CITY OF INDUSTRY

CITY COUNCIL
REGULAR MEETING AGENDA

JUNE 25, 2015
9:00 AM

Mayor Mark Radecki
Mayor Pro Tem Cory Moss
Council Member Roy Haber, III
Council Member Jeff Parriott
Council Member Newell Ruggles

Location: City Council Chamber, 15651 East Stafford Street, City of Industry, California 91744

Addressing the City Council:

- ***Agenda Items:*** *Members of the public may address the City Council on any matter listed on the Agenda. In order to conduct a timely meeting, there will be a three-minute time limit per person for any matter listed on the Agenda. Anyone wishing to speak to the City Council is asked to complete a Speaker's Card which can be found at the back of the room and at the podium. The completed card should be submitted to the City Clerk prior to the Agenda item being called and prior to the individual being heard by the City Council.*

- ***Public Comments (Non-Agenda Items):*** *Anyone wishing to address the City Council on an item not on the Agenda may do so during the "Public Comments" period. In order to conduct a timely meeting, there will be a three-minute time limit per person for the Public Comments portion of the Agenda. State law prohibits the City Council from taking action on a specific item unless it appears on the posted Agenda. Anyone wishing to speak to the City Council is asked to complete a Speaker's Card which can be found at the back of the room and at the podium. The completed card should be submitted to the City Clerk prior to the Agenda item being called by the City Clerk and prior to the individual being heard by the City Council.*

Americans with Disabilities Act:

- *In compliance with the ADA, if you need special assistance to participate in any City meeting (including assisted listening devices), please contact the City Clerk's Office (626) 333-2211. Notification of at least 48 hours prior to the meeting will assist staff in assuring that reasonable arrangements can be made to provide accessibility to the meeting.*

Agendas and other writings:

- *In compliance with SB 343, staff reports and other public records permissible for disclosure related to open session agenda items are available at City Hall, 15625 East Stafford Street, Suite 100, City of Industry, California, at the office of the City Clerk during regular business hours, Monday through Friday 9:00 a.m. to 5:00 p.m. Any person with a question concerning any agenda item may call the City Clerk's Office at (626) 333-2211.*

1. Call to Order

2. Flag Salute

3. Roll Call

4. Public Comments

4.1 Presentation by Jason Farned, Public Information Officer of San Gabriel Valley Mosquito and Vector Control District.

5. CONSENT CALENDAR

All matters listed under the Consent Calendar are considered to be routine and will be enacted by one vote. There will be no separate discussion of these items unless members of the City Council, the public, or staff request specific items be removed from the Consent Calendar for separate action.

5.1 Consideration of Register of Demands.

RECOMMENDED ACTION: Approve the Register of Demands and authorize the appropriate City Officials to pay the bills.

5.2 Consideration of the minutes of the May 28, 2015 regular meeting.

RECOMMENDED ACTION: Approve as submitted.

5.3 Consideration of a Proposition A Assignment Agreement between the City of Industry and the City of San Gabriel.

RECOMMENDED ACTION: Approve the Agreement.

5.4 Consideration of a Legal Services Agreement between the City of Industry and Casso & Sparks, LLP, to provide city attorney services.

RECOMMENDED ACTION: Approve the Agreement.

6. CITY ENGINEER MATTERS

6.1 Consideration of submission of the Enhanced Watershed Management Program Plan to the Los Angeles Regional Water Quality Control Board and an Authorization to Submit Letter.

RECOMMENDED ACTION: Approve the submission of the Enhanced Watershed Management Program Plan, and authorize the City Engineer to sign the Authorization to Submit Letter.

6.2 Consideration of a Covenant and Agreement to Hold Property as One Parcel affecting parcels located at 425 9th Avenue.

RECOMMENDED ACTION: *Approve the Covenant and Agreement to Hold Property as One Parcel.*

6.3 Consideration of the Second Amended and Restated Water Supply Agreement between the City of Industry and La Puente Valley County Water

District to facilitate the conveyance of treated water from 111 Hudson Avenue easterly through the Industry Waterworks system to Azusa Avenue and into the Rowland Water District potable water system.

RECOMMENDED ACTION: *Approve the Agreement.*

7. Adjournment. Next regular meeting: Thursday, July 9, 2015 at 9:00 a.m.

CITY COUNCIL

ITEM NO. 5.1

CITY OF INDUSTRY
AUTHORIZATION FOR PAYMENT OF BILLS
CITY COUNCIL MEETING OF JUNE 25, 2015

FUND RECAP:

FUND	DESCRIPTION	DISBURSEMENTS
100	GENERAL FUND	1,719,913.95
120	CAPITAL IMPROVEMENT FUND	93,693.39
140	CITY DEBT SERVICE	5,250.00
161	IPUC - ELECTRIC	393,288.13
TOTAL ALL FUNDS		2,212,145.47

BANK RECAP:

BANK	NAME	DISBURSEMENTS
BOFA	BANK OF AMERICA - CKING ACCOUNTS	388,651.85
REF	REFUSE - CKING ACCOUNT	404,346.37
WFBK	WELLS FARGO- CKING ACCOUNT	1,419,147.25
TOTAL ALL BANKS		2,212,145.47

CITY OF INDUSTRY
BANK OF AMERICA
June 25, 2015

Check	Date			Payee Name	Check Amount
CITYELEC.CHK - City Electric					
1356	06/09/2015			**CITY OF INDUSTRY**	$298,651.85
	Invoice	Date	Description	Amount	
	06/09/15	06/09/2015	TRANSFER FUNDS-ELECTRIC	$298,651.85	
CITYGEN.CHK - City General					
24265	06/15/2015		VOIDED- PAPER JAM		$0.00
24266	06/09/2015			**CIVIC RECREATIONAL INDUSTRIAL**	$90,000.00
	Invoice	Date	Description	Amount	
	06/09/15	06/09/2015	TRANSFER FUNDS-CRIA A/P	$90,000.00	

Checks	Status	Count	Transaction Amount
	Total	**3**	**$388,651.85**

CITY OF INDUSTRY
WELLS FARGO REFUSE
June 25, 2015

Check	Date			Payee Name	Check Amount
REFUSE - Refuse Account					
4154	06/08/2015			**GALE CONCOURSE, LLC**	$135.11
	Invoice	Date	Description	Amount	
	06/08/15	06/08/2015	REFUND-ACCT #045630	$135.11	
4155	06/08/2015			**FRISCO'S CARHOP DINER**	$4,211.26
	Invoice	Date	Description	Amount	
	06/08/15	06/08/2015	REFUND-ACCT #084256	$4,211.26	
4156	06/08/2015			**CITY OF INDUSTRY**	$400,000.00
	Invoice	Date	Description	Amount	
	06/08/15	06/08/2015	INVESTMENT	$400,000.00	

Checks	Status	Count	Transaction Amount
	Total	**3**	**$404,346.37**

CITY OF INDUSTRY

WELLS FARGO VOIDED CHECKS

June 25, 2015

Check	Date			Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo					
61920	06/11/2015		06/12/2015	**SATSUMA LANDSCAPE & MAINT.**	($148,202.79)
	Invoice	Date	Description	Amount	
	0515CHTA	05/29/2015	VOIDED-TO BE RE-ISSUED	($37,737.00)	
	0515TACH	05/29/2015	VOIDED-TO BE RE-ISSUED	($110,465.79)	

Check	Status	Count	Transaction Amount
	Total	**1**	**($148,202.79)**

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date			Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo					
61951	06/09/2015			**CITY OF INDUSTRY-PETTY CASH**	$779.22
	Invoice	Date	Description	Amount	
	06/03/15	06/03/2015	REIMBURSE PETTY CASH	$779.22	
61952	06/10/2015			**ADVANCED DISCOVERY, INC.**	$14,214.75
	Invoice	Date	Description	Amount	
	B149539	05/31/2015	PROF SVC-LITIGATION	$14,214.75	
61953	06/10/2015			**AT & T**	$8.81
	Invoice	Date	Description	Amount	
	2015-00001512	06/01/2015	06/01-06/30/15 SVC - CITY WHITE PAGES	$8.81	
61954	06/10/2015			**AT & T**	$225.00
	Invoice	Date	Description	Amount	
	8958880943	06/01/2015	06/01-06/30/15 SVC - METROLINK	$225.00	
61955	06/10/2015			**GAS COMPANY, THE**	$533.26
	Invoice	Date	Description	Amount	
	2015-00001508	06/04/2015	04/06-05/06/15 SVC - 2700 CHINO HILLS PKWY	$60.06	
	2015-00001509	06/04/2015	05/01-06/02/15 SVC - 710 NOGALES ST	$17.61	
	1135HATCH-JUN15	06/04/2015	05/01-06/02/15 SVC - 1135 HATCHER AVE	$18.52	
	2015-00001510	06/05/2015	05/01-06/01/15 SVC - 1 INDUSTRY HILLS PKWY UNIT	$422.28	
	2015-00001511	06/08/2015	05/05-06/04/15 SVC - 1 INDUSTRY HILLS PKWY	$14.79	
61956	06/10/2015			**HORACIO COLMENARES**	$1,850.00
	Invoice	Date	Description	Amount	
	20150608COI	06/08/2015	VIDEO FOR ELECTION DAY	$800.00	
	20150602COI-A	06/02/2015	VIDEO FOR ELECTION DAY	$1,050.00	
61957	06/10/2015			**ROWLAND WATER DISTRICT**	$1,625.85
	Invoice	Date	Description	Amount	

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date		Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo				
	2015-00001513	05/27/2015	04/15-05/20/15 SVC - AZUSA AVE - CENTER	$140.06
	2015-00001514	05/27/2015	04/15-05/20/15 SVC - AZUSA AVE 205597	$116.86
	2015-00001515	05/27/2015	04/14-05/20/15 SVC - 930 AZUSA AVE	$439.59
	2015-00001516	05/27/2015	04/14-05/19/15 SVC - 17401 VALLEY BLVD	$367.09
	2015-00001517	05/27/2015	04/14-05/25/15 SVC - 18044 ROWLAND-LAWSON	$119.76
	2015-00001518	05/27/2015	04/14-05/20/15 SVC - HURLEY ST & VALLEY	$442.49
61958	06/10/2015		**SO CALIFORNIA EDISON COMPANY**	$9,023.90
	Invoice	Date	Description	Amount
	2015-00001494	06/02/2015	05/01-06/01/15 SVC - 1 VALLEY/AZUSA	$16.59
	5010ENG-JUN15	06/02/2015	04/29-05/29/15 SVC - 5010 ENGLISH	$68.57
	205HUD-JUN15	06/02/2015	04/29-05/29/15 SVC - 205 N HUDSON AVE	$539.93
	2015-00001495	06/05/2015	05/01-06/01/15 SVC - VARIOUS SITES	$1,904.27
	2015-00001496	06/05/2015	05/05-06/04/15 SVC - 208 S WADDINGHAM WAY CP	$134.26
	2015-00001497	06/06/2015	05/05-06/04/15 SVC - 15625 STAFFORD ST	$4,589.62
	15660STAFF-JUN15	06/06/2015	04/29-05/29/15 SVC - 15660 STAFFORD ST	$1,770.66
61959	06/10/2015		**SUBURBAN WATER SYSTEMS**	$418.93
	Invoice	Date	Description	Amount
	180060571081	06/03/2015	05/05-06/02/15 SVC - NE CNR VALLEY/STIMS	$418.93
61960	06/10/2015		**VERIZON**	$2,271.16
	Invoice	Date	Description	Amount
	2015-00001498	05/19/2015	05/19-06/18/15 SVC - GENERATOR SITE-TELEMETRY	$41.50
	2015-00001499	05/22/2015	05/22-06/21/15 SVC - GENERATOR SITE-TELEMETRY	$57.19
	2015-00001500	05/25/2015	05/25-06/24/15 SVC - ELECTRIC MODEM	$52.09
	2015-00001501	05/25/2015	05/25-06/24/15 SVC - ELECTRIC MODEM	$61.67
	2015-00001502	05/28/2015	05/28-06/27/15 SVC - ELECTRIC MODEM	$38.35
	2015-00001503	05/28/2015	05/28-06/27/15 SVC - ELECTRIC MODEM	$61.67
	2015-00001504	05/28/2015	05/28-06/27/15 SVC - ELECTRIC MODEM	$54.36
	2015-00001505	06/01/2015	06/01-06/30/15 SVC - CITY HALL FAXES	$509.77

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date		Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo				
	2015-00001506	06/01/2015	06/01-06/30/15 SVC - VARIOUS SITES	$321.60
	HATCHER-JUN15	06/01/2015	06/01-06/30/15 SVC - HATCHER WAREHOUSE	$51.23
	TRESHERM-JUN15	06/01/2015	06/01-06/30/15 SVC - TRES HERMANOS	$49.39
	2015-00001507	06/01/2015	06/01-06/30/15 SVC - VARIOUS SITES	$972.34
61961	06/10/2015		**VERIZON WIRELESS - LA**	$944.47
	Invoice	Date	Description	Amount
	9746358501	05/26/2015	04/27-05/26/15 SVC - VARIOUS WIRELESS	$944.47
61962	06/10/2015		**VERIZON WIRELESS - LA**	$114.03
	Invoice	Date	Description	Amount
	9746358502	05/26/2015	04/27-05/26/15 SVC - MOBILE BROADBAND	$114.03
61963	06/10/2015		**WEX BANK**	$668.60
	Invoice	Date	Description	Amount
	41054281	05/31/2015	FUEL-CITY VEHICLES	$668.60
61964	06/12/2015		**SATSUMA LANDSCAPE & MAINT.**	$148,202.79
	Invoice	Date	Description	Amount
	0515CHTA	05/29/2015	LANDSCAPE SVC-VARIOUS SITES	$37,737.00
	0515TACH	05/29/2015	LANDSCAPE SVC-MAY 2015	$110,465.79
61965	06/16/2015		**BROWN, CHRISTINA M.**	$5,378.12
	Invoice	Date	Description	Amount
	SPRING 2015	06/15/2015	REIMBURSE TUITION/BOOKS	$5,378.12
61966	06/16/2015		**EXXON MOBIL**	$1,013.00
	Invoice	Date	Description	Amount
	72006767506	06/08/2015	FUEL-SECURITY VEHICLES	$1,013.00
61967	06/16/2015		**GAS COMPANY, THE**	$375.90

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date	Payee Name	Check Amount

CITY.WF.CHK - City General Wells Fargo

Invoice	Date	Description	Amount
2015-00001521	06/10/2015	5/7-6/8/15 SVC-15651 STAFFORD ST	$91.36
2015-00001522	06/10/2015	5/7-6/8/15 SVC-15633 RAUSCH RD	$250.21
2015-00001523	06/10/2015	5/7-6/8/15 SVC-15625 STAFFORD ST	$16.71
2015-00001524	06/10/2015	5/7-6/8/15 SVC-15651 STAFFORD ST APT #B	$17.62

61968 06/16/2015 **NOBLE AMERICAS ENERGY** $1,018.94

Invoice	Date	Description	Amount
151600004529974	06/09/2015	WHOLESALE GAS-MAY 2015	$1,018.94

61969 06/16/2015 **PAETEC COMMUNICATIONS** $733.46

Invoice	Date	Description	Amount
58502723	06/10/2015	PHONE SVC-JUN 2015	$733.46

61970 06/16/2015 **RICOH USA, INC.** $3,448.87

Invoice	Date	Description	Amount
46007066	06/06/2015	COPIER LEASE-JUN 2015	$3,166.14
46015926	06/06/2015	COPIER LEASE-HR	$282.73

61971 06/16/2015 **SHELL** $917.96

Invoice	Date	Description	Amount
8000073489506	06/05/2015	FUEL-CITY VEHICLES	$917.96

61972 06/16/2015 **SO CALIFORNIA EDISON COMPANY** $19,458.38

Invoice	Date	Description	Amount
2015-00001525	06/09/2015	5/1-6/1/15 SVC-NOGALES ST/SAN JOSE AVE	$615.49
2015-00001526	06/10/2015	5/1-6/1/15 SVC-208 S WADDINGHAM WAY	$17,269.20
2015-00001527	06/09/2015	5/7-6/8/15 SVC-1135 HATCHER AVE	$425.16
2015-00001528	06/09/2015	5/7-6/8/15 SVC-1123 HATCHER AVE STE A	$182.86
2015-00001529	06/10/2015	5/7-6/8/15 SVC-VARIOUS	$137.97
2015-00001530	06/12/2015	4/15-6/9/15 SVC-VARIOUS SITES VALLEY BLVD U	$658.08

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date		Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo				
	2015-00001531	06/11/2015	5/1-6/1/15 SVC-GALE AVE/L STREET	$36.50
	2015-00001532	06/13/2015	5/13-6/12/15 SVC-490 7TH U	$66.14
	2015-00001533	06/12/2015	5/12-6/11/15 SVC-575 BALDWIN PK AVE U	$66.98
61973	06/16/2015		**TELEPACIFIC COMMUNICATIONS**	$5,454.07
	Invoice	Date	Description	Amount
	67624901-0	05/31/2015	INTERNET SVC-METRO SOLAR/CITY HALL	$5,454.07
61974	06/16/2015		**VERIZON**	$118.97
	Invoice	Date	Description	Amount
	2015-00001519	06/04/2015	6/4-7/3/15 SVC-GENERATOR SITE TELEMETRY	$57.25
	2015-00001520	06/04/2015	6/4-7/3/15 SVC-ELECTRIC MODEM	$61.72
61975	06/16/2015		**VERIZON BUSINESS**	$114.47
	Invoice	Date	Description	Amount
	06843360	06/10/2015	5/1-5/31/15 SVC-VARIOUS SITES	$114.47
61976	06/16/2015		**VERIZON BUSINESS**	$32.45
	Invoice	Date	Description	Amount
	06843359	06/10/2015	5/1-5/31/15 SVC-HATCHER WIRELESS SVC	$32.45
61977	06/16/2015		**WALNUT VALLEY WATER DISTRICT**	$6,801.19
	Invoice	Date	Description	Amount
	1994269	06/09/2015	5/1-6/1/15 SVC-IRR 820 FAIRWAY DR	$127.75
	1994321	06/09/2015	5/1-6/1/15 SVC-LEMON AVE N OF CURRIER RD	$72.96
	1994355	06/09/2015	5/1-6/1/15 SVC-BREA CYN RD & OLD RANCH RD	$57.36
	1994371	06/09/2015	5/1-6/1/15 SVC-FERRERO 7 GRAND EAST RAMP	$970.15
	1994389	06/09/2015	5/1-6/1/15 SVC-BAKER PKWY METER #1	$467.61
	1994390	06/09/2015	5/1-6/1/15 SVC-BAKER PKWY METER #2	$431.88
	1994396	06/09/2015	5/1-6/1/15 SVC-GRAND AVE XING-12'E OF BAKER	$296.85
	1994397	06/09/2015	5/1-6/1/15 SVC-GRAND XING-1200'E OF BAKER	$530.48

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date		Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo				
	1994399	06/09/2015	5/1-6/1/15 SVC-22002 VALLEY BLVD	$512.88
	1994416	06/09/2015	5/1-6/1/15 SVC-21350 VALLEY-MEDIAN	$83.88
	1994417	06/09/2015	5/1-6/1/15 SVC-GRAND CROSSING EAST-35'W BAKER	$49.56
	1994418	06/09/2015	5/1-6/1/15 SVC-GRAND CROSSING WEST-25' E MAYO	$83.88
	1994419	06/09/2015	5/1-6/1/15 SVC-BAKER PKWY & GRAND N/W CNR	$1,829.71
	1994426	06/09/2015	5/1-6/1/15 SVC-E/S GRAND 215'S/O BAKER PKWY	$165.19
	1994432	06/09/2015	5/1-6/1/15 SVC-BREA CYN 100' N OF RR TRKS	$258.53
	1994433	06/09/2015	5/1-6/1/15 SVC-BREA CYN 60' N OF CURRIER	$49.49
	1994435	06/09/2015	5/1-6/1/15 SVC-60 FWY INTERCHANGE FAIRWAY DR	$44.81
	1994453	06/09/2015	5/1-6/1/15 SVC-END OF BAKER PKWY-TEMP	$203.41
	1995134	06/10/2015	5/5-6/3/15 SVC-PUMP STN N/W CHERYL LN/MAYO	$23.04
	1995154	06/10/2015	5/5-6/3/15 SVC-PUMP STN BREA CYN	$487.34
	1995376	06/10/2015	5/5-6/3/15 SVC-NOGALES PUMP STN	$54.43
61978	06/25/2015		**ADVANCE EXERCISE EQUIPMENT**	$8,999.51
	Invoice	Date	Description	Amount
	21898	05/28/2015	BALANCE-INSTALL EXERCISE EQUIP AT CITY HALL	$8,999.51
61979	06/25/2015		**ALL AMERICAN TONERS, INC**	$595.00
	Invoice	Date	Description	Amount
	CONT5108	03/18/2015	MAINT AGREEMENT-3/18/15 THRU 3/18/17	$595.00
61980	06/25/2015		**ALL PRO PAINTING, INC.**	$13,795.00
	Invoice	Date	Description	Amount
	6428	05/29/2015	EXTERIOR PAINTING-FIRE STATION ON GALE AVE	$13,795.00
61981	06/25/2015		**ALVAKA NETWORKS**	$17,710.17
	Invoice	Date	Description	Amount
	154626	05/29/2015	ADD'L NET MAINT FOR MAY 2015	$4,930.00
	154753NP	05/31/2015	TRIP CHARGE	$220.00
	154633	06/01/2015	NETWORK MAINT-JUL 2015	$6,020.00

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date			Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo					
	154661	06/01/2015	NETWORK MAINT-JUL 2015	$6,540.17	
61982	06/25/2015			**AQUA BACKFLOW & CHLORINATION**	$80.00
	Invoice	Date	Description	Amount	
	33554	09/30/2014	B/F REPAIR-VARIOUS	$80.00	
61983	06/25/2015			**ARAMARK REFRESHMENT SERVICE,**	$119.50
	Invoice	Date	Description	Amount	
	1534359	06/05/2015	COFFEE/OFFICE SUPPLIES	$119.50	
61984	06/25/2015			**AVANT-GARDE, INC**	$2,255.00
	Invoice	Date	Description	Amount	
	3708	05/20/2015	PROGRAM MGMT-AZUSA AVE BRIDGE	$2,255.00	
61985	06/25/2015			**BRYAN PRESS**	$730.31
	Invoice	Date	Description	Amount	
	0072898	06/08/2015	CODE VIOLATIONS FORMS	$326.46	
	0072922	06/08/2015	COI-MAILING LABELS	$135.71	
	0072913	06/08/2015	COI LETTERHEAD/SA MAILING LABELS	$268.14	
61986	06/25/2015			**CASC ENGINEERING AND**	$5,928.00
	Invoice	Date	Description	Amount	
	33518	04/30/2015	NPDES ENG SVC-COI	$5,781.00	
	33513	04/30/2015	NPDES ENG SVC-FOLLOW'S CAMP	$147.00	
61987	06/25/2015			**CITY OF INDUSTRY**	$987.64
	Invoice	Date	Description	Amount	
	2015-00000027	05/31/2015	IH FUEL PUMP-SECURITY VEHICLES	$987.64	
61988	06/25/2015			**CITY OF INDUSTRY DISPOSAL CO.**	$2,362.08
	Invoice	Date	Description	Amount	

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date			Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo					
	2139801	05/31/2015	MO SVC-CITY RESIDENCES	$2,362.08	
61989	06/25/2015			**CITY OF INDUSTRY-MEDICAL**	$8,000.00
	Invoice	Date	Description	Amount	
	REG 6/25/15	06/17/2015	TRANSFER FUNDS-MEDICAL	$8,000.00	
61990	06/25/2015			**CITY OF INDUSTRY-PAYROLL ACCT**	$60,000.00
	Invoice	Date	Description	Amount	
	P/R 6/15/15	06/15/2015	PAYROLL REIMBURSEMENT 6/15/15	$60,000.00	
61991	06/25/2015			**CITY OF INDUSTRY-REFUSE**	$7,565.02
	Invoice	Date	Description	Amount	
	2138573	06/01/2015	DISP SVC-CITY HALL	$441.75	
	2138574	06/01/2015	DISP SVC-TRES HERMANOS	$316.26	
	2143415	05/31/2015	DISP SVC-TONNER CYN	$466.41	
	2143414	05/31/2015	DISP SVC-1123 HATCHER	$1,595.79	
	2139199	06/01/2015	DISP SVC-CITY BUS STOPS	$4,376.33	
	2138835-A	06/01/2015	DISP SVC-205 HUDSON	$184.24	
	2138835-B	06/01/2015	DISP SVC-841 7TH AVE	$184.24	
61992	06/25/2015			**CNC ENGINEERING**	$166,444.36
	Invoice	Date	Description	Amount	
	072015	06/01/2015	MEALS/WHEELS RENT- JUL 2015	$5,000.00	
	43451	06/11/2015	INDUSTRY 66KV ELEC SUBSTATION FACILITY	$482.30	
	43452	06/11/2015	ON-CALL STREET MAINT PROGRAM	$1,140.03	
	43453	06/11/2015	WALNUT DR SOUTH WIDENING	$5,574.28	
	43454	06/11/2015	CLARK AVE WIDENING AND SIDEWALK	$4,615.24	
	43455	06/11/2015	2014-2015 SLURRY SEAL	$5,072.63	
	43456	06/11/2015	GENERAL ENGINEERING SVC-CIP	$33,805.68	
	43457	06/11/2015	GENERAL ENGINEERING SVC 5/25-6/7/15	$51,243.26	
	43458	06/11/2015	TONNER CYN PROPERTY	$3,800.37	

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date		Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo				
	43459	06/11/2015	PUENTE VALLEY OPERABLE UNIT	$941.28
	43460	06/11/2015	TRES HERMANOS GENERAL ENGINEERING	$1,330.04
	43461	06/11/2015	CITY ADMIN OFFICES-15625 STAFFORD	$2,349.76
	43462	06/11/2015	IMC BLDG-15651 STAFFORD	$253.34
	43463	06/11/2015	HOMESTEAD MUSEUM MAINT	$1,098.16
	43464	06/11/2015	RESURFACING-VARIOUS STREETS	$4,706.40
	43465	06/11/2015	LOS ANGELES SUB QUIET ZONE	$1,176.60
	43466	06/11/2015	OPERATION AND MAINT OF THE METRO PARKING	$1,766.49
	43467	06/11/2015	PROP 1B STATE FUND ALLOCATIONS	$162.71
	43468	06/11/2015	INDUSTRY HILLS-FUEL STATION MAINT	$313.76
	43469	06/11/2015	PROPERTY MGMT - CITY OWNED PROPERTIES	$2,423.08
	43470	06/11/2015	AZUSA AVE OVER VALLEY BLVD BRIDGE	$280.37
	43471	06/11/2015	FISCAL YEAR BUDGET	$1,392.31
	43472	06/11/2015	FOLLOW'S CAMP PROPERTY	$1,103.99
	43473	06/11/2015	VARIOUS ASSIGNMENTS-SA TO THE IUDA	$4,836.54
	43474	06/11/2015	COMMUTER RAIL STATION -METROLINK STN	$470.64
	43475	06/11/2015	FOOTHILL TRANSIT PARKING STRUCTURE	$1,870.37
	43476	06/11/2015	GALE AVE AND JELLICK AVE TRAFFIC SIGNAL	$156.88
	43477	06/11/2015	CIVIC-FINANCIAL CENTER LANDSCAPING	$4,784.84
	43478	06/11/2015	BICYCLE MASTER PLAN	$1,266.70
	43479	06/11/2015	CITY MAINT YARD AT 1123 HATCHER	$156.88
	43480	06/11/2015	ARENTH AVE RECONSTRUCTION	$1,013.36
	43481	06/11/2015	CITY OF INDUSTRY MUNICIPAL CODE COMPLIANCE	$470.64
	43482	06/11/2015	GENERAL ENGINEERING SVC-HWY MONITORING	$4,325.86
	43483	06/11/2015	CITY OF INDUSTRY PAVEMENT MGMT SYSTEM	$10,098.55
	43484	06/11/2015	FULLERTON RD GRADE SEPARATION	$4,392.64
	43485	06/11/2015	ALAMEDA CORRIDOR EAST RELATED PROJECT	$325.42
	43486	06/11/2015	FAIRWAY DR GRADE SEPARATION	$1,688.05
	43487	06/11/2015	NOGALES GRADE SEPARATION	$554.91
61993	06/25/2015		**CORELOGIC INFORMATION**	$192.50

