Main Yard	Mixed-Use	5	0.00	0.00	--	--
W113	Airport Spectrum	Mixed-Use	7	0.01	0.01	--	--
W115	Kentwood Elementary School	Irrigation	7	0.01	0.01	--	--
W150	Wright Jr High	Irrigation	5	0.00	0.01	--	--
W154	Playa Vista Park Landscaping	Irrigation	5	0.00	0.01	--	--
W157	Scattergood Generating Plant	Industrial	5	0.00	0.01	B	--
W158	Loyola Village Elementary School	Irrigation	5	0.00	0.01	--	--
Total⁵			390	0.35	0.61		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Loyola Marymount University:** LMU is an existing recycled water customer. The water is used for landscape irrigation and they are currently expanding recycled water service to the remaining irrigation demand on campus. LMU also has cooling tower demands that could be met with recycled water; however, they have been dealing with poor water

quality (due to water age) since they initiated recycled water service and are not interested in investigating cooling tower use until the water quality issues are resolved. (LADWP is currently addressing the issues).

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westside

Annual Yield (AFY)
390

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	21,500	in-diam*LF	\$24	\$ 3,096,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
			Construction Subtotal	\$ 3,096,000
Contingency Costs			30%	\$ 929,000
			Construction Total	\$ 4,025,000
Implementation Costs			30%	\$ 1,208,000
			Total Capital Cost	\$ 5,233,000

Capital Replacement Costs

20-Year Useful Life

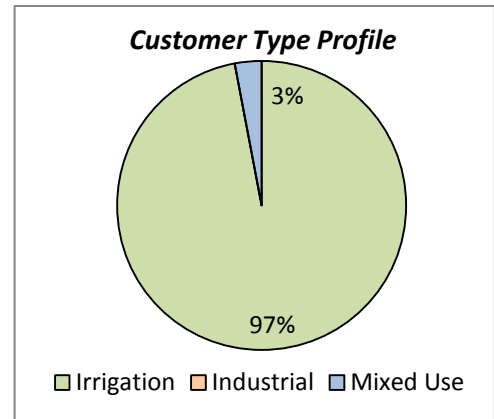
Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
		Construction Subtotal	\$ -
Contingency Costs		30%	\$ -
		Construction Total	\$ -
Implementation Costs		30%	\$ -
		Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	21,500	LF	\$0.60	\$ 13,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 13,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	390	AFY	\$728	\$ 285,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
390		Purchase Cost Total		\$ 285,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	390	
Water Purchase Escalator	4.0%	Total Yield (AF)	19,506	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 5,233,000		1.00	\$ 5,233,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 13,000		49.00	\$ 637,000
Recycled Water Cost	\$ 285,000		66.73	\$ 19,018,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 24,888,000
50-year Project Yield (AF)				19,506
Unit Cost (\$/af)				\$1,280

11.2 Penmar WRP

This WRP defines service to nine potential customers, including one anchor customer:

- Penmar Golf Course



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
177	0.16	0.35	\$10.63	\$0.14	\$2,240

Facilities

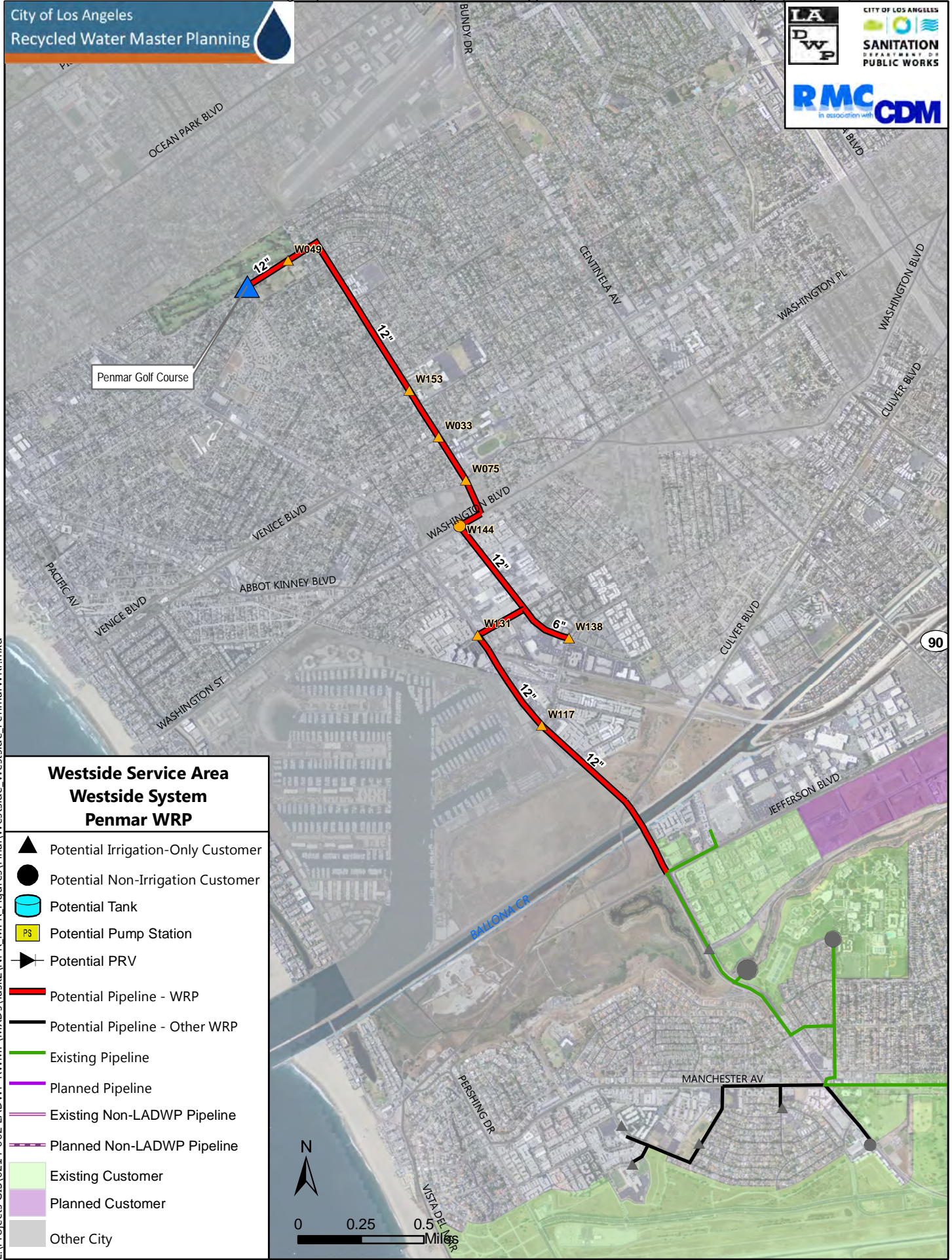
This WRP consists of an extension of the existing system and does not require any new tanks, pump stations, or PRVs.

- **Crossings:** This WRP requires a crossing Balboa Creek near Lincoln Blvd, which consists of an approximate 500 ft wide concrete channel at this location. This crossing could either be a large trenchless crossing under the channel or could be attached to the Lincoln Blvd bridge.
- **Pipelines:** This WRP has approximately 3.7 miles of 12" pipe. The utility review conducted using NavigateLA did not include this alignment because the WRP was added after the review was completed.

The primary implementation issue with this WRP is determining how much demand the Penmar Water Quality Improvement Project (PWQIP) can meet for Penmar Golf Course and Penmar Recreation Center. The PWQIP proposes to reuse dry weather stormwater for irrigation at these sites and is currently being implemented by the City. Therefore, these customers' recycled water demand estimates will need to be adjusted based on the amount of non-potable demand that is offset by the PWQIP and the cost effectiveness of this WRP must then be revisited.

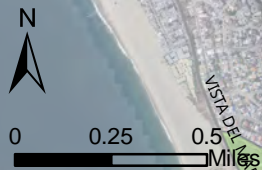
As noted for the Westside Laterals WRP, the addition of customers at the end of the system helps to address water quality issues that arise from water age for existing customers so this WRP will improve water quality in the system. Also, the availability of supply and conveyance capacity from WBMWD must be confirmed prior to implementation. The availability of supply from WBMWD in the future is not guaranteed until LADWP requests and acquires this supply since WBMWD has plans to potentially use all remaining treatment capacity at ELWRF.

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Westside Service Area Westside System Penmar WRP

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 50 AFY are labeled. Other potential customers have IDs shown.

Customers

Westside System – Penmar WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
W012	Penmar Golf Course	Irrigation	100	0.09	0.20	A	--
W033	Venice High School	Irrigation	22	0.02	0.04	--	--
W049	Penmar Rec Center	Irrigation	17	0.02	0.03	--	--
W075	Venice Swimming Rec	Irrigation	11	0.01	0.02	--	--
W117	Marina Terrace I	Irrigation	6	0.01	0.01	--	--
W131	AZZURRA HOA	Irrigation	6	0.01	0.01	--	--
W138	VILLA MARINA EAST IV	Irrigation	6	0.00	0.01	--	--
W144	C WHOLESALE COSTCO	Mixed-Use	5	0.00	0.01	--	--
W153	Mark Twain Jr High	Irrigation	5	0.00	0.01	--	--
Total⁵			177	0.16	0.35		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for the anchor customer:

- **Penmar Golf Course:** This City golf course is the anchor customer for this WRP. Currently, the City is implementing the Penmar Water Quality Improvement Project, which includes reuse of disinfected stormwater for irrigation at the golf course (and Penmar Recreation Center and Marine Park). Therefore, this customer’s recycled water demand estimate will need to be adjusted based on the amount of non-potable demand that is offset by the stormwater reuse project.

This WRP terminates at Penmar Golf Course, which runs adjacent to the City of Santa Monica border, and which may have some non-potable demands. Marine Park in Santa Monica is adjacent to the northwest corner of Penmar Golf Course and is identified in the Penmar Water Quality Improvement Project as a customer for the treated stormwater.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westside

Annual Yield (AFY)
177

WRP: Penmar

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	19,800	in-diam*LF	\$20	\$ 4,752,000
River Crossing		LS	\$1,540,000	\$1,540,000
Construction Subtotal				\$ 6,292,000
Contingency Costs 30%				\$ 1,888,000
Construction Total				\$ 8,180,000
Implementation Costs 30%				\$ 2,454,000
Total Capital Cost				\$ 10,634,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	19,800	LF	\$0.60	\$ 12,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 12,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	177	AFY	\$728	\$ 130,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
177		Purchase Cost Total		\$ 130,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escal	3.0%		Annual Yield (AFY)	177
Water Purchase Escalat	4.0%		Total Yield (AF)	8,871
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 10,634,000		1.00	\$ 10,634,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 12,000		49.00	\$ 588,000
Recycled Water Cost	\$ 130,000		66.73	\$ 8,675,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 19,897,000
50-year Project Yield (AF)				8,871
Unit Cost (\$/af)				\$2,240

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12. Westside – Westwood System

Overview

The potential Westside – Westwood System includes potential WRPs to serve the set of large customers in the northern half of the Westside Service Area, which is far from existing recycled water infrastructure. The system uses recycled water produced by WBMWD at their ELWRF in El Segundo and connects to WBMWD's recycled water system at its terminus in Inglewood. The Inglewood extension was originally sized to accommodate a large LADWP recycled water system in the future.

Westside – Westwood System – Summary of WRPs

WRP	Annual Demand (AFY)	Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Lifecycle Unit Cost (\$/yr)
Kenneth Hahn	349	0.31	0.64	\$14.67	\$0.43	\$2,430
UCLA	2,836	2.53	4.80	\$61.28	\$2.55	\$1,610
Total	3,185	2.84	5.44	\$75.97	\$2.99	\$1,700

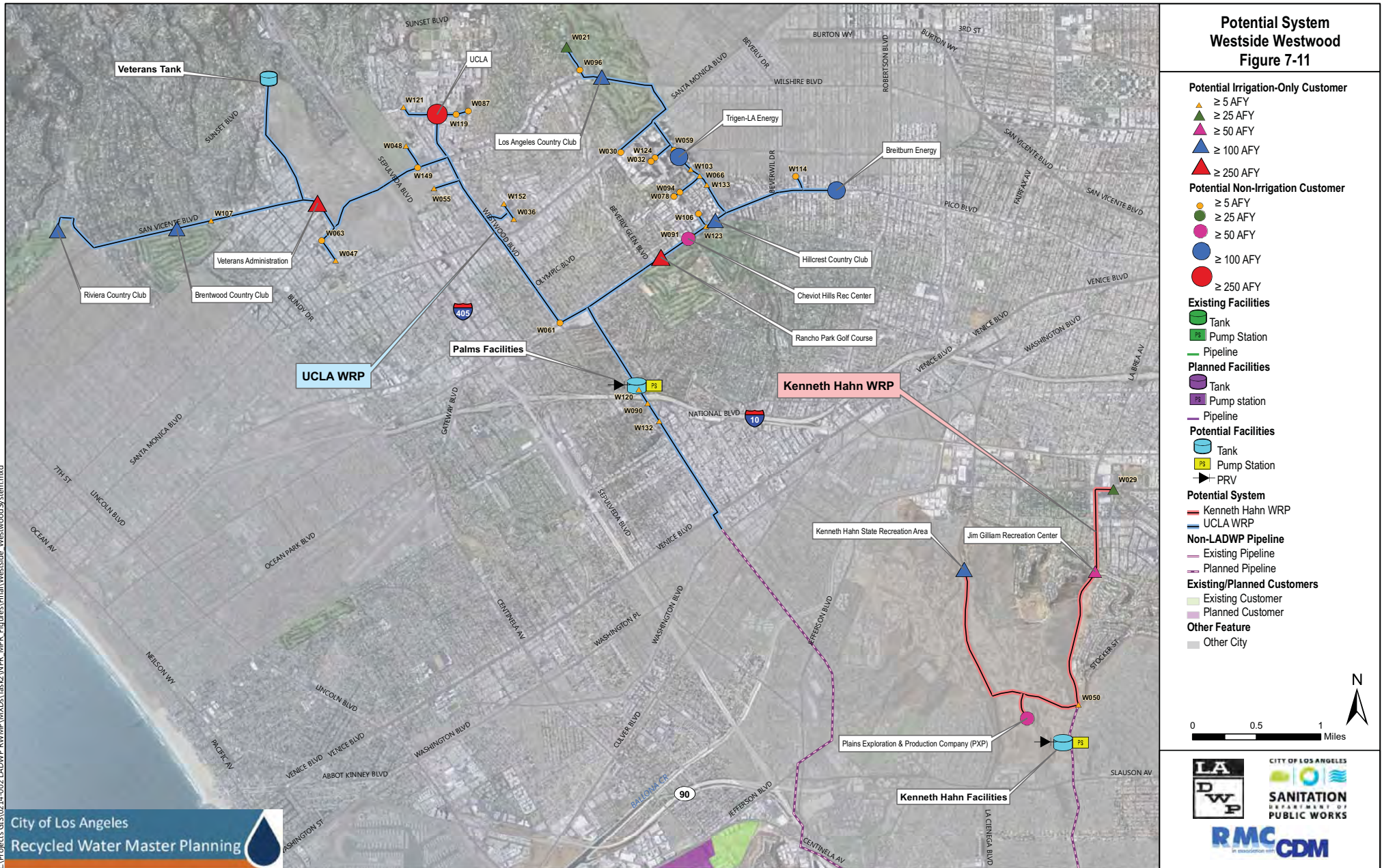
Note: Total system demands or costs may not be equal to the sum of the individual WRP demands or costs due to rounding.

Implementation Considerations

Since this system starts within the WBMWD service area, implementation of this WRP will require coordination with WBMWD (as the regional wholesaler) and their retailers serving customers in the area (Cal Am and Culver City). WBMWD has identified potential non-potable customers in their service area that could be added to the project. This provides an opportunity for cost-sharing of capital facilities but implementation is dependent on moving ahead with an agreement with WBMWD, Cal Am, and Culver City.

Also, the availability of additional supply and conveyance capacity from WBMWD must be confirmed prior to implementation. The availability of additional supply from WBMWD in the future is not ensured since WBMWD has plans to potentially use all remaining treatment capacity at ELWRF. The WBMWD recycled water distribution system has some potential hydraulic capacity limitations.

Each WRP can be implemented independently but each WRP has unique issues. The UCLA WRP has one of the largest potential non-potable demands in this report but all of the anchor customers are located at least 7 miles from the supply (at the WBMWD Inglewood connection) so significant capital investment must be undertaken prior to connecting any large customers. Within the Kenneth Hahn WRP there are plans to convert the existing oil operations to open space with public access. The park conversion may result in a large demand that could anchor this WRP and provide the opportunity to upgrade the aging irrigation system.



DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westwood

Annual Yield (AFY)
3,185

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Palms	0.4	MG	\$4,000,000	\$ 1,600,000
Tank 2 at Veterans	4.0	MG	\$2,000,000	\$ 8,000,000
Tank 3 at Kenneth Hahn	1.0	MG	\$3,000,000	\$ 3,000,000
Pump Station				
PS 1 at 10 Fwy	3,200	gpm	formula	\$ 2,224,000
PS 2 at Kenneth Hahn	1,100	gpm	formula	\$ 990,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 at Palms	24	LS	\$350,000	\$ 350,000
PRV 2 at Kenneth Hahn	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	23,900	in-diam*LF	\$24	\$ 3,442,000
8 inch	13,300	in-diam*LF	\$24	\$ 2,554,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	15,800	in-diam*LF	\$20	\$ 3,792,000
16 inch	14,400	in-diam*LF	\$18	\$ 4,147,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	28,800	in-diam*LF	\$18	\$ 10,368,000
24 inch	10,900	in-diam*LF	\$16	\$ 4,186,000
Construction Subtotal				\$ 44,953,000
Contingency Costs 30%				\$ 13,486,000
Construction Total				\$ 58,439,000
Implementation Costs 30%				\$ 17,532,000
Total Capital Cost				\$ 75,971,000

Capital Replacement Costs

20-Year Useful Life

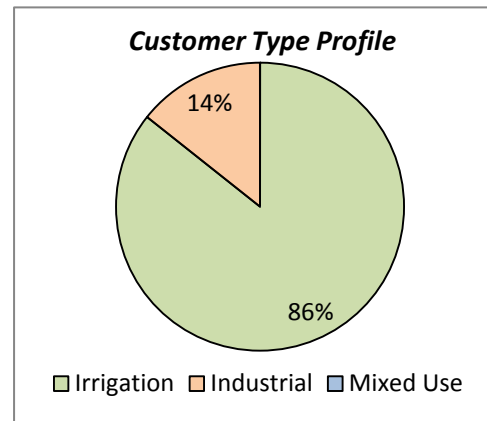
Storage	10%	\$	1,260,000
Pump Station	50%	\$	1,607,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	325,000
Construction Subtotal			\$ 3,192,000
Contingency Costs 30%			\$ 958,000
Construction Total			\$ 4,150,000
Implementation Costs 30%			\$ 1,245,000
Total 20-year Capital Cost			\$ 5,395,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	3	LS	\$75,000	\$ 225,000
Pump Station				
Maintenance	\$ 3,214,000	capital cost	5.0%	\$ 161,000
Maintenance	2	LS	\$10,000	\$ 20,000
PS 1 - Electricity	1,220,100	kWh	\$0.12	\$ 146,000
PS 2 - Electricity	95,200	kWh	\$0.12	\$ 11,000
Conveyance	107,100	LF	\$0.60	\$ 64,000
Pressure Reducing Stations	2	station(s)	\$20,000	\$ 40,000
			Total Annual O&M	\$ 667,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	3,185	AFY	\$728	\$ 2,319,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	3,185		Purchase Cost Total	\$ 2,319,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escal	3.0%		Annual Yield (AFY)	3,185
Water Purchase Escalat	4.0%		Total Yield (AF)	159,246
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 75,971,000		1.00	\$ 75,971,000
20-Year Capital Costs	\$ 5,395,000		2.00	\$ 10,790,000
Annual O&M Costs	\$ 667,000		49.00	\$ 32,683,000
Recycled Water Cost	\$ 2,319,000		66.73	\$ 154,747,000
Salvage	\$ (2,697,500)		1.00	\$ (2,698,000)
			Total PV	\$ 271,493,000
			50-year Project Yield (AF)	159,246
			Unit Cost (\$/af)	\$1,700

12.1 Kenneth Hahn WRP

This WRP defines service to seven potential customers located near WBMWD planned system, including three anchor customers:

- Kenneth Hahn State Recreation Area
- Jim Gilliam Recreation Center
- Plains Exploration & Production Company (PXP)



Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost
349	0.31	0.64	\$14.67	\$0.43	\$2,430

Facilities

- **WBMWD Connection:** The system connects to the WBMWD Title 22 system at its terminus in Inglewood. This portion of WBMWD’s system was originally designed to provide several thousand acre-feet per year to LADWP in the future.
- **Kenneth Hahn PRV, Tank, and Pump Station:** The Kenneth Hahn WRP requires a PRV, storage tank, and pump station combination to create a new pressure zone to provide adequate customer service pressures. A 12” PRV is required to break the pressure provided from the WBMWD Inglewood Connection. The 1.0 MG tank with a ground elevation of 270 ft and overflow elevation of 300 ft serves as a wet well for the pump station. The pump station has two pumps (plus one standby) each with 200 ft head at 550 gpm. All the facilities should be co-located. The facilities are assumed to be located along in Kenneth Hahn Park but a specific site was not identified to accommodate all three facilities.
- **Crossings:** This WRP has no major crossings.
- **Pipelines:** This WRP has approximately 4.2 miles of 6” to 12” pipe. The utility review conducted using NavigateLA did not reveal significant existing utilities along the proposed pipelines; however, utilities were not available for review for the portions of the alignment outside City limits.

Implementation Considerations

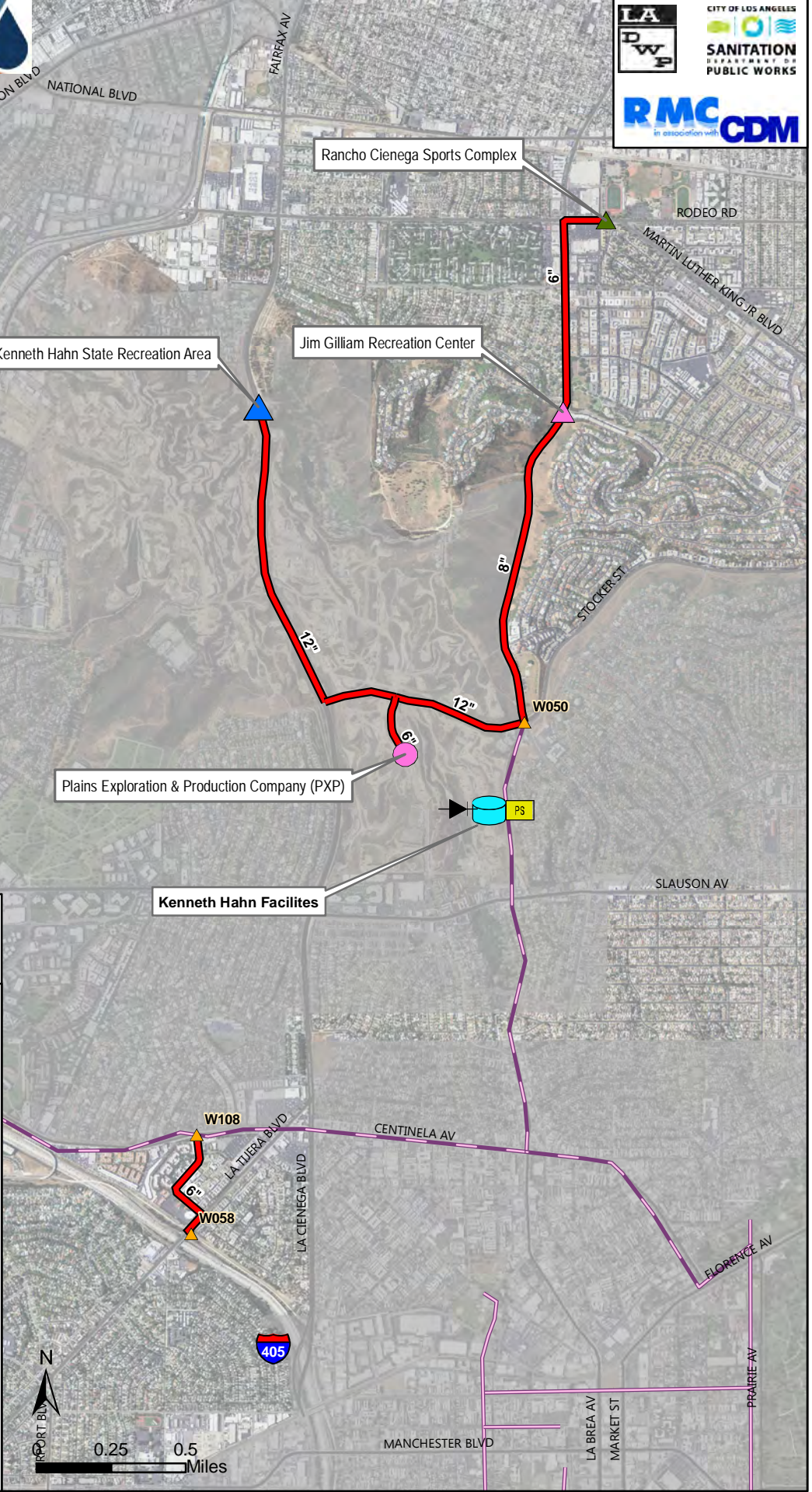
This WRP passes through areas inside the WBMWD service area and WBMWD has identified potential non-potable customers that could be added to the project. Therefore, implementation of this WRP will require coordination with WBMWD (as the regional wholesaler) and their retailers serving customers in the area (Cal Am and Culver City). The largest customer for this WRP (Kenneth Hahn) is supplied potable water by both LADWP and Cal Am and the second largest customer (PXP) is supplied by Cal Am and Culver City. This provides an opportunity for cost-sharing of capital facilities but implementation then becomes dependent on the willingness of WBMWD, Cal Am, and Culver City to move forward with the project.



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Westside Service Area Westwood System Kenneth Hahn WRP

- Potential Irrigation-Only Customer
- Potential Non-Irrigation Customer
- Potential Tank
- Potential Pump Station
- Potential PRV
- Potential Pipeline - WRP
- Potential Pipeline - Other WRP
- Existing Pipeline
- Planned Pipeline
- Existing Non-LADWP Pipeline
- Planned Non-LADWP Pipeline
- Existing Customer
- Planned Customer
- Other City



Note: Only potential customers ≥ 50 AFY are labeled. Other potential customers have IDs shown.

There are plans to the convert the existing oil operations to open space with public access. Conceptual plans to convert the area to a large Baldwin Hills Park are advocated by many in the local community. The Baldwin Hills Park Master Plan (2002) describes the park as a “community-based vision to expand Kenneth Hahn State Recreation Area into a two-square mile world-class park that will serve as a recreation nucleus for area residents and visitors to this region of Los Angeles County.” The park conversion would likely result in a large demand that could anchor this WRP.

Other implementation issues associated with this WRP is that construction outside of the City will require coordination with the appropriate local entities. The availability of supply and conveyance capacity from WBMWD must be confirmed prior to implementation the availability of supply from WBMWD in the future is not guaranteed until LADWP requests and acquires this supply since WBWMD has plans to potentially use all remaining treatment capacity at ELWRF.

Customers

Westwood System – Kenneth Hahn WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
W007	Kenneth Hahn State Rec Area	Irrigation	160	0.14	0.31	B	--
W014	Jim Gilliam Recreation Center	Irrigation	75	0.07	0.15	--	--
W016	Plains Exploration & Production Company (PXP)	Industrial	50	0.04	0.06	--	--
W029	Rancho Cienega Sports Complex	Irrigation	25	0.02	0.05	--	--
W050	Normand O. Houston Park	Irrigation	17	0.02	0.03	--	--
W058	Caltrans (405 at LA TIJERA BL)	Irrigation	14	0.01	0.03	--	--
W108	Heights Apartments	Irrigation	7	0.01	0.01	--	--
Total⁵			349	0.31	0.64		

Notes:

1. Table is sorted by the customer’s ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The “Initial” conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the “Comprehensive” conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Kenneth Hahn State Recreation Area:** This customer covers approximately 380 acres that includes large areas of native coastal sage scrub habitat, lawns and landscaped areas, picnic sites, tot lots, fishing lake, lotus pond, community center, and five miles of trails. Approximately 80 acres of the entire site are irrigated. The area is state-owned and operated by LA County Parks. The southern portion of the park receives water from Cal Am while the northern portion is supplied by LADWP. The irrigation system is in need of upgrades but no plans to upgrade and replace it have been developed, although, smart controllers were recently planned for installation in a portion of the park.
- **Jim Gilliam Recreation Center:** This City park, which is located to the northeast of Kenneth Hahn State Recreation Area, is a willing recycled water customer.
- **Plains Exploration & Production Company (PXP):** This customer is a private oil production company that has multiple oil drilling locations in the LA Basin. The site associated with this WRP is their Inglewood Oilfield, which is located along the western boundary of Kenneth Hahn Park; however, this site receives potable water from Cal Am and Culver City but not LADWP. PXP uses potable water for drill rig washdown and as make-up water for reinjection to prevent subsidence. Recycled water could be used for the non-potable drill rig uses as well as make up water for reinjection.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westwood

Annual Yield (AFY)
349

WRP: Kenneth Hahn

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Palms	0.0	MG	\$0	\$ -
Tank 2 at Veterans	0.0	MG	\$0	\$ -
Tank 3 at Kenneth Hahn	1.0	MG	\$3,000,000	\$ 3,000,000
Pump Station				
PS 1 at 10 Fwy	0	gpm	formula	\$ -
PS 2 at Kenneth Hahn	1,100	gpm	formula	\$ 990,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 at Palms	0	LS	\$0	\$ -
PRV 2 at Kenneth Hahn	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,400	in-diam*LF	\$24	\$ 1,066,000
8 inch	5,800	in-diam*LF	\$24	\$ 1,114,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	9,200	in-diam*LF	\$20	\$ 2,208,000
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
Construction Subtotal				\$ 8,678,000
Contingency Costs 30%				\$ 2,603,000
Construction Total				\$ 11,281,000
Implementation Costs 30%				\$ 3,384,000
Total Capital Cost				\$ 14,665,000