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date	Payee Name	Check Amount

CITY.WF.CHK - City General Wells Fargo

Invoice	Date	Description	Amount
81491964	05/31/2015	GEOGRAPHIC PKG-MAY 2015	$192.50

Check	Date	Payee Name	Check Amount
61994	06/25/2015	**EASYLINK SERVICES**	$56.33

Invoice	Date	Description	Amount
07634191506	06/02/2015	FAX SVC-MAY 2015	$56.33

Check	Date	Payee Name	Check Amount
61995	06/25/2015	**ENCO UTILITY SERVICES**	$7,609.50

Invoice	Date	Description	Amount
20-3-05-15	05/31/2015	PROF SVC-MAY 2015	$2,500.00
0113-0029MR	06/08/2015	METER READING-MAY 2015	$2,263.50
0612-00036S	06/08/2015	METER SYSTEN MONITORING-MAY 2015	$2,846.00

Check	Date	Payee Name	Check Amount
61996	06/25/2015	**ENVIRONS, INC.**	$22,216.89

Invoice	Date	Description	Amount
2802	05/13/2015	LANDSCAPE PLANS-BIXBY DR	$322.50
2787	04/23/2015	LANDSCAPE PLANS-FOLLOW'S CAMP	$927.27
2801	05/13/2015	LANDCAPE PLANS-CLARK AVE	$1,080.00
2806	06/01/2015	LANDCAPE PLANS-CIVIC CENTER	$19,887.12

Check	Date	Payee Name	Check Amount
61997	06/25/2015	**FEDERAL EXPRESS CORP.**	$241.58

Invoice	Date	Description	Amount
5-061-70872	06/12/2015	MESSENGER SVC	$241.58

Check	Date	Payee Name	Check Amount
61998	06/25/2015	**FRAZER, LLP**	$84,020.00

Invoice	Date	Description	Amount
137992	05/31/2015	COI-CONSULTING SVC FOR MAY 2015	$44,010.00
138332	06/15/2015	COI-ACCTG SVC 6/1-6/15/15	$40,010.00

Check	Date	Payee Name	Check Amount
61999	06/25/2015	**FUEL PROS, INC.**	$1,159.68

Invoice	Date	Description	Amount

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date			Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo					
	0000020821	04/29/2015	INDUSTRY HILLS-FUEL STATION MAINT	$150.00	
	0000020863	04/29/2015	INDUSTRY HILLS-FUEL STATION MAINT	$859.68	
	0000020985	05/23/2015	INDUSTRY HILLS-FUEL STATION MAINT	$150.00	
62000	06/25/2015			**G.M. SAGER CONSTRUCTION CO.,**	$3,375.00
	Invoice	Date	Description	Amount	
	33821	05/14/2015	REPAIR SEPTIC TANK-TONNER CYN	$3,375.00	
62001	06/25/2015			**GMS ELEVATOR SERVICES, INC**	$134.00
	Invoice	Date	Description	Amount	
	00078748	06/01/2015	MO SVC-ELEVATOR	$134.00	
62002	06/25/2015			**GRAND CENTRAL RECYCLING &**	$457.08
	Invoice	Date	Description	Amount	
	2144030	05/31/2015	SOLID WASTE-MAY 2015	$457.08	
62003	06/25/2015			**INDUSTRY SECURITY SERVICES**	$33,176.92
	Invoice	Date	Description	Amount	
	14-14467	06/12/2015	SECURITY SVC 6/5-6/11/15	$13,253.89	
	14-14477	06/12/2015	SECURITY SVC 6/5-6/11/15	$3,364.80	
	14-14417	06/05/2015	SECURITY SVC 5/29-6/4/15	$3,364.80	
	14-14407	06/05/2015	SECURITY SVC 5/29-6/4/15	$13,193.43	
62004	06/25/2015			**INTERTIE**	$11,925.00
	Invoice	Date	Description	Amount	
	1665	06/09/2015	ENERGY CONSULTING-METRO SOLAR	$11,925.00	
62005	06/25/2015			**JANUS PEST MANAGEMENT**	$580.00
	Invoice	Date	Description	Amount	
	134414	06/01/2015	SVC-HOMESTEAD	$580.00	

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date			Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo					
62006	06/25/2015			**KLEINFELDER, INC.**	$9,133.75
	Invoice	Date	Description	Amount	
	001057688	04/26/2015	CROSSROADS PKY SOUTH RECONSTRUCTION	$8,203.75	
	001061161	05/27/2015	NOGALES/FULLERTON RD GRADE SEPARATION	$930.00	
62007	06/25/2015			**L A COUNTY DEPT OF PUBLIC**	$4,502.80
	Invoice	Date	Description	Amount	
	IN150001156	06/04/2015	PILOT ROUTINE MAINT	$4,502.80	
62008	06/25/2015			**L A COUNTY SHERIFF'S**	$667,606.07
	Invoice	Date	Description	Amount	
	154507NH	06/05/2015	SHERIFF CONTRACT-MAY 2015	$667,606.07	
62009	06/25/2015			**LEAGUE OF CALIFORNIA CITIES**	$1,092.00
	Invoice	Date	Description	Amount	
	3074	06/05/2015	MEMBERSHIP DUES 2015-2016	$1,092.00	
62010	06/25/2015			**MARIPOSA LANDSCAPES, INC**	$10,300.00
	Invoice	Date	Description	Amount	
	68658	05/22/2015	INSTALL BOULDERS-VALLEY/605 FWY	$10,300.00	
62011	06/25/2015			**MERRITT'S ACE HARDWARE**	$52.44
	Invoice	Date	Description	Amount	
	086352	06/10/2015	MISC SUPPLIES	$26.09	
	086221	06/03/2015	MISC SUPPLIES	$26.35	
62012	06/25/2015			**METHOD TECHNOLOGIES**	$420.00
	Invoice	Date	Description	Amount	
	20961	06/04/2015	CITY WEBSITE UPDATE	$420.00	
62013	06/25/2015			**PARAGON MICRO INC**	$4,252.54

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date	Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo			
	Invoice	Date	Description	Amount
	617250	05/18/2015	COMPUTER SUPPLIES	$127.54
	618898	06/03/2015	COMPUTER SERVICE-RENEWAL	$4,125.00
62014	06/25/2015	**PITNEY BOWES, INC.**	$103.75
	Invoice	Date	Description	Amount
	8554990-JN15	06/13/2015	POSTAGE MACHINE-JUN 2015	$103.75
62015	06/25/2015	**PLACEWORKS**	$18,195.85
	Invoice	Date	Description	Amount
	56405	05/31/2015	STAFF SERVICES	$1,682.50
	56398	05/31/2015	DONLON BUILDERS/15000 NELSON AVE BLDG	$8,270.00
	56460	05/31/2015	INDUSTRY CLIMATE ACTION PLAN	$8,243.35
62016	06/25/2015	**ProcureIT USA, LLC**	$272.38
	Invoice	Date	Description	Amount
	PITI6093	05/28/2015	COMPUTER SUPPLIES	$272.38
62017	06/25/2015	**RICKABUS, LEWIS S & GRACE M**	$3,500.00
	Invoice	Date	Description	Amount
	JULY 2015	06/09/2015	LEASE OF STORAGE SPACE	$3,500.00
62018	06/25/2015	**SAGE ENVIRONMENTAL GROUP**	$16,811.00
	Invoice	Date	Description	Amount
	525	05/19/2015	WALNUT DR SOUTH WIDENING	$4,335.00
	526	06/03/2015	BIO MONITORING SVC-TONNER CYN	$12,476.00
62019	06/25/2015	**SAN GABRIEL VALLEY NEWSPAPER**	$1,958.54
	Invoice	Date	Description	Amount
	0010675905	06/03/2015	PUBLIC NOTICE-ORDINANCE #791	$237.70
	0010675909	06/03/2015	PUBLIC NOTICE-ORDINANCE #792	$283.24

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date		Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo				
	0010675916	06/03/2015	RESTRICTIONS ON WATER USAGE	$683.44
	0010680296	06/16/2015	PUBLIC NOTICE-ORDINANCE #792	$396.40
	0010680275	06/16/2015	PUBLIC NOTICE-ORDINANCE #791	$357.76
62020	06/25/2015		**SCS ENERGY**	$190.00
	Invoice	Date	Description	Amount
	0255184	04/30/2015	RECIPROCATING ENG-INDUSTRY HILLS	$190.00
62021	06/25/2015		**SCS FIELD SERVICES**	$33,296.11
	Invoice	Date	Description	Amount
	0254188	04/30/2015	MAINT LANDFILL GAS SYSTEM	$13,752.50
	0254034	04/30/2015	MAINT OF LANDFILL GAS SYSTEM	$5,133.41
	0255933	05/31/2015	IH-SCAQMD MONITORING-1ST QTR 2015	$876.20
	0255931	05/31/2015	MAINT LANDFILL GAS SYSTEM	$13,534.00
62022	06/25/2015		**SENNA TREE COMPANY**	$2,500.00
	Invoice	Date	Description	Amount
	25634	05/26/2015	REMOVAL OF FALLEN OAK TREES-FOLLOW'S CAMP	$2,500.00
62023	06/25/2015		**SNOWDEN ELECTRIC COMPANY,**	$46,231.00
	Invoice	Date	Description	Amount
	15-0226	05/26/2015	MAINT SVC-METRO SOLAR	$16,393.00
	15-0240	05/29/2015	INSTALL NEW ELECTRICAL CABLING-WATER TANK	$29,838.00
62024	06/25/2015		**SO CAL INDUSTRIES**	$84.90
	Invoice	Date	Description	Amount
	184431	06/04/2015	RR RENTAL-TONNER CYN	$84.90
62025	06/25/2015		**SOUTH COAST A.Q.M.D.**	$9,307.57
	Invoice	Date	Description	Amount
	2845000	06/02/2015	FLAT FEE EMISSIONS-IND HILLS	$121.44

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date		Payee Name	Check Amount
CITY.WF.CHK - City General Wells Fargo				
	2844008	06/02/2015	LANDFILL GAS COLLECTIONS-IND HILLS	$9,186.13
62026	06/25/2015		**STAPLES BUSINESS ADVANTAGE**	$457.31
	Invoice	Date	Description	Amount
	8034631912	05/30/2015	OFFICE SUPPLIES	$457.31
62027	06/25/2015		**STEPHEN G. WHITE, MAI**	$4,000.00
	Invoice	Date	Description	Amount
	06/11/15	06/11/2015	APPRAISAL SVC-PROPERTIES #23/49	$4,000.00
62028	06/25/2015		**SUPERIOR COURT OF CALIFORNIA,**	$3,045.50
	Invoice	Date	Description	Amount
	MAY 2015	06/15/2015	PARKING CITATIONS REPORT-MAY 2015	$3,045.50
62029	06/25/2015		**THE 20/20 NETWORK**	$5,000.00
	Invoice	Date	Description	Amount
	1483	05/31/2015	MEDIA CONSULTING-MAY 2015	$5,000.00
62030	06/25/2015		**THOMSON REUTERS - WEST**	$109.00
	Invoice	Date	Description	Amount
	832001421	06/04/2015	PRODUCT CHARGES-CA ANNO CODES	$109.00
62031	06/25/2015		**THRALL, RANCE**	$14,580.00
	Invoice	Date	Description	Amount
	JUNE 2015	06/09/2015	MAINTENANCE SVC-JUN 2015	$14,580.00
62032	06/25/2015		**TRIMARK ASSOCIATES, INC.**	$1,726.67
	Invoice	Date	Description	Amount
	EB11005	06/01/2015	MAINT SVC-METRO SOLAR	$1,726.67
62033	06/25/2015		**TURBO DATA SYSTEMS, INC**	$406.94

CITY OF INDUSTRY
WELLS FARGO BANK
June 25, 2015

Check	Date	Payee Name	Check Amount

CITY.WF.CHK - City General Wells Fargo

Invoice	Date	Description	Amount
22868	05/31/2015	CITATION PROCESSING-APR/MAY 2015	$406.94

62034	06/25/2015	**U.S. BANK**	$5,250.00

Invoice	Date	Description	Amount
3987027	05/22/2015	COI ADMIN FEES-2005 SALES TAX BOND	$2,750.00
3983454	05/22/2015	COI ADMIN FEES-2010 SALES TAX BOND	$2,500.00

62035	06/25/2015	**UNDERGROUND SERVICE ALERT OF**	$28.50

Invoice	Date	Description	Amount
520150151	06/01/2015	DIG ALERTS	$28.50

62036	06/25/2015	**VANGUARD CLEANING SYSTEMS,**	$925.00

Invoice	Date	Description	Amount
5765	06/01/2015	JANITORIAL SVC-JU N 2015	$925.00

62037	06/25/2015	**WASTE SYSTEMS TECHNOLOGY,**	$14,810.00

Invoice	Date	Description	Amount
COI-60115	06/01/2015	COMMERCIAL WASTE PROGRAM	$14,810.00

62038	06/25/2015	**WEATHERITE SERVICE**	$392.00

Invoice	Date	Description	Amount
L163086	06/06/2015	A/C MAINT-IMC	$392.00

62039	06/25/2015	**WKE, INC**	$345.80

Invoice	Date	Description	Amount
11-A	05/06/2015	ENGINEERINGPLAN CHECK SVC	$345.80

Checks	Status	Count	Transaction Amount
	Total	**89**	**$1,567,350.04**

CITY COUNCIL

ITEM NO. 5.2

CALL TO ORDER

The Regular Meeting of the City Council of the City of Industry, California, was called to order by Mayor Tim Spohn at 9:00 a.m. in the City of Industry Council Chamber, 15651 East Stafford Street, California.

FLAG SALUTE

The flag salute was led by Mayor Tim Spohn.

ROLL CALL

PRESENT: Tim Spohn, Mayor
Roy Haber, Council Member
Pat Marcellin, Council Member

ABSENT : Jeff Parriott, Mayor Pro Tem
John P. Ferrero, Council Member

STAFF PRESENT: Kevin Radecki, City Manager; Michele Vadon, City Attorney; Cecelia Dunlap, Deputy City Clerk; John Ballas, City Engineer; and Brian James, Planning Director.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO GRANT MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO AN EXCUSED ABSENCE. MOTION 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

PUBLIC COMMENTS

Mr. Steve Baric, an elections attorney, inquired with the City Council about a recently filed referendum and questioned why it was not on the May 28, 2015 City Council Agenda. City Attorney Vadon advised Mr. Baric that the City Attorney's office was not handling the matter and the referendum was being handled by the law firm of Richards, Watson and Gershon.

Los Angeles County Sheriff Jim McDonnell introduced himself to the City Council and indicated he is looking forward to working with the City of Industry.

CONSENT CALENDAR

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN THAT THE RECOMMENDATIONS BE ACCEPTED FOR THE FOLLOWING ITEMS LISTED ON THE CONSENT CALENDAR. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

1. CONSIDERATION OF REGISTER OF DEMANDS

APPROVED THE REGISTER OF DEMANDS AND AUTHORIZED THE APPROPRIATE CITY OFFICIALS TO PAY THE BILLS.

2. CONSIDERATION OF ANNUAL BUDGET SUBMITTED BY THE INDUSTRY PROPERTY AND HOUSING MANAGEMENT AUTHORITY FOR FISCAL YEAR 2015-2016

APPROVED, RECEIVED AND FILED.

3. CONSIDERATION OF ANNUAL BUDGET SUBMITTED BY THE INDUSTRY PUBLIC UTILITIES COMMISSION FOR FISCAL YEAR 2015-2016

APPROVED, RECEIVED AND FILED.

4. CONSIDERATION OF ANNUAL BUDGET SUBMITTED BY THE INDUSTRY PUBLIC FACILITIES AUTHORITY FOR FISCAL YEAR 2015-2016

APPROVED, RECEIVED AND FILED.

5. CONSIDERATION TO AUTHORIZE THE PURCHASE OF MATERIALS FOR THE RELOCATION OF A 16-INCH WATERLINE IN CONJUNCTION WITH PHASE 1 OF THE PUENTE GRADE SEPARATION PROJECT, IN THE AMOUNT OF $20,158.25

AUTHORIZED LA PUENTE VALLEY COUNTY WATER DISTRICT TO PURCHASE THE MATERIALS IN ACCORDANCE WITH THE MANAGEMENT AGREEMENT.

6. CONSIDERATION TO SOLICIT PROPOSALS FOR DESIGN SERVICES FOR THE REPAINTING OF THE AZUSA AVENUE BRIDGE OVER VALLEY BOULEVARD AND THE UNION PACIFIC RAILROAD WITH $289,493.00 IN FEDERAL HIGHWAY ADMINISTRATION (FHWA) FUNDS

APPROVED THE SOLICITATION OF PROPOSALS.

7. CONSIDERATION OF RESOLUTION NO. CC 2015-17 – A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, DELEGATING AUTHORITY TO THE CITY TREASURER AND ACTING CITY TREASURER TO INVEST CITY FUNDS.

ADOPTED RESOLUTION NO. CC 2015-17.

8. CONSIDERATION TO AUTHORIZE THE SALE OF SAFE AND SANE FIREWORKS TO THE FOLLOWING APPLICANTS:

FRIENDS OF INDUSTRY SHERIFF'S STATION, WORKMAN HIGH SCHOOL ATHLETIC BOOSTERS, BASSETT HIGH SCHOOL OLYMPIAN BOOSTER, WILSON HIGH SCHOOL ATHLETICS BOOSTERS, ROWLAND HIGH SCHOOL HUDDLE CLUB, LA PUENTE HIGH SCHOOL ATHLETICS, NOGALES HIGH SCHOOL REGIMENT BOOSTERS, LOS ALTOS HIGH SCHOOL QUARTERBACK CLUB, BISHOP AMAT MEMORIAL HIGH SCHOOL, LYLE OLSEN MEMORIAL FOUNDATION, WEST COVINA YOUTH PONY BASEBALL, SOUTHLAND CHRISTIAN HIGH SCHOOL, CORY LIDLE FOUNDATION, KNIGHTS OF COLUMBUS #6028, BASSET EDUCATION FOUNDATION, NORTH VIEW VIKINGS BASEBALL, PRAISE CHAPEL, LA PUENTE, A PLACE OF HOPE, KIWANIS CLUB OF HACIENDA HEIGHTS, SAN GABRIEL VALLEY YMCA.

AUTHORIZED THE SALE OF SAFE AND SANE FIREWORKS SUBJECT TO THE REGULATIONS SET FORTH IN THE INDUSTRY MUNICIPAL CODE SECTION 15.28.

PUBLIC HEARING REGARDING EMERGENCY WATER SHORTAGE CONDITIONS AND TO SET MANDATORY CONSERVATION MEASURES FOR THE CITY OF INDUSTRY WATERWORKS SYSTEM

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO OPEN THE PUBLIC HEARING. MOTION 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

Mr. Greg Galindo, General Manager of the La Puente Valley Water District, presented a report to the City Council.

Mayor Spohn inquired if anyone wished to be heard on the matter. There were no comments.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER

MARCELLIN TO CLOSE THE PUBLIC HEARING. MOTION 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF RESOLUTION NO. CC 2015-09 - A RESOLUTION OF CITY COUNCIL OF THE CITY OF INDUSTRY DECLARING EMERGENCY WATER SHORTAGE CONDITIONS AND ADOPTING MANDATORY WATER CONSERVATION MEASURES CONSISTENT WITH THOSE IMPOSED BY THE STATE WATER RESOURCES CONTROL BOARD ON THE DELIVERY AND CONSUMPTION OF WATER FOR PUBLIC USE

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO ADOPT RESOLUTION NO. CC 2015-09. MOTION 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF ANNUAL BUDGET SUBMITTED BY THE CIVIC-RECREATIONAL-INDUSTRIAL AUTHORITY FOR FISCAL YEAR 2015-2016.

City Manager Radecki presented a staff report to the City Council.

MOTION BY COUNCIL MEMBER MARCELLIN, AND SECOND BY COUNCIL MEMBER HABER TO NOT APPROVE THE BUDGET, AND DIRECTED STAFF TO WORK WITH THE CIVIC-RECREATIONAL-INDUSTRIAL AUTHORITY BOARD TO STUDY VIABLE OPTIONS TO REDUCE THE BUDGET DEFICIT. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF RESOLUTION NO. CC 2015-10 – A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, ESTABLISHING THE 2015-2016 APPROPRIATIONS LIMITATION AND SELECTING THE GROWTH IN THE CALIFORNIA PER CAPITA INCOME AND COUNTY POPULATION GROWTH ADJUSTMENT FACTORS FOR THE CITY PURSUANT TO ARTICLE XIIIB OF THE CALIFORNIA CONSTITUTION

City Manager Radecki presented a staff report to the City Council.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO ADOPT RESOLUTION NO. CC 2015-10. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF RESOLUTION NO. CC 2015-11 – A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, APPROVING A BUDGET FOR

THE FISCAL YEAR 2015-2016

Mr. Dean Yamagata from Frazer LLP, the City's contracted Finance Department, presented a report to the City Council.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO ADOPT RESOLUTION NO. CC 2015-11. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF RESOLUTION NO. CC 2015-12 - A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, ADOPTING A SALARY RANGE SCHEDULE FOR CITY EMPLOYEES AND OFFICERS

City Manager Radecki presented a staff report to the City Council.

MOTION BY COUNCIL MEMBER MARCELLIN, AND SECOND BY HABER TO ADOPT RESOLUTION NO. CC 2015-12. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF RESOLUTION NO. CC 2015-15 – A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, AUTHORIZING THE CREATION OF A CITY OPERATING RESERVE FUND, SPECIAL REVENUE OPERATING RESERVE, ENTERPRISE FUND OPERATING RESERVE, AND A CITY CAPITAL IMPROVEMENT RESERVE FUND AND AUTHORIZING CERTAIN APPROPRIATION TO VARIOUS FUNDS

City Manager Radecki presented a staff report to the City Council.

MOTION BY MARCELLIN, AND SECOND BY COUNCIL MEMBER HABER TO ADOPT RESOLUTION CC 2015-15. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF ORDINANCE NO. 792 - AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, AMENDING AND RESTATING MUNICIPAL CODE CHAPTER 13.16 PERTAINING TO STORMWATER RUNOFF AND URBAN RUNOFF POLLUTION CONTROL AND REPEALING CHAPTER 13.17 PERTAINING TO STANDARD URBAN STORMWATER MITIGATION PLAN IMPLEMENTATION (FIRST READING)

City Engineer Ballas presented a staff report to the City Council. Mr. Josh Nelson, Senior Project Manager from CNC Engineering, also presented a report to the City Council.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO WAIVE FURTHER READING AND INTRODUCE ORDINANCE NO. 792. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF RESOLUTION NO. CC 2015-16 - A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, ADOPTING A GREEN STREET POLICY

City Engineer Ballas presented a staff report to the City Council.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO ADOPT RESOLUTION NO. CC 2015-16. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF AN AGREEMENT BETWEEN THE LOS ANGELES GATEWAY REGION INTEGRATED REGIONAL WATER MANAGEMENT JOINT POWERS AUTHORITY AND THE CITY OF INDUSTRY FOR COST SHARING FOR THE INSTALLATION OF MONITORING EQUIPMENT AND MONITORING PURSUANT TO THE HARBOR TOXIC POLLUTANTS TMDL

City Engineer Ballas presented a staff report to the City Council.

MOTION BY COUNCIL MEMBER MARCELLIN, AND SECOND BY COUNCIL MEMBER HABER TO APPROVE THE AGREEMENT. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF A TRAFFIC ANALYSIS REPORT PREPARED FOR THE ALAMEDA CORRIDOR-EAST CONSTRUCTION AUTHORITY IDENTIFYING IMPACTS TO NOGALES STREET DURING THE CONCURRENT CLOSURE OF THE FAIRWAY DRIVE AND FULLERTON ROAD GRADE SEPARATION PROJECTS FOR THE PERIOD OF SEPTEMBER 2016 THROUGH JUNE 2018

City Engineer Ballas presented a staff report to the City Council.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO APPROVE THE TRAFFIC ANALYSIS AND RECOMMENDED MITIGATION MEASURES. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION TO SOLICIT PROPOSALS FOR PROFESSIONAL SERVICES RELATED TO THE CREATION OF QUIET ZONES AT VARIOUS LOCATIONS ALONG THE UNION PACIFIC RAILROAD

City Engineer Ballas presented a staff report to the City Council.

City Engineer Ballas indicated that the City received correspondence from Mr. Don C. Moss, Avocado Heights Community Advocate, to include working cooperatively with Los Angeles County for two additional quiet zones. The correspondence was distributed to the City Council, and a copy of the correspondence is on file with the City Clerk's office.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO APPROVE THE SOLICITATION OF PROPOSALS AND DIRECT STAFF TO CONTACT THE COUNTY OF LOS ANGELES FOR THEIR COOPERATION TO INCLUDE TWO ADDITIONAL QUIET ZONES AT VINELAND AVENUE AND TEMPLE AVENUE GRADE CROSSINGS WHICH ARE PARTIALLY LOCATED IN THE UNINCORPORATED AREA OF LOS ANGELES COUNTY. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF DEVELOPMENT PLAN APPLICATION NO. 14-9 SUBMITTED BY QUINN DEVELOPMENT, LLC TO CONSTRUCT AN 80,000 SQUARE FOOT INDUSTRIAL BUILDING LOCATED AT 125 ORANGE AVENUE

Senior Planner Helling presented a staff report to the City Council.

CONSIDERATION OF RESOLUTION NO. CC 2015-13 - A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, ADOPTING THE MITIGATED NEGATIVE DECLARATION AND MITIGATION MONITORING AND REPORTING PROGRAM PREPARED IN CONJUNCTION WITH DEVELOPMENT PLAN NO. 14-9 TO ALLOW THE CONSTRUCTION OF AN 80,000 SQUARE FOOT INDUSTRIAL BUILDING LOCATED AT 125 ORANGE AVENUE IN THE CITY OF INDUSTRY, WITHIN THE "M"-INDUSTRIAL ZONE, AND MAKING FINDINGS IN SUPPORT THEREOF

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO ADOPT RESOLUTION NO. CC 2015 -13. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF RESOLUTION NO. CC 2015-14 - A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, ADOPTING DEVELOPMENT PLAN NO. 14-9 TO ALLOW THE CONSTRUCTION OF AN 80,000 SQUARE FOOT

INDUSTRIAL BUILDING LOCATED AT 125 ORANGE AVENUE IN THE CITY OF INDUSTRY, WITHIN THE "M-INDUSTRIAL ZONE, AND MAKING FINDINGS IN SUPPORT THEREOF

MOTION BY COUNCIL MEMBER MARCELLIN, AND SECOND BY COUNCIL HABER TO ADOPT RESOLUTION NO. CC 2015 -14. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF DEVELOPMENT PLAN APPLICATION 15-8 SUBMITTED BY ART WEISS, INC. TO IMPROVE AN EXISTING SITE AND BUILDING LOCATED AT 15130 NELSON AVENUE

Planning Director James presented a staff report to the City Council.