Capital Replacement Costs

20-Year Useful Life

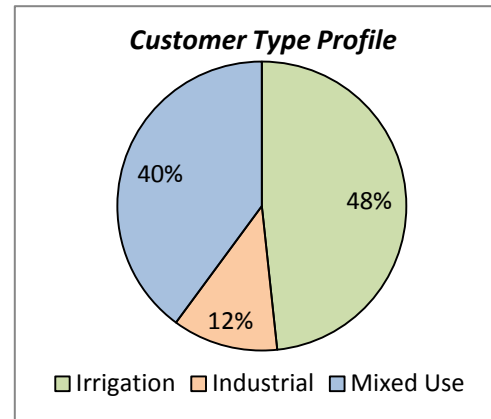
Storage	10%	\$	300,000
Pump Station	50%	\$	495,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 795,000
Contingency Costs 30%			\$ 239,000
Construction Total			\$ 1,034,000
Implementation Costs 30%			\$ 310,000
Total 20-year Capital Cost			\$ 1,344,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 990,000	capital cost	5.0%	\$ 50,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	95,200	kWh	\$0.12	\$ 11,000
Conveyance	22,400	LF	\$0.60	\$ 13,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 179,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	349	AFY	\$728	\$ 254,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
349		Purchase Cost Total		\$ 254,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escal	3.0%		Annual Yield (AFY)	349
Water Purchase Escalat	4.0%		Total Yield (AF)	17,429
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 14,665,000		1.00	\$ 14,665,000
20-Year Capital Costs	\$ 1,344,000		2.00	\$ 2,688,000
Annual O&M Costs	\$ 179,000		49.00	\$ 8,771,000
Recycled Water Cost	\$ 254,000		66.73	\$ 16,949,000
Salvage	\$ (672,000)		1.00	\$ (672,000)
Total PV				\$ 42,401,000
50-year Project Yield (AF)				17,429
Unit Cost (\$/af)				\$2,430

12.2 UCLA WRP

This WRP defines service to 39 potential customers located in the Westwood area, including 9 anchor customers:

- Brentwood Country Club
- Brietburn Energy
- Hillcrest Country Club
- Los Angeles Country Club
- Rancho Park Golf Course
- Riviera Country Club
- Trigen-LA Energy
- UCLA
- Veterans Administration

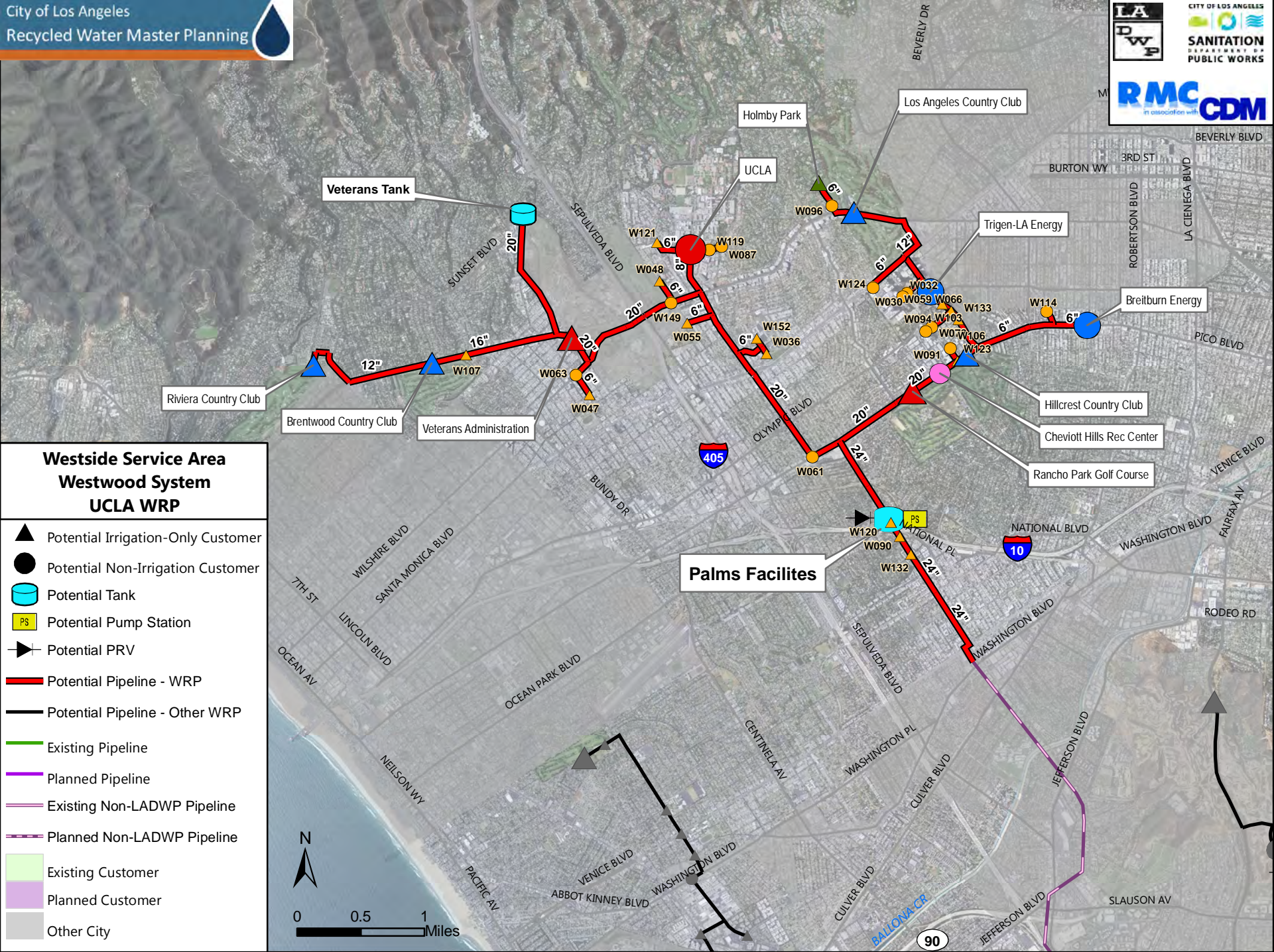


Avg Annual Demand (AFY)	Avg Annual Demand (MGD)	Peak Day Demand (MGD)	Capital Cost (\$M)	O&M Cost (\$M/yr)	Unit Lifecycle Cost (\$/AF)
2,836	2.53	4.80	\$61.28	\$2.55	\$1,610

Facilities

- **WBMWD Connection:** The system connects to the WBMWD Title 22 system at its terminus in Inglewood. This portion of WBMWD’s system was originally designed to provide several thousand acre-feet per year to LADWP in the future.
- **Palms PRV, Tank, and Pump Station:** The UCLA WRP requires a PRV, storage tank, and pump station combination to create a new pressure zone to provide adequate customer service pressures. A 24” PRV is required to break the pressure provided from the WBMWD Inglewood Connection. The 0.4 MG tank with a ground elevation of 165 ft and overflow elevation of 195 ft serves as a wet well for the pump station. The pump station has two pumps (plus one standby) each with 340 ft head at 1,600 gpm. All the facilities should be co-located. The facilities are assumed to be located along the Overland Ave alignment between the City boundary at Venice Blvd and Pico Blvd but a specific site was not identified to accommodate all three facilities.
- **Veterans Tank:** The tank is 4.0 MG with a ground elevation of 490 ft and overflow elevation of 520 ft and provides floating head to the pressure zone created by the Palms facilities. The tank is assumed to be located somewhere near Knollwood Golf Course but a specific site was not identified.
- **Crossings:** This WRP crosses I-10 at the Overland Ave overpass and crosses I-405 at the Wilshire Blvd underpass. The I-10 crossing could either be a large trenchless crossing under the highway, attached to the overpass bridge, or the alignment could be shifted east or west to adjacent underpasses at Motor Blvd and Westwood Blvd, respectively. Since the I-405 crossing is an underpass it could probably be constructed using jack and bore method instead of a more expensive direction drilling method.

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Note: Only potential customers ≥ 25 AFY are labeled. Other potential customers have IDs shown.

- **Pipelines:** This WRP includes approximately 16.0 miles of 6" to 24" pipe. The utility review conducted using NavigateLA revealed potential "crowding" along the proposed alignment due to existing utilities along Venice Blvd at Overland Ave; along Overland Ave at Palms Blvd, at National Blvd, and at Pico Blvd; along Pico Blvd at Avenue of the Stars, at Century Blvd, and at Beverly Blvd; along Santa Monica Blvd at Century Blvd; along Westwood Blvd at Santa Monica Blvd and at Wilshire Blvd; along San Vicente Blvd at Wilshire Blvd, at Montana Ave, and at Bundy Dr. Utilities were not available for review for the portions of the alignment outside City limits.

Implementation Considerations

This WRP has one of the largest potential non-potable demands in this report but all of the anchor customers are located at least 7 miles from the supply (at the WBMWD Inglewood connection) so significant capital investment must be undertaken prior to connecting any large customers. Also, approximately the first 5 miles of the alignment is located outside the City.

This WRP passes through areas inside the WBMWD service area and WBMWD has identified potential non-potable customers that could be added to the project. Therefore, implementation of this WRP will require coordination with WBMWD (as the regional wholesaler) and their retailers serving customers in the area (Cal Am and Culver City). This provides an opportunity for cost-sharing of capital facilities but implementation then becomes dependent on the willingness of WBMWD, Cal Am, and Culver City to move forward with the project.

Other implementation issues associated with this WRP is that construction outside of the City will require coordination with the appropriate local entities and the availability of supply and conveyance capacity from WBMWD must be confirmed prior to implementation. The availability of supply from WBMWD in the future is not guaranteed until LADWP requests and acquires this supply since WBMWD has plans to potentially use all remaining treatment capacity at ELWRF.

Customers

Westwood System – UCLA WRP Potential Customers

ID ¹	Name ²	Type of Use	Annual Demand		Peak Day	Conversion Rating	
			(AFY)	(MGD)	Demand (MGD)	Initial ³	Compre-hensive ⁴
W001	UCLA	Mixed-Use	540	0.48	0.82	B	--
W002	Veterans Administration	Mixed-Use	430	0.38	0.65	A	--
W003	Rancho Park Golf Course	Irrigation	400	0.36	0.79	A	--
W005	Brentwood Country Club	Irrigation	230	0.21	0.45	A	--
W006	Breitburn Energy	Industrial	165	0.15	0.19	A	--
W008	Riviera Country Club	Irrigation	180	0.16	0.35	A	--
W009	Hillcrest Country Club	Irrigation	170	0.15	0.33	A	--
W010	Trigen-LA Energy	Industrial	170	0.15	0.20	B	--
W011	Los Angeles Country Club	Irrigation	140	0.12	0.27	A	--
W021	Holmby Park	Irrigation	40	0.04	0.08	A	--
W030	Bloomington	Mixed-Use	23	0.02	0.04	--	--
W032	Hyatt Regency Century Plaza	Mixed-Use	22	0.02	0.03	--	--
W036	CORP PRESIDING BISHOP CHURCH OF J.C.L.D.S.	Irrigation	21	0.02	0.04	--	--
W047	University High School	Irrigation	17	0.02	0.03	--	--
W048	Weyburn Terraces (UCLA)	Irrigation	17	0.02	0.03	--	--
W055	Westwood Rec Center	Irrigation	15	0.01	0.03	--	--
W059	One Hundred Towers	Mixed-Use	14	0.01	0.02	--	--
W061	Westside Pavillion Shopping Center	Mixed-Use	13	0.01	0.02	--	--
W063	Pavillions	Mixed-Use	13	0.01	0.02	--	--
W066	Century Park Place Condominiums	Irrigation	12	0.01	0.02	--	--
W078	LA Park Hyatt	Mixed-Use	10	0.01	0.02	--	--
W087	SLC WESTWOOD OPERATING LLC	Mixed-Use	9	0.01	0.01	--	--
W090	Caltrans (10 at CHEVIOT VISTA P)	Irrigation	9	0.01	0.02	--	--
W091	20TH CENTURY FOX FILM CORP	Mixed-Use	9	0.01	0.01	--	--
W094	2121 AVENUE OF STARS LLC	Mixed-Use	8	0.01	0.01	--	--
W096	WILSHIRE COMSTOCK CONDOASSO	Mixed-Use	8	0.01	0.01	--	--
W103	Century Park East	Irrigation	8	0.01	0.01	--	--
W106	20th Century Fox	Mixed-Use	7	0.01	0.01	--	--
W107	LAUSD Brentwood Mgmt Center	Irrigation	7	0.01	0.01	--	--
W114	NEW BEVERLY HILLS HOTELLIMITED	Mixed-Use	7	0.01	0.01	--	--
W119	WESTWOOD HORIZONS CORP	Mixed-Use	6	0.01	0.01	--	--
W120	Palms Rec Center	Irrigation	6	0.01	0.01	--	--
W121	UCLA University Apartments North	Irrigation	6	0.01	0.01	--	--
W123	CENTURY TOWERS ASSN	Irrigation	6	0.01	0.01	--	--
W124	ENTERTAINMENT CTR LLC	Mixed-Use	6	0.01	0.01	--	--
W132	MOSS & CO PROP MGMT	Irrigation	6	0.01	0.01	--	--
W133	Le Parc HOA	Irrigation	6	0.01	0.01	--	--
W149	Federal Building	Mixed-Use	5	0.00	0.01	--	--
W152	Emerson Jr High	Irrigation	5	0.00	0.01	--	--
W155	Cheviot Hills Rec Center	Irrigation	70	0.06	0.14	A	--
Total⁵			2,836	2.53	4.80		

Notes:

1. Table is sorted by the customer's ID from the database and GIS.
2. Names in all caps were not individually reviewed.
3. The "Initial" conversion ratings were prepared for all customers with initial non-potable demands of greater than 75 AFY and were documented in the Initial Customer Evaluations TMs.
4. The basis for the "Comprehensive" conversion ratings were documented in the Customer Conversion Evaluations TMs. The evaluations were a more detailed assessment than the initial evaluation and conducted for a shorter list of priority anchor customers. This assessment has two conversion ratings – one for likelihood to convert and one strictly related to the conversion cost.
5. Individual customer demand values are rounded. Total values are based on the sum of unrounded individual customer demand values.

The following are considerations for each anchor customer:

- **Breitburn Energy:** This oil and gas production facility is receptive to using recycled water, and has previously sought recycled water for injection into oil and natural gas wells. There is also the potential to for recycled water use for once-through cooling, wash down, and drilling mud mixing.
- **Brentwood Country Club:** This private golf course would like to convert to recycled water for irrigation and does not have any significant conversion issues. At the time of our site visit, they were planning to install a well to reduce their potable water use, which would reduce the potential recycled water demand, but were still interested in recycled water.
- **Cheviot Hills Recreation Center:** This City park is adjacent to the Rancho Park Golf Course and has indicated they would consider using recycled water.
- **Hillcrest Country Club:** This private golf course currently blends local groundwater with potable water. Groundwater use is maximized since it is less expensive but the groundwater's poor water quality limits its use. The customer had limited interest in recycled water to offset potable due to water quality concerns when blended with groundwater but may be willing to offset groundwater use depending on the net cost to the customer.
- **Los Angeles Country Club:** This private golf course currently uses local groundwater to meet approximately 80% of irrigation demand and is very interested in offsetting the remaining potable demand with recycled water. The irrigation system is currently being upgraded so no significant conversion issues were identified.
- **Rancho Park Golf Course:** This City golf course has indicated they would consider converting to recycled water.
- **Riviera Country Club:** This private golf course currently uses groundwater to meet approximately half their irrigation demand and is interested in offsetting the remaining potable demand with recycled water. The irrigation system was upgraded in 2006 so no significant conversion issues were identified.
- **Trigen-LA - Century City:** This customer is a heating and cooling facility that could use recycled water for cooling tower and boiler feed operations; however, they did express concern over ammonia concentrations.
- **UCLA:** This customer indicated they are interested in using recycled water for irrigation and cooling tower operations. The cooling towers are located in the central plant, which should ease recycled water conversion, but the landscaped grounds are spread across campus so conversions may need to be focused on cost effective areas.