MOTION BY COUNCIL MEMBER HABER, AND SECOND BY COUNCIL MEMBER MARCELLIN TO APPROVE DEVELOPMENT PLAN NO. 15-8 SUBMITTED BY ART WEISS, INC. BASED ON THE FINDINGS AND STANDARD REQUIREMENTS AND CONDITIONS. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

CONSIDERATION OF ORDINANCE NO. 791 - AN ORDINANCE OF THE CITY COUNCIL OF THE CITY OF INDUSTRY, CALIFORNIA, REPEALING CHAPTER 9.26 (ELECTRONIC GAMES AND DEVICES) OF TITLE 9 (PUBLIC PEACE, MORALS AND WELFARE) OF THE INDUSTRY MUNICIPAL CODE (FIRST READING)

Planning Director James presented a staff report to the City Council.

MOTION BY COUNCIL MEMBER MARCELLIN, AND SECOND BY COUNCIL MEMBER HABER TO WAIVE FURTHER READING AND INTRODUCE ORDINANCE NO. 791. MOTION CARRIED 3-0, WITH MAYOR PRO TEM PARRIOTT AND COUNCIL MEMBER FERRERO ABSENT.

Mayor Spohn indicated the City Council would take a 10 minute recess.

Mr. Stephen Larson of Arent Fox LLP, addressed the City Council, indicating a complaint had not been served against his clients, and strongly advised the City Council to reconsider serving the complaint against the Perezes.

The City Council recessed at 9:50 a.m.

Mayor Spohn reconvened the meeting at 10:00 a.m. All members of the City Council were

present, except Mayor Pro Tem Parriott and Council Member Ferrero, who were absent.

CLOSED SESSION

Deputy City Clerk Dunlap announced there was a need for Closed Session as follows:

A CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION
Significant exposure to litigation pursuant to Government Code Section 54956.9(d)(2): Five Potential Cases.

B CONFERENCE WITH LEGAL COUNSEL – ANTICIPATED LITIGATION
Initiation of litigation pursuant to Government Code Section 54956.9(d)(4): One Case.

There were no public comments on the Closed Session items.

Mayor Spohn recessed the meeting into Closed Session at 10:01 a.m.

RECONVENE CITY COUNCIL MEETING

Mayor Spohn reconvened the meeting at 10:36 a.m. All members of the City Council were present, except for Mayor Pro Tem Parriott and Council Member Ferrero, who were absent.

With regard to Closed Session item A, Case One, the City Council took no reportable action.

With regard to Closed Session item A, Case Two, the City Council took no reportable action.

With regard to Closed Session item A, Case Three, the City Council took no reportable action.

With regard to Closed Session item A, Case Four, the City Council took no reportable action.

With regard to Closed Session item A, Case Five, the City Council took no reportable action.

City Attorney Vadon stated there was no discussion for Closed Session item B.

ADJOURNMENT

There being no further business, the City Council adjourned.

MARK D. RADECKI, MAYOR

CECELIA DUNLAP,
DEPUTY CITY CLERK

CITY COUNCIL

ITEM NO. 5.3

CITY OF INDUSTRY

Incorporated June 18, 1957

June 23, 2015

Mayor & City Council

Attached please find Proposition "A" Fund Trade Agreement with the City San Gabriel. Staff recommends that you approve this Agreement for Proposition "A" Local Return Fund exchange.

Sincerely,

Phyllis Tucker
City Treasurer

Encl.-1

P.O. Box 3366, City of Industry, California 91744-0366 • Administrative Offices: 15625 E. Stafford St. • (626) 333-2211 • Fax (626) 961-6795

PROPOSITION A ASSIGNMENT AGREEMENT

This Proposition A Assignment Agreement ("Agreement") is made and entered into this 2nd day of June, 2015, by the City of San Gabriel, California and the 25th day of June, 2015 by the City of Industry, California with respect to the following facts:

A. The City of Industry is participating in the construction of grade separation improvements at Fairway Drive and Fullerton Road through betterment agreements with the Alameda Corridor-East Construction Authority "ACE". The City desires additional Proposition A Local Return funds to assist in these two grade separation projects and any other Metro approved Proposition A expenditures.

B. The City of San Gabriel has an accumulation of uncommitted Proposition A Local Return funds which could be made available to the City of Industry to assist in providing the project described in Paragraph A of this Agreement. In exchange for the assignment by the City of Industry of the amount of its general funds indicated in Section 1 below, the City of San Gabriel is willing to assign uncommitted Proposition A Local Return funds to the City of Industry for the purpose identified in Paragraph A.

Now, therefore, in consideration of the mutual benefits to be derived by the parties and of the promises herein contained, it is mutually agreed as follows:

1. Exchange. The City of San Gabriel agrees to assign $570,000 of its Fiscal Year 2013-2014 and $630,000 of its Fiscal Year 2014-2015 Proposition A Local Return Funding authority to the City of Industry. In return, the City of Industry agrees to assign $900,000 in General Funds to the City of San Gabriel.

2. Consideration. The City of San Gabriel shall assign the agreed upon Proposition A Local Return funds to the City of Industry in one lump sum payment. The City of Industry shall assign the agreed upon general funds to the City of San Gabriel in one lump sum payment. The lump sum payment shall be due and payable no later than June 30, 2015.

3. Term. This Agreement is effective on the date above written and for such time as is necessary for both parties to complete their mutual obligations under this Agreement.

4. Termination. Termination of this Agreement may be made by either party before the date of approval of the project description covering the funds in question by the Metropolitan Transportation Authority, so long as written notice of intent to terminate is given to the other party at least five (5) days prior to the termination.

5. Notices. Notices shall be given pursuant to this Agreement by personal service on the party to be notified, or by written notice upon such party deposited in the custody of the United States Postal Service addressed as follows:

a. Thomas C. Marston, Finance Director
City of San Gabriel
425 South Mission Drive
San Gabriel, California 91776

b. Phyllis Tucker, City Treasurer
City of Industry
15625 E. Stafford St., Suite 100
City of Industry, CA 91744-0366
Fax: (626) 961-6795

6. Assurances

a. The City of Industry shall use the assigned Proposition A Local Return Funds only for the purpose of providing the project discussed in Paragraph A of the Agreement and within the time limits specified in Metropolitan Transportation Authority's Proposition A Local Return Program Guidelines.

IN WITNESS WHEREOF, the parties hereto have caused this Assignment Agreement to be executed by their respective officers, duly authorized, on the day and year written above.

CITY OF SAN GABRIEL

By Jason Pu
Jason Pu, Mayor

Attest:

Eleanor K. Andrews
Eleanor K. Andrews, City Clerk

Approved as to Form:

Robert L. Kress, City Attorney

CITY OF INDUSTRY

By
Tim Spohn, Mayor
Mark Radecki, Mayor

Cecelia Dunlap, Deputy City Clerk

Michele Vadon, City Attorney
James Casso,

CITY COUNCIL

ITEM NO. 5.4

James M. Casso
Principal
jcasso@cassosparks.com

C|S Casso&Sparks, LLP
ATTORNEYS AT LAW
Post Office Box 4131
West Covina, CA 91791
Telephone: 626.512.5470

June 19, 2015

The Honorable Mark Radecki & Members of the City Council
City of Industry
15625 E. Stafford Street, Suite 100
Industry, CA 91744

RE: Engagement of Legal Services – Casso & Sparks, LLP

Dear Mayor Radecki & Members of the City Council:

Thank you for retaining Casso & Sparks, LLP., to serve as the City Attorney of the City of Industry, and as General Counsel to the Successor Agency to the Industry Urban Development Agency, Civic Recreational Industrial Authority, Industry Development Authority, Industry Housing & Property Management Authority, Industry Public Facilities Authority and the Industry Public Utilities Commission (collectively "the City"), effective as of June 10, 2015. We appreciate the opportunity to serve as your legal counsel and look forward to working with you.

This letter sets forth our agreement concerning the legal services we will provide and our fee arrangements for those services. Please read this entire agreement before signing and returning it to us.

1. **Scope of Engagement.** We shall provide advice, consultation, and representation in all matters of municipal affairs. General legal services include attendance at regular and special meetings of the City Council, Successor Agency, Planning Commission, Civic Recreational Industrial Authority, Industry Development Authority, Industry Housing & Property Management Authority, Industry Public Facilities Authority and the Industry Public Utilities Commission; daily advice as requested by the City Council, City Manager, and authorized staff; preparation and/or review of resolutions, agreements, ordinances, and other documents; general matters related to municipal elections; general labor and employment advice; and preparation of legal opinions. We will also provide legal services for additional matters that you request of us, provided we agree to perform that additional work. A letter confirming such additional work shall bring such work within the scope of this agreement.

2. **Fees and Personnel.** As compensation for our services to the City, we propose a monthly retainer of Forty-Five Thousand Dollars ($45,000.00) for general legal services. For the month of June 2015, the rate will be prorated to Thirty Thousand Dollars ($30,000.00).

For additional services, other than general legal services, including preparation, prosecution and defense of litigation, including the representation of City officials and employees, as appropriate

and necessary; representation at administrative and regulatory hearings; advice regarding specialized employment issues; advice regarding investigations by outside agencies; personnel disciplinary matters; construction disputes; property acquisition or disposal; non-routine and/or specialized matters such as annexations; and other specialized legal services rendered by our attorneys, the City shall be billed $325.00 per hour.

As compensation for our services to the Successor Agency, Civic Recreational Industrial Authority, Industry Development Authority, Industry Housing & Property Management Authority, Industry Public Facilities Authority and the Industry Public Utilities Commission, our hourly rate is $350.00. Any property acquisition or disposal, including eminent domain proceedings, and specialized legal services, shall be billed at $375.00 per hour. Attendance at the meetings of each of these bodies is included in the retainer set forth above.

For those legal services for which the City can be reimbursed by third parties, either pursuant to City policy, by statutory authority or agreement, we will charge the City $475.00 per hour. In the event the rates are not reimbursed by a third party, the City shall be charged the applicable rate, provided herein, for the services rendered.

If paralegals are assigned to work on your matter, the then current hourly rates of those individuals, but not more than $150.00 per hour, will be utilized. This agreement retains the legal services of our law firm and not of a particular attorney. Hourly rates are subject to reasonable change, usually at the beginning of each year.

For services as Issuer's Counsel, we shall charge the issuing agency of the City .02% of the total amount of the bonds issued.

The above-mentioned rates shall be adjusted at the beginning of each fiscal year, commencing July 1, 2016, pursuant to the Consumer Price Index published by the U.S. Department of Labor, Bureau of Labor Statistics as of December of the prior calendar year for the Los Angeles-Long Beach-Anaheim Metropolitan Statistical Area average, all items, not seasonally adjusted, rounded up to the nearest five dollars ($5.00) per hour, however, such adjustment shall be no less than 2.5% per year.

3. **Disbursements and Expenses**. In addition to hourly fees, we may incur out-of-pocket expenses related to your representation. Our Billing Information, which sets forth the details of our disbursement and expense policy, is attached as Attachment 1.

4. **Billing and Payment Responsibilities**. We will send monthly statements which are due within 30 days of receipt. If you have any questions about an invoice, please promptly telephone or write to me so that we may discuss these matters. Our Fees (Section 2) and Billing Information sets forth the details of our fee and billing policy.

5. **Termination of Services**. You may terminate our services at any time by written notice. After receiving such notice, we will cease providing services. We will cooperate with you in the orderly transfer of all related files and records to your new counsel.

We may terminate our services at any time with your consent or for good cause. Good cause exists if (a) any statement is not paid within 60 days of its date; (b) you fail to meet any other obligation under this agreement and continue in that failure for 15 days after we send written notice to you; (c) you have misrepresented or failed to disclose material facts to us, refused to cooperate with us, refused to follow our advice on a material matter, or otherwise made our representation unreasonably difficult; or (d) any other circumstance exists in which ethical rules of the legal profession mandate or permit termination, including situations where a conflict of interest arises. If we terminate our services, you agree to execute a substitution of attorneys promptly and otherwise cooperate in effecting that termination.

Termination of our services, whether by you or by us, will not relieve the obligation to pay for services rendered and costs incurred before our services formally ceased.

6. **Insurance.** Pursuant to California Business & Professions Code Section 6148(a), we maintain professional errors and omissions insurance in an amount not less than $1,000,000 per occurrence; and $2,000,000 aggregate, which insurance may not be canceled or reduced in required limits of liability unless at least ten days advance written notice be given to you.

7. **No Guarantee of Outcome.** Any comments made by us about the potential outcome of this matter are expressions of opinion only and are not guarantees or promises about any outcome or results.

8. **Governing Law; Venue.** This agreement shall be governed by and construed in accordance with the laws of the State of California without regard to principles of conflicts of laws. Any action to enforce or interpret this Agreement shall be filed in the Superior Court of Los Angeles County, California or in the Federal District Court for the Central District of California.

9. **Entire Agreement; Full Understanding; Modifications in Writing.** This letter contains our entire agreement about our representation. Any modifications or additions to this letter agreement must be made in writing.

10. **Joint Representation.** Our firm may engage certain legal specialists under an of counsel agreement. Because these individuals are deemed independent contractors under the applicable provisions of the tax laws and not employees of the firm, it is necessary that you consent to dual representation by the firm and the specialist in the event the matter which you have engaged us to handle requires the use of that specialist. This arrangement has no effect whatsoever on the cost of your legal services, rather it is an ethical requirement that we disclose this fact and that you consent. You are consenting by signing this letter.

11. **Conflicts.** Our firm represents many public agencies in California, including numerous cities, redevelopment agencies, special districts, counties and other public entities, and we are accepting new engagements all the time. It is virtually inevitable that we will work on projects from other clients having different governmental or political objectives, beliefs or views from the City

In view of the fact that the City is a public entity this letter confirms that the services which we are rendering to you are limited in scope and for the benefit of the City, only. Casso & Sparks performs a variety of professional services for its clients and it is possible that we will represent public agency

clients which are adverse to you on other matters. To avoid potential problems, you agree that you expressly waive any actual or potential conflicts that might arise from such representation, that you will not attempt to disqualify Casso & Sparks on such matters, and that our firm is free to represent its clients on such matters.

By signing this letter and returning it to us, you acknowledge that we have discussed these matters and you confirm that the City does not object to our representation of clients on matters where their legal, governmental or political objectives and/or positions may be different from or adverse to those of the City, and that the City waives any conflict of interests with respect to our representation of such clients with differing legal, governmental or political interests. You further confirm that the City will not assert any conflict of interest concerning such representation or attempt to disqualify this firm from representing such clients notwithstanding such adversity. While you would certainly be free to terminate our relationship, you agree that this firm nonetheless would be free to represent such clients even on those matters which you consider adverse, and that you waive any conflict of interest in connection therewith.

Needless to say, these acknowledgments do not permit our firm to represent another client in opposing the specific project for which you engage us without your specific written consent.

You may wish, and we encourage you, to consult legal counsel regarding the effect of this conflict waiver.

We would request that you review this letter carefully and, if it is consistent with your understanding of our respective responsibilities, please so indicate by returning a signed copy of this letter to me at your earliest convenience. Enclosed is an additional copy of this letter which you should retain for your records. Again, we thank you for allowing us the opportunity to serve as your lawyers.

Very truly yours,

James M. Casso

James M. Casso

Enclosures: Attachment 1

cc: Kevin Radecki, City Manager

The City agrees to the terms and conditions for the legal services of Casso & Sparks as set forth herein. The individual executing this agreement hereby represents and warrants his authority to do so, and that such authority has been duly and validly conferred

CITY OF INDUSTRY

By: _____
Mark Radecki, Mayor

ATTEST:

By: _____
Cecilia Dunlap, Deputy City Clerk

ATTACHMENT 1

CASSO & SPARKS

STATEMENT OF FEE AND BILLING INFORMATION

The following is a general description of our fee and billing policies. These general policies may be modified by the specific engagement letter or agreement to which this summary is attached.

Billing and Payment Procedures. Unless other arrangements are made at the time of the engagement, invoices will be sent monthly. Invoices for outside services exceeding $100.00 may be billed separately. Occasionally, however, we may defer billing for a given month or months if the accrued fees and costs do not warrant current billing or if other circumstances would make it appropriate to defer billing.

Our invoices contain a brief narrative description of the work performed; the initials of the attorney who performed the work will appear on the statement. The invoice will include a line item reflecting in-house administrative costs. We do not bill for costs such as duplication, facsimile charges, delivery charges and postage expenses; instead, there will be an overhead charge of 5% of each invoice to cover these costs on average.

The firm will be reimbursed for all outside services incurred in the course of providing legal services to our client(s). Outside services will include, but are not limited to, all third-party expenses, delivery charges, travel expenses, outside research services, filing fees, expert witness and expert consultant fees.

For any unresolved matters, the Bar Association has an arbitration mechanism that can be used to resolve such matters.

Late Payments. Statements for services are payable upon presentation and, in all events, within thirty (30) days after receipt. Occasionally a client has difficulty in making timely payments. To avoid burdening those clients who pay their statements promptly with the added costs we incur as a result of late payments, a late charge will be assessed on statements not paid within thirty (30) days. The maximum monthly late payment charge will be 1.5% per month. In the unlikely event we are required to institute legal proceedings to collect fees and costs, the prevailing party will be entitled to reasonable attorneys' fees and other costs of collection.

CITY COUNCIL

ITEM NO. 6.1

CNC
ENGINEERING

Consulting Civil Engineers · Surveyors

MEMORANDUM

TO:	John D. Ballas, City Engineer	**DATE:**	June 18, 2015
FROM:	James Cramsie Joshua Nelson	**JOB NO.:**	JN-7446
SUBJECT:	Submission of the Upper San Gabriel River Enhanced Watershed Management Program Work Plan to the Los Angeles Regional Water Quality Control Board		

On December 28, 2012 the new Municipal Stormwater Permit (MS4 Permit) became effective. On June 27, 2013, the City of Industry submitted a letter to the Regional Board stating the City's intent to collaborate and form a watershed group with the Los Angeles County Flood Control District, the County of Los Angeles, and the Cities of Baldwin Park, Covina, Glendora, and La Puente (Group) in the development of an Enhanced Watershed Management Program Plan (EWMP) in order comply with the MS4 Permit. The documents are due to the Regional Board June 28, 2015.

The EWMP provides for Best Management Practices (BMPs) that are expected to be sufficient to meet receiving water and effluent limitations (water quality standards) set forth in the MS4 Permit, which requires EWMP Group Members to identify institutional and structural BMPs to achieve the objectives of the EWMP.

The EWMP presents a 'recipe for compliance' based on a Reasonable Assurance Analysis (RAA) which uses available data to determine the volume of stormwater runoff required to be in treated to be compliance with the MS4 Permit. The outcome of the RAA was the need for the EWMP group to capture 1,120 acre-feet of runoff. The RAA further breaks down this volume per jurisdiction and type of BMP's needed, along with the pace of implementation to achieve the interim and final water quality milestones.

A conceptual planning level cost estimate is included for implementation of the EWMP Plan. The cost for the EWMP group for a 20-year implementation, including operation and maintenance is approximately $2 billion. The City of Industry portion is $451 million, over the same 20-year period. A financial strategy is included in the EWMP Plan, which identifies funding sources, such as grants, fees, charges and legislative policy.

This MS4 Permit is the first permit of its kind to require a quantitative analysis of the stormwater runoff to achieve water quality standards. Each of the permittees are faced with similar funding hurdles and challenges.

In addition to the institutional and structural BMP's outlined in the EWMP, there are also specific 'regional' BMP projects that when installed will achieve the receiving water and effluent limitations for a larger drainage area. The EWMP was prepared to provide, at a minimum, one of these 'regional' type projects per jurisdiction involved in the EWMP. The project that has been identified for the City of Industry to install is a subsurface infiltration BMP at San Angelo Park and a vacant lot within the city near Temple Avenue and Valley Boulevard.

A conceptual level cost estimate was prepared for the 'regional' projects identified in the EWMP. The conceptual cost developed for the San Angelo Park project is estimated to be $7,201,000.00. A more detailed breakdown on the estimated cost can be found in Appendix B-1 of the EWMP.

Because the draft EWMP is, as noted above, essentially a feasibility and planning document and does not commit the City to any particular project, the City's support of the draft EWMP is exempt from the California Environmental Quality Act (CEQA) under Section 15262 of the State CEQA Guidelines. However, in anticipation of future implementation of the activities set forth in the EWMP, LACFCD decided to prepare a Program Environmental Impact Report (PEIR) on behalf of all the EWMP agencies to provide a countywide approach that evaluates the proposed EWMP plans with a comprehensive perspective. The PEIR will help simplify later environmental review of the activities proposed in the EWMP and will avoid the preparation of multiple EIRs. For example, if Industry proceeds with the actual implementation of any of the activities analyzed in the PEIR, and the City determines that the activity is within the scope of the PEIR, and that no new effects will result, and no new mitigation measures are required, the City may approve the activity as being within the scope of the PEIR, and no additional environmental documentation would be necessary. If on the other hand, the proposed activity by the City is significantly different from what was analyzed in the PEIR or there is new information that was not known at the time the PEIR was prepared, the City may have to undertake additional environmental review at such time, but the PEIR will certainly help expedite and streamline the review process.

It is hereby recommended that the City Council approve the submission of the Enhanced Watershed Management Plan for the Upper San Gabriel River Enhanced Watershed Management Program Group and authorize the City Engineer to sign a Letter of Authorization for the County to submit the plan to the Los Angeles Regional Water Quality Control Board on the City's behalf.

By: James Cramsie, PE Signature: James Cramsie /cf.
Project Engineer

By: Joshua Nelson, PE Signature:
Sr. Project Manager

JN/JC:jv

CNC ENGINEERING

CITY OF INDUSTRY
Incorporated June 18, 1957

June 11, 2015

Mr. Gary Hildebrand
Assistant Deputy Director
County of Los Angeles Department of Public Works
Watershed Management Division, 11th Floor
900 South Fremont Avenue
Alhambra, CA 91803-1331

Dear Mr. Hildebrand,

AUTHORIZATION TO SUBMIT – CITY OF INDUSTRY
UPPER SAN GABRIEL RIVER WATERSHED
ENHANCED WATERSHED MANAGEMENT PROGRAM PLAN

As required by Order No. R4-2012-0175 (Municipal Separate Storm Sewer System Permit), the City of Industry has been participating in the Upper San Gabriel River Enhanced Watershed Management Program Group to develop an Enhanced Watershed Management Program (EWMP) Plan. This Plan has been developed in partnership with the following agencies: County of Los Angeles as the coordinating agency, the Los Angeles County Flood Control District, and cities of Baldwin Park, Covina, Glendora, Industry, and La Puente.

This letter serves to authorize the County of Los Angeles to submit the EWMP Plan to the California Regional Water Quality Control Board – Los Angeles Region on behalf of the City of Industry

If you have any questions, please contact John D. Ballas at (626) 333-2211.

Sincerely,

John D. Ballas
City Engineer

c: Baldwin Park
Covina
Glendora
Industry
La Puente

June 2015

LOS ANGELES REGIONAL WATER QUALITY CONTROL BOARD

DRAFT ENHANCED WATERSHED MANAGEMENT PROGRAM PLAN

Prepared for:

Upper San Gabriel River Enhanced Watershed Management Program Group
(County of Los Angeles, Los Angeles County Flood Control District, Cities of Baldwin Park, Covina, Glendora, Industry, and La Puente)

DRAFT
ENHANCED WATERSHED MANAGEMENT PROGRAM PLAN

June 2015

Prepared For:

Upper San Gabriel River Enhanced Watershed Management Program Group

County of Los Angeles
Los Angeles County Flood Control District
City of Baldwin Park
City of Covina
City of Glendora
City of Industry
City of La Puente

Prepared By:

MWH

300 N. Lake Avenue, Suite 400
Pasadena, CA 91101

In Conjunction with Larry Walker Associates, Paradigm Environmental, and Tetra Tech

Executive Summary

The Upper San Gabriel River Enhanced Watershed Management Program Group (EWMP Group) is comprised of the County of Los Angeles (County), Los Angeles County Flood Control District (LACFCD), and the cities of Baldwin Park, Covina, Glendora, Industry, and La Puente (Group Members). The USGR EWMP Group was formed in response to provisions of National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit Order No. R4-2012-0175 (Permit). By electing the optional compliance pathway in the MS4 Permit, the EWMP Group has leveraged this EWMP to facilitate a robust, comprehensive approach to stormwater planning for the San Gabriel River Watershed.

The San Gabriel River Watershed is a unique area with a wide diversity of land uses, ranging from heavily urbanized in the lower, coastal portion to nearly pristine, open spaces in the upper, higher elevation portion of the watershed in the San Gabriel Mountains. Controlling pollutants in stormwater is a major challenge for the Group Members, but regulations in the watershed provide clear compliance timelines to address water quality issues. In particular, the San Gabriel River Watershed is subject to a Total Maximum Daily Load (TMDL) for metals that requires compliance by 2026 and is listed as impaired for many pollutants including bacteria. According to the Basin Plan for the Coastal Watersheds of Los Angeles and Ventura Counties (Basin Plan), metal levels above the established water quality standards can negatively impact aquatic life in the rivers, creeks, and estuary. Likewise, bacteria levels above the established standards can pose health risks to people that recreate in the watershed. The EWMP addresses these types of water quality impacts and presents a clear timeline for implementation.

IDENTIFICATION OF WATER QUALITY PRIORITIES

The water quality prioritization process identifies and prioritizes water quality impairments in the watershed based on review of available monitoring data. Based on permit requirements, the following categories of water body-pollutant combinations (WBPCs) are identified:

- **Category 1** are those subject to an established TMDL, as follows: metals (lead, copper, zinc, selenium, and mercury), nutrients (total nitrogen and total phosphorus) and legacy pollutants (polychlorinated biphenyl [PCB], chlordane, dieldrin, and dichlorodiphenyltrichloroethane [DDT]).
- **Category 2** are those on the State Water Resources Control Board 2010 Clean Water Act Section 303(d) list or those constituents that have sufficient exceedances to be listed, including metals (lead, zinc, selenium, nickel, cadmium, mercury and copper), the legacy pollutant polycyclic aromatic hydrocarbon (PAH), bacteria, cyanide, ammonia, diazinon, dioxin, methylene blue active substances (MBAS), sulfate, chloride, total dissolved solids (TDS), cyanide, toxicity and alpha-endosulfan.
- **Category 3** for those with observed exceedances, but too infrequent to be listed, and conditions that are not pollutants, including dissolved oxygen (DO) and pH.

WATERSHED CONTROL MEASURES

The EWMP is designed to address all the identified Water Quality Priorities through a network of stormwater control measures. The following categories of control measures make up the EWMP:

- **Low impact development:** control measures implemented on parcels to retain stormwater runoff during rain events. For the EWMP, the Group Members' Low Impact Development (LID)

ordinances are incorporated. In addition, residential LID programs, such as a rain barrel incentive program or other methods to reduce runoff from residential properties are incorporated. Group Members will also implement LID retrofits on public parcels.

- **Green streets:** the right-of-way along streets offers a significant opportunity to implement control measures on public land. The EWMP includes extensive green streets to retain runoff from roads and alleys. Green streets will potentially offer many other benefits to communities in terms of aesthetics, safety and increased property values.
- **Regional projects:** these control measures are potentially the most effective because they are able to capture runoff from large upstream areas. The EWMP emphasizes implementation of regional projects, particularly those that are able to retain the 85th percentile, 24-hour storm event. The USGR EWMP highlights 10 multi-benefit regional projects that retain the stormwater volume from the 85th percentile, 24-hour storm for the drainage areas tributary to the multi-benefit regional projects. The selection of these sites was based on detailed spatial analysis of soil type, topography, land ownership, land use, hydrologic delineation, and environmental constraints. The EWMP includes the volume of stormwater to be captured by regional projects on private land to assure required pollutant reductions are achieved. The Watershed Management Modeling System (WMMS) was used to prioritize control measures based on water quality benefits and cost effectiveness.
- **Minimum control measures (MCMs):** the MS4 Permit required Group Members to implement MCMs and they will continue to be implemented over the course of EWMP implementation. Enhanced MCMs are incorporated for the Covina, Glendora, Industry, and the County for 10% reduction, additional measures, such as enhanced street sweeping and installation of catch basins.

REASONABLE ASSURANCE ANALYSIS

A key element of the EWMP is the Reasonable Assurance Analysis (RAA), which is a quantitative demonstration through computer modeling that control measures will be effective in meeting water quality standards. The RAA describes baseline critical conditions and required pollutant reductions, representation of control measures, and the approach for selecting control measures. Additionally, the RAA was also applied to prioritize potential control measures to be implemented by the EWMP.

The WMMS was used to conduct the RAA for the USGR EWMP. WMMS is a publicly available modeling system that incorporates three tools: (1) the watershed model for prediction of long-term hydrology and pollutant loading, (2) a best management practice (BMP) model, and (3) a BMP optimization tool to support regional, cost-effective planning efforts. The WMMS was used to evaluate millions of potential scenarios of control measures for the EWMP, and select the most cost-effective scenarios while also incorporating input from the EWMP Group regarding the needs and opportunities within the communities.

The RAA Guidelines allow the EWMP to be developed with consideration of a "limiting pollutant", or the pollutant that drives BMP capacity (i.e., control measures that address the limiting pollutant will also address other pollutants). The RAA identifies the "limiting pollutants" for this watershed as zinc and *E. coli*, and provides an assurance that addressing these pollutants will address the other Water Quality Priorities in the watershed.

EWMP IMPLEMENTATION PLAN

The outcome of the RAA presents a "recipe for compliance" for individual jurisdictions of the EWMP Group. The recipe consists of volumes of stormwater to be captured by LID, green streets, and regional

projects and has a total equivalent capacity of nearly four Rose Bowl stadiums or 1,120 acre-feet. The recipe also describes the pace of implementation to achieve interim and final milestones.

ASSESSMENT AND ADAPTIVE MANAGEMENT FRAMEWORK

The EWMP Group has developed a Coordinated Integrated Monitoring Program (CIMP) separately from the EWMP to collect water quality data and measure the effectiveness of the EWMP. This section describes the process for evaluating the water quality data and "lessons learned" during implementation.

EWMP IMPLEMENTATION COSTS AND FINANAICAL STRATEGY

Based the RAA result, the total cost for the EWMP Group for 20-year implementation including operation and maintenance is approximately $2 billion. The costs provided here are considered to be planning level only (order of magnitude), and can be refined with actual BMP implementation costs. Funds are not currently available nor have they been identified for the EWMP Implementation Plan. The EWMP identifies potential funding sources and alternatives that could be further pursued by each Group Member, including grants, fees, charges, and legislative policy.

STAKEHOLDER PARTICIPATION

The EWMP Group is strongly committed to providing the opportunity for meaningful stakeholder input throughout the development of the EWMP. The EWMP Group conducted public stakeholder meetings on May 5, 2014 and March 9, 2015 to receive feedback from stakeholders on the overall strategy to improving water quality, proposed control measures and regional projects, and potential partnership opportunities. Community input will continue to be solicited during the course of the EWMP implementation.

Table of Contents

LIST OF APPENDICES

LIST OF TABLES

LIST OF FIGURES

LIST OF ACRONYMS AND ABBREVATIONS

303(d) list	California State Water Resources Control Board 2010 Clean Water Act Section 303(d) list
Basin Plan	Water Quality Control Plan for the Los Angeles Region
BMP	Best Management Practice
CEDEN	California Environmental Data Exchange Network
CEQA	California Environmental Quality Act
CIMP	Coordinated Integrated Monitoring Program
County	County of Los Angeles (as a Municipality and MS4 Permittee)
CTR	California Toxics Rule
CWH	Council for Watershed Health
DDT	Dichloro-diphenyl-trichloroethane
DO	Dissolved Oxygen
EV	Exceedance Volume
EWMP	Enhanced Watershed Management Program
GIS	Geographic Information System
Group	Upper San Gabriel River EWMP Group
Group Members	County of Los Angeles, Los Angeles County Flood Control District, and the Cities of Baldwin Park, Covina, Glendora, Industry, and La Puente
HFS	High Flow Suspension
HSPF	Hydrologic Simulation Program - FORTRAN
IC/ID	Illicit Connection/Illicit Discharge
LACDPW	Los Angeles County Department of Public Works
LACFCD	Los Angeles County Flood Control District
LACSD	Los Angeles County Sanitation District
Legacy Toxics	Pollutants from historic contaminants not currently used, such as PCBs and OC pesticides
LID	Low Impact Development
Limiting Pollutant	Pollutant that drives BMP capacity (i.e., control measures that address the limiting pollutant will also address other pollutants)
LSPC	Loading Simulation Program C++
LTA	Long-Term Assessment
MBAS	Methylene Blue Active Substances
MCM	Minimum Control Measure
MPN	Most Probable Number
MS4	Municipal Separate Storm Sewer System
NIMS	Nonlinearity-Interval Mapping Scheme
NOI	Notice of Intent
Nonpoint Source	Pollution that is not released through a specific geographic location but rather originates from multiple sources over a relatively large area. Nonpoint sources can related either to land or water use including failing septic tanks, animal-keeping practices, forestry practices, and urban and rural runoff.
NPDES	National Pollutant Discharge Elimination System
OC	Organochlorine
O&M	Operation & maintenance
PAH	Polycyclic Aromatic Hydrocarbon
PCB	Polychlorinated Biphenyl
PEIR	Programmatic Environmental Impact Report
Permit	Permit No. R4-2012-0175
Point Source	Pollutant loads discharged at a specific location from pipes, outfalls, and

	conveyance channels. Point sources can also include pollutant loads contributed by tributaries to the main receiving water stream or river.
RAA	Reasonable Assurance Analysis
Regional Board	Los Angeles Regional Water Quality Control Board
RWL	Receiving Water Limit
RWQCB	Regional Water Quality Control Board
SGR	San Gabriel River
SUSTAIN	System for Urban Stormwater Treatment and Analysis Integration
SWPPP	Stormwater Pollution Prevention Plan
TAC	Technical Advisory Committee
TCDD	2,3,7,8-Tetrachlorodibenzo-p-dioxin (Dioxin)
TDS	Total Dissolved Solids
TMDL	Total Maximum Daily Load
USEPA	United States Environmental Protection Agency
USGR	Upper San Gabriel River
USGS	United States Geological Survey
WBPC	Water Body-Pollutant Combination
WLA	Waste Load Allocation
WMMS	Watershed Management Modeling System
WMP	Watershed Management Program
WQBEL	Water Quality Based Effluent Limitation
WQO	Water Quality Objectives
WRP	Water Reclamation Plant

1 Introduction

The Upper San Gabriel River (USGR) Enhanced Watershed Management Program (EWMP) has been developed by the Upper San Gabriel River Enhanced Watershed Management Program Group (Group), which comprises the County of Los Angeles, Los Angeles County Flood Control District (LACFCD), and the Cities of Baldwin Park, Covina, Glendora, Industry, and La Puente. The EWMP fulfills the requirements of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit Order No. R4-2012-0175 (Permit), which was adopted by the Los Angeles Regional Water Quality Control Board (RWQCB or Regional Board) and became effective on December 28, 2012.

The EWMP contains customized strategies, watershed control measures, and best management practices (BMPs), including multi-benefit regional projects that retain and infiltrate stormwater runoff from the 85th-percentile, 24-hour storm event for the drainage area tributary to the project.

As required on page 39 of the Standard Provisions of the Permit, each permittee must maintain the legal authority to implement the provisions of the Permit consistent to the Annual Report submittals. **Appendix A-1** includes copies of the legal authority certifications.

Separately from the EWMP, the Group has developed a Coordinated Integrated Monitoring Program (CIMP) to progressively monitor water quality, determine effectiveness of the EWMP activities, and guide the Group's decisions for future adaptive management of the EWMP.

This document is presented as follows:

- **Section 1, Introduction** – Discusses the regulatory framework associated with the development of the EWMP, including permit requirements. The section also reviews the San Gabriel River Watershed, with emphasis on the EWMP area, the EWMP Group's jurisdictional boundaries, and geologic and environmental characteristics of the area.
- **Section 2, Identification of Water Quality Priorities** – Identifies water quality priorities for the water body pollutant combinations (WBPCs) in the Upper San Gabriel River EWMP area, and discusses the EWMP goals to achieving water quality standards.
- **Section 3, Watershed Control Measures** – Describes the different watershed control measures (also referred to as BMPs) that could be implemented individually or on a watershed scale to create an efficient program to focus resources on water quality priorities. This section provides an overview of the various types of BMPs considered, including multi-benefit, regional projects that capture and infiltrate the 85th percentile, 24-hour storm volume.
- **Section 4, Reasonable Assurance Analysis** – Describes key elements of the RAA, which is essentially a quantitative demonstration that control measures will be effective to meet Permit requirements. This section describes the modeling system used for the RAA, baseline critical conditions and required pollutant reductions, representation of control measures in the RAA, and the approach for selecting control measures in the EWMP.
- **Section 5, EWMP Implementation Plan and Compliance Schedule** – Presents the outcome of the RAA – the EWMP Implementation Plan, which is the "recipe for compliance" for each jurisdiction to address the water quality priorities and comply with the MS4 Permit. This section describes the control measures or BMPs to be implemented for each jurisdiction and each watershed/assessment area, and also the pace of implementation to achieve applicable milestones.

- **Section 6, Assessment and Adaptive Management Framework** – Describes the adaptive management process that will be used to gather information over time and modify the EWMP to reflect the most current understanding of the watershed.
- **Section 7, EWMP Implementation Costs and Financial Strategy** – Identifies the estimated order-of-magnitude cost of the activities, the amount of funding currently available to meet the needs described in the EWMP, and potential funding sources that may be available to fund the program.
- **Section 8, References** – Lists the references cited in this EWMP.

1.1 BACKGROUND REGULATORY FRAMEWORK

1.1.1 Permit Requirements

The Permit was adopted November 8, 2012, by the Regional Board and became effective December 28, 2012. The purpose of the Permit is to ensure the MS4s in Los Angeles County are not causing or contributing to exceedances of water quality objectives (WQOs) set to protect the beneficial uses in the receiving waters in the Los Angeles region.

On June 26, 2013, the EWMP Group submitted a notice of intent (NOI) to develop an EWMP to fulfill the requirements of the NPDES MS4 Permit Order. Subsequently, the draft EWMP Work Plan and draft CIMP were submitted to the Regional Board on June 26, 2014.

To establish consistency with Part VI.C.5-C.8 of the Permit, this EWMP:

(i) Prioritizes water quality issues resulting from stormwater and non-stormwater discharges from the MS4 to receiving waters within the EWMP area;

(ii) Identifies and implements strategies, control measures, and BMPs to achieve the outcomes specified in Part VI.C.1.d of the Permit;

(iii) Modifies strategies, control measures, and BMPs, as necessary, based on analysis of monitoring data to ensure that applicable water quality-based effluent limitations (WQBELs) and receiving water limitations (RWLs) and other milestones set forth in this EWMP are achieved in the required timeframes; and

(iv) Provides appropriate opportunity for meaningful stakeholder input.

The EWMP identifies multi-benefit regional projects that retain (i) all non-stormwater runoff and (ii) all stormwater runoff from the 85th percentile, 24-hour storm event for the drainage areas tributary to the projects.

1.2 UPPER SAN GABRIEL RIVER EWMP AREA

1.2.1 San Gabriel River Watershed

The San Gabriel River Watershed encompasses approximately 680 square miles of eastern Los Angeles County, northwest Orange County, and southwest San Bernardino County. The San Gabriel River itself has a main channel length of approximately 58 miles. Its headwaters originate in the San Gabriel Mountains with the East, West, and North Forks. The river flows through residential, commercial and industrial areas before reaching the Pacific Ocean in Long Beach. The main tributaries of the river are

Walnut Creek Wash, San Jose Creek, and Coyote Creek. The EWMP area is mainly located in the upper portion of the San Gabriel River Watershed. Water bodies within the EWMP area include:

- Thompsons Wash
- Little Dalton Wash
- Big Dalton Wash
- San Dimas Wash
- Walnut Creek Wash
- Puente Creek
- San Jose Creek Reaches 1 and 2
- San Gabriel River Reaches 2, 3, 4, and 5
- North Fork of Coyote Creek

Water bodies downstream of the EWMP area include:

- San Gabriel River Reach 1
- Coyote Creek
- San Gabriel River Estuary

Additionally, there are unnamed tributaries draining unincorporated County areas that discharge into Coyote Creek and Puddingstone Reservoir.

1.2.2 EWMP Group Jurisdictional Boundaries

The EWMP Group consists of five cities, unincorporated areas of the County, and the LACFCD. Water bodies and geographic boundaries of the USGR EWMP Group are shown on **Figure 1-1** along with the named water bodies.

The LACFCD owns and operates the majority of flood control facilities within the San Gabriel River Watershed, while a small portion are owned and operated by the United States Army Corps of Engineers. The EWMP Group includes the LACFCD service areas as depicted in **Appendix A-3.**

Table 1-1 shows the land area distribution by each jurisdiction for the EWMP Group not including the Angeles National Forest. Size and land uses for the Group Members' jurisdictional boundaries are provided in **Table 1-2**.

Figure 1-1
Water Bodies and Geographic Boundaries of the USGR EWMP Group

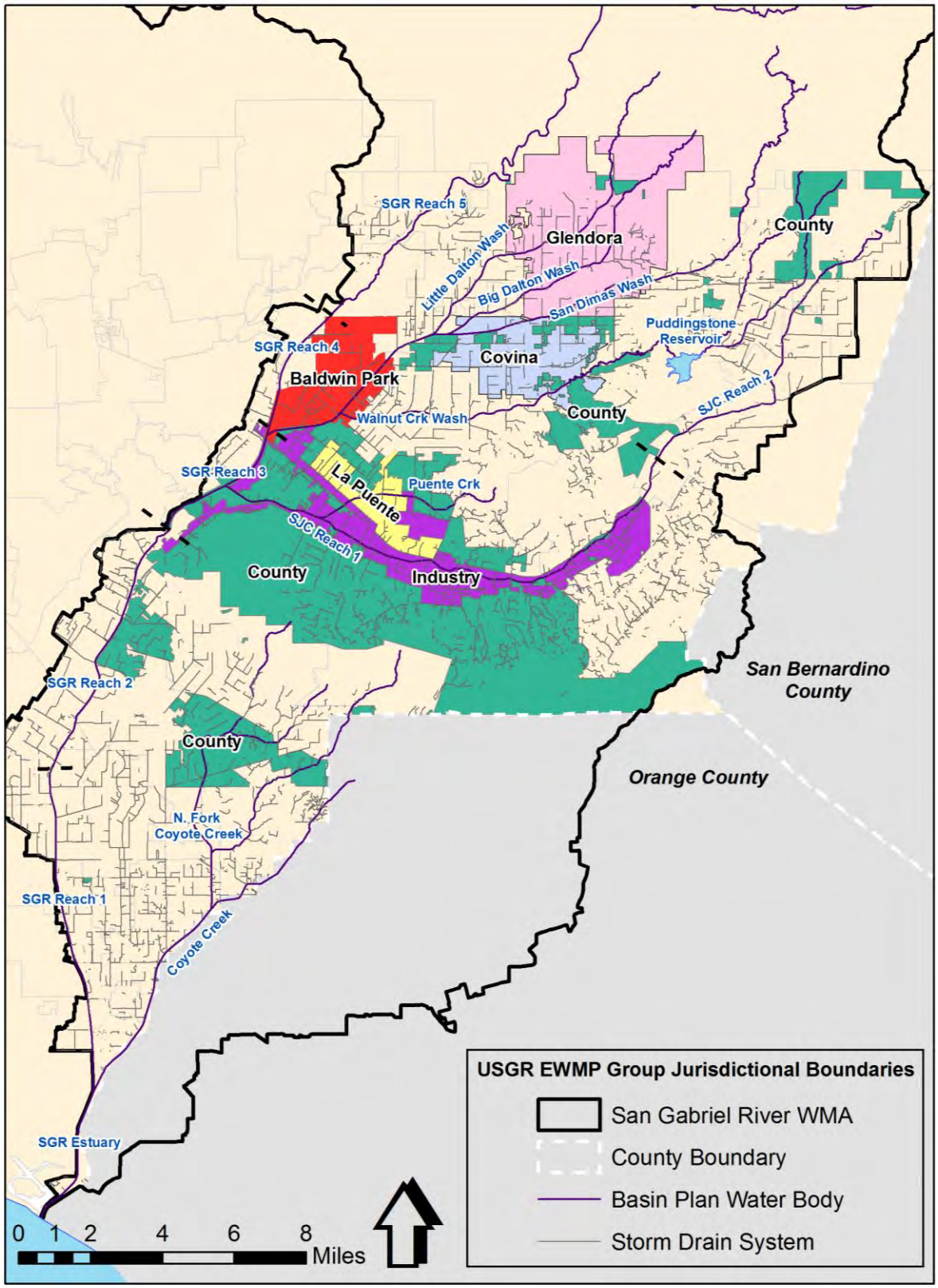


Table 1-1
EWMP Group Land Area by Jurisdiction

Jurisdiction	Land Area (acres)	Percent (%)
County of Los Angeles	40,812	59.4
City of Baldwin Park	4,335	6.3
City of Covina	4,481	6.5
City of Glendora	9,307	13.5
City of Industry	7,647	11.1
City of La Puente	2,207	3.2
LACFCD	N/A	N/A
Total Area of EWMP Group	**68,789**	**100**

Table 1-2
List of Group Members with Land Use Summaries within Jurisdictional Boundaries

Group Member	Area (acres)	Percent of Land Area[(1)]			
		Res	Com/Ind	Ag/Nur	Open
Baldwin Park	4,335	66	31	2	1
Covina	4,481	65	32	<1	3
Glendora	9,307	48	13	1	38
Industry	7,647	<1	75	3	22
La Puente	2,207	71	24	<1	5
County of Los Angeles	40,812	50	14	1	35
LACFCD	N/A	N/A	N/A	N/A	N/A
All Members	68,789	47	23	1	29

1 Land use classifications include: residential (res), commercial and industrial (com/ind), agriculture and nursery (ag/nur), and open space (open). Totals correspond to the percent of the total area considered in the EWMP.

1.2.3 San Gabriel River Valley Geological Characteristics

The geology of the San Gabriel River Watershed can be subdivided into three basic types of geologic materials:

- Bedrock materials in the steep upper portion of the watershed in the Angeles National Forest in the San Gabriel Mountains
- Sedimentary materials comprising valley fill emanating from alluvial fans from the San Gabriel Mountains
- Marine sedimentary deposits which comprise the San Jose Hills and Puente Hills

The bedrock materials of the San Gabriel Mountains consist of igneous and metamorphic rocks, which were uplifted by faulting to form steep ridges and valleys in the upper portion of the watershed. These rocks are generally impermeable and transmit only small quantities of water through fractures.

The sedimentary materials which comprise the flatter areas of the valley are comprised of alluvial fan and fluvial deposits. These deposits tend to be very permeable, especially near the northern portions of the valley adjacent to the San Gabriel Mountains. The valley fill materials consist of interbedded silt, sand and gravels. The numerous gravel pits in the valley are located in these deposits. The deposits represent the most promising areas for regional infiltration facilities. During dry weather, surface water from the San Gabriel Mountains infiltrates rapidly into these deposits, providing a hydraulic separation of the lower portions of the watershed. A goal of the monitoring in the Coordinated Integrated Monitoring Program (CIMP) will be to establish when the EWMP area is hydraulically connected to the downstream water bodies.

The sedimentary deposits which form the upland areas of the San Jose Hills and Puente Hills consist of marine sandstone, siltstone, and shale. Because these deposits are fine-grained and consolidated, they have relatively low permeability. Aside from the disadvantages of higher elevation and relatively steep slopes, they represent poor areas for infiltration because of their expected low permeability.

1.2.4 Groundwater Basins

The alluvial and fluvial valley-fill deposits in the flatter areas of the watershed form two groundwater basins that underlie the EWMP area. Most of the area of Covina, Baldwin Park, and Glendora overlie the Main San Gabriel Groundwater Basin. This groundwater basin is an important source of water supply, with a typical production of 250,000 acre-feet of water per year. The basin is adjudicated and actively managed by the Main San Gabriel Watermaster. Groundwater flow is generally from east to west across the basin, then southward into the Central Basin through the Montebello Forebay. There are numerous existing stormwater capture facilities that are operated by LACFCD, the largest being along the San Gabriel River and Santa Fe Dam. The groundwater contains a number of contaminant plumes stemming from past agricultural and industrial practices, including nitrate, volatile organic compounds, and perchlorate.

The Puente Basin is a smaller groundwater basin roughly co-located with the City of Industry south of the San Jose Hills. Groundwater flow is generally westward, flowing into the Main San Gabriel Basin near Highway 605. The Puente Basin is also adjudicated and managed by a three-person watermaster committee. The average production from this basin is approximately 1,000 acre-feet per year. Due to the poor quality of the groundwater, it is used for non-potable purposes including blending with reclaimed water, construction water, and irrigation.

1.2.5 Rainfall Conditions

The semi-arid climate of the Los Angeles region creates distinct hydrologic differences between the dry and wet seasons. The amount of rainfall is a key variable for water quality conditions and pollutant loadings from MS4 areas. To support EWMP development, a rainfall analysis was performed by aggregating data from available rain gages across the San Gabriel River Watershed. For comparison, other watersheds were also analyzed. Two key metrics were evaluated: (1) total annual rainfall, and (2) average rainfall per wet day (with wet days defined as days with rainfall totals greater than 0.1 inches). The second metric serves as a coarse indicator of rainfall intensity. The analysis covered 25 water years from 1987 through 2011—the total rainfall for each precipitation gage was aggregated into annual totals based on water year (i.e. previous October through current September).

For EWMP development, the last 10 years of available data from years 2002 to 2011was used to develop the RAA (Section 4). As shown in **Table 1-3** and **Table 1-4**, these 10 years were compared to the overall 25 years of record. Both the average and 90th percentile values were compared across the 10- and 25-year records. For the San Gabriel River, water year 2008 is a representative average year based on both rainfall metrics (yellow cells in **Table 1-3** and **Table 1-4**), while water year 2003 was proximal to the 90th percentile values for San Gabriel River in terms of rainfall per wet day, which is a conservative metric for BMP planning (green highlighted cells in **Table 1-4**). As such, for the San Gabriel River, water year 2008 is a representative year for average conditions and water year 2003 is a representative year for critical wet conditions, which will be important boundary conditions for the RAA (Section 4).

Table 1-3
Annual Rainfall Totals (Water Years 2002–2011 vs. 25-year Average)

Water Year	Average Rainfall Totals (inches/year)				
	Ballona Creek	Dominguez Channel	Malibu Creek	San Gabriel River	Los Angeles River
2002	25.4	19.1	28.1	30.6	30.5
2003	17.1	13.9	20.8	23.0	20.4
2004	10.2	8.1	9.2	13.7	11.2
2005	39.3	28.4	42.6	49.6	46.7
2006	14.1	9.8	16.9	17.9	17.5
2007	4.3	3.1	6.8	6.4	5.8
2008	13.2	11.9	18.6	19.4	17.5
2009	9.6	8.5	12.3	14.6	12.5
2010	16.8	14.9	20.3	24.1	20.5
2011	21.2	18.5	25.3	28.5	25.7
Avg. (1987-2011)	15.9	12.5	18.4	20.7	19.2
90th Percentile (1987-2011)	30.8	22.9	34.7	37.8	36.9

Yellow highlighted cells are the two years in each basin with the smallest difference from the 25-year average. Green cells have the smallest difference from 90th percentile of the 25-year record.

Table 1-4
Average Rainfall Per Wet Day (Water Years 2002–2011 vs. 25-year Average)

Water Year	Average Rainfall Per Wet Day (inches/wet day)				
	Ballona Creek	Dominguez Channel	Malibu Creek	San Gabriel River	Los Angeles River
2002	0.36	0.32	0.41	0.42	0.36
2003	0.79	0.66	0.88	0.92	0.84
2004	0.61	0.48	0.61	0.66	0.58
2005	0.98	0.69	1.03	1.07	1.03
2006	0.53	0.41	0.61	0.64	0.61
2007	0.31	0.27	0.39	0.41	0.37
2008	0.56	0.52	0.68	0.76	0.71
2009	0.49	0.48	0.56	0.65	0.57
2010	0.64	0.60	0.71	0.82	0.72
2011	0.62	0.58	0.73	0.76	0.70
Avg. (1987-2011)	0.59	0.52	0.67	0.72	0.66
90th Percentile (1987-2011)	0.78	0.66	0.91	0.97	0.89

Yellow highlighted cells are the two years in each basin with the smallest difference from the 25-year average. Green cells have the smallest difference from 90th percentile of the 25-year record.

1.3 STAKEHOLDER INVOLVEMENT

The EWMP Group is strongly committed to providing the opportunity for meaningful stakeholder input throughout the development of the EWMP. The EWMP Group participated in watershed coordination meetings that were developed to facilitate collaboration among watershed groups within the SGR Watershed as well as the Technical Advisory Committee (TAC), which was established by MS4 Permit to facilitate participation in the EWMP development by the Regional Board and stakeholder groups. The EWMP Group conducted public stakeholder meetings on May 5, 2014 and March 9, 2015 to receive feedback from stakeholders on the overall strategy to improving water quality, proposed control measures and regional projects, and potential partnership opportunities. USGR EWMP Group Members will continue to engage the communities during the course of EWMP implementation. Documentation of stakeholder outreach is provided in **Appendix A-2**.

2 Identification of Water Quality Priorities

Water quality priorities establish the goals for the EWMP, and support prioritization and scheduling of EWMP control measures. The water body pollutant combination (WBPC) defines the specific location and constituent that needs to be addressed in the watershed. Tthe USEPA defines a water body as "a geographically defined portion of navigable waters, waters of the contiguous zone, and ocean waters under the jurisdiction of the United States, including segments of rivers, streams, lakes, wetlands, coastal waters and ocean waters". Concrete-lined channels present in the EWMP area are therefore defined as as water bodies. The Permit outlines a specific set of priorities based on total maximum daily loads (TMDLs), State Water Resources Control Board 2010 Clean Water Act Section 303(d) list, and monitoring data. Data were obtained from available sources and analyzed to evaluate exceedances of water quality objectives (WQOs). The determination of the WBPCs for the group is presented below.

2.1 WATER BODY-POLLUTANT RECEIVING WATER LIMITATION EXCEEDANCES

Monitoring data for sites within the Upper San Gabriel River Watershed Management Area was obtained from the following sources:

- The LACFCD provides long-term monitoring data from the San Gabriel River Mass Emission Stations S14 and S13.
- LACFCD tributary monitoring sites, each operated for two years:
    - Big Dalton Wash TS13
    - Puente Creek TS14
    - San Jose Creek TS15
    - Maplewood Channel TS16
    - North Fork of Coyote Creek TS17
    - Artesia-Norwalk Drain TS18
- The Council for Watershed Health (CWH) provides monitoring data from their monitoring activities throughout the San Gabriel River Watershed.
- The California Environmental Data Exchange Network (CEDEN).
- LACSD provides long-term dry weather receiving water monitoring data.