- **Veterans Administration – Westside Campus:** This customer has indicated interest in using recycled water for irrigation of sports fields, golf course, cemetery, and other landscaped areas; for cooling tower operations; and for laundry operations.

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westwood

Annual Yield (AFY)
2,836

WRP: UCLA

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Palms	0.4	MG	\$4,000,000	\$ 1,600,000
Tank 2 at Veterans	4.0	MG	\$2,000,000	\$ 8,000,000
Tank 3 at Kenneth Hahn	0.0	MG	\$0	\$ -
Pump Station				
PS 1 at 10 Fwy	3,200	gpm	formula	\$ 2,224,000
PS 2 at Kenneth Hahn	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 at Palms	24	LS	\$350,000	\$ 350,000
PRV 2 at Kenneth Hahn	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	16,400	in-diam*LF	\$24	\$ 2,362,000
8 inch	7,500	in-diam*LF	\$24	\$ 1,440,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	6,600	in-diam*LF	\$20	\$ 1,584,000
16 inch	14,400	in-diam*LF	\$18	\$ 4,147,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	28,800	in-diam*LF	\$18	\$ 10,368,000
24 inch	10,900	in-diam*LF	\$16	\$ 4,186,000

Construction Subtotal		\$ 36,261,000
Contingency Costs	30%	\$ 10,878,000
Construction Total		\$ 47,139,000
Implementation Costs	30%	\$ 14,142,000
Total Capital Cost		\$ 61,281,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 960,000
Pump Station	50%	\$ 1,112,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 2,072,000
Contingency Costs	30%	\$ 622,000
Construction Total		\$ 2,694,000
Implementation Costs	30%	\$ 808,000
Total 20-year Capital Cost		\$ 3,502,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	2	LS	\$75,000	\$ 150,000
Pump Station				
Maintenance	\$ 2,224,000	capital cost	5.0%	\$ 111,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	1,220,100	kWh	\$0.12	\$ 146,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	84,600	LF	\$0.60	\$ 51,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 488,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	2,836	AFY	\$728	\$ 2,065,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
2,836		Purchase Cost Total		\$ 2,065,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	2,836	
Water Purchase Escalator	4.0%	Total Yield (AF)	141,817	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 61,281,000		1.00	\$ 61,281,000
20-Year Capital Costs	\$ 3,502,000		2.00	\$ 7,004,000
Annual O&M Costs	\$ 488,000		49.00	\$ 23,912,000
Recycled Water Cost	\$ 2,065,000		66.73	\$ 137,797,000
Salvage	\$ (1,751,000)		1.00	\$ (1,751,000)
Total PV				\$ 228,243,000
50-year Project Yield (AF)				141,817
Unit Cost (\$/af)				\$1,610

Appendix J

Detailed Cost Estimates

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DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
2,132

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	610	gpm	formula	\$ 633,000
PS 3 - Peck Park	860	gpm	formula	\$ 821,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	30,300	in-diam*LF	\$24	\$ 4,363,000
8 inch	32,600	in-diam*LF	\$24	\$ 6,259,000
12 inch	24,300	in-diam*LF	\$20	\$ 5,832,000
Channel Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 21,758,000
Contingency Costs 30%				\$ 6,527,000
Construction Total				\$ 28,285,000
Implementation Costs 30%				\$ 8,486,000
Total Capital Cost				\$ 36,771,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	727,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 727,000
Contingency Costs 30%			\$ 218,000
Construction Total			\$ 945,000
Implementation Costs 30%			\$ 284,000
Total 20-year Capital Cost			\$ 1,229,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 1,454,000	capital cost	5.0%	\$ 73,000
Maintenance	2	LS	\$10,000	\$ 20,000
PS 1 - Electricity	564,800	kWh	\$0.12	\$ 68,000
PS 2 - Electricity	44,900	kWh	\$0.12	\$ 5,000
PS 3 - Electricity	85,500	kWh	\$0.12	\$ 10,000
Conveyance	87,200	LF	\$0.60	\$ 52,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	2,132	AFY	\$1,300	\$ 2,771,000
			Total Annual O&M	\$ 2,999,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	-		Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	2,132
Water Purchase Escalator	4.0%		Total Yield (AF)	106,588
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 36,771,000		1.00	\$ 36,771,000
20-Year Capital Costs	\$ 1,229,000		2.00	\$ 2,458,000
Annual O&M Costs	\$ 2,999,000		49.00	\$ 146,951,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (614,500)		1.00	\$ (615,000)
			Total PV	\$ 185,565,000
			50-year Project Yield (AF)	106,588
			Unit Cost (\$/af)	\$1,740

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
109

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	1,600	in-diam*LF	\$24	\$ 230,000
8 inch	700	in-diam*LF	\$24	\$ 134,000
12 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 364,000
Contingency Costs 30%				\$ 109,000
Construction Total				\$ 473,000
Implementation Costs 30%				\$ 142,000
Total Capital Cost				\$ 615,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	29,000	kWh	\$0.12	\$ 3,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	2,300	LF	\$0.60	\$ 1,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	109	AFY	\$1,300	\$ 142,000
Total Annual O&M				\$ 146,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		109
Water Purchase Escalat	4.0%	Total Yield (AF)		5,459
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 615,000		1.00	\$ 615,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 146,000		49.00	\$ 7,154,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 7,769,000
50-year Project Yield (AF)				5,459
Unit Cost (\$/af)				\$1,420

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
799

WRP: Harbor East

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	6,500	in-diam*LF	\$24	\$ 936,000
8 inch	10,700	in-diam*LF	\$24	\$ 2,054,000
12 inch	700	in-diam*LF	\$20	\$ 168,000
Channel Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 7,008,000
Contingency Costs 30%				\$ 2,102,000
Construction Total				\$ 9,110,000
Implementation Costs 30%				\$ 2,733,000
Total Capital Cost				\$ 11,843,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	211,700	kWh	\$0.12	\$ 25,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	17,900	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	799	AFY	\$1,300	\$ 1,039,000
Total Annual O&M				\$ 1,075,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		799
Water Purchase Escalator	4.0%	Total Yield (AF)		39,948
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 11,843,000		1.00	\$ 11,843,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 1,075,000		49.00	\$ 52,675,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 64,518,000
50-year Project Yield (AF)				39,948
Unit Cost (\$/af)				\$1,620

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
194

WRP: Peck Park

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	860	gpm	formula	\$ 821,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,000	in-diam*LF	\$24	\$ 1,008,000
8 inch	2,000	in-diam*LF	\$24	\$ 384,000
12 inch	5,400	in-diam*LF	\$20	\$ 1,296,000
Construction Subtotal				\$ 3,509,000
Contingency Costs 30%				\$ 1,053,000
Construction Total				\$ 4,562,000
Implementation Costs 30%				\$ 1,369,000
Total Capital Cost				\$ 5,931,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	411,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 411,000
Contingency Costs 30%			\$ 123,000
Construction Total			\$ 534,000
Implementation Costs 30%			\$ 160,000
Total 20-year Capital Cost			\$ 694,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 821,000	capital cost	5.0%	\$ 41,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	51,400	kWh	\$0.12	\$ 6,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	85,500	kWh	\$0.12	\$ 10,000
Conveyance	14,400	LF	\$0.60	\$ 9,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	194	AFY	\$1,300	\$ 252,000
Total Annual O&M				\$ 328,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		194
Water Purchase Escalator	4.0%	Total Yield (AF)		9,697
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 5,931,000		1.00	\$ 5,931,000
20-Year Capital Costs	\$ 694,000		2.00	\$ 1,388,000
Annual O&M Costs	\$ 328,000		49.00	\$ 16,072,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (347,000)		1.00	\$ (347,000)
Total PV				\$ 23,044,000
50-year Project Yield (AF)				9,697
Unit Cost (\$/af)				\$2,380

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
268

WRP: POLA

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	4,700	in-diam*LF	\$24	\$ 677,000
8 inch	3,000	in-diam*LF	\$24	\$ 576,000
12 inch	15,700	in-diam*LF	\$20	\$ 3,768,000
Construction Subtotal				\$ 5,021,000
Contingency Costs 30%				\$ 1,506,000
Construction Total				\$ 6,527,000
Implementation Costs 30%				\$ 1,958,000
Total Capital Cost				\$ 8,485,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal		\$	-
Contingency Costs 30%		\$	-
Construction Total		\$	-
Implementation Costs 30%		\$	-
Total 20-year Capital Cost		\$	-

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	71,100	kWh	\$0.12	\$ 9,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	23,400	LF	\$0.60	\$ 14,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	268	AFY	\$1,300	\$ 349,000
Total Annual O&M				\$ 372,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	268	
Water Purchase Escalator	4.0%	Total Yield (AF)	13,419	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 8,485,000		1.00	\$ 8,485,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 372,000		49.00	\$ 18,228,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 26,713,000
50-year Project Yield (AF)				13,419
Unit Cost (\$/af)				\$1,990

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
281

WRP: Ponte Vista

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	610	gpm	formula	\$ 633,000
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	2,900	in-diam*LF	\$24	\$ 418,000
8 inch	16,200	in-diam*LF	\$24	\$ 3,110,000
12 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 4,161,000
Contingency Costs 30%				\$ 1,248,000
Construction Total				\$ 5,409,000
Implementation Costs 30%				\$ 1,623,000
Total Capital Cost				\$ 7,032,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	317,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 317,000
Contingency Costs 30%			\$ 95,000
Construction Total			\$ 412,000
Implementation Costs 30%			\$ 124,000
Total 20-year Capital Cost			\$ 536,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 633,000	capital cost	5.0%	\$ 32,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	74,600	kWh	\$0.12	\$ 9,000
PS 2 - Electricity	44,900	kWh	\$0.12	\$ 5,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	19,100	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	281	AFY	\$1,300	\$ 366,000
Total Annual O&M				\$ 433,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		281
Water Purchase Escalat	4.0%	Total Yield (AF)		14,065
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 7,032,000		1.00	\$ 7,032,000
20-Year Capital Costs	\$ 536,000		2.00	\$ 1,072,000
Annual O&M Costs	\$ 433,000		49.00	\$ 21,217,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (268,000)		1.00	\$ (268,000)
Total PV				\$ 29,053,000
50-year Project Yield (AF)				14,065
Unit Cost (\$/af)				\$2,070

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
105

WRP: SA Recycling

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,600	in-diam*LF	\$24	\$ 1,094,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 1,094,000
Contingency Costs 30%				\$ 328,000
Construction Total				\$ 1,422,000
Implementation Costs 30%				\$ 427,000
Total Capital Cost				\$ 1,849,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	27,900	kWh	\$0.12	\$ 3,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	7,600	LF	\$0.60	\$ 5,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	105	AFY	\$1,300	\$ 137,000
Total Annual O&M				\$ 145,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		105
Water Purchase Escalator	4.0%	Total Yield (AF)		5,250
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 1,849,000		1.00	\$ 1,849,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 145,000		49.00	\$ 7,105,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 8,954,000
50-year Project Yield (AF)				5,250
Unit Cost (\$/af)				\$1,710

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor TIWRP

Annual Yield (AFY)
375

WRP: Warren E&P

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing TIWRP	0	gpm	formula	\$ -
PS 2 - Ponte Vista	0	gpm	formula	\$ -
PS 3 - Peck Park	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	2,500	in-diam*LF	\$20	\$ 600,000
Construction Subtotal				\$ 600,000
Contingency Costs 30%				\$ 180,000
Construction Total				\$ 780,000
Implementation Costs 30%				\$ 234,000
Total Capital Cost				\$ 1,014,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	99,400	kWh	\$0.12	\$ 12,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	2,500	LF	\$0.60	\$ 2,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
TIWRP AWTF O&M	375	AFY	\$1,300	\$ 488,000
Total Annual O&M				\$ 502,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		375
Water Purchase Escalat	4.0%	Total Yield (AF)		18,750
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 1,014,000		1.00	\$ 1,014,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 502,000		49.00	\$ 24,598,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 25,612,000
50-year Project Yield (AF)				18,750
Unit Cost (\$/af)				\$1,370

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor WBMWD

Annual Yield (AFY)
1,199

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	15,600	in-diam*LF	\$24	\$ 2,246,000
8 inch	3,273	in-diam*LF	\$24	\$ 629,000
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 2,875,000
Contingency Costs 30%				\$ 863,000
Construction Total				\$ 3,738,000
Implementation Costs 30%				\$ 1,121,000
Total Capital Cost				\$ 4,859,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	18,873	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
			Total Annual O&M	\$ 11,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified	1,199	AFY	\$800	\$ 960,000
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	1,199		Purchase Cost Total	\$ 960,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	1,199
Water Purchase Escalator	4.0%		Total Yield (AF)	59,938
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 4,859,000		1.00	\$ 4,859,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 11,000		49.00	\$ 539,000
Recycled Water Cost	\$ 960,000		66.73	\$ 64,061,000
Salvage	\$ -		1.00	\$ -
			Total PV	\$ 69,459,000
			50-year Project Yield (AF)	59,938
			Unit Cost (\$/af)	\$1,160

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor WBMWD

Annual Yield (AFY)
104

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,349	in-diam*LF	\$24	\$ 1,058,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 1,058,000
Contingency Costs 30%				\$ 317,000
Construction Total				\$ 1,375,000
Implementation Costs 30%				\$ 413,000
Total Capital Cost				\$ 1,788,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	7,349	LF	\$0.60	\$ 4,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 4,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified	104	AFY	\$800	\$ 84,000
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
104		Purchase Cost Total		\$ 84,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		104
Water Purchase Escalat	4.0%	Total Yield (AF)		5,188
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 1,788,000		1.00	\$ 1,788,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 4,000		49.00	\$ 196,000
Recycled Water Cost	\$ 84,000		66.73	\$ 5,605,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 7,589,000
50-year Project Yield (AF)				5,188
Unit Cost (\$/af)				\$1,460

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor WBMWD

Annual Yield (AFY)
720

WRP: Harbor East

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,126	in-diam*LF	\$24	\$ 1,026,000
8 inch	3,273	in-diam*LF	\$24	\$ 629,000
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 1,655,000
Contingency Costs 30%				\$ 497,000
Construction Total				\$ 2,152,000
Implementation Costs 30%				\$ 646,000
Total Capital Cost				\$ 2,798,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	10,399	LF	\$0.60	\$ 6,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 6,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified	720	AFY	\$800	\$ 576,000
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
720		Purchase Cost Total		\$ 576,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	720	
Water Purchase Escalat	4.0%	Total Yield (AF)	36,000	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 2,798,000		1.00	\$ 2,798,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 6,000		49.00	\$ 294,000
Recycled Water Cost	\$ 576,000		66.73	\$ 38,436,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 41,528,000
50-year Project Yield (AF)				36,000
Unit Cost (\$/af)				\$1,150

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor WBMWD

Annual Yield (AFY)
375

WRP: Warren E&P

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	1,125	in-diam*LF	\$24	\$ 162,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 162,000
Contingency Costs 30%				\$ 49,000
Construction Total				\$ 211,000
Implementation Costs 30%				\$ 63,000
Total Capital Cost				\$ 274,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	1,125	LF	\$0.60	\$ 1,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 1,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified	375	AFY	\$800	\$ 300,000
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
375		Purchase Cost Total		\$ 300,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		375
Water Purchase Escalat	4.0%	Total Yield (AF)		18,750
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 274,000		1.00	\$ 274,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 1,000		49.00	\$ 49,000
Recycled Water Cost	\$ 300,000		66.73	\$ 20,019,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 20,342,000
50-year Project Yield (AF)				18,750
Unit Cost (\$/af)				\$1,080

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor Gateway

Annual Yield (AFY)
645

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	12,015	in-diam*LF	\$24	\$ 1,730,000
8 inch	10,131	in-diam*LF	\$24	\$ 1,945,000
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 3,675,000
Contingency Costs 30%				\$ 1,103,000
Construction Total				\$ 4,778,000
Implementation Costs 30%				\$ 1,433,000
Total Capital Cost				\$ 6,211,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	22,146	LF	\$0.60	\$ 13,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 13,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	645	AFY	\$728	\$ 470,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
645		Purchase Cost Total		\$ 470,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	645	
Water Purchase Escalator	4.0%	Total Yield (AF)	32,257	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 6,211,000		1.00	\$ 6,211,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 13,000		49.00	\$ 637,000
Recycled Water Cost	\$ 470,000		66.73	\$ 31,363,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 38,211,000
50-year Project Yield (AF)				32,257
Unit Cost (\$/af)				\$1,180

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor Gateway

Annual Yield (AFY)
123

WRP: Roosevelt

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	6,407	in-diam*LF	\$24	\$ 923,000
8 inch	3,506	in-diam*LF	\$24	\$ 673,000
10 inch	0	in-diam*LF	\$20	\$ -
			Construction Subtotal	\$ 1,596,000
Contingency Costs			30%	\$ 479,000
			Construction Total	\$ 2,075,000
Implementation Costs			30%	\$ 623,000
			Total Capital Cost	\$ 2,698,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
		Construction Subtotal	\$ -
Contingency Costs		30%	\$ -
		Construction Total	\$ -
Implementation Costs		30%	\$ -
		Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	9,913	LF	\$0.60	\$ 6,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 6,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	123	AFY	\$728	\$ 90,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
123		Purchase Cost Total		\$ 90,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		123
Water Purchase Escalat	4.0%	Total Yield (AF)		6,127
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 2,698,000		1.00	\$ 2,698,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 6,000		49.00	\$ 294,000
Recycled Water Cost	\$ 90,000		66.73	\$ 6,006,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 8,998,000
50-year Project Yield (AF)				6,127
Unit Cost (\$/af)				\$1,470

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Harbor Gateway

Annual Yield (AFY)
523

WRP: Swisstex

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	5,608	in-diam*LF	\$24	\$ 808,000
8 inch	6,625	in-diam*LF	\$24	\$ 1,272,000
10 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 2,080,000
Contingency Costs 30%				\$ 624,000
Construction Total				\$ 2,704,000
Implementation Costs 30%				\$ 811,000
Total Capital Cost				\$ 3,515,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	12,233	LF	\$0.60	\$ 7,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 7,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	523	AFY	\$728	\$ 381,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
523		Purchase Cost Total		\$ 381,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	523
Water Purchase Escalator	4.0%		Total Yield (AF)	26,131
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 3,515,000		1.00	\$ 3,515,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 7,000		49.00	\$ 343,000
Recycled Water Cost	\$ 381,000		66.73	\$ 25,424,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 29,282,000
50-year Project Yield (AF)				26,131
Unit Cost (\$/af)				\$1,120

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
3,485

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	34,534	in-diam*LF	\$24	\$ 4,973,000
8 inch	13,318	in-diam*LF	\$24	\$ 2,557,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	21,496	in-diam*LF	\$20	\$ 5,159,000
16 inch	29,155	in-diam*LF	\$18	\$ 8,397,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
River Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 24,936,000
Contingency Costs 30%				\$ 7,481,000
Construction Total				\$ 32,417,000
Implementation Costs 30%				\$ 9,725,000
Total Capital Cost				\$ 42,142,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	2,093,700	kWh	\$0.12	\$ 251,000
PS 2 - Electricity	100,700	kWh	\$0.12	\$ 12,000
Conveyance	98,503	LF	\$0.60	\$ 59,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
			Total Annual O&M	\$ 322,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
			Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	3,485
Water Purchase Escalator	4.0%		Total Yield (AF)	174,231
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 42,142,000		1.00	\$ 42,142,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 322,000		49.00	\$ 15,778,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
			Total PV	\$ 57,920,000
			50-year Project Yield (AF)	174,231
			Unit Cost (\$/af)	\$330

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
565

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	26,094	in-diam*LF	\$24	\$ 3,758,000
8 inch	0	in-diam*LF	\$24	\$ -
Construction Subtotal				\$ 3,758,000
Contingency Costs 30%				\$ 1,127,000
Construction Total				\$ 4,885,000
Implementation Costs 30%				\$ 1,466,000
Total Capital Cost				\$ 6,351,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	339,600	kWh	\$0.12	\$ 41,000
PS 2 - Electricity	100,700	kWh	\$0.12	\$ 12,000
Conveyance	26,094	LF	\$0.60	\$ 16,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 69,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	565	
Water Purchase Escalat	4.0%	Total Yield (AF)	28,256	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 6,351,000		1.00	\$ 6,351,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 69,000		49.00	\$ 3,381,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 9,732,000
50-year Project Yield (AF)				28,256
Unit Cost (\$/af)				\$340

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
310

WRP: Atlas Carpets

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	356	in-diam*LF	\$24	\$ 68,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	1,792	in-diam*LF	\$20	\$ 430,000
Construction Subtotal				\$ 498,000
Contingency Costs 30%				\$ 149,000
Construction Total				\$ 647,000
Implementation Costs 30%				\$ 194,000
Total Capital Cost				\$ 841,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	186,300	kWh	\$0.12	\$ 22,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	2,148	LF	\$0.60	\$ 1,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 23,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		310
Water Purchase Escalat	4.0%	Total Yield (AF)		15,500
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 841,000		1.00	\$ 841,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 23,000		49.00	\$ 1,127,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 1,968,000
50-year Project Yield (AF)				15,500
Unit Cost (\$/af)				\$130

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
264

WRP: Medical Center

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	8,440	in-diam*LF	\$24	\$ 1,215,000
8 inch	5,869	in-diam*LF	\$24	\$ 1,127,000
Construction Subtotal				\$ 2,342,000
Contingency Costs 30%				\$ 703,000
Construction Total				\$ 3,045,000
Implementation Costs 30%				\$ 914,000
Total Capital Cost				\$ 3,959,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	159,000	kWh	\$0.12	\$ 19,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	14,308	LF	\$0.60	\$ 9,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 28,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	264	
Water Purchase Escalat	4.0%	Total Yield (AF)	13,224	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 3,959,000		1.00	\$ 3,959,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 28,000		49.00	\$ 1,372,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 5,331,000
50-year Project Yield (AF)				13,224
Unit Cost (\$/af)				\$400

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro LAG

Annual Yield (AFY)
2,345

WRP: USC

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Treatment				
LAG Expansion Option 1		mgd		
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Existing LAG	0	gpm	formula	\$ -
PS 2 - T1 Univ. Backlot	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	7,093	in-diam*LF	\$24	\$ 1,362,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	19,704	in-diam*LF	\$20	\$ 4,729,000
16 inch	29,155	in-diam*LF	\$18	\$ 8,397,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
River Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 18,338,000
Contingency Costs 30%				\$ 5,501,000
Construction Total				\$ 23,839,000
Implementation Costs 30%				\$ 7,152,000
Total Capital Cost				\$ 30,991,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal		\$	-
Contingency Costs 30%		\$	-
Construction Total		\$	-
Implementation Costs 30%		\$	-
Total 20-year Capital Cost		\$	-

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	1,409,000	kWh	\$0.12	\$ 169,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	55,953	LF	\$0.60	\$ 34,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 203,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		2,345
Water Purchase Escalator	4.0%	Total Yield (AF)		117,250
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 30,991,000		1.00	\$ 30,991,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 203,000		49.00	\$ 9,947,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 40,938,000
50-year Project Yield (AF)				117,250
Unit Cost (\$/af)				\$350

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
3,831

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.8	MG	\$4,000,000	\$ 3,200,000
Pump Station				
PS 1 at Downtown	1,900	gpm	formula	\$ 1,498,000
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	40,965	in-diam*LF	\$24	\$ 5,899,000
8 inch	23,931	in-diam*LF	\$24	\$ 4,595,000
10 inch	1,831	in-diam*LF	\$20	\$ 366,000
12 inch	4,947	in-diam*LF	\$20	\$ 1,187,000
16 inch	18,018	in-diam*LF	\$18	\$ 5,189,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	24,054	in-diam*LF	\$18	\$ 8,660,000
24 inch	12,450	in-diam*LF	\$16	\$ 4,781,000
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
River Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 39,525,000
Contingency Costs 30%				\$ 11,858,000
Construction Total				\$ 51,383,000
Implementation Costs 30%				\$ 15,415,000
Total Capital Cost				\$ 66,798,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	320,000
Pump Station	50%	\$	749,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	150,000
Construction Subtotal			\$ 1,219,000
Contingency Costs 30%			\$ 366,000
Construction Total			\$ 1,585,000
Implementation Costs 30%			\$ 476,000
Total 20-year Capital Cost			\$ 2,061,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 1,498,000	capital cost	5.0%	\$ 75,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	367,600	kWh	\$0.12	\$ 44,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	126,197	LF	\$0.60	\$ 76,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 300,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	3,831	AFY	\$500	\$ 1,916,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
3,831		Purchase Cost Total		\$ 1,916,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	3,831	
Water Purchase Escalat	4.0%	Total Yield (AF)	191,552	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 66,798,000		1.00	\$ 66,798,000
20-Year Capital Costs	\$ 2,061,000		2.00	\$ 4,122,000
Annual O&M Costs	\$ 300,000		49.00	\$ 14,700,000
Recycled Water Cost	\$ 1,916,000		66.73	\$ 127,855,000
Salvage	\$ (1,030,500)		1.00	\$ (1,031,000)
Total PV				\$ 212,444,000
50-year Project Yield (AF)				191,552
Unit Cost (\$/af)				\$1,110

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
884

WRP: Downtown

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.8	MG	\$4,000,000	\$ 3,200,000
Pump Station				
PS 1 at Downtown (65%)	1,900	gpm	formula	\$ 973,700
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	15,352	in-diam*LF	\$24	\$ 2,211,000
8 inch	3,513	in-diam*LF	\$24	\$ 675,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	7,325	in-diam*LF	\$18	\$ 2,110,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	13,675	in-diam*LF	\$18	\$ 4,923,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 14,392,700
Contingency Costs	30%	\$ 4,318,000
Construction Total		\$ 18,710,700
Implementation Costs	30%	\$ 5,613,000
Total Capital Cost		\$ 24,323,700

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 320,000
Pump Station	50%	\$ 487,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 807,000
Contingency Costs	30%	\$ 242,000
Construction Total		\$ 1,049,000
Implementation Costs	30%	\$ 315,000
Total 20-year Capital Cost		\$ 1,364,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 973,700	capital cost	5.0%	\$ 49,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	251,000	kWh	\$0.12	\$ 30,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	39,866	LF	\$0.60	\$ 24,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 208,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	884	AFY	\$500	\$ 443,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
884		Purchase Cost Total		\$ 443,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escala	3.0%	Annual Yield (AFY)	884	
Water Purchase Escalator	4.0%	Total Yield (AF)	44,222	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 24,323,700		1.00	\$ 24,324,000
20-Year Capital Costs	\$ 1,364,000		2.00	\$ 2,728,000
Annual O&M Costs	\$ 208,000		49.00	\$ 10,192,000
Recycled Water Cost	\$ 443,000		66.73	\$ 29,561,000
Salvage	\$ (682,000)		1.00	\$ (682,000)
Total PV				\$ 66,123,000
50-year Project Yield (AF)				44,222
Unit Cost (\$/af)				\$1,500

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
282

WRP: Echo Park

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.0	MG	\$0	\$ -
Pump Station				
PS 1 at Downtown (30%)	1,900	gpm	formula	\$ 449,400
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	8,538	in-diam*LF	\$24	\$ 1,230,000
8 inch	8,053	in-diam*LF	\$24	\$ 1,546,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	4,375	in-diam*LF	\$20	\$ 1,050,000
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal	\$ 4,275,400
Contingency Costs 30%	\$ 1,283,000
Construction Total	\$ 5,558,400
Implementation Costs 30%	\$ 1,668,000
Total Capital Cost	\$ 7,226,400

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 225,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal	\$ 225,000
Contingency Costs 30%	\$ 68,000
Construction Total	\$ 293,000
Implementation Costs 30%	\$ 88,000
Total 20-year Capital Cost	\$ 381,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 449,400	capital cost	5.0%	\$ 22,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	96,200	kWh	\$0.12	\$ 12,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	20,967	LF	\$0.60	\$ 13,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 47,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	282	AFY	\$500	\$ 141,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
282		Purchase Cost Total		\$ 141,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalat	3.0%		Annual Yield (AFY)	282
Water Purchase Escalator	4.0%		Total Yield (AF)	14,086
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations			<u>PV Factor</u>	
Initial Capital Cost	\$ 7,226,400		1.00	\$ 7,226,000
20-Year Capital Costs	\$ 381,000		2.00	\$ 762,000
Annual O&M Costs	\$ 47,000		49.00	\$ 2,303,000
Recycled Water Cost	\$ 141,000		66.73	\$ 9,409,000
Salvage	\$ (190,500)		1.00	\$ (191,000)
Total PV				\$ 19,509,000
50-year Project Yield (AF)				14,086
Unit Cost (\$/af)				\$1,380

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
60

WRP: LAG Connection

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.0	MG	\$0	\$ -
Pump Station				
PS 1 at Downtown (5%)	1,900	gpm	formula	\$ 74,900
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	1,532	in-diam*LF	\$24	\$ 294,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	4,904	in-diam*LF	\$18	\$ 1,412,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal	\$ 1,780,900
Contingency Costs 30%	\$ 534,000
Construction Total	\$ 2,314,900
Implementation Costs 30%	\$ 694,000
Total Capital Cost	\$ 3,008,900

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 37,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal	\$ 37,000
Contingency Costs 30%	\$ 11,000
Construction Total	\$ 48,000
Implementation Costs 30%	\$ 14,000
Total 20-year Capital Cost	\$ 62,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 74,900	capital cost	5.0%	\$ 4,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	20,500	kWh	\$0.12	\$ 2,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	6,436	LF	\$0.60	\$ 4,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 10,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	60	AFY	\$500	\$ 30,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
60		Purchase Cost Total		\$ 30,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escal	3.0%		Annual Yield (AFY)	60
Water Purchase Escalat	4.0%		Total Yield (AF)	3,000
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 3,008,900		1.00	\$ 3,009,000
20-Year Capital Costs	\$ 62,000		2.00	\$ 124,000
Annual O&M Costs	\$ 10,000		49.00	\$ 490,000
Recycled Water Cost	\$ 30,000		66.73	\$ 2,002,000
Salvage	\$ (31,000)		1.00	\$ (31,000)
Total PV				\$ 5,594,000
50-year Project Yield (AF)				3,000
Unit Cost (\$/af)				\$1,860