Stormwater quality data are sparse for the receiving waters in the EWMP area. Data obtained from the CWH and CEDEN largely consisted of short-term monitoring activities and many sites from these programs were only used for a single sampling event or had a limited number of constituents tested at the sites. However, the two LACFCD mass emission stations provide a history of stormwater quality for the upper San Gabriel River and Coyote Creek. Additionally, the tributary monitoring sites provide a two-year snapshot of stormwater quality within the watershed. All data were screened to identify potential WQO exceedances.

During dry weather the San Gabriel River is typically dry upstream of the confluence with San Jose Creek and downstream of Whittier Dam. LACSD receiving water monitoring provides characterization of portions of the San Gabriel River, San Jose Creek, and Coyote Creek during dry weather. Monitoring of other receiving waters is generally sporadic, with the exception of the LACFCD program. A large number of sites on receiving waters downstream from the EWMP area are regularly monitored

under dry weather conditions by LACFCD. To identify the water quality priorities in the EWMP area, data reflective of receiving waters downstream from the EWMP area were considered. It is not known at this time if the MS4 discharges from the EWMP area are contributing to water quality issues observed downstream.

During dryweather, the water bodies in the EWMP area are generally hydraulically disconnected from the lower sections of the watershed due to the rapid infiltration over soft-bottom channels. The monitoring performed under the CIMP will also provide information to support a determination of whether the discharges are affecting the water quality of water bodies within and downstream of the EWMP area.

The water quality data are compared to the WQBELs, where available, or the WQOs to determine if the constituent exceeds the limitations in the past five years. Based on the data review, constituents that had no observed exceedances in the past five years or would not meet the 303(d) listing criteria for impairment could potentially be delisted are identified in the prioritization process.

2.2 EWMP GROUP'S WATER QUALITY PRIORITIES

Water quality priorities for the EWMP area are based on TMDLs, 303(d) list, and monitoring data. From the available information and data analysis results, WBPCs were classified in one of the three Permit-defined categories. Category 1 if WBPCs are subject to established TMDLs, Category 2 if they are on the 303(d) list, or have sufficient exceedances to be listed, and Category 3 if there are observed exceedances but too infrequently to be listed.

Subcategories were identified and created to refine the prioritization process. Those pollutants with measurements exceeding WQOs are further evaluated and categorized based on the frequency, timing, and magnitude of exceedances. The subcategories are listed in **Table 2-1**. The WBPCs are placed in the respective subcategories as outlined in **Table 2-2**.

Table 2-1
Details for Water Body-Pollutant Combination Subcategories

Category	Water Body-Pollutant Combinations (WBPCs)	Description
1	**Category 1A:** WBPCs with past due or current Permit term TMDL deadlines with exceedances in the past 5 years.	WBPCs with TMDLs with past due or current Permit term interim and/or final limits. These pollutants are the highest priority for the current Permit term.
	Category 1B: WBPCs with TMDL deadlines beyond the Permit term with exceedances in the past 5 years.	The Permit does not require the prioritization of TMDL interim and/or final deadlines outside of the Permit term or USEPA TMDLs, which do not have implementation schedules. To ensure EWMPs consider long term planning requirements and utilize the available compliance mechanisms these WBPCs should be considered during BMP planning and scheduling, and during CIMP development.
	Category 1C: WBPCs addressed in USEPA TMDL without a Regional Board Adopted Implementation Plan.	
	Category 1D: WBPCs with past due or current Permit term TMDL deadlines but have not exceeded in past 5 years.	WBPCs where specific actions may end up not being identified because recent exceedances have not been observed and specific actions may not be necessary. The CIMP should address these WBPCs to support future re-prioritization.
	Category 1E: WBPCs with future Permit term TMDL deadlines but have not exceeded in past 5 years.	
2	**Category 2A:** 303(d) Listed WBPCs or WBPCs that meet 303(d) Listing requirements with exceedances in the past 5 years.	WBPCs with confirmed impairment or exceedances of RWLs. WBPCs in a similar class[1] as those with TMDLs are identified. WBPCs currently on the 303(d) List are differentiated from those that are not to support utilization of WMP compliance mechanisms.
	Category 2B: 303(d) Listed WBPCs or WBPCs that meet 303(d) Listing requirements that are not a "pollutant"[2] (i.e., toxicity).	WBPCs where specific actions may not be identifiable because the cause of the impairment or exceedances is not resolved. Either routine monitoring or special studies identified in the CIMP should support identification of a "pollutant" linked to the impairment and re-prioritization in the future.
	Category 2C: 303(d) Listed WBPCs or WBPCs that meet 303(d) Listing requirements but have not exceeded in past 5 years.	WBPCs where specific actions for implementation may not be identified because recent exceedances have not been observed. Pollutants that are in a similar class[1] as those with TMDLs are identified. Routine monitoring identified in the CIMP should ensure these WBPCs are addressed to support re-prioritization in the future.
3	**Category 3A:** All other WBPCs with exceedances in the past 5 years.	Pollutants that are in a similar class[1] as those with TMDLs are identified.
	Category 3B: All other WBPCs that are not a "pollutant"[2] (i.e., toxicity).	WBPCs where specific actions may not be identifiable because the cause of the impairment is not resolved. Routine monitoring identified in the CIMP should support identification of a "pollutant" linked to the impairment and re-prioritization in the future.
	Category 3C: All other WBPCs but have not exceeded in past 5 years.	Pollutants that are in a similar class[1] as those with TMDLs are identified.
	Category 3D: WBPCs identified by the EWMP Group.	The EWMP Group may identify other WBPCs for consideration in WMP planning.

1 Pollutants are considered in a similar class if they have similar fate and transport mechanisms, can be addressed via the same types of control measures, and within the same timeline already contemplated as part of the EWMP for the TMDL. (Permit pg. 49 – RWQCB, 2012).

2 While one or more pollutants may be contributing to the impairment, it currently is not possible to identify the specific pollutant/stressor.

Table 2-2
Summary of Upper San Gabriel River Watershed Management Area Water Body-Pollutant Combination Categories

Class[1]	Constituent[2]	Within EMWP Area								Downstream of EWMP Area		
		San Gabriel River Reach[3]		San Jose Creek Reach		Puente Creek	Walnut Creek Wash	North Fork of Coyote Creek	Pudding-stone Reservoir	Coyote Creek	San Gabriel River Reach 1	San Gabriel Estuary
		2	3	1	2							
Category 1A: WBPCs with past due or current term TMDL deadlines with exceedances in the past 5 years.												
Metals	Copper (Dry)							I		I	I	I
	Copper (Wet)[4]							I		I		
	Zinc (Wet)[4]							I		I		
	Selenium (Dry)			I	I							
Category 1B: WBPCs with TMDL deadlines beyond the current Permit term and with exceedances in the past 5 years.												
Metals	Copper (Dry)							F		F	F	F
	Copper (Wet)[4]							F		F		
	Zinc (Wet)[4]							F		F		
	Selenium (Dry)			F	F							
Category 1C: WBPCs addressed in USEPA TMDL without an Implementation Plan												
Nutrients	Total Nitrogen								X			
	Total Phosphorus								X			
Metals	Total Mercury								X			
Legacy	Polychlorinated Biphenyl (PCB) (Sediment)								X			
	PCB (Water)								X			
	Chlordane (Sediment)								X			
	Chlordane (Water)								X			
	Dieldrin (Sediment)								X			
	Dieldrin (Water)								X			
	DDT (Sediment)								X			
	DDT (Water)								X			

Table 2-2
Continued

Class[1]	Constituent[2]	Within EMWP Area								Downstream of EWMP Area		
		San Gabriel River Reach[3]		San Jose Creek Reach		Puente Creek	Walnut Creek Wash	North Fork of Coyote Creek	Pudding-stone Reservoir	Coyote Creek	San Gabriel River Reach 1	San Gabriel Estuary
		2	3	1	2							
Category 1D: WBPCs with past due or current term deadlines without exceedances in the past 5 years.												
Metals	Lead (Wet)[5]	I	I	I	I	I	I	I		I		
Category 1E: WBPCs with TMDL deadlines beyond the current Permit term without exceedances in the past 5 years.												
Metals	Lead (Wet)[5]	F	F	F	F	F	F	F		F		
Category 2A: 303(d) Listed WBPCs with exceedances in the past 5 years.												
Bacteria	Indicator Organisms	303(d)	303(d)	303(d)	303(d)	303(d)	303(d)	303(d)		303(d)	303(d)	
Metal	Lead				Dry					Dry		
	Zinc		Wet							Dry		
	Selenium					303(d)		303(d)				
	Copper		X			X	X					
Legacy	Polycyclic Aromatic Hydrocarbon (PAH)	X	X	X	X							
Other	Cyanide	303(d)	X							X		
Category 2B: 303(d) Listed WBPCs that are not a "pollutant"[6] (i.e., toxicity).												
Other	Benthic-Macroinvertebrates						303(d)					
Other	Dissolved Oxygen (DO)											303(d)
Other	pH			303(d)			303(d)			303(d)	303(d)	
Other	Toxicity			303(d)						303(d)		

continued

Table 2-2
Continued

Class[1]	Constituent[2]	Within EMWP Area								Downstream of EMWP Area		
		San Gabriel River Reach[3]		San Jose Creek Reach		Puente Creek	Walnut Creek Wash	North Fork of Coyote Creek	Pudding-stone Reservoir	Coyote Creek	San Gabriel River Reach 1	San Gabriel Estuary
		2	3	1	2							
Category 2C: 303(d) Listed WBPCs without exceedances in past 5 years.												
Nutrients	Ammonia			303(d)						303(d)		
Other	Diazinon									303(d)		
Other	2,3,7,8-TCDD (Dioxin)											303(d)
Metal	Cadmium				Wet							
	Copper			X								
	Lead					Dry	Dry					
	Zinc			X		X	X					
	Nickel									Dry		303(d)
	Mercury (Total)							X				
Salts	Total Dissolved Solids (TDS) (Dry)			303(d)								
Category 3A: WBPCs with exceedances in the past 5 years.												
Other	MBAS (methylene blue active substances)		Wet							Wet		
Salts	Sulfate		Dry	Dry	Dry							
	Chloride		Dry	Dry	Dry					Dry		
	TDS		Dry									
Legacy	Alpha-Endosulfan									Dry		
Other	Cyanide							X				
Category 3B: WBPCs that are not a "pollutant"[4] (i.e., toxicity).												
Other	Dissolved Oxygen (DO)		X	X	X					Wet	Dry	
	pH					X		Dry				

continued

Table 2-2
Continued

Class[1]	Constituent[2]	Within EMWP Area								Downstream of EMWP Area		
		San Gabriel River Reach[3]		San Jose Creek Reach		Puente Creek	Walnut Creek Wash	North Fork of Coyote Creek	Pudding-stone Reservoir	Coyote Creek	San Gabriel River Reach 1	San Gabriel Estuary
		2	3	1	2							
Category 3C: WBPCs with historical exceedances but none in the past 5 years.												
Other	Cyanide			X								
Metals	Selenium						X				X	X
	Lead											X
	Copper							Dry				
	Zinc											X
	Mercury (Total)						X					
Other	Lindane		X									

1 Pollutants are considered in a similar class if they have similar fate and transport mechanisms, can be addressed via the same types of control measures, and within the same timeline already contemplated as part of the EWMP for the TMDL.
2 WBPC listed as Wet or Dry where issue is restricted to a condition. Otherwise, WBPC is both an issue for both Wet and Dry
3 Data from Mass Emission Station S14 are included under San Gabriel River Reach 3 because the station is located just downstream of the reach break. TMDL and 303(d) listings historically applied to Reach 2.
4 Grouped allocation. Compliance in Coyote Creek, as measured at the Coyote Creek LTA station, is compliance for all tributaries.
5 Grouped allocation. Compliance in San Gabriel River Reach 2, as measured at the San Gabriel LTA station, is compliance for all tributaries.
6 While pollutants may be contributing to the impairment, it currently is not possible to identify the specific pollutant/stressor.
I/F Denotes where the Permit includes interim (I) and/or final (F) effluent and/or RWLs.
X WBPC determined through data analysis
303(d) WBPC on the 2010 303(d) List where the listing was confirmed during data analysis.

2.3 WBPC CLASSIFICATION FOR COMPLIANCE SCHEDULING

Each WBPC is linked to a compliance schedule. There are four scheduling conditions under which the WBPCs may fall, including:

- Established schedule in an adopted TMDL including the WBPC (Category 1A, 1B, 1D, 1E)
- USEPA Adopted TMDL including the WBPC (Category 1C)
- 303(d) listed WBPC, or could be listed through the review of data (All Category 2)
- Observed exceedances of WBPC, but does not meet 303(d) listing criteria (All Category 3)

Where an established TMDL implementation schedule exists for a WBPC, the associated milestones and implementation schedule will apply. USEPA TMDLs, 303(d) listings without a TMDL adopted, and other exceedances of RWLs do not contain milestones or an implementation schedule. These water quality priorities do not have a defined schedule for implementation. To address this issue for USEPA TMDLs, the Permit allows schedules to be proposed in the EWMP. To address the issue of RWL exceedances associated with WBPCs on the 303(d) List or other exceedances of RWLs, interim numeric milestones and compliance schedules must be set for each WBPC based on its placement in one of the following groups:

- **Group A:** Pollutants that are in the same class[1] as those addressed in a TMDL in the watershed and for which the water body is identified as impaired on the 303(d) List as of December 28, 2012;
- **Group B:** Pollutants that are not in the same class as those addressed in a TMDL for the watershed, but for which the water body is identified as impaired on the 303(d) List as of December 28, 2012; or
- **Group C:** Pollutants for which there are exceedances of RWLs, but for which the water body is not identified as impaired on the 303(d) List as of December 28, 2012; or
- **USEPA TMDL:** Pollutants addressed by USEPA TMDL without an implementation plan/schedule.

The process for setting numeric milestones and compliance schedules for the remaining water quality priorities is dependent upon whether the water body is identified as impaired on the 303(d) list as of December 28, 2012 and if the pollutants are considered to be in the same class as those pollutants addressed in a TMDL for the watershed. Two findings must be made to determine whether or not a pollutant is in the same class as a TMDL pollutant:

- The pollutant must have similar fate and transport mechanisms (e.g., sediment particle associated), and thus, can be addressed via the same types of control measures. These pollutants are in the same "BMP class" as other TMDL pollutants.
- The pollutant is in the same "scheduling class", that is, it can be addressed within the same timeline already established in an existing TMDL. To be considered in the same scheduling class, the water quality priority must be present in a water body already being addressed by the TMDL or upstream of

[1] As defined in Part VI.C.2.a.i of the Permit (page 49), "Pollutants are considered in a similar class if they have similar fate and transport mechanisms, can be addressed via the same types of control measures, and within the same timeline already contemplated as part of the Watershed Management Program for the TMDL." The need to define the control measures and timelines for addressing the various pollutants per the permit requirements, "classes" are preliminary and may be refined as part of EWMP development.

a water body already being addressed by the TMDL and can be addressed on the same time frame as the TMDL pollutant.

To define whether a pollutant can be addressed within the same time frame as a TMDL pollutant, it is necessary to consider whether the reductions that will be achieved by the control measures implemented for the TMDL pollutant are expected to be sufficient to achieve the needed reductions for the other pollutants. The "limiting pollutant" analysis of the RAA is used to evaluate whether control measures implemented for the Regional Board adopted TMDLs will be sufficient to meet the RWLs for WBPCs that have both the same BMP class. If the RWLs will be met for the WBPCs they are in the same scheduling class as the pollutants addressed by each respective Regional Board adopted TMDL. A limiting pollutant, which is acknowledged by the RAA Guidelines from the Regional Board, can be defined as a pollutant whose structural control measures[2] are anticipated to address exceedances from all other pollutants. In many cases, the limiting pollutant for wet weather (e.g., zinc) may differ than the limiting pollutant for dry weather (e.g., bacteria). If the limiting pollutant is a TMDL pollutant, then other pollutants in the same class would be expected to be achieved by the final compliance date of the TMDL for the limiting pollutant. If the limiting pollutant is not a TMDL pollutant, then the limiting pollutant, and all other pollutants that are more limiting than the TMDL pollutant, do not have the ability to be considered on the same timeframe as those addressed in a TMDL. To be in the same class as a TMDL pollutant, the WBPC must be in both the same "BMP class" and the same "scheduling class" as the TMDL pollutant.

The requirements for milestones and compliance schedules are detailed in the Permit, and are summarized as follows:

- Group A pollutants, are to be given milestones and dates for their achievement consistent with those in the corresponding TMDL.
- Group B pollutants, are to be given enforceable requirements and milestones and dates for their achievement.
- Group C pollutants, are to be given enforceable requirements and milestones and dates for their achievement.
- USEPA TMDL pollutants, the time schedule requested is as short as possible, taking into account the time since USEPA establishment of the TMDL, and technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary to comply with the WLAs

The enforceable milestones and compliance schedules requirements must control MS4 discharges such that they do not cause or contribute to exceedances of RWLs and the milestones and dates for their achievement must be within a timeframe that is as short as possible, taking into account the technological, operation, and economic factors that affect the design, development, and implementation of the control measures that are necessary. The time between dates shall not exceed one year. Milestones shall relate to a specific water quality endpoint (e.g., x% of the MS4 drainage area is meeting the RWLs) and dates shall

[2] By evaluating the role of *structural* control measures when identifying limiting pollutants, the scheduling of control measures can be simplified early in the planning process. For example, even though the required reductions to achieve copper RWLs may be higher than those for zinc, a significant portion of the reduction of copper loading is anticipated through the brake pad replacement programs (an institutional control measure). Zinc could be categorized as more limiting than copper because reductions in zinc loading will likely require more structural control measures. Note that adjustments to water quality objectives through special studies like water-effect ratios (WERs) could also be used to address water quality priorities during EWMP implementation, but those considerations have not been incorporated into the analysis of which pollutant is limiting.

relate either to taking a specific action or meeting a milestone. In summary, Group A pollutants must have milestones and schedules consistent with the TMDL for the pollutant in the same class. Group B and C pollutants must have schedules that are as short as possible and include at least annual milestones.

Furthermore, for Group B pollutants, where retention of (i) all non-stormwater runoff and (ii) all storm water runoff from the 85th percentile, 24-hour storm event is technically infeasible, and where the Regional Board determines that MS4 discharges cause or contribute to the water quality impairment, the EWMP Group may initiate development of a stakeholder-proposed TMDL upon approval of the EWMP. Any extension of this compliance mechanism beyond the current Permit term shall be consistent with the implementation schedule in a TMDL for the WBPCs adopted by the Regional Board. However, *E. coli* are the only Group B constituent, and the Regional Board is currently developing a TMDL for the San Gabriel River watershed.

Benthic macro-invertebrates, dissolved oxygen, and pH are reflective of watershed pollution and not necessarily a result of MS4 discharges. Additionally, ammonia is being addressed through the implementation of nitrification and denitrification treatment processes at the LACSD facilities. These parameters are not scheduled, but will be assessed through the CIMP implementation and watershed wide stormwater monitoring coalition (SMC) and schedules developed as necessary through the adaptive management component of the CIMP and EWMP.

2.3.1 WBPCs included in TMDLs with Implementation Schedules

Compliance schedules to WBPCs are directly assigned in Regional Board-established TMDLs, and United States Environmental Protection Agency (USEPA) TMDLs with separately adopted Implementation Schedules. TMDLs and compliance schedules are presented in **Table 2-3**. The Category 1A, 1B, 1D, and 1E constituents include copper, lead, zinc, and selenium. The compliance schedule for these WBPCs has been established in the San Gabriel River Metals (SGR Metals) TMDL Implementation Plan as shown in **Table 2-4**.

2.3.2 WBPCs included in USEPA TMDLs

Category 1C WBPCs are included in the Puddingstone USEPA TMDL. However, USEPA TMDLs do not include implementation schedules. WBPCs in Category 1C include nutrients, mercury, and legacy toxics. The permit requirements for information included in the EWMP are as follows:

- Data for current conditions of the WBPC
- Description of BMPs
- Time schedule to achieve compliance
- Demonstration the schedule is as sort as practicable.
- If the schedule exceeds one year, interim milestones are a necessary part of the schedule.

To determine schedules for these WBPCs, similar TMDLs in the region are used as precedent. Unless otherwise specified, the SGR Metals TMDL is the generally the driver for BMP implementation in the watershed. By using the existing TMDL schedule, the EWMP implementation schedule is highly aggressive and meets the requirement to be as short as practicable.

The Harbor Toxics TMDL includes consideration of mercury and legacy pollutants in water, sediment, and fish tissue. These hydrophobic compounds bound tightly to the soil and organic particles. Nearly the entire mass load of the legacy pollutants is bound to the suspended solids. Additionally, the TMDL will be used as the model for compliance scheduling for total nitrogen and total phosphorus, because the nutrient concentrations are generally correlated with sediment just as with the OC and PCB constituents, as the runoff mobilizing sediment simultaneously mobilizes nutrients present in the soil matrix and bound

to the soil particles. Furthermore, loading is greatest during storm conditions and the infiltration BMPs implemented to control metals are expected to control nutrients. The nutrient allocations are expressed as annual load, which is largely the loading during storm events. Therefore, the compliance schedule for Category 1C WBPCs will specifically follow the Harbor Toxics TMDL.

2.3.3 WBPCs Classified in Group A

Group A WBPCs are in the same class as the SGR Metals TMDL WBPCs and will be addressed by the control measures implemented to achieve compliance with waste load allocations (WLAs). Therefore, it is proposed that 303(d)-listed WBPCs of the same class as the SGR Metals TMDL WBPCs will be linked to the compliance schedule established in the SGR Metals TMDL Implementation Plan. The metals schedule is applied to WBPCs where metals are listed or data supports their listing for water bodies not originally included in the SGR Metals TMDL. The RAA will be used to demonstrate compliance for WBPCs.

Control measures implemented to achieve the targets for the SGR Metals TMDL will also address other WBPCs that are associated with sediment removal. Implementation of control measures to treat the limiting pollutant, zinc, may also treat WBPCs not associated with sediment removal. For example, infiltration type BMPs will provide treatment for all constituents. Other WBPCs are assumed to be watershed conditions not associated with the MS4. PAHs, cyanide, diazinon, and TDS are included in the SGR Metals TMDL schedule as these constituents will be controlled by the infiltration BMPs for wet weather and activities to control non-storm water discharges.

The dioxin listing for the SGR Estuary is in the same class of constituent as legacy pollutants addressed by the Harbor Toxics TMDL. Therefore, dioxin is assigned the Harbor Toxics TMDL schedule.

The watershed loading of sediment is used as a surrogate for watershed toxics loading in the RAA, which is the same mechanism used to simulate particle associated metals loading. Therefore, the 303(d)-listed WBPCs that are in the same class as the SGR Metals TMDL WBPCs will be linked to the compliance schedule established in the SGR Metals TMDL Implementation Plan.

2.4 WBPCS CLASSIFIED IN GROUP B

Indicator organisms (bacteria) are the sole Group B WBPC. Bacteria are not of the same class as the SGR Metals TMDL WBPCs, but to some degree, may be addressed by the control measures implemented to achieve compliance with the limiting Group 1 pollutant, zinc. A great majority of dry and wet weather samples collected from Los Angeles region waterways, including the SGR and its tributaries, exceed the receiving water limits for bacteria. Compliance with bacteria standards may involve additional controls beyond those determined necessary for zinc. Additional analyses may be necessary to fully define the bacteria compliance condition. The Basin Plan provides consideration of high flow suspension (HFS) of objectives in certain channelized receiving waters where greater than 0.5 inches of rain in a 24-hour period. Because the recreational beneficial use was shown to be unattainable for concrete lined channels, the bacteria objectives are suspended when flows increase beyond the trigger level associated with ta 24-hour storm of 0.5 inches or more. In addition, areas where bacteria TMDLs have been adopted include a set number of allowable exceedance days to reflect the fact that reference watersheds typically exceed bacteria objectives several days in a given year. Determination of the allowable exceedance days would follow the analysis performed in adopted Bacteria TMDLs in the basin. Monitoring results of the non-stormwater program will determine compliance for bacteria during dry weather.

The scheduling of milestones and compliance for bacteria in the watershed should mimic the scheduling adopted in TMDLs developed for other areas of the Basin. A 25-year schedule for bacteria compliance similar to the Los Angeles River TMDL is proposed. The schedule matches the other TMDLs in the Basin. As part of the schedule, the number of allowable exceedance days should be determined. The

installation of controls for the Metals TMDL compliance and addressing significant non-storm water flows would be the first phase of the bacteria compliance. After the controls necessary to meet the Metals TMDL WLAs are functional, additional controls as a second phase, if necessary, to meet the bacteria objectives in MS4 discharges would commence. As the Metals TMDL wet-weather compliance is 14 years, an additional 14 years is requested for the second phase of controls implementation to address bacteria over 28 years. However, to be consistent with the LA River Bacteria TMDL, the proposed 25-year compliance schedule would be a reasonable interpretation of short as practicable to address bacteria in the San Gabriel River Watershed.

Due to the challenges associated with complying with bacteria limits, it is recommended that special consideration be taken when establishing the compliance schedule for bacteria. There are two key issues associated with establishing a compliance schedule for bacteria, as follows:

1. **An extended timeline for compliance is necessary:** the LA River Bacteria TMDL provides a 25-year compliance schedule for dry and wet weather. The Regional Board has initiated a TMDL for bacteria in the San Gabriel Watershed. Presumably, the Regional Board will follow a similar path to development as the LA River TMDL.
2. **Allowable Exceedance Days are a TMDL implementation provision:** bacteria TMDLs in the region include Allowable Exceedance Days, which allow on the order of 15 days of objective exceedances per year. While the RAA Guidelines encourage the EWMPs to use critical conditions similar to TMDLs in the region, the Basin Plan is clear that Allowable Exceedance Days are a TMDL implementation provision. It is assumed Allowable Exceedance Days will be a component of the Regional Board initiated TMDL. Note that the Allowable Exceedance Days could be incorporated into the TMDL such that they are *in addition to* the High Flow Suspension days.

Most reaches in SGR Watershed are 303(d) listed for bacteria, however, bacteria is not in the same "class" as a TMDL in the watershed. The Regional Board has initiated a Bacteria TMDL for the San Gabriel watershed. Based on other TMDLs in the Los Angeles basin, a 25-year timeline is assumed for the EWMP.

2.5 WBPCS CLASSIFIED IN GROUP C

Most of the WBPCs in Group C are of the same class as the SGR Metals TMDL WBPCs will be addressed by the control measures implemented to achieve compliance with the SGR Metals TMDL WBPCs. The exceptions are Category 3B WBPCs that are reflective of watershed pollution conditions and not necessarily reflective of MS4 discharge conditions. Therefore, it is proposed that Category 3A and 3C WBPCs be linked to the compliance schedule established in the SGR Metals TMDL Implementation Plan. WBPCs in Category 3B may be addressed by the control measures implemented to achieve compliance with the limiting pollutant, zinc, but are not assigned a specific schedule for compliance. The RAA will be used to demonstrate compliance for WBPCs.

Table 2-3
Schedule of TMDL Milestones for the EWMP

TMDL	Compliance Goal	Weather Condition	Compliance Dates and Compliance Milestone (Bolded numbers indicated milestone deadlines within the current Permit term) [1]													
			2012	**2013**	**2014**	**2015**	**2016**	**2017**	2020	2023	2024	2026	2028	2030	2032	2036
San Gabriel River Metals and Impaired Tributaries Metals and Selenium TMDL	% of MS4 area Meets WQBELs[2]	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Dominguez Channel and Greater Los Angeles and Long Beach Harbor Water Toxic Pollutants TMDL	Meet WQBELs	All	12/28												3/23	
			Interim												Final	
Los Angeles Area Lakes TMDLs for Puddingstone Reservoir and Santa Fe Dam Park Lake	Meet waste load allocations (WLAs)	All	USEPA TMDLs, which do not contain interim milestones or implementation schedule. The Permit (Part VI.E.3.c, pg. 145 – RWQCB, 2012) allows MS4 Permittees to propose a schedule in the EWMP.													