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Metro CBMWD

Annual Yield (AFY)
2,605

WRP: USC

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Downtown	0.0	MG	\$0	\$ -
Pump Station				
PS 1 at Downtown	0	gpm	formula	\$ -
PS 2	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	17,074	in-diam*LF	\$24	\$ 2,459,000
8 inch	10,833	in-diam*LF	\$24	\$ 2,080,000
10 inch	1,831	in-diam*LF	\$20	\$ 366,000
12 inch	572	in-diam*LF	\$20	\$ 137,000
16 inch	5,789	in-diam*LF	\$18	\$ 1,667,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	10,379	in-diam*LF	\$18	\$ 3,736,000
24 inch	12,450	in-diam*LF	\$16	\$ 4,781,000
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
River Crossing		LS	\$3,850,000	\$3,850,000
Construction Subtotal				\$ 19,076,000
Contingency Costs 30%				\$ 5,723,000
Construction Total				\$ 24,799,000
Implementation Costs 30%				\$ 7,440,000
Total Capital Cost				\$ 32,239,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal		\$	-
Contingency Costs 30%		\$	-
Construction Total		\$	-
Implementation Costs 30%		\$	-
Total 20-year Capital Cost		\$	-

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	58,928	LF	\$0.60	\$ 35,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 35,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD	2,605	AFY	\$500	\$ 1,303,000
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
2,605		Purchase Cost Total		\$ 1,303,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escal	3.0%		Annual Yield (AFY)	2,605
Water Purchase Escalat	4.0%		Total Yield (AF)	130,243
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 32,239,000		1.00	\$ 32,239,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 35,000		49.00	\$ 1,715,000
Recycled Water Cost	\$ 1,303,000		66.73	\$ 86,949,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 120,903,000
50-year Project Yield (AF)				130,243
Unit Cost (\$/af)				\$930

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley DCTWRP AWP

Annual Yield (AFY)
734

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Hansen PS Exp.	320	gpm	formula	\$ 388,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer 1	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	39,400	in-diam*LF	\$24	\$ 5,674,000
8 inch	4,500	in-diam*LF	\$24	\$ 864,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	7,700	in-diam*LF	\$18	\$ 2,218,000
Construction Subtotal				\$ 9,144,000
Contingency Costs 30%				\$ 2,743,000
Construction Total				\$ 11,887,000
Implementation Costs 30%				\$ 3,566,000
Total Capital Cost				\$ 15,453,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	194,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 194,000
Contingency Costs 30%			\$ 58,000
Construction Total			\$ 252,000
Implementation Costs 30%			\$ 76,000
Total 20-year Capital Cost			\$ 328,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 388,000	capital cost	5.0%	\$ 19,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	149,500	kWh	\$0.12	\$ 18,000
PS 2 - Electricity	391,100	kWh	\$0.12	\$ 47,000
Conveyance	51,600	LF	\$0.60	\$ 31,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
DCT AWT O&M	734	AFY	\$0	\$ -
Total Annual O&M				\$ 125,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)		734
Water Purchase Escalator	4.0%	Total Yield (AF)		36,713
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 15,453,000		1.00	\$ 15,453,000
20-Year Capital Costs	\$ 328,000		2.00	\$ 656,000
Annual O&M Costs	\$ 125,000		49.00	\$ 6,125,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (164,000)		1.00	\$ (164,000)
Total PV				\$ 22,070,000
50-year Project Yield (AF)				36,713
Unit Cost (\$/af)				\$600

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley DCTWRP AWP

Annual Yield (AFY)
438

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Hansen PS Exp.	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	28,700	in-diam*LF	\$24	\$ 4,133,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
Construction Subtotal				\$ 4,133,000
Contingency Costs 30%				\$ 1,240,000
Construction Total				\$ 5,373,000
Implementation Costs 30%				\$ 1,612,000
Total Capital Cost				\$ 6,985,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	233,500	kWh	\$0.12	\$ 28,000
Conveyance	28,700	LF	\$0.60	\$ 17,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
DCT AWT O&M	438	AFY	\$0	\$ -
Total Annual O&M				\$ 45,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		438
Water Purchase Escalat	4.0%	Total Yield (AF)		21,921
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 6,985,000		1.00	\$ 6,985,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 45,000		49.00	\$ 2,205,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 9,190,000
50-year Project Yield (AF)				21,921
Unit Cost (\$/af)				\$420

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley DCTWRP AWP

Annual Yield (AFY)
296

WRP: Vulcan

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - Hansen PS Exp.	320	gpm	formula	\$ 388,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	10,700	in-diam*LF	\$24	\$ 1,541,000
8 inch	4,500	in-diam*LF	\$24	\$ 864,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	7,700	in-diam*LF	\$18	\$ 2,218,000
Construction Subtotal				\$ 5,011,000
Contingency Costs 30%				\$ 1,503,000
Construction Total				\$ 6,514,000
Implementation Costs 30%				\$ 1,954,000
Total Capital Cost				\$ 8,468,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	194,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 194,000
Contingency Costs 30%			\$ 58,000
Construction Total			\$ 252,000
Implementation Costs 30%			\$ 76,000
Total 20-year Capital Cost			\$ 328,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 388,000	capital cost	5.0%	\$ 19,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	149,500	kWh	\$0.12	\$ 18,000
PS 2 - Electricity	157,600	kWh	\$0.12	\$ 19,000
Conveyance	22,900	LF	\$0.60	\$ 14,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
DCT AWT O&M	296	AFY	\$0	\$ -
Total Annual O&M				\$ 80,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	296	
Water Purchase Escalator	4.0%	Total Yield (AF)	14,792	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 8,468,000		1.00	\$ 8,468,000
20-Year Capital Costs	\$ 328,000		2.00	\$ 656,000
Annual O&M Costs	\$ 80,000		49.00	\$ 3,920,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (164,000)		1.00	\$ (164,000)
Total PV				\$ 12,880,000
50-year Project Yield (AF)				14,792
Unit Cost (\$/af)				\$870

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
3,502

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	2.5	MG	\$2,000,000	\$ 5,000,000
Tank 2 at Haskell	1.0	MG	\$3,000,000	\$ 3,000,000
Tank 3 at Knollwood	1.25	MG	\$3,000,000	\$ 3,750,000
Pump Station				
PS 1 - New DCTWRP T22	8,800	gpm	formula	\$ 4,790,000
PS 2 - Haskell	1,700	gpm	formula	\$ 1,377,000
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	20	LS	\$350,000	\$ 350,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	48,900	in-diam*LF	\$24	\$ 7,042,000
8 inch	5,600	in-diam*LF	\$24	\$ 1,075,000
12 inch	25,200	in-diam*LF	\$20	\$ 6,048,000
16 inch	43,100	in-diam*LF	\$18	\$ 12,413,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	33,100	in-diam*LF	\$18	\$ 11,916,000
24 inch	16,900	in-diam*LF	\$16	\$ 6,490,000
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Bridge Crossing		LS	\$1,540,000	\$1,540,000
Construction Subtotal				\$ 65,651,000
Contingency Costs 30%				\$ 19,695,000
Construction Total				\$ 85,346,000
Implementation Costs 30%				\$ 25,604,000
Total Capital Cost				\$ 110,950,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	1,175,000
Pump Station	50%	\$	3,084,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	175,000
Construction Subtotal			\$ 4,434,000
Contingency Costs 30%			\$ 1,330,000
Construction Total			\$ 5,764,000
Implementation Costs 30%			\$ 1,729,000
Total 20-year Capital Cost			\$ 7,493,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	3	LS	\$75,000	\$ 225,000
Pump Station				
Maintenance	\$ 6,167,000	capital cost	5.0%	\$ 308,000
Maintenance	2	LS	\$10,000	\$ 20,000
PS 1 - Electricity	1,625,800	kWh	\$0.12	\$ 195,000
PS 2 - Electricity	366,700	kWh	\$0.12	\$ 44,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	177,100	LF	\$0.60	\$ 106,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 918,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	3,502
Water Purchase Escalator	4.0%		Total Yield (AF)	175,083
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 110,950,000		1.00	\$ 110,950,000
20-Year Capital Costs	\$ 7,493,000		2.00	\$ 14,986,000
Annual O&M Costs	\$ 918,000		49.00	\$ 44,982,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (3,746,500)		1.00	\$ (3,747,000)
Total PV				\$ 167,171,000
50-year Project Yield (AF)				175,083
Unit Cost (\$/af)				\$950

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
195

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (6%)	8,800	gpm	formula	\$ 266,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	6,300	in-diam*LF	\$24	\$ 907,000
8 inch	4,400	in-diam*LF	\$24	\$ 845,000
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	1,800	in-diam*LF	\$18	\$ 648,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal	\$ 2,666,000
Contingency Costs 30%	\$ 800,000
Construction Total	\$ 3,466,000
Implementation Costs 30%	\$ 1,040,000
Total Capital Cost	\$ 4,506,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 133,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal	\$ 133,000
Contingency Costs 30%	\$ 40,000
Construction Total	\$ 173,000
Implementation Costs 30%	\$ 52,000
Total 20-year Capital Cost	\$ 225,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 266,000	capital cost	5.0%	\$ 13,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	90,400	kWh	\$0.12	\$ 11,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	12,500	LF	\$0.60	\$ 8,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 32,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	195
Water Purchase Escalator	4.0%		Total Yield (AF)	9,735
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 4,506,000		1.00	\$ 4,506,000
20-Year Capital Costs	\$ 225,000		2.00	\$ 450,000
Annual O&M Costs	\$ 32,000		49.00	\$ 1,568,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (112,500)		1.00	\$ (113,000)
Total PV				\$ 6,411,000
50-year Project Yield (AF)				9,735
Unit Cost (\$/af)				\$660

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
707

WRP: Braemar

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	2.5	MG	\$2,000,000	\$ 5,000,000
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (20%)	8,800	gpm	formula	\$ 968,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	4,200	in-diam*LF	\$24	\$ 605,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	16,500	in-diam*LF	\$18	\$ 4,752,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	1,200	in-diam*LF	\$18	\$ 432,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 12,617,000
Contingency Costs	30%	\$ 3,785,000
Construction Total		\$ 16,402,000
Implementation Costs	30%	\$ 4,921,000
Total Capital Cost		\$ 21,323,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 500,000
Pump Station	50%	\$ 484,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 984,000
Contingency Costs	30%	\$ 295,000
Construction Total		\$ 1,279,000
Implementation Costs	30%	\$ 384,000
Total 20-year Capital Cost		\$ 1,663,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 968,000	capital cost	5.0%	\$ 48,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	328,500	kWh	\$0.12	\$ 39,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	26,200	LF	\$0.60	\$ 16,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 178,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	707
Water Purchase Escalator	4.0%		Total Yield (AF)	35,370
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 21,323,000		1.00	\$ 21,323,000
20-Year Capital Costs	\$ 1,663,000		2.00	\$ 3,326,000
Annual O&M Costs	\$ 178,000		49.00	\$ 8,722,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (831,500)		1.00	\$ (832,000)
Total PV				\$ 32,539,000
50-year Project Yield (AF)				35,370
Unit Cost (\$/af)				\$920

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
1,074

WRP: Knollwood

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	1.0	MG	\$3,000,000	\$ 3,000,000
Tank 3 at Knollwood	1.25	MG	\$3,000,000	\$ 3,750,000
Pump Station				
PS 1 - New DCTWRP T22 (31%)	8,800	gpm	formula	\$ 1,469,000
PS 2 - Haskell	1,700	gpm	formula	\$ 1,377,000
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	20	LS	\$350,000	\$ 350,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	18,900	in-diam*LF	\$24	\$ 2,722,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	9,800	in-diam*LF	\$20	\$ 2,352,000
16 inch	10,000	in-diam*LF	\$18	\$ 2,880,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	8,000	in-diam*LF	\$18	\$ 2,880,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 20,780,000
Contingency Costs	30%	\$ 6,234,000
Construction Total		\$ 27,014,000
Implementation Costs	30%	\$ 8,104,000
Total Capital Cost		\$ 35,118,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 675,000
Pump Station	50%	\$ 1,423,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 2,098,000
Contingency Costs	30%	\$ 629,000
Construction Total		\$ 2,727,000
Implementation Costs	30%	\$ 818,000
Total 20-year Capital Cost		\$ 3,545,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	2	LS	\$75,000	\$ 150,000
Pump Station				
Maintenance	\$ 2,846,000	capital cost	5.0%	\$ 142,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	498,700	kWh	\$0.12	\$ 60,000
PS 2 - Electricity	366,700	kWh	\$0.12	\$ 44,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	46,700	LF	\$0.60	\$ 28,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 454,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	1,074
Water Purchase Escalator	4.0%		Total Yield (AF)	53,701
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 35,118,000		1.00	\$ 35,118,000
20-Year Capital Costs	\$ 3,545,000		2.00	\$ 7,090,000
Annual O&M Costs	\$ 454,000		49.00	\$ 22,246,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (1,772,500)		1.00	\$ (1,773,000)
Total PV				\$ 62,681,000
50-year Project Yield (AF)				53,701
Unit Cost (\$/af)				\$1,170

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
261

WRP: Pierce College

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (7%)	8,800	gpm	formula	\$ 357,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	2,100	in-diam*LF	\$24	\$ 302,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	13,600	in-diam*LF	\$18	\$ 3,917,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	100	in-diam*LF	\$18	\$ 36,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal	\$ 4,612,000
Contingency Costs 30%	\$ 1,384,000
Construction Total	\$ 5,996,000
Implementation Costs 30%	\$ 1,799,000
Total Capital Cost	\$ 7,795,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ 179,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal	\$ 179,000
Contingency Costs 30%	\$ 54,000
Construction Total	\$ 233,000
Implementation Costs 30%	\$ 70,000
Total 20-year Capital Cost	\$ 303,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 357,000	capital cost	5.0%	\$ 18,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	121,100	kWh	\$0.12	\$ 15,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	15,800	LF	\$0.60	\$ 9,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 42,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	261
Water Purchase Escalator	4.0%		Total Yield (AF)	13,034
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 7,795,000		1.00	\$ 7,795,000
20-Year Capital Costs	\$ 303,000		2.00	\$ 606,000
Annual O&M Costs	\$ 42,000		49.00	\$ 2,058,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (151,500)		1.00	\$ (152,000)
Total PV				\$ 10,307,000
50-year Project Yield (AF)				13,034
Unit Cost (\$/af)				\$790

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
88

WRP: Reseda

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (3%)	8,800	gpm	formula	\$ 120,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	11,500	in-diam*LF	\$18	\$ 4,140,000
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Bridge Crossing		LS	\$1,540,000	\$1,540,000
Construction Subtotal				\$ 5,800,000
Contingency Costs 30%				\$ 1,740,000
Construction Total				\$ 7,540,000
Implementation Costs 30%				\$ 2,262,000
Total Capital Cost				\$ 9,802,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	\$ -
Pump Station	50%	\$	60,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 60,000
Contingency Costs 30%			\$ 18,000
Construction Total			\$ 78,000
Implementation Costs 30%			\$ 23,000
Total 20-year Capital Cost			\$ 101,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 120,000	capital cost	5.0%	\$ 6,000
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	40,700	kWh	\$0.12	\$ 5,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	11,500	LF	\$0.60	\$ 7,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 18,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	88
Water Purchase Escalator	4.0%		Total Yield (AF)	4,377
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 9,802,000		1.00	\$ 9,802,000
20-Year Capital Costs	\$ 101,000		2.00	\$ 202,000
Annual O&M Costs	\$ 18,000		49.00	\$ 882,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (50,500)		1.00	\$ (51,000)
Total PV				\$ 10,835,000
50-year Project Yield (AF)				4,377
Unit Cost (\$/af)				\$2,480

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: LIMITED Valley DCTWRP T22

Annual Yield (AFY)
88

WRP: Reseda (in Limited System)

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Treatment				
AWPF (Avoided Cost)	0	mgd	\$ 8,965,000	\$ -
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22	10,200	gpm	formula	\$ 5,358,000
Pressure Reducing Stations				
PRV 1 - Haskell	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch		in-diam*LF	\$24	\$ -
8 inch		in-diam*LF	\$24	\$ -
12 inch	14,000	in-diam*LF	\$20	\$ 3,360,000
16 inch		in-diam*LF	\$18	\$ -
18 inch		in-diam*LF	\$18	\$ -
20 inch		in-diam*LF	\$18	\$ -
24 inch		in-diam*LF	\$16	\$ -
30 inch		in-diam*LF	\$16	\$ -
36 inch		in-diam*LF	\$16	\$ -
Bridge Crossing	1	LS	\$1,540,000	\$ 1,540,000
Construction Subtotal				\$ 10,258,000
Contingency Costs 30%				\$ 3,077,000
Construction Total				\$ 13,335,000
Implementation Costs 30%				\$ 4,001,000
Total Capital Cost				\$ 17,336,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	2,679,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 2,679,000
Contingency Costs 30%			\$ 804,000
Construction Total			\$ 3,483,000
Implementation Costs 30%			\$ 1,045,000
Total 20-year Capital Cost			\$ 4,528,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
AWPF (Avoided Cost)	2.13	mgd	\$529,600	\$ (1,128,000)
Storage		LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 5,358,000	capital cost	5.0%	\$ 268,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	946,200	kWh	\$0.12	\$ 114,000
Conveyance	14,000	LF	\$0.60	\$ 8,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ (728,000)
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escala	3.0%		Annual Yield (AFY)	88
Water Purchase Escalator	4.0%		Total Yield (AF)	4,377
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations			<u>PV Factor</u>	
Initial Capital Cost	\$ 17,336,000		1.00	\$ 17,336,000
20-Year Capital Costs	\$ 4,528,000		2.00	\$ 9,056,000
Annual O&M Costs	\$ (728,000)		49.00	\$ (35,672,000)
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (2,264,000)		1.00	\$ (2,264,000)
Total PV				\$ (11,544,000)
Project Yield (AFY)				4,377
Unit Cost (\$/af)				-\$2,640

DESCRIPTION: Present Value Estimate

Date: 3/19/2012

SYSTEM: Valley DCTWRP T22

Annual Yield (AFY)
1,177

WRP: VA Hospital

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at El Caballero	0.0	MG	\$0	\$ -
Tank 2 at Haskell	0.0	MG	\$0	\$ -
Tank 3 at Knollwood	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - New DCTWRP T22 (34%)	8,800	gpm	formula	\$ 1,611,000
PS 2 - Haskell	0	gpm	formula	\$ -
PS 3	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - Haskell	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	17,200	in-diam*LF	\$24	\$ 2,477,000
8 inch	1,300	in-diam*LF	\$24	\$ 250,000
12 inch	15,400	in-diam*LF	\$20	\$ 3,696,000
16 inch	3,100	in-diam*LF	\$18	\$ 893,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	10,500	in-diam*LF	\$18	\$ 3,780,000
24 inch	16,900	in-diam*LF	\$16	\$ 6,490,000
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Construction Subtotal				\$ 19,197,000
Contingency Costs 30%				\$ 5,759,000
Construction Total				\$ 24,956,000
Implementation Costs 30%				\$ 7,487,000
Total Capital Cost				\$ 32,443,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	806,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
Construction Subtotal			\$ 806,000
Contingency Costs 30%			\$ 242,000
Construction Total			\$ 1,048,000
Implementation Costs 30%			\$ 314,000
Total 20-year Capital Cost			\$ 1,362,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ 1,611,000	capital cost	5.0%	\$ 81,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	546,600	kWh	\$0.12	\$ 66,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	64,400	LF	\$0.60	\$ 39,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 196,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
Purchase Cost Total				\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	1,177
Water Purchase Escalator	4.0%		Total Yield (AF)	58,864
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 32,443,000		1.00	\$ 32,443,000
20-Year Capital Costs	\$ 1,362,000		2.00	\$ 2,724,000
Annual O&M Costs	\$ 196,000		49.00	\$ 9,604,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (681,000)		1.00	\$ (681,000)
Total PV				\$ 44,090,000
50-year Project Yield (AF)				58,864
Unit Cost (\$/af)				\$750

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
1,808

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood	1.0	MG	\$3,000,000	\$ 3,000,000
Tank 2 at Valley Plaza	0.5	MG	\$4,000,000	\$ 2,000,000
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood	1,500	gpm	formula	\$ 1,252,000
PS 2 - Valley Plaza	780	gpm	formula	\$ 763,000
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	16	LS	\$350,000	\$ 350,000
PRV 2 - Valley Plaza	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	45,900	in-diam*LF	\$24	\$ 6,610,000
8 inch	14,700	in-diam*LF	\$24	\$ 2,822,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	37,900	in-diam*LF	\$20	\$ 9,096,000
16 inch	19,300	in-diam*LF	\$18	\$ 5,558,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Construction Subtotal				\$ 31,751,000
Contingency Costs 30%				\$ 9,525,000
Construction Total				\$ 41,276,000
Implementation Costs 30%				\$ 12,383,000
Total Capital Cost				\$ 53,659,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 500,000
Pump Station	50%	\$ 1,008,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ 325,000
Construction Subtotal		\$ 1,833,000
Contingency Costs 30%		\$ 550,000
Construction Total		\$ 2,383,000
Implementation Costs 30%		\$ 715,000
Total 20-year Capital Cost		\$ 3,098,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	2	LS	\$75,000	\$ 150,000
Pump Station				
Maintenance	\$ 2,015,000	capital cost	5.0%	\$ 101,000
Maintenance	2	LS	\$10,000	\$ 20,000
PS 1 - Electricity	549,600	kWh	\$0.12	\$ 66,000
PS 2 - Electricity	293,500	kWh	\$0.12	\$ 35,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	117,800	LF	\$0.60	\$ 71,000
Pressure Reducing Stations	2	station(s)	\$20,000	\$ 40,000
Total Annual O&M				\$ 483,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	1,808	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
1,808		Purchase Cost Total		\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	1,808	
Water Purchase Escalator	4.0%	Total Yield (AF)	90,380	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 53,659,000		1.00	\$ 53,659,000
20-Year Capital Costs	\$ 3,098,000		2.00	\$ 6,196,000
Annual O&M Costs	\$ 483,000		49.00	\$ 23,667,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (1,549,000)		1.00	\$ (1,549,000)
Total PV				\$ 81,973,000
50-year Project Yield (AF)				90,380
Unit Cost (\$/af)				\$910

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
233

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood	0.0	MG	\$0	\$ -
Tank 2 at Valley Plaza	0.0	MG	\$0	\$ -
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood	0	gpm	formula	\$ -
PS 2 - Valley Plaza	0	gpm	formula	\$ -
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	0	LS	\$0	\$ -
PRV 2 - Valley Plaza	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	11,500	in-diam*LF	\$24	\$ 1,656,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Construction Subtotal				\$ 1,656,000
Contingency Costs 30%				\$ 497,000
Construction Total				\$ 2,153,000
Implementation Costs 30%				\$ 646,000
Total Capital Cost				\$ 2,799,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	11,500	LF	\$0.60	\$ 7,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 7,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	233	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
		233	Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	233
Water Purchase Escalator	4.0%		Total Yield (AF)	11,643
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 2,799,000		1.00	\$ 2,799,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 7,000		49.00	\$ 343,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 3,142,000
50-year Project Yield (AF)				11,643
Unit Cost (\$/af)				\$270

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
767

WRP: Cesar Chavez

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood (50%)	1.0	MG	\$3,000,000	\$ 1,500,000
Tank 2 at Valley Plaza	0.5	MG	\$4,000,000	\$ 2,000,000
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood (50%)	1,500	gpm	formula	\$ 626,000
PS 2 - Valley Plaza	780	gpm	formula	\$ 763,000
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	0	LS	\$0	\$ -
PRV 2 - Valley Plaza	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	12,900	in-diam*LF	\$24	\$ 1,858,000
8 inch	10,400	in-diam*LF	\$24	\$ 1,997,000
12 inch	11,900	in-diam*LF	\$20	\$ 2,856,000
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 11,900,000
Contingency Costs	30%	\$ 3,570,000
Construction Total		\$ 15,470,000
Implementation Costs	30%	\$ 4,641,000
Total Capital Cost		\$ 20,111,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 350,000
Pump Station	50%	\$ 695,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 1,045,000
Contingency Costs	30%	\$ 314,000
Construction Total		\$ 1,359,000
Implementation Costs	30%	\$ 408,000
Total 20-year Capital Cost		\$ 1,767,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 1,389,000	capital cost	5.0%	\$ 69,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	293,500	kWh	\$0.12	\$ 35,000
PS 2 - Electricity	293,500	kWh	\$0.12	\$ 35,000
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	35,200	LF	\$0.60	\$ 21,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 265,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	767	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
767		Purchase Cost Total		\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	767	
Water Purchase Escalator	4.0%	Total Yield (AF)	38,374	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 20,111,000		1.00	\$ 20,111,000
20-Year Capital Costs	\$ 1,767,000		2.00	\$ 3,534,000
Annual O&M Costs	\$ 265,000		49.00	\$ 12,985,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (883,500)		1.00	\$ (884,000)
Total PV				\$ 35,746,000
50-year Project Yield (AF)				38,374
Unit Cost (\$/af)				\$930

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
137

WRP: North Hollywood

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood	0.0	MG	\$0	\$ -
Tank 2 at Valley Plaza	0.0	MG	\$0	\$ -
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood	0	gpm	formula	\$ -
PS 2 - Valley Plaza	0	gpm	formula	\$ -
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	0	LS	\$0	\$ -
PRV 2 - Valley Plaza	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	4,200	in-diam*LF	\$24	\$ 605,000
8 inch	0	in-diam*LF	\$24	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	13,800	in-diam*LF	\$18	\$ 3,974,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -
Construction Subtotal				\$ 4,579,000
Contingency Costs 30%				\$ 1,374,000
Construction Total				\$ 5,953,000
Implementation Costs 30%				\$ 1,786,000
Total Capital Cost				\$ 7,739,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-

Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	18,000	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 11,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	137	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
		137	Purchase Cost Total	\$ -
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escalator	3.0%	Annual Yield (AFY)	137	
Water Purchase Escalator	4.0%	Total Yield (AF)	6,868	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 7,739,000		1.00	\$ 7,739,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 11,000		49.00	\$ 539,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ -		1.00	\$ -
Total PV				\$ 8,278,000
50-year Project Yield (AF)				6,868
Unit Cost (\$/af)				\$1,210

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Burbank

Annual Yield (AFY)
670

WRP: Valley College

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at N. Hollywood (50%)	1.0	MG	\$3,000,000	\$ 1,500,000
Tank 2 at Valley Plaza	0.0	MG	\$0	\$ -
Tank 3	0.0	MG	\$0	\$ -
Pump Station				
PS 1 - N. Hollywood (50%)	1,500	gpm	formula	\$ 626,000
PS 2 - Valley Plaza	0	gpm	formula	\$ -
PS 3 -	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 - N. Hollywood	16	LS	\$350,000	\$ 350,000
PRV 2 - Valley Plaza	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	17,400	in-diam*LF	\$24	\$ 2,506,000
8 inch	4,300	in-diam*LF	\$24	\$ 826,000
12 inch	25,900	in-diam*LF	\$20	\$ 6,216,000
16 inch	5,500	in-diam*LF	\$18	\$ 1,584,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -
30 inch	0	in-diam*LF	\$16	\$ -
36 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 13,608,000
Contingency Costs	30%	\$ 4,082,000
Construction Total		\$ 17,690,000
Implementation Costs	30%	\$ 5,307,000
Total Capital Cost		\$ 22,997,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 150,000
Pump Station	50%	\$ 313,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 463,000
Contingency Costs	30%	\$ 139,000
Construction Total		\$ 602,000
Implementation Costs	30%	\$ 181,000
Total 20-year Capital Cost		\$ 783,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 626,000	capital cost	5.0%	\$ 31,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	256,200	kWh	\$0.12	\$ 31,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
PS 3 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	53,100	LF	\$0.60	\$ 32,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 199,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$728	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP	670	AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
670		Purchase Cost Total		\$ -
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	670
Water Purchase Escalator	4.0%		Total Yield (AF)	33,495
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 22,997,000		1.00	\$ 22,997,000
20-Year Capital Costs	\$ 783,000		2.00	\$ 1,566,000
Annual O&M Costs	\$ 199,000		49.00	\$ 9,751,000
Recycled Water Cost	\$ -		66.73	\$ -
Salvage	\$ (391,500)		1.00	\$ (392,000)
Total PV				\$ 33,922,000
50-year Project Yield (AF)				33,495
Unit Cost (\$/af)				\$1,010

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Las Virgenes

Annual Yield (AFY)
954

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer 1	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	24,700	in-diam*LF	\$24	\$ 3,557,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	16,700	in-diam*LF	\$20	\$ 3,340,000
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	16,100	in-diam*LF	\$18	\$ 4,637,000
Las Virgenes Pipelines				\$ 2,464,500
Construction Subtotal				\$ 13,998,500
Contingency Costs 30%				\$ 4,200,000
Construction Total				\$ 18,198,500
Implementation Costs 30%				\$ 5,460,000
Total Capital Cost				\$ 23,658,500

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	57,500	LF	\$0.60	\$ 35,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 35,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD	954	AFY	\$500	\$ 478,000
	954		Purchase Cost Total	\$ 478,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		954
Water Purchase Escalat	4.0%	Total Yield (AF)		47,711
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 23,658,500		1.00	\$ 23,659,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 35,000		49.00	\$ 1,715,000
Recycled Water Cost	\$ 478,000		66.73	\$ 31,897,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 57,271,000
50-year Project Yield (AF)				47,711
Unit Cost (\$/af)				\$1,200

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Las Virgenes

Annual Yield (AFY)
666

WRP: Pierce College

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	21,900	in-diam*LF	\$24	\$ 3,154,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	16,700	in-diam*LF	\$20	\$ 3,340,000
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	0	in-diam*LF	\$18	\$ -
Las Virgenes Pipelines				

Construction Subtotal	\$ 6,494,000
Contingency Costs 30%	\$ 1,948,000
Construction Total	\$ 8,442,000
Implementation Costs 30%	\$ 2,533,000
Total Capital Cost	\$ 10,975,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ -
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal	\$ -
Contingency Costs 30%	\$ -
Construction Total	\$ -
Implementation Costs 30%	\$ -
Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	38,600	LF	\$0.60	\$ 23,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 23,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD	666	AFY	\$500	\$ 334,000
		666	Purchase Cost Total	\$ 334,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		666
Water Purchase Escalat	4.0%	Total Yield (AF)		33,317
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 10,975,000		1.00	\$ 10,975,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 23,000		49.00	\$ 1,127,000
Recycled Water Cost	\$ 334,000		66.73	\$ 22,288,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 34,390,000
50-year Project Yield (AF)				33,317
Unit Cost (\$/af)				\$1,030