[1] The Permit term is assumed to be five years from the Permit effective date or December 27, 2017.

[2] Water Quality Based Effluent Limitations

Table 2-4
Compliance Schedule for WBPCs in the EWMP

Constituent	Compliance Schedule Source	Weather Condition	Compliance Dates and Compliance Milestone (Bolded numbers indicated milestone deadlines within the current Permit term) [1]													
			2012	**2013**	**2014**	**2015**	**2016**	**2017**	2020	2023	2024	2026	2028	2032	2036	2040
Copper	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Lead	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Zinc	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Cadmium	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Nickel	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Mercury, Total (N. Fork Coyote Creek and Walnut Creek Wash)	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Selenium	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Total Nitrogen	Harbor Toxics TMDL	Annual	12/28 Interim											3/23 Final		
Total Phosphorus	Harbor Toxics TMDL	Annual	12/28 Interim											3/23 Final		
Total Mercury (MS4 discharges to Puddingstone Reservoir)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
Polychlorinated Biphenyl (PCB) (Sediment)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
PCB (Water)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		

Constituent	Compliance Schedule Source	Weather Condition	Compliance Dates and Compliance Milestone (Bolded numbers indicated milestone deadlines within the current Permit term) [1]													
			2012	**2013**	**2014**	**2015**	**2016**	**2017**	2020	2023	2024	2026	2028	2032	2036	2040
Chlordane (Sediment)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
Chlordane (Water)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
Dieldrin (Sediment)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
Dieldrin (Water)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
Dichloro-diphenyl-tricloroethane (DDT) (Sediment)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
DDT (Water)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
Bacteria (Indicator Organisms)	Group 2	Dry						30%			70%			100%		
		Wet						10%			35%		65%			100%
PAH	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Cyanide	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
Ammonia	Not an MS4 Source	All	LACSD Implementation of nitrification and denitrification addresses control of ammonia.													
Diazinon	SGR Metals TMDL	Dry						30%	70%	100%						
		Wet						10%	35%	65%		100%				
TDS	SGR Metals TMDL	Dry						30%	70%	100%						
Sulfate	SGR Metals TMDL	Dry						30%	70%	100%						
Chloride	SGR Metals TMDL	Dry						30%	70%	100%						
Alpha-Endosulfan	SGR Metals TMDL	Dry						30%	70%	100%						
MBAS	SGR Metals TMDL	Wet						10%	35%	65%		100%				
Lindane	SGR Metals	Dry						30%	70%	100%						

Constituent	Compliance Schedule Source	Weather Condition	Compliance Dates and Compliance Milestone (Bolded numbers indicated milestone deadlines within the current Permit term) [1]													
			2012	**2013**	**2014**	**2015**	**2016**	**2017**	2020	2023	2024	2026	2028	2032	2036	2040
	TMDL	Wet						10%	35%	65%		100%				
2,3,7,8-TCDD (Dioxin)	Harbor Toxics TMDL	All	12/28 Interim											3/23 Final		
Benthic Macro-invertebrates	None	All	Reflective of a condition of pollution, not necessarily a result of MS4 discharge													
Dissolved Oxygen	None	All	Reflective of a condition of pollution, not necessarily a result of MS4 discharge													
pH	None	All	Reflective of a condition of pollution, not necessarily a result of MS4 discharge													
Toxicity	None	All	Reflective of a condition of pollution, not necessarily a result of MS4 discharge													

[1] The Permit term is assumed to be five years from the Permit effective date or December 27, 2017.

2.6 INITIAL SOURCE ASSESSMENT

Constituents were evaluated to determine if MS4 discharges could be a potential source. Many constituents are typically associated with MS4 discharges and additional investigation is not necessarily required to determine if they are a potential source to the receiving water. Metals, nutrients, and bacteria are commonly found in runoff from urban areas. Metals may be naturally occurring bound to soil and sediment movement by storms would increase the loading to the receiving waters. Automobile wear are a source of metals, with tires wear most influenced by zinc, lead, and copper, while brakes were is associated with copper. Metal architectural features and building materials may contribute zinc, copper, lead or other metals to the MS4 system by leaching during storm events. Other NPDES discharges may contain metals. Where historic soil contamination exists, legacy pollutants such as Polychlorinated biphenyls (PCBs) and organochlorine (OC) pesticides may be found in urban stormwater. However, for some constituents such as selenium, cyanide, and ammonia, MS4 discharges are either not known as significant sources of the constituent or other potential sources are more likely. In the absence of outfall data, it would be inappropriate to directly link any one jurisdiction to specific pollutants.

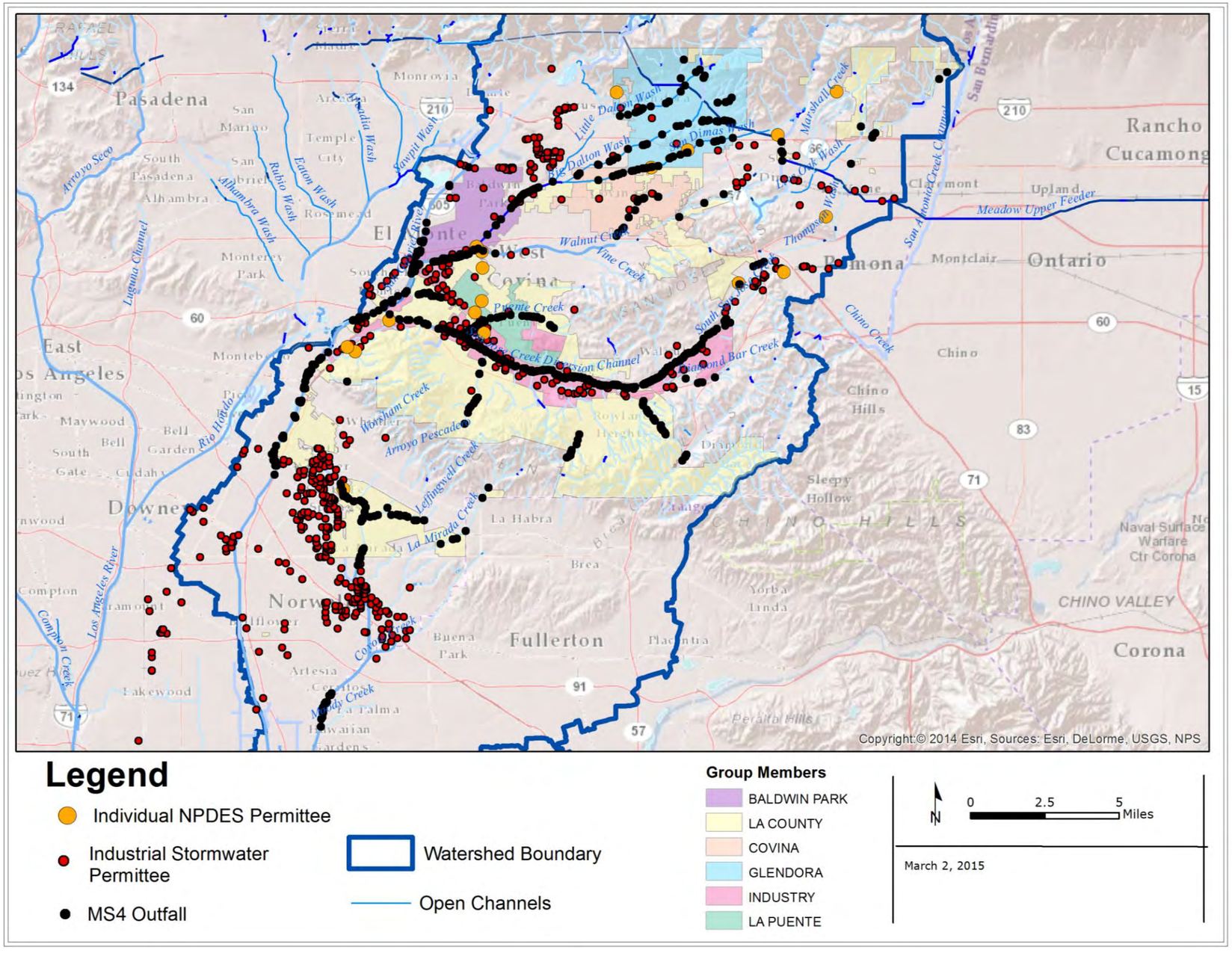
Ammonia exceedances are likely being addressed through NPDES permit limits and associated treatment upgrades for the wastewater reclamation plants. The primary source of ammonia is wastewater treatment plant discharges, and controlling their effluent through their individual NPDES permit is the appropriate method to address receiving water exceedances.

Chloride, total dissolved solids (TDS), and sulfate are all salts that could be naturally occurring in the SGRWMA. The majority of the exceedances occur in one reach (Puente Creek) as indicated by the MS4 annual reports. During storm events, salts are significantly diluted by stormwater runoff. Dry weather is generally the only time exceedances are observed. Further investigation of the source of exceedances is warranted to assess if non-stormwater discharges from MS4 systems are a potential source and may be conducted by a special study or addressed in the RAA.

2.6.1 Dischargers

There are many facilities in the San Gabriel River Watershed that have NPDES permits to discharge industrial wastewater and stormwater. **Figure 2-1** shows the location of NPDES-permitted dischargers within the USGR EWMP area. The California Integrated Water Quality System was used to identify all currently active, or active within the past three years, NPDES permittees within the watershed. There are approximately 18 NPDES major dischargers, minor permits, and dischargers covered under general permits, and 150 dischargers covered under the industrial stormwater permit.

Figure 2-1
Location of NPDES-permitted Dischargers within the USGR EWMP Area



2.6.2 TMDL Report and Staff Report

The TMDL for metals and selenium for the San Gabriel River and Impaired Tributaries was established by the USEPA in 2007. The source assessment section of the TMDL documentation divides sources into point sources, which includes "discharges for which there are defined outfalls such as wastewater treatment plants, industrial discharges, and storm drain outlets," and nonpoint sources from various land uses and source activities not regulated through NPDES permits (USEPA, 2007).

Major findings of the source assessment for point sources, relevant to the USGR EWMP area, included the following (USEPA, 2007) (RWQCB, 2013).

Municipal Stormwater:

Municipal storm water contributes sources of metals to the San Gabriel River from automobile brake pads, vehicle wear, building materials, pesticides, erosion of paint and deposition of air emissions from fuel combustion and industrial facilities. A 2007 study from the Brake Pad Partnership determined that up to half of the anthropogenic copper discharged to the San Francisco Bay could be linked to brake pad debris. In 2010, SB 346 was signed, with provisions to limit the amount of copper used in brake pad material.

Industrial Stormwater:

Potential metals loading during dry weather are considered to be low, as non-storm water discharges are prohibited or controlled by NPDES permits. However, one study by *Stenstrom et al. (2005)* showed that loading of copper, lead, and zinc from industrial facilities may exceed applicable California Toxics Rule (CTR) standards. Runoff from metal plating, transit, and recycling facilities are considered to have a high potential for metals loading.

Construction Stormwater:

One study by Raskin et al. (2004) showed that there is a potential for metals loading due to leaching of metals from building materials and construction waste during wet weather events. Potential metals loading during dry weather are considered to be low, as non-storm water discharges are prohibited or controlled by NPDES permits.

Publicly Owned Treatment Works:

Three water reclamation plants (WRPs) discharge to water bodies within the USGR EWMP area. A description of each facility taken from the TMDL Report and updated by the LACSD is provided below:

- Pomona WRP
  - Discharges tertiary-treated effluent to the South Fork of San Jose Creek. The influent to the Pomona WRP is a combination of municipal and industrial wastewater.
  - During dry weather, a majority of the treated effluent is reclaimed for landscape and crop irrigation, as well as for industrial processes.
- San Jose Creek WRP
  - Permitted to discharge 100 Million gallons per day (MGD) of tertiary-treated effluent via five permitted discharge points. The influent to the San Jose Creek East and West WRPs is a combination of municipal and industrial wastewater.
  - Discharge No. 001 to San Gabriel River Reach 1 is a combination of San Jose Creek East and West WRP effluent and in 2014 was the primary

discharge point for San Jose Creek West WRP. The outfall is eight miles south of the plant near Firestone Blvd. The river is concrete-lined from the discharge point to the Estuary, about nine miles downstream. A turnout located approximately midway down the pipe is used to divert reclaimed water to spreading grounds.

  - Discharge No. 001A to the unlined portion of the San Gabriel River Reach 2 is a combination of San Jose Creek East and West WRP effluent. The outfall is located near the turnout to the spreading grounds, which is near Whittier Blvd.
  - Discharge No. 001B to the unlined portion of the San Gabriel River Reach 2 is a combination of San Jose Creek East and West WRP effluent. The outfall is located mid-way between Discharges 001A and 001 near Slauson Blvd. Discharge is expected to begin in 2015.
  - Discharge No. 002 to San Jose Creek from San Jose Creek East WRP is used for groundwater recharge at the San Gabriel Coastal Spreading Grounds. San Jose Creek is unlined from the discharge point to the San Gabriel River. In 2014, this outfall was the primary discharge point for the San Jose Creek East WRP.
  - Discharge No. 003 delivers treated effluent to the unlined portion of the San Gabriel River Reach 3 as well as the San Gabriel Coastal Spreading Grounds.
  - The 2015 San Jose Creek WRP NPDES permit is expected to permit two additional discharge points to the unlined San Gabriel River Reaches 4 and 5 in the area of the Santa Fe Dam.

- Whittier Narrows WRP
  - Discharge No. 001 discharges to the river about 700 feet upstream from the Whittier Narrows Dam.
  - The tertiary-treated effluent generally flows down the river to the San Gabriel River Spreading Grounds. The influent to the Whittier Narrows WRP is a combination of municipal and industrial wastewater.

3 Watershed Control Measures

The Permit requires the identification of Watershed Control Measures, which are strategies, institutional measures, and BMPs[3] that will implemented through the EWMP individually or collectively at a watershed-scale to address Water Quality Priorities. This section provides an overview of the categories of BMPs used to develop the USGR EWMP (and simulated by the RAA), summarizes existing and planned structural BMPs, and describes the institutional control measures that will be implemented including customization of MCMs. In addition, details are provided for 10 "signature" (or example) regional projects that have been identified in the USGR EWMP.

The objectives for the watershed control measures as identified in the Permit are as follows:

- Prevent or eliminate the non-storm water discharges to the MS4 that are determined to be a source of pollutants to the MS4 or receiving waters.
- Implement pollutant controls necessary to achieve interim and final WQBELs and RWLs at the corresponding compliance schedules.
- Ensure the discharges from the MS4s do not cause or contribute to RWLs.

A network of control measures was selected for the EWMP Implementation Plan using a combination of existing information and modeling. The approach for selecting the control measures included the following steps:

1. Summarize existing structural and institutional BMPs (as described in this section)
2. Identify a menu of potential control measures to be considered (as described in this section)
3. Evaluate effectiveness of potential BMPs on receiving water quality and jurisdictional loading with modeling (as described in Section 4)
4. Identify the combination and sequencing of BMPs to be included in the EWMP Implementation Plan to achieve interim and final water quality objectives (described in Section 5)

As outlined in Section 1, by definition the USGR EWMP shall include multi-benefit regional projects that retain the storm water volume from the 85th percentile, 24-hour storm for the drainage areas tributary to the multi-benefit regional projects. Additionally, the watershed control measures should incorporate effective innovative technologies, approaches and practices, and includes green infrastructure. This section highlights multi-benefit regional projects to be implemented by the EWMP, along with innovative green infrastructure BMPs.

3.1 INTRODUCTION TO CATEGORIES OF CONTROL MEASURES

Two overarching categories of BMPs will be discussed throughout the EWMP:

- **Structural BMPs:** these BMPs retain, divert or treat stormwater and/or non-stormwater, and can either be distributed throughout the watershed or sited regionally.

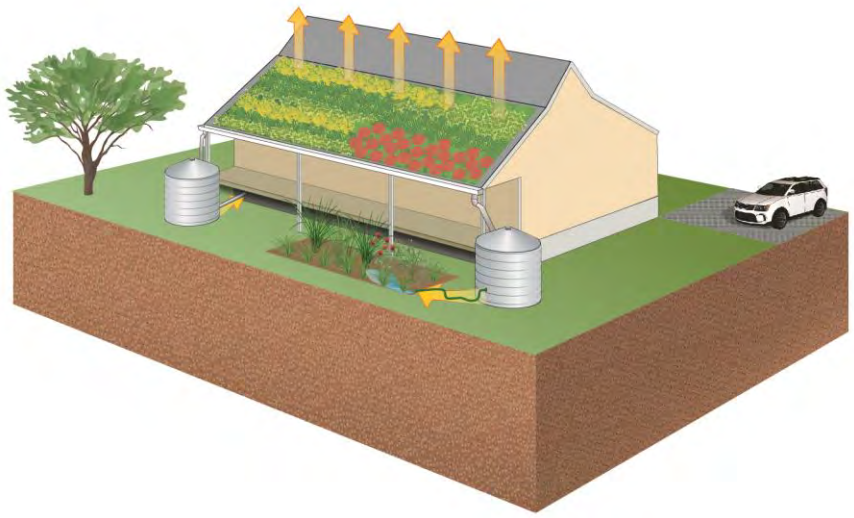
[3] In this EWMP, the terms "control measures" and "best management practices (BMPs)" are used interchangeably.

- **Institutional BMPs:** these BMPs encompass the Minimum Control Measures (MCMs) outlined in the permit, other non-structural BMP's, and any other source control measures, such as community education programs.

Furthermore, the three main categories of structural BMPs included in the EWMP include low-impact development, green streets, and regional projects, as defined below:

- **Low-Impact Development (LID):** Distributed structural practices intended to treat runoff relatively close to the source and typically implemented at a single-parcel- or few-parcel-level (normally less than 10 tributary acres) (**Figure 3-1**).

Figure 3-1
Conceptual Schematic of LID Implemented at the Parcel Scale

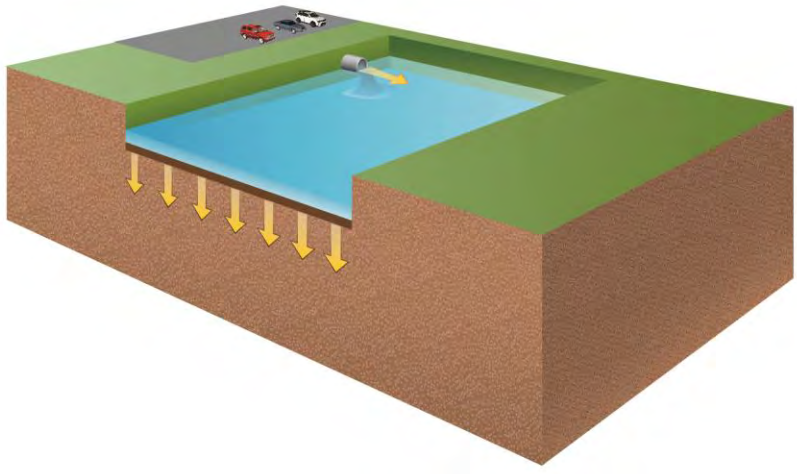


- **Green Streets and Green Infrastructure:** Distributed structural practices intended to treat runoff within public transportation rights-of-way (normally less than 10 tributary acres) (**Figure 3-2**).

Figure 3-2
Conceptual Schematic of Green Street/Green Infrastructure

- **Regional BMPs[4]:** Constructed structural practices intended to treat runoff from a contributing area of multiple parcels (normally on the order of 10s or 100s of acres or larger) (**Figure 3-3**).

Figure 3-3
Conceptual Schematic of Regional BMP



[4] Note not all regional BMPs are necessarily able to capture the 85thpercentile, 24-hour storm. The subset of regional BMPs that can capture the 85th percentile, 24-hour storm are referred to as "Regional EWMP Projects" herein.

Table 3-1 summarizes the types of BMPs that were included in the EWMP.

Table 3-1
Types of BMPs Considered in the EWMP

Category		Type
Structural (Section 3.2)	Low Impact Development	LID ordinance (new/redevelopment)
		Existing and Planned BMPs
		Residential LID
		LID on public parcels (retrofits)
	Green Streets	Green streets
	Regional	Regional BMPs on public parcels (Tier 1, Tier 2, and Tier 3)
		Regional BMPs on private parcels
Institutional (Section 3.3)		Minimum control measures and enhanced minimum control measures

3.2 STRUCTURAL CONTROL MEASURES

Constructed BMPs will perform the majority of required pollutant reduction for the USGR EWMP. To implement control measures efficiently at the watershed-scale and support compliance tracking, structural BMP programs will be an important element of EWMP implementation. This section describes the structural BMP programs necessary to implement the EWMP. Detailed fact sheets of the structural control measures are provided in **Appendix B-2**.

Both regional projects and regional EWMP projects are included in this EWMP and categorized as described below:

- Tier 1 Regional Projects: Select subset of regional BMPs identified during the regional BMP selection process. Tier 1 regional BMPs have been modeled explicitly utilizing SUSTAIN (System for Urban Stormwater Treatment Analysis and Integration). 10 Tier 1 regional BMPs have been included in the EWMP as "signature" or example regional EWMP projects.
- Tier 2 Regional Projects: Potential regional projects or regional EWMP projects that are located on the other parcels owned by the Group Members.
- Tier 3 Regional Projects: Potential regional BMPs located on school properties (if elected by the individual Group Member) and public parcels owned by other entities identified during EWMP implementation.
- Private Regional Projects: Potential regional projects located on privately-owned land.

3.2.1 Regional Control Measures on Public Parcels

The Permit places heavy emphasis on regional projects as multi-benefit components of the EWMP. The compliance determination of the Permit specifies that retention of the stormwater volume associated with

the 85th percentile, 24-hour storm (design storm) achieves compliance with final TMDL RWLs and WQBELs for upstream areas. Regional projects that achieve this specification are referred to as "Regional EWMP Projects".

Regional projects are centralized facilities located near the downstream ends of large drainage areas (typically treating 10s to 100s of acres). Unlike LID and green streets, runoff is typically diverted to regional projects after it has already entered storm drains, but before entering the receiving waters. Routing offsite runoff to public parcels (versus treating surface runoff near its source) often allows regional BMPs to be placed in the cost-effective locations with the best available BMP opportunity. Regional projects have access to large volumes of runoff from extensive upstream areas, and thus can provide a cost-effective mechanism for infiltration, pollutant reduction, and augmentation to water supply.

3.2.1.1 Regional EWMP Project Screening Methodology

An initial screening methodology was developed to identify preferred project sites for regional projects. Criteria were established in order to rank possible sites based on project site constraints and preferred project site attributes. Geographic information system (GIS) spatial analysis was utilized in order to process and compare data layers among the potential sites.

Site Identification

Potential project sites were identified using two main sources of information; 1) the Los Angeles County Parcel Boundary Map (Parcels identified by Assessor Identification Number (AIN), available from the Los Angeles County of the Assessor) and 2) the County of Los Angeles GIS shapefile of land use types (available at http://egis3.lacounty.gov/dataportal/2014/07/07/la-county-land-types/). The land use file contains land areas such as parks, recreation centers, sports complexes, schools, and open spaces. The parcel file was used to define individual parcels and identify possible site locations that are not in the land use file. Project sites contain one or more parcels that are linked by land use type and ownership. In this manner, parcels were grouped into their respective sites using the shape boundaries of the land use file and ownership information. **Figure 3-4** illustrates an example of grouping multiple parcels into individual sites.

Figure 3-4
Example of Two Public Parcels Grouped as One Site

Initial Site Evaluation

GIS spatial analysis was performed on each individual project site. Multiple layers of data were processed using GIS and used to evaluate potential sites. **Figure 3-5** graphically illustrates the method used to develop the preliminary list of sites for regional projects.

Because land acquisition for projects would significantly increase the cost, only parcels that are currently publicly owned were identified. More than 2,000 public parcels in the EWMP Group area were evaluated using the GIS spatial analysis. After grouping the parcels, sites smaller than half an acre were eliminated because they are considered impractical for constructing a large-scale, regional project. The BMP footprint and therefore the ability to capture large volumes of runoff would be severely limited with sites smaller than half an acre..

To evaluate the potential for stormwater recharge within the watershed, a site suitability analysis was conducted, using several GIS data layers. These layers are summarized in **Table 3-2** and presented in **Figure 3-6** through **Figure 3-14**.
Each layer used in the spatial analysis was defined as one of the following types: (1) constraints, (2) preferences, and (3) flags. The layer types are defined as follows:

- Constraints – Layers used to filter parcels from further consideration by assigning a YES/NO value.
- Preferences – Layers used to evaluate expected effectiveness of potential parcel and produce a relative rank of parcels by assigning a score of 1-5.
- Flags – Layers that could affect the feasibility but are not considered site constraints until further site investigation is conducted and are assigned as flags.

.