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Valley Las Virgenes

Annual Yield (AFY)
288

WRP: Woodland Hills

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	2,800	in-diam*LF	\$24	\$ 403,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
16 inch	16,100	in-diam*LF	\$18	\$ 4,637,000
Las Virgenes Pipelines				\$ 2,464,500

Construction Subtotal	\$ 7,504,500
Contingency Costs 30%	\$ 2,251,000
Construction Total	\$ 9,755,500
Implementation Costs 30%	\$ 2,927,000
Total Capital Cost	\$ 12,682,500

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ -
Pump Station	50%	\$ -
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal	\$ -
Contingency Costs 30%	\$ -
Construction Total	\$ -
Implementation Costs 30%	\$ -
Total 20-year Capital Cost	\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	18,900	LF	\$0.60	\$ 11,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 11,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary		AFY	\$700	\$ -
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD	288	AFY	\$500	\$ 144,000
		288	Purchase Cost Total	\$ 144,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		288
Water Purchase Escalat	4.0%	Total Yield (AF)		14,394
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 12,682,500		1.00	\$ 12,683,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 11,000		49.00	\$ 539,000
Recycled Water Cost	\$ 144,000		66.73	\$ 9,609,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 22,831,000
50-year Project Yield (AF)				14,394
Unit Cost (\$/af)				\$1,590

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westside

Annual Yield (AFY)
568

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
Pressure Reducer 1	<u>Diam (in)</u> 0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	21,500	in-diam*LF	\$24	\$ 3,096,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	19,800	in-diam*LF	\$20	\$ 4,752,000
River Crossing		LS	\$1,540,000	\$1,540,000
			Construction Subtotal	\$ 9,388,000
Contingency Costs			30%	\$ 2,816,000
			Construction Total	\$ 12,204,000
Implementation Costs			30%	\$ 3,661,000
			Total Capital Cost	\$ 15,865,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-
Pump Station	50%	\$	-
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	-
			Construction Subtotal
Contingency Costs			30%
			Construction Total
Implementation Costs			30%
			Total 20-year Capital Cost

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	41,300	LF	\$0.60	\$ 25,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
			Total Annual O&M	\$ 25,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	568	AFY	\$728	\$ 414,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	568		Purchase Cost Total	\$ 414,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	568
Water Purchase Escalator	4.0%		Total Yield (AF)	28,378
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 15,865,000		1.00	\$ 15,865,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 25,000		49.00	\$ 1,225,000
Recycled Water Cost	\$ 414,000		66.73	\$ 27,626,000
Salvage	\$ -		1.00	\$ -
			Total PV	\$ 44,716,000
			50-year Project Yield (AF)	28,378
			Unit Cost (\$/af)	\$1,580

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westside

Annual Yield (AFY)
390

WRP: Laterals

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	21,500	in-diam*LF	\$24	\$ 3,096,000
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	0	in-diam*LF	\$20	\$ -
Construction Subtotal				\$ 3,096,000
Contingency Costs 30%				\$ 929,000
Construction Total				\$ 4,025,000
Implementation Costs 30%				\$ 1,208,000
Total Capital Cost				\$ 5,233,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	21,500	LF	\$0.60	\$ 13,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 13,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	390	AFY	\$728	\$ 285,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
390		Purchase Cost Total		\$ 285,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)		390
Water Purchase Escalat	4.0%	Total Yield (AF)		19,506
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 5,233,000		1.00	\$ 5,233,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 13,000		49.00	\$ 637,000
Recycled Water Cost	\$ 285,000		66.73	\$ 19,018,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 24,888,000
50-year Project Yield (AF)				19,506
Unit Cost (\$/af)				\$1,280

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westside

Annual Yield (AFY)
177

WRP: Penmar

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1	0.0	MG	\$0	\$ -
Pump Station				
PS 1	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
Pressure Reducer	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	0	in-diam*LF	\$24	\$ -
8 inch	0	in-diam*LF	\$24	\$ -
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	19,800	in-diam*LF	\$20	\$ 4,752,000
River Crossing		LS	\$1,540,000	\$1,540,000
Construction Subtotal				\$ 6,292,000
Contingency Costs 30%				\$ 1,888,000
Construction Total				\$ 8,180,000
Implementation Costs 30%				\$ 2,454,000
Total Capital Cost				\$ 10,634,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	-	
Pump Station	50%	\$	-	
Conveyance	0%	\$	-	
Pressure Reducing Stations	50%	\$	-	
Construction Subtotal				\$ -
Contingency Costs 30%				\$ -
Construction Total				\$ -
Implementation Costs 30%				\$ -
Total 20-year Capital Cost				\$ -

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	-	LS	\$75,000	\$ -
Pump Station				
Maintenance	\$ -	capital cost	5.0%	\$ -
Maintenance	-	LS	\$10,000	\$ -
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	19,800	LF	\$0.60	\$ 12,000
Pressure Reducing Stations	-	station(s)	\$20,000	\$ -
Total Annual O&M				\$ 12,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	177	AFY	\$728	\$ 130,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
177		Purchase Cost Total		\$ 130,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escal	3.0%		Annual Yield (AFY)	177
Water Purchase Escalat	4.0%		Total Yield (AF)	8,871
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 10,634,000		1.00	\$ 10,634,000
20-Year Capital Costs	\$ -		2.00	\$ -
Annual O&M Costs	\$ 12,000		49.00	\$ 588,000
Recycled Water Cost	\$ 130,000		66.73	\$ 8,675,000
Salvage	\$ -		1.00	\$ -
Total PV				\$ 19,897,000
50-year Project Yield (AF)				8,871
Unit Cost (\$/af)				\$2,240

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westwood

Annual Yield (AFY)
3,185

WRP: All

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Palms	0.4	MG	\$4,000,000	\$ 1,600,000
Tank 2 at Veterans	4.0	MG	\$2,000,000	\$ 8,000,000
Tank 3 at Kenneth Hahn	1.0	MG	\$3,000,000	\$ 3,000,000
Pump Station				
PS 1 at 10 Fwy	3,200	gpm	formula	\$ 2,224,000
PS 2 at Kenneth Hahn	1,100	gpm	formula	\$ 990,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 at Palms	24	LS	\$350,000	\$ 350,000
PRV 2 at Kenneth Hahn	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	23,900	in-diam*LF	\$24	\$ 3,442,000
8 inch	13,300	in-diam*LF	\$24	\$ 2,554,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	15,800	in-diam*LF	\$20	\$ 3,792,000
16 inch	14,400	in-diam*LF	\$18	\$ 4,147,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	28,800	in-diam*LF	\$18	\$ 10,368,000
24 inch	10,900	in-diam*LF	\$16	\$ 4,186,000
Construction Subtotal				\$ 44,953,000
Contingency Costs 30%				\$ 13,486,000
Construction Total				\$ 58,439,000
Implementation Costs 30%				\$ 17,532,000
Total Capital Cost				\$ 75,971,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$	1,260,000
Pump Station	50%	\$	1,607,000
Conveyance	0%	\$	-
Pressure Reducing Stations	50%	\$	325,000
Construction Subtotal			\$ 3,192,000
Contingency Costs 30%			\$ 958,000
Construction Total			\$ 4,150,000
Implementation Costs 30%			\$ 1,245,000
Total 20-year Capital Cost			\$ 5,395,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	3	LS	\$75,000	\$ 225,000
Pump Station				
Maintenance	\$ 3,214,000	capital cost	5.0%	\$ 161,000
Maintenance	2	LS	\$10,000	\$ 20,000
PS 1 - Electricity	1,220,100	kWh	\$0.12	\$ 146,000
PS 2 - Electricity	95,200	kWh	\$0.12	\$ 11,000
Conveyance	107,100	LF	\$0.60	\$ 64,000
Pressure Reducing Stations	2	station(s)	\$20,000	\$ 40,000
			Total Annual O&M	\$ 667,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	3,185	AFY	\$728	\$ 2,319,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	3,185		Purchase Cost Total	\$ 2,319,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escalator	3.0%		Annual Yield (AFY)	3,185
Water Purchase Escalator	4.0%		Total Yield (AF)	159,246
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 75,971,000		1.00	\$ 75,971,000
20-Year Capital Costs	\$ 5,395,000		2.00	\$ 10,790,000
Annual O&M Costs	\$ 667,000		49.00	\$ 32,683,000
Recycled Water Cost	\$ 2,319,000		66.73	\$ 154,747,000
Salvage	\$ (2,697,500)		1.00	\$ (2,698,000)
			Total PV	\$ 271,493,000
			50-year Project Yield (AF)	159,246
			Unit Cost (\$/af)	\$1,700

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westwood

Annual Yield (AFY)
349

WRP: Kenneth Hahn

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Palms	0.0	MG	\$0	\$ -
Tank 2 at Veterans	0.0	MG	\$0	\$ -
Tank 3 at Kenneth Hahn	1.0	MG	\$3,000,000	\$ 3,000,000
Pump Station				
PS 1 at 10 Fwy	0	gpm	formula	\$ -
PS 2 at Kenneth Hahn	1,100	gpm	formula	\$ 990,000
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 at Palms	0	LS	\$0	\$ -
PRV 2 at Kenneth Hahn	12	LS	\$300,000	\$ 300,000
Conveyance				
	<u>Length (ft)</u>			
6 inch	7,400	in-diam*LF	\$24	\$ 1,066,000
8 inch	5,800	in-diam*LF	\$24	\$ 1,114,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	9,200	in-diam*LF	\$20	\$ 2,208,000
16 inch	0	in-diam*LF	\$18	\$ -
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	0	in-diam*LF	\$18	\$ -
24 inch	0	in-diam*LF	\$16	\$ -

Construction Subtotal		\$ 8,678,000
Contingency Costs	30%	\$ 2,603,000
Construction Total		\$ 11,281,000
Implementation Costs	30%	\$ 3,384,000
Total Capital Cost		\$ 14,665,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 300,000
Pump Station	50%	\$ 495,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 795,000
Contingency Costs	30%	\$ 239,000
Construction Total		\$ 1,034,000
Implementation Costs	30%	\$ 310,000
Total 20-year Capital Cost		\$ 1,344,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	1	LS	\$75,000	\$ 75,000
Pump Station				
Maintenance	\$ 990,000	capital cost	5.0%	\$ 50,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	-	kWh	\$0.12	\$ -
PS 2 - Electricity	95,200	kWh	\$0.12	\$ 11,000
Conveyance	22,400	LF	\$0.60	\$ 13,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 179,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	349	AFY	\$728	\$ 254,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
349		Purchase Cost Total		\$ 254,000
PV Calculations				
Inflation / Discount Rate			<u>Project Yield</u>	
Construction/O&M Escal	3.0%		Annual Yield (AFY)	349
Water Purchase Escalat	4.0%		Total Yield (AF)	17,429
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 14,665,000		1.00	\$ 14,665,000
20-Year Capital Costs	\$ 1,344,000		2.00	\$ 2,688,000
Annual O&M Costs	\$ 179,000		49.00	\$ 8,771,000
Recycled Water Cost	\$ 254,000		66.73	\$ 16,949,000
Salvage	\$ (672,000)		1.00	\$ (672,000)
Total PV				\$ 42,401,000
50-year Project Yield (AF)				17,429
Unit Cost (\$/af)				\$2,430

DESCRIPTION: Present Value Estimate

Date: 3/14/2012

SYSTEM: Westside Westwood

Annual Yield (AFY)
2,836

WRP: UCLA

Item	Qty	Units	Unit Cost	Cost
Capital Costs				
Storage				
Tank 1 at Palms	0.4	MG	\$4,000,000	\$ 1,600,000
Tank 2 at Veterans	4.0	MG	\$2,000,000	\$ 8,000,000
Tank 3 at Kenneth Hahn	0.0	MG	\$0	\$ -
Pump Station				
PS 1 at 10 Fwy	3,200	gpm	formula	\$ 2,224,000
PS 2 at Kenneth Hahn	0	gpm	formula	\$ -
Pressure Reducing Stations				
	<u>Diam (in)</u>			
PRV 1 at Palms	24	LS	\$350,000	\$ 350,000
PRV 2 at Kenneth Hahn	0	LS	\$0	\$ -
Conveyance				
	<u>Length (ft)</u>			
6 inch	16,400	in-diam*LF	\$24	\$ 2,362,000
8 inch	7,500	in-diam*LF	\$24	\$ 1,440,000
10 inch	0	in-diam*LF	\$20	\$ -
12 inch	6,600	in-diam*LF	\$20	\$ 1,584,000
16 inch	14,400	in-diam*LF	\$18	\$ 4,147,000
18 inch	0	in-diam*LF	\$18	\$ -
20 inch	28,800	in-diam*LF	\$18	\$ 10,368,000
24 inch	10,900	in-diam*LF	\$16	\$ 4,186,000

Construction Subtotal		\$ 36,261,000
Contingency Costs	30%	\$ 10,878,000
Construction Total		\$ 47,139,000
Implementation Costs	30%	\$ 14,142,000
Total Capital Cost		\$ 61,281,000

Capital Replacement Costs

20-Year Useful Life

Storage	10%	\$ 960,000
Pump Station	50%	\$ 1,112,000
Conveyance	0%	\$ -
Pressure Reducing Stations	50%	\$ -

Construction Subtotal		\$ 2,072,000
Contingency Costs	30%	\$ 622,000
Construction Total		\$ 2,694,000
Implementation Costs	30%	\$ 808,000
Total 20-year Capital Cost		\$ 3,502,000

Item	Qty	Units	Unit Cost	Cost
O&M Costs (\$ / Year)				
Storage	2	LS	\$75,000	\$ 150,000
Pump Station				
Maintenance	\$ 2,224,000	capital cost	5.0%	\$ 111,000
Maintenance	1	LS	\$10,000	\$ 10,000
PS 1 - Electricity	1,220,100	kWh	\$0.12	\$ 146,000
PS 2 - Electricity	-	kWh	\$0.12	\$ -
Conveyance	84,600	LF	\$0.60	\$ 51,000
Pressure Reducing Stations	1	station(s)	\$20,000	\$ 20,000
Total Annual O&M				\$ 488,000
Recycled Water Purchase (\$ / Year)				
West Basin - Nitrified		AFY	\$800	\$ -
West Basin - Tertiary	2,836	AFY	\$728	\$ 2,065,000
Central Basin MWD		AFY	\$500	\$ -
Burbank WP		AFY	\$0	\$ -
Las Virgenes MWD		AFY	\$500	\$ -
	2,836		Purchase Cost Total	\$ 2,065,000
PV Calculations				
Inflation / Discount Rate		<u>Project Yield</u>		
Construction/O&M Escal	3.0%	Annual Yield (AFY)	2,836	
Water Purchase Escalat	4.0%	Total Yield (AF)	141,817	
Discount Rate	3.0%			
Economic Cost Summary				
Present Value Calculations				
			<u>PV Factor</u>	
Initial Capital Cost	\$ 61,281,000		1.00	\$ 61,281,000
20-Year Capital Costs	\$ 3,502,000		2.00	\$ 7,004,000
Annual O&M Costs	\$ 488,000		49.00	\$ 23,912,000
Recycled Water Cost	\$ 2,065,000		66.73	\$ 137,797,000
Salvage	\$ (1,751,000)		1.00	\$ (1,751,000)
Total PV				\$ 228,243,000
50-year Project Yield (AF)				141,817
Unit Cost (\$/af)				\$1,610

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Prepared by:



Los Angeles
Department of
Water & Power

CITY OF LOS ANGELES



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