Figure 3-5
Initial Screening Methodology

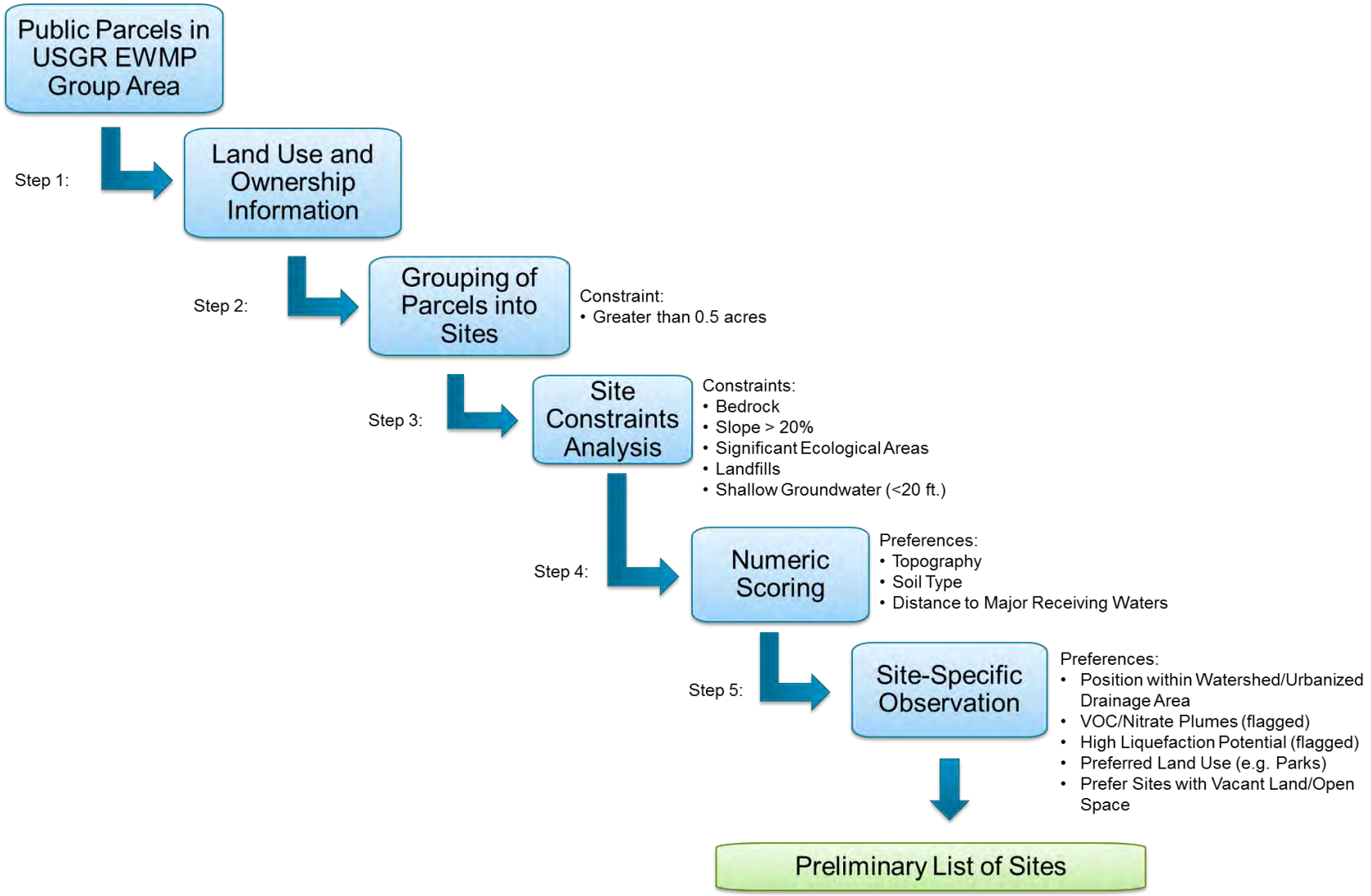


Table 3-2
GIS Data Layers and Descriptions

Layer	Source	Description	Type
Bedrock	California Geological Survey	areas of bedrock where infiltration is severely limited	Constraint
Methane-Producing Landfill	County of Los Angeles Department of Public Works, April 2012	disposal sites that historically accepted degradable refuse material	Constraint
Significant Ecological Area (SEA)	County of Los Angeles Planning	land that contains irreplaceable biological resources	Constraint
Depth to Groundwater	Main San Gabriel Basin Watermaster, July 1997	depth to groundwater	Constraint if depth to groundwater is less than 20 feet
Ground Surface Slope	USGS Digital Elevation Model (DEM)	30-foot horizontal, 5-foot vertical resolution	Constraint if slope greater than 20%, Preference if slope less than 20%,
Distance to Major Receiving Waters	Calculated using County's SDS Channels Shapefile	horizontal distance to nearest receiving water	Preference
Soil Infiltration Rate	County of Los Angeles Department of Public Works, Tetra Tech	infiltration rate	Preference
Groundwater Contamination	MWH Hydrogeologic Assessment of Continuous Recharge and Extraction of Recycled Water in the Main San Gabriel Basin, January 2011	existence of VOCs or nitrate in groundwater greater than the Maximum Contaminant Level (MCL)	Flag
High Liquefaction Potential	California Geological Survey Seismic Hazard Zonation Program, 1999	areas of historic occurrence of liquefaction as defined in Public Resource Code Section 2693(c)	Flag

Figure 3-6 – Soil Infiltration Rates

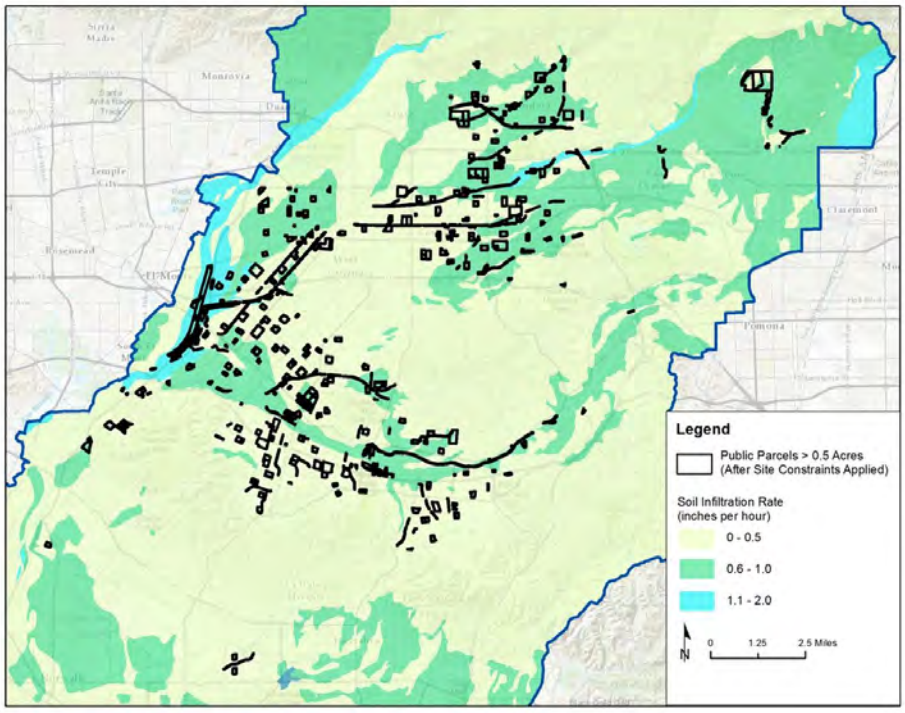


Figure 3-7 – Ground Surface Slope

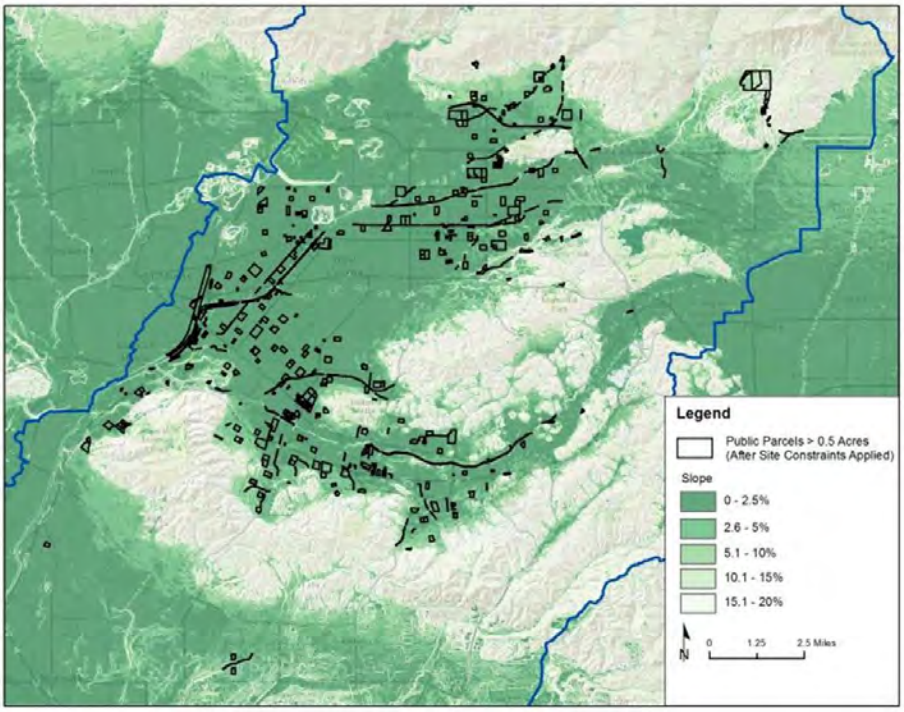
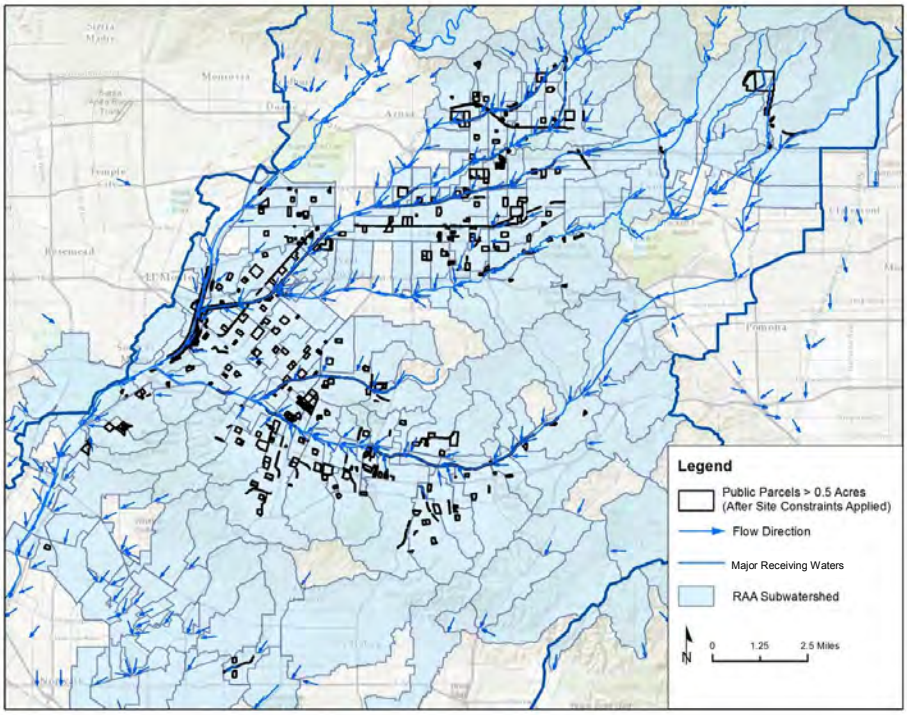


Figure 3-8 – RAA Subwatersheds and Flow Direction



In the Upper San Gabriel River watershed, most subwatersheds tend to drain towards a major receiving water body, such as the San Gabriel River or San Jose Creek. Therefore, it is reasonable to assume that if a site is closer to a major receiving water body, the area draining towards the site (i.e. contributing drainage area) is likely to be larger. Conversely, if a site is far from a major receiving water body, the contributing drainage area to the site is likely to be smaller. For this reason, the distance of a site to a major receiving water body was used as an indicator of the potential contributing drainage area to the site. If the contributing drainage area to a site is larger, the site has more potential to capture and infiltrate large quantities of runoff. Therefore, sites closer to a major receiving water body were considered preferable.

Figure 3-9 – Depth to Groundwater (<20 ft. BGS)

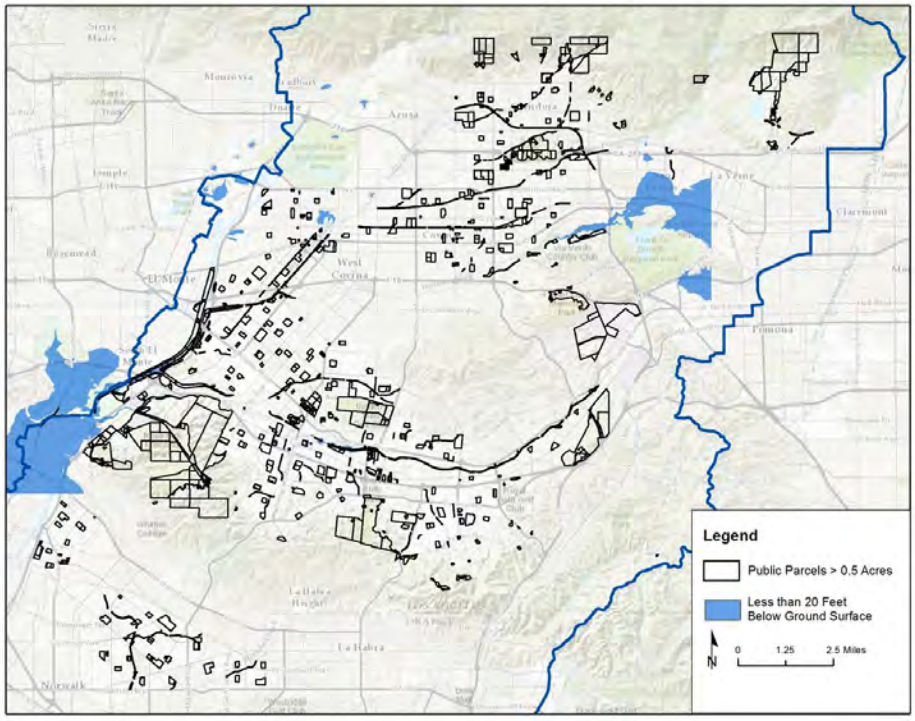


Figure 3-10 – High Liquefaction Potential

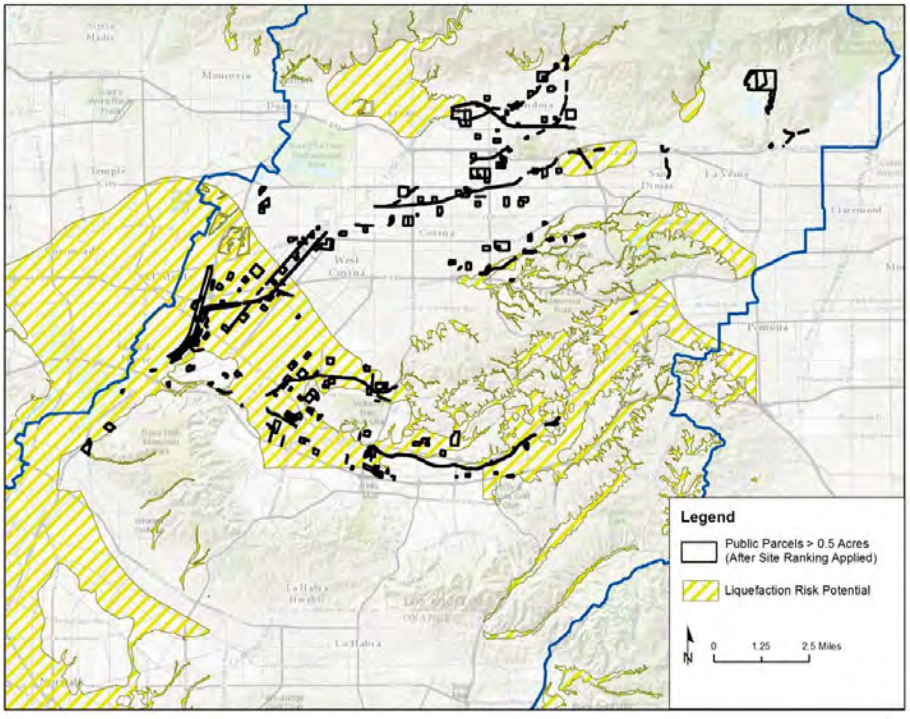


Figure 3-11 – Groundwater Contamination

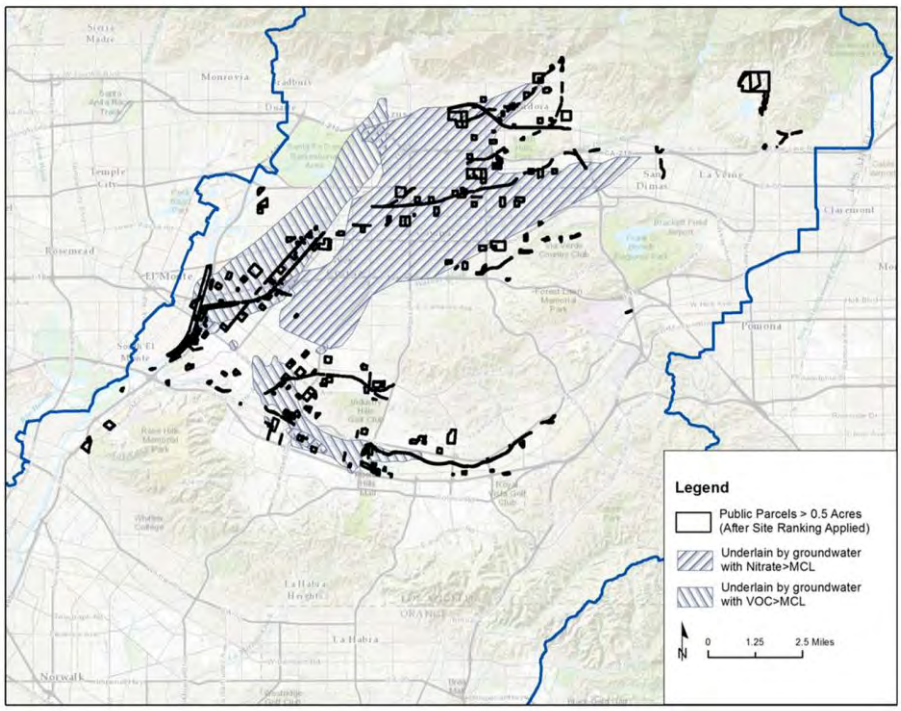


Figure 3-12 – Significant Ecological Areas (SEAs)

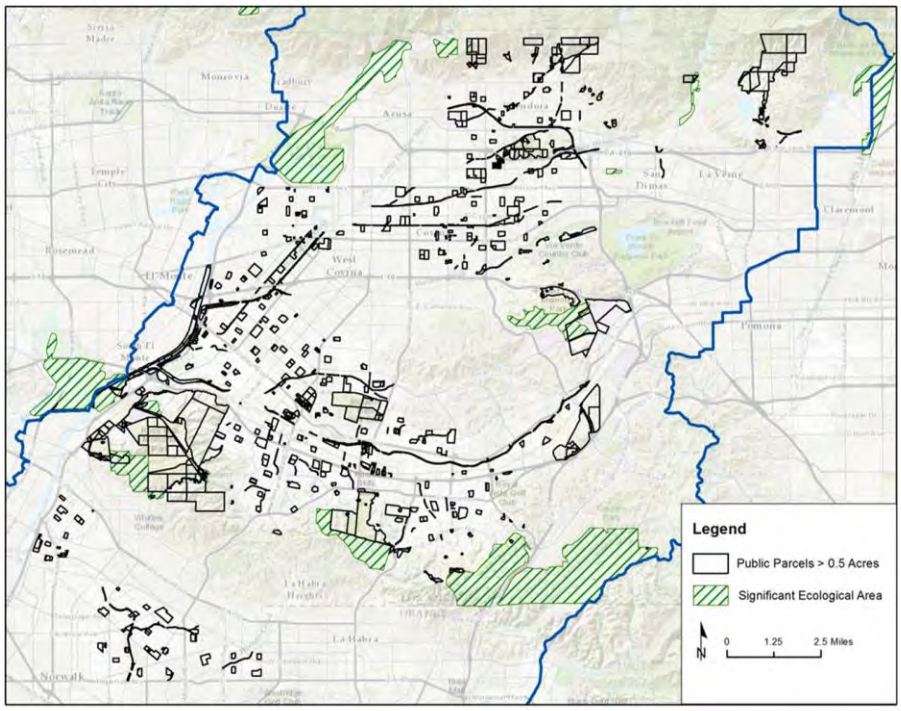


Figure 3-13 – Methane-Producing Landfills

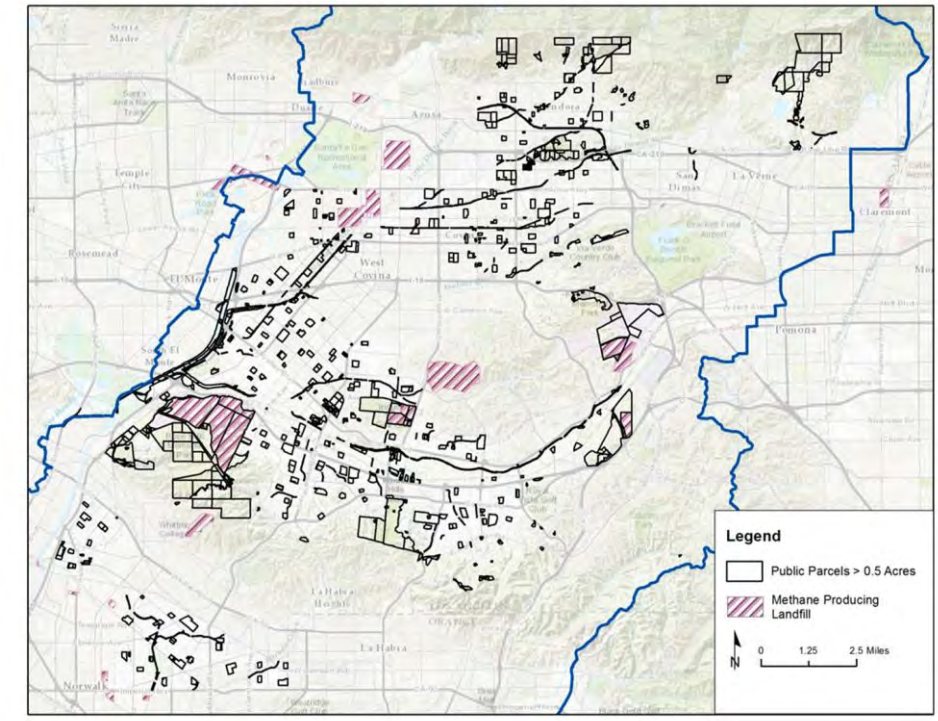
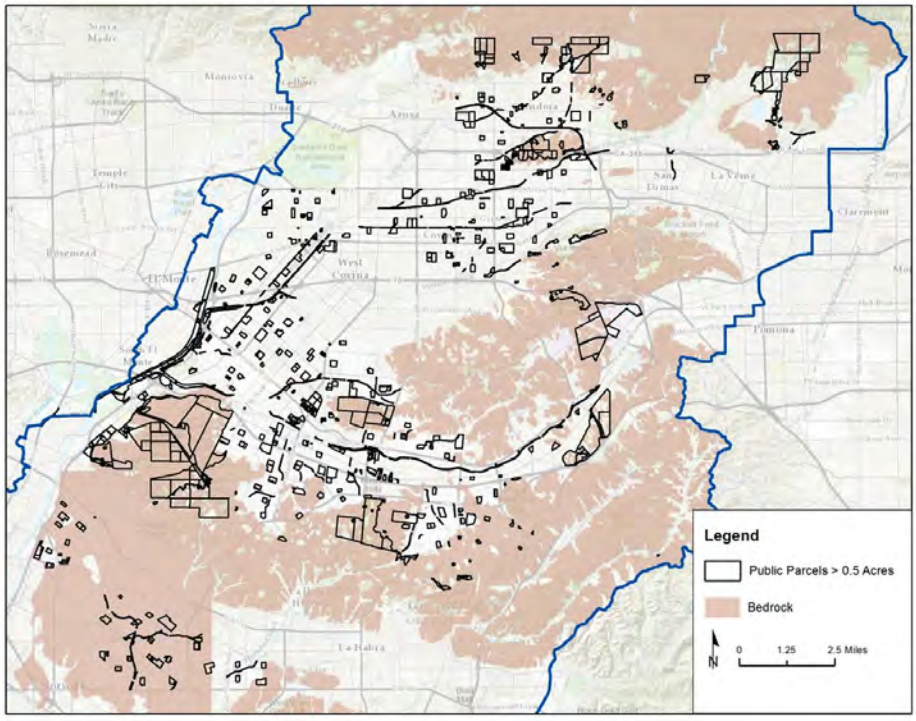


Figure 3-14 - Bedrock



Numeric scoring was performed by discretizing a 200-foot regular Cartesian grid over the EWMP Group area. The size of the grid was driven by the resolution of the coarsest data layer, the Digital Elevation Model (DEM). The grid was generated using the NAD 1983 State Plane California V FIPS 0405 Feet projection.

The method used for numeric scoring included the following steps:

1. Raw values (e.g percent for slope, inches per hour for soil infiltration, and feet for distanced to major receiving waters) were calculated by spatially joining grid cell centroids to each layer.
2. Raw values were indexed to the following scoring matrix in **Table 3-3**:

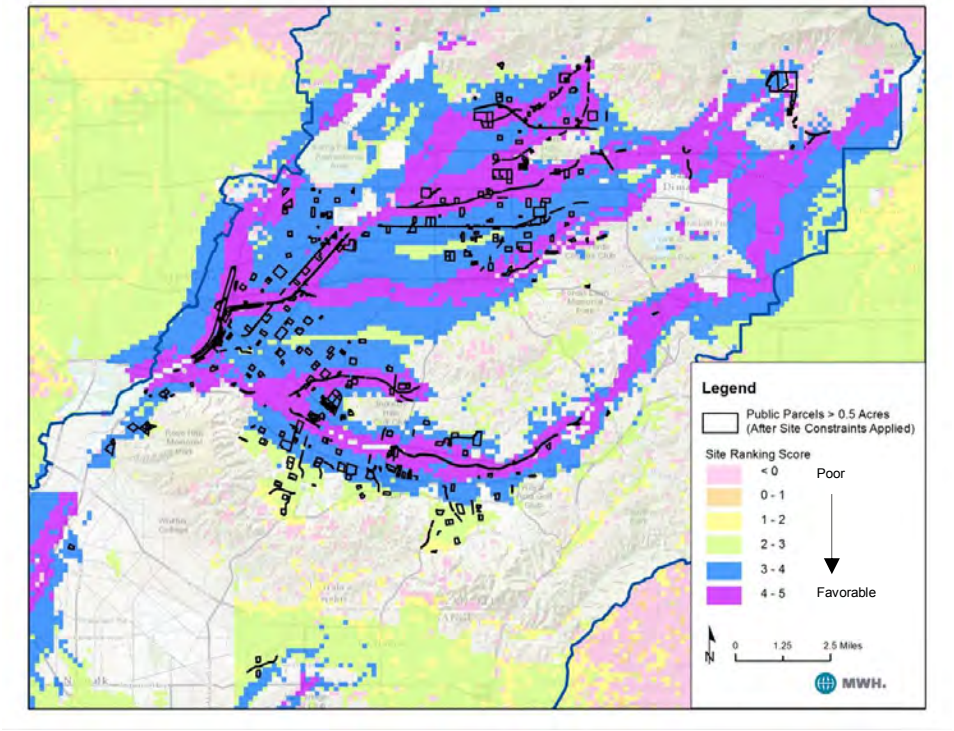
Table 3-3
Scoring Matrix for Regional EWMP Project Initial Screening

	Numeric Score				
Layer	**1**	**2**	**3**	**4**	**5**
Soil Infiltration Rate (in/hr)	0-0.1	0.1-0.25	0.25-0.5	0.5-1	>1
Distance to conveyance (miles)	>2	1-2	0.5-1	0.25-0.5	0-0.25
Ground Surface Slope (%)	15-20	10-15	5-10	2.5-5	0-2.5

3. The total score for each cell was determined by averaging the three scores for each of the preference layer types, yielding a total score of 1-5. Note that constraints layer types are not scored, but were assigned YES for true or NO for false, i.e., indicating the presence of a particular constraint.
4. Each site was assigned a score based on the grid cell that the sites centroid was located in.

The numeric scoring was used to help identify sites that represented relatively favorable areas for stormwater recharge, consisting of sites with good soil infiltration rates (greater than 0.5 inches per hour), preferable slopes (less than 5 percent), and sites closer to major receiving waters (within half of a mile). The resulting scoring map is presented in **Figure 3-15**.

Figure 3-15 – Numeric Scoring Process



Following the GIS spatial analysis, sites were further evaluated using aerial imagery. Sites consisting of infeasible land use types, including natural and wildlife areas, historic sites, hospitals, in-channel parcels, and existing spreading grounds were not considered for further analysis. Sites were checked visually to ensure that the contributing drainage area to the site appears to be primarily from the MS4. Sites were checked to determine if existing development (such as buildings at a park) would significantly impact the space available to construct a regional project.

3.2.1.2 Example Regional EWMP Projects

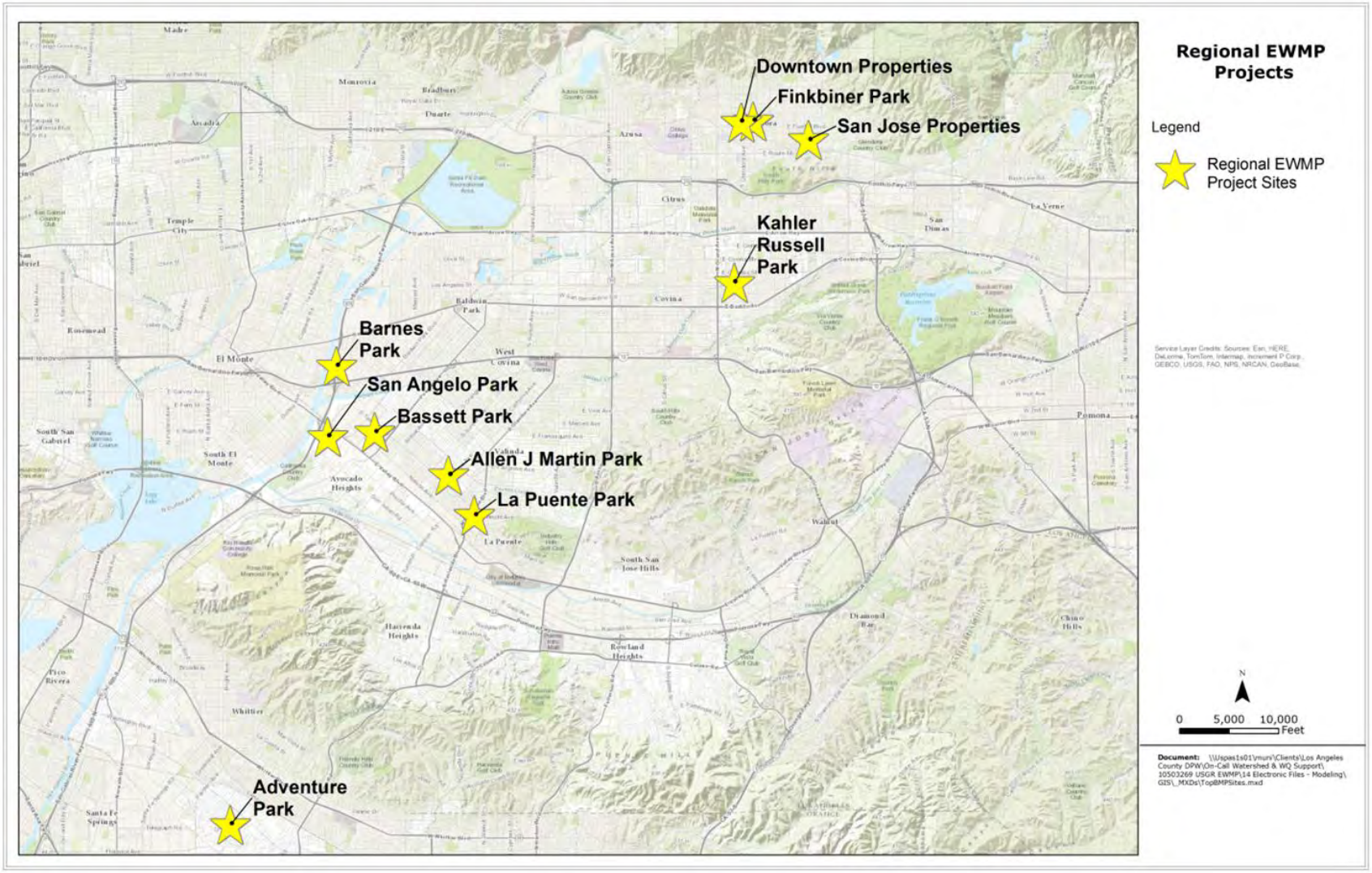
Based on the extensive initial screening process and through coordination with the Group Members, 10 "signature" or example regional EWMP project sites were selected for conceptual design and inclusion in the EWMP plan. These regional EWMP projects retain and infiltrate or beneficially reuse all stormwater runoff from the 85th-percentile, 24-hour storm event for the drainage area tributary to the project. Additional information on the selection and conceptual design of the 10 example regional EWMP projects is provided in **Appendix B-1**. Additional potential regional projects are listed in **Appendix C-8**. The example regional EWMP project sites are listed in **Table 3-4** and presented in **Figure 3-16**.

Operations and maintenance considerations and evaluation of multi-benefit features, such as groundwater recharge, improvements to enhance existing facility user experience, and educational outreach opportunities, will be key issues to be addressed. Preliminary sketches and conceptual site layouts have been developed for each project (**Appendix B-1)**.

Table 3-4
Regional BMP Project Sites

Regional EWMP Project Site	Address
Finkbiner Park	160 N. Wabash Ave, Glendora, CA 91741
Bassett Park	510 Vineland Avenue, La Puente, CA 91746
Kahler Russell Park	735 North Glendora Avenue, Covina, CA 91724
San Angelo Park and Vacant Lot	245 San Angelo Avenue, Bassett, CA 91746
Allen J Martin Park	14830 East Giordano Street, La Puente, CA 91744
Barnes Park	3251 Patritti Avenue, Baldwin Park, CA 91706
La Puente Park	15538-15598 E Temple Ave, La Puente, CA 91744
Adventure Park (aka Gunn Ave. Park)	10130 S. Gunn Avenue, Whittier, CA 90605
Downtown Properties	Foothill Blvd. and Glendora Ave., Glendora, CA 91741
San Jose Properties	Burnaby Dr, Lawford St., Glendora, CA 91741

Figure 3-16
Regional EWMP Project Sites



The 10 example projects represent opportunities to capture and infiltrate stormwater and protect receiving waters. A conceptual level design was developed for each of the 10 example regional EWMP projects that include the selection of BMP type, preliminary sizing, configuration, and diversion pipeline alignment. The conceptual level designs include the following components, and each is discussed further below:

- Preliminary geotechnical evaluation at each site
- Preliminary evaluation of potential environmental constraints
- Construction feasibility review
- Cost estimates and project schedules

Preliminary Geotechnical Evaluation

Geotechnical evaluations have been conducted to verify site constraints such as bedrock, high groundwater, and clay and silt layers that may impact the feasibility of the regional EWMP project. These evaluations augment assumptions from the initial screening of all regional project sites. The results of these evaluations may be used to inform the level of effort required for a construction level geotechnical study. Boring logs from the geotechnical study are in included as **Appendix B-3**

Evaluation of Potential Environmental Constraints

A Programmatic Environmental Impact Report (PEIR) for County-wide watershed activities associated the Permit was developed by the County of Los Angeles Department of Public Works on behalf of the LACFCD. The Draft PEIR was circulated for public comment on January 21, 2015. Comments were due on March 16, 2015 and the PEIR is expected to be certified in mid-May. Copies of the draft PEIR can be found at www.LACoH2Osheds.com. An initial study of potential environmental considerations for the example regional EWMP projects is summarized in **Appendix B-4.**

The PEIR evaluates the major environmental effects of implementing proposed EWMP projects from a broad perspective; this evaluation is a program-level analysis. While the Permittees are developing the design, construction, and operation details of the projects that would be included in the EWMPs, these project details are not the focus of this PEIR. Instead, the PEIR frames the nature and magnitude of the expected environmental impacts associated with these proposed EWMP projects and identifies program mitigation measures to reduce the impacts of the projects as proposed. More detailed project-level analyses of individual EWMP projects may be conducted separately by each of the Permittees as required by California Environmental Quality Act (CEQA). The PEIR can provide a basis for the discussion of the environmental documents, assessments and permitting required for the implementation of priority projects. The PEIR can be used by the local implementing agencies to streamline environmental review of individual EWMP projects. The implementing agency may determine that a more detailed, project-level analysis is required, or may determine some projects to be exempt from CEQA. For non-exempt projects, project-level CEQA review will be conducted separately by the appropriate implementing agency. The separate environmental review of individual projects will evaluate site-specific impacts and incorporate feasible mitigation measures and alternatives (CEQA Guidelines, Section 15168[c]).

Construction Feasibility Review

Preliminary engineering considerations have been developed to determine the feasibility of construction the proposed projects. Based the information gathered, best professional judgment, and technical assumptions, a preliminary sizing and placement of the BMP(s) have been provided for each site (**Appendix B-1**).

Available as-built drawings of stormwater infrastructure have been reviewed for the purposes of confirming technical assumptions to be used in the conceptual designs, such as slope, depth, and size of storm drains.

3.2.1.3 Additional Potential Regional Projects (Tier 2 and Tier 3)

Regional Project Program Highlights:
- Retrofits public parcels with regional projects
- Can provide community cobenefits (recreation, groundwater recharge, habitat)
- Maximizing infiltration rate, runoff diversion rate, and drainage area will maximize BMP efficiency

Assumptions:
Public parcels identified via desktop screening and vetted by Group will be retrofit to treat runoff diverted from upstream (offsite) drainage area. Assume infiltration basins where feasible.

Additional potential (Tier 2) regional projects were identified using a detailed spatial analysis, beginning with an initial spatial analysis of constraints, and culminating with an identification of publically-owned parcels potentially suitable for regional projects. Certain Group Members also elected to consider regional projects on parcels owned by other public entities such as local school districts and transportation authorities (Tier 3 regional projects). Tier 2 and Tier 3 candidate sites represent important components of the compliance strategy, although the massive quantity of parcels required more generalized analysis than the 10 signature sites. Section 3.5 describes the Tiers selected for inclusion by each Group Member and the associated analysis. A list of potential regional projects is provided in **Appendix C-8.**

3.2.2 Regional Control Measures on Private Parcels

Private Regional Project Program Highlights:
- Retrofits private parcels with regional projects
- Requires land acquisition or public/private partnerships
- Parcel identification and prioritization required
- Maximizing infiltration rate, runoff diversion rate, and drainage area will maximize BMP efficiency

Assumptions:
Infiltration basins implemented at or near subwatershed outlets

Additional control measures required beyond the opportunities identified in the preceding subsections are identified as regional control measures on private parcels. Because specific opportunities for land acquisition and/or public-private partnerships cannot be confirmed during the timeframe of the EWMP development, the RAA modeling described in Section 4 report a conceptual volume of infiltration basins required in each subwatershed to meet the numeric goal. Modeling assumptions for additional regional control measures on private parcels will follow the assumptions presented for subsurface infiltration basins, as discussed in Section 3.5 and presented in **Appendix C-1**.

3.2.3 LID Programs

A key element of the structural BMP strategy for the USGR EWMP is to assume that LID will be distributed throughout the watershed. LID can provide multiple benefits to the surrounding community, including increasing property values, landscape value and sense of well-being, increased safety, and reducing crime rate (Ward et al. 2008; Shultz and Schmitz 2008; Wolf 2008; Northeastern Illinois Planning Commission 2004; Hastie 2003; Kuo 2003; Kuo et al. 2001a; Kuo et al. 2001b; Wolf 1998) as well as the reduction in reliance of imported water, a key issue in Southern California.

For the purposes of this EWMP, it is assumed that LID is defined as a series of distributed structural practices that capture, infiltrate, and/or treat runoff at the parcel scale. Common LID practices include bioretention, permeable pavement, and other infiltration BMPs that manage runoff at the source. Rainfall harvest practices such as cisterns can also be used to capture rainwater that would otherwise run off a parcel and offset potable water demands. **Appendix B-2** provides fact sheets explaining several potential LID practices. For the RAA, the LID BMPs are designed to capture the 85th percentile storm from the parcels on which they are located.

While individually these features are not large, when deployed across numerous parcels throughout the watershed, they can collectively make significant progress towards improving water quality and achieving WQOs. Since the vast majority (nearly 90 percent according to RAA inputs) of runoff from the developed portion of the watershed is generated from impervious areas on parcels, LID is a natural choice as a key strategy to address imperviousness. This strategy can be viewed as the "first line of defense" due to the fact that the water is treated on-site before it runs off from the parcel and travels downstream. Especially for areas where regional opportunities do not exist downstream, LID is an effective strategy that will only be limited by the extent of implementation.

The following paragraphs provide an overview of each specific LID strategy. **Appendix C-3** provides an analysis that defines the overall opportunity for and extent of implementation for each individual element. The approach/assumptions for representing LID BMPs in the RAA is described in Section 4.3.

LID Ordinance (New/Redevelopment)

The Permit specifies adoption of LID ordinances requiring mitigation of newly developed and redeveloped areas. As such, redevelopment LID projects will take existing impervious surfaces offline over time – greatly improving the effluent water quality and materially advancing EWMP objectives. The key advantage to the Group members is that these projects are 100 percent funded by the developer. As such, the RAA assumes that a certain percentage of parcels is redeveloped over the course of the compliance period and reflects the benefits of the LID ordinance. **Figure 3-18** shows areas that are subject to redevelopment, per the WMMS land use data

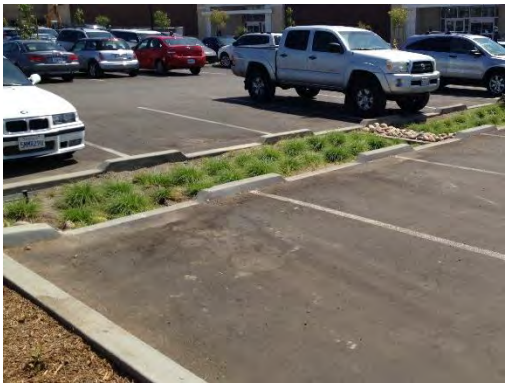


Figure 3-17. Biofiltration in a Redeveloped Shopping Center Parking Lot

As this program matures it is important to maintain a robust set of engineering standards to ensure that BMPs are being sized, sited, and designed properly. The USGR EWMP Group will retain the responsibility of reviewing and approving calculations, engineering plans, and specifications provided by developers. Ultimately, a strong LID ordinance program provides an inexpensive strategy to continually make progress towards EWMP goals. As redevelopment occurs throughout the watershed, it will be important for the USGR EWMP Group to track BMP implementation and compare to the projections made by the RAA.

LID Ordinance Program Highlights:

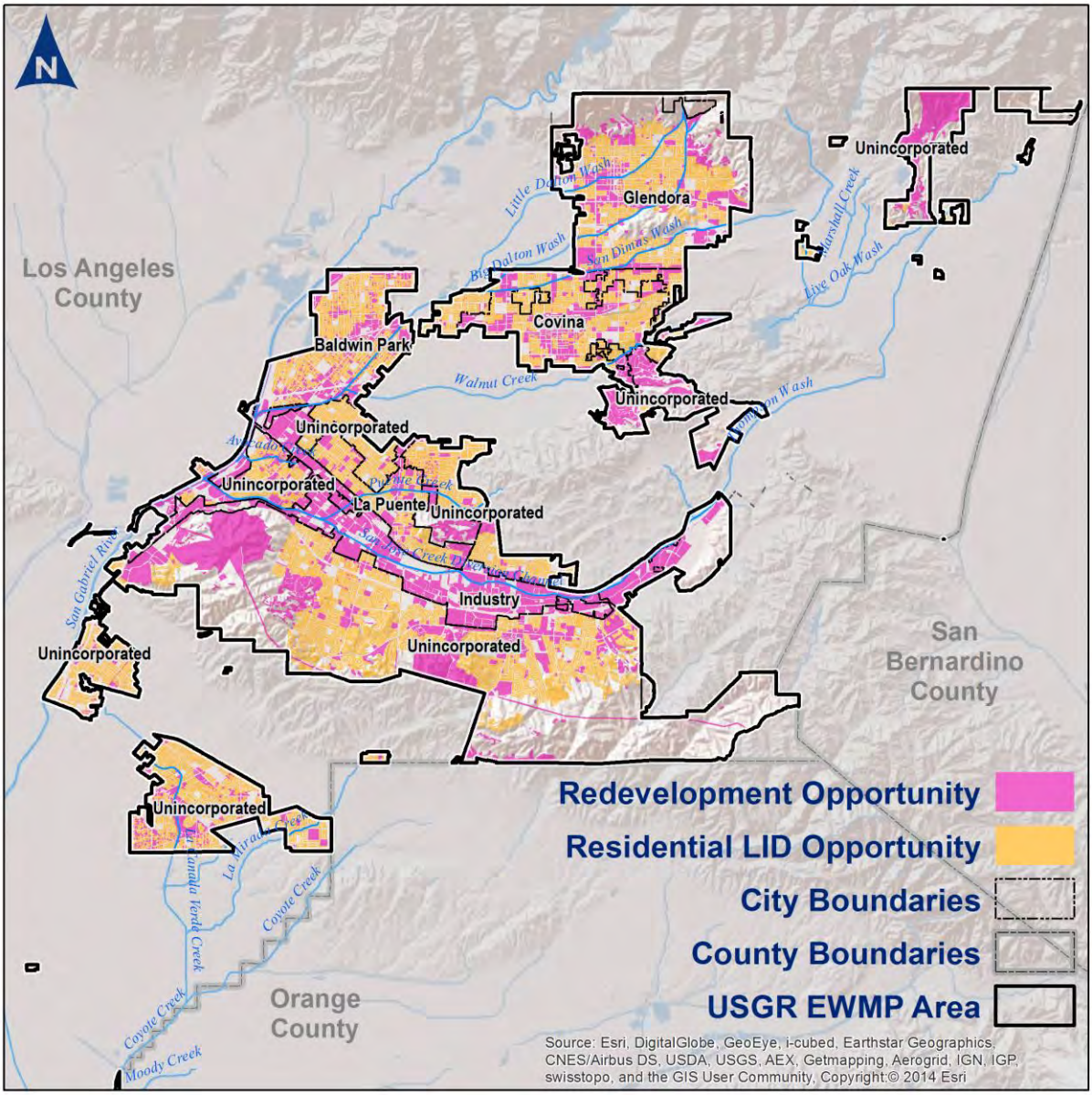
- Ongoing water quality improvement program
- Important to account for water quality benefits
- Costs to Group agencies minimal
- Requires strong standards and oversight
- Benefit based on number of redeveloped parcels

Assumptions:

BMP implementation to capture 85th percentile storm on redeveloped parcels, based on land use-specific historical redevelopment growth rates reported by Los Angeles Bureau of Sanitation (rates vary from 1.65% of commercial land use to 3.74% of industrial land

Note that while LID on new/redevelopment is a structural BMP, the MS4 Permit categorizes it as an MCM, since the control measures are implemented by developers.

Figure 3-18
Opportunities for Redevelopment and Residential LID



Residential LID

Accounting for approximately 14 percent of all developed impervious area in the watershed, residential parcels represent an important opportunity for LID implementation (**Figure 3-18** shows the extent of high-density residential land, per the WMMS land use data). Runoff from residential parcels is often directly connected to a curb and gutter or other conveyance system on the street. Based on input from the EWMP Group, the RAA assumes that a residential LID program will be initiated to encourage and incentivize residential homeowners to retrofit their properties with LID features.

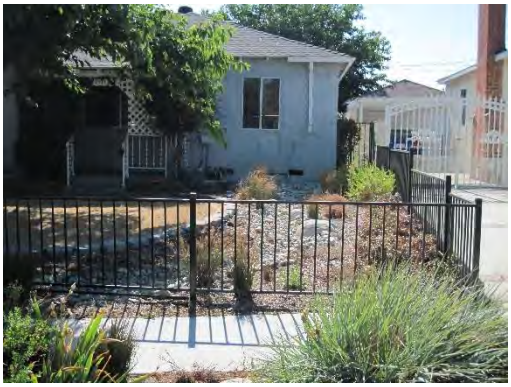


Figure 3-19. Residential LID Retrofit in the form of a Xeriscaped Infiltration Swale

Treating runoff through a voluntary program at the residential parcel scale can significantly offset the need for regional or green infrastructure BMPs. A well-designed residential LID program will thoroughly engage individual homeowners to establish a sense of stewardship and ownership as they transform small areas of their property into stormwater treatment elements. Incentive programs can potentially be aligned with existing water conservation programs such as turf replacement or xeriscaping incentives. Partnering with key non-governmental organizations can be an effective strategy to rapidly developing an effective program that includes community engagement and preparation of standard plans and procedures. As with the redevelopment ordinance program, BMPs implemented as part of this program will be tracked and compared to the projections made by the RAA.

Residential LID Program Highlights:

- Incentivizes installation of BMPs on residential land
- Offsets more expensive BMPs downstream
- NGO partners can help develop and operate program
- Homeowner engagement and stewardship is critical
- Benefit based on rate of adoption by homeowners

Assumptions:

Starting 2017, one percent of residential parcels per year in each jurisdiction (approximately 193 acres per year across the entire EWMP area) will be retrofit with BMPs to retain the 85th percentile storm

LID on Public Parcels (Retrofits)

Although public parcels represent less than 1 percent of all impervious land use in the watershed, they provide key opportunities to implement LID on parcels where the USGR EWMP Group has domain. These opportunities provide several key advantages, including the ability to coordinate efforts with already-planned infrastructure upgrades (e.g., parking lot rehabilitations), avoidance of land acquisition costs, and the opportunity for public engagement and education.

Figure 3-20. Bioretention and Permeable Pavement at the Los Angeles Zoological Park

Sites that attract significant public traffic, such as libraries, City Hall, and parks can also provide excellent forums to demonstrate LID practices. Not only will these demonstrations help the USGR EWMP Group to achieve the goals of the EWMP, if done properly they can advance the

public's understanding, acceptance, and support for these types of projects which will be critical for developing financial funding strategies for larger efforts (such as green streets and regional projects). **Figure 3-21** shows the public parcels that were considered for LID.

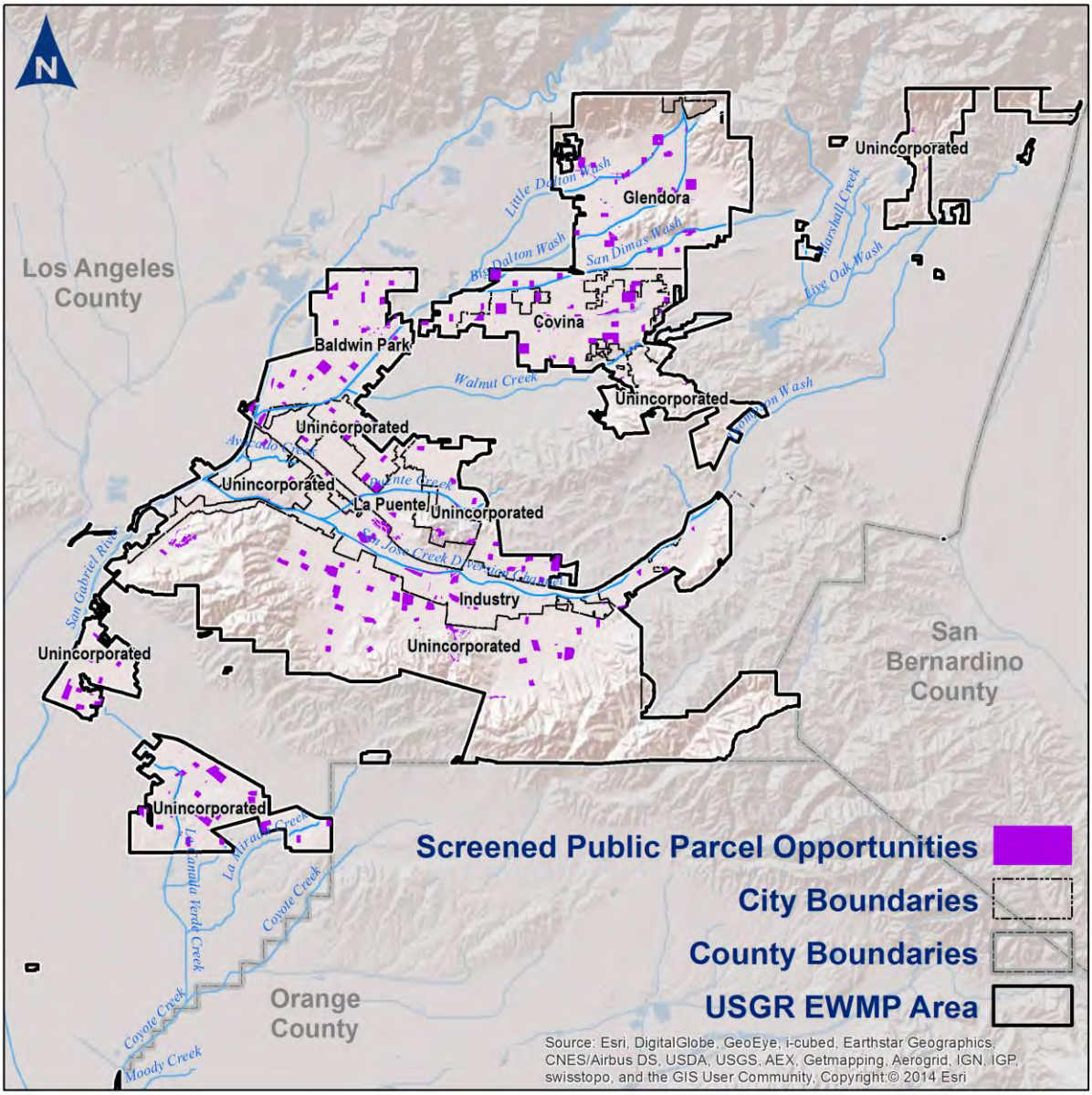
Public Parcel LID Program Highlights:

- Implements LID on public parcels through retrofits
- Key opportunities for public education
- Readily integrated into planned site rehabilitation
- Can be leveraged to generate public support/funding
- Small number of public parcels limits total impact

Assumptions:

Public parcels identified via desktop screening for slopes, groundwater, and soil contamination (2,270 acres in total) will be retrofit to treat onsite runoff from the 85th percentile storm.

Figure 3-21
Opportunities for LID on Public Parcels



Existing and Planned BMPs

In addition to the above programs, the EWMP incorporates ongoing structural BMP activities that have recently been or are currently taken place. An inventory of existing and planned structural BMPs within each jurisdiction was developed to account for these activities. Existing and planned BMPs were identified through a data request distributed to the USGR EWMP Group to identify BMPs within the EWMP area. In addition, a literature review was performed to identify further structural BMP projects that were not encompassed by the data request. The literature review included the following documents/sources:

- Integrated Regional Watershed Management Plan (IRWMP) documents,
- Notice of Intent (NOI),
- 2011-2012 Annual Report, and
- Online OPTI database (for planned BMPs).

Figure 3-22. Biofiltration in a Parking Lot

Existing and Planned BMP Highlights:
- Accounts for ongoing or recent BMP activity
- Projects will count as credit toward EWMP objectives as they are completed
- Documentation of project details is key

Assumptions:
Includes projects implemented after 2011, as identified in the EWMP Work Plan

As with the other programs, it will be important to track project details such as BMP size, type, and drainage area to compare to the assumptions/performance used in the RAA. Appendix C-6 details the existing and planned structural BMPs.

3.2.4 Green Streets Programs

The Permit specifies that EWMPs should "incorporate effective technologies, approaches and practices, including green infrastructure." Rights-of-way along streets may be the most extensive opportunity for the USGR EWMP Group to implement green infrastructure BMPs on public land. In developed areas, curb and gutter in the road provides the primary means of conveying stormwater (and associated pollutants) directly to storm drain inlets and receiving waters. Green streets provide an opportunity to intercept this runoff prior to entering the MS4 and treat it within the public right-of-way. Green streets have been demonstrated to provide "complete streets" benefits in addition to stormwater management, including pedestrian safety and traffic calming, street tree canopy and heat island effect mitigation, increased property values, and even reduced crime rates.

Figure 3-23. A Residential Green Street

As with LID, green streets tend to be distributed practices that are deployed throughout a watershed to treat runoff near the source. Key advantages of green streets, however, are that they are located on land directly controlled by public entities and can intercept runoff from larger upstream drainage areas when compared to LID projects.

Green Street Program Highlights:

- Implements green infrastructure in the rights-of-way
- High potential for significant load reduction
- Agencies retain ownership and O&M burden
- Design/construction standards can yield efficiency
- Strategic selection of streets can yield cost savings
- Opportunity for integration with CIP
- Data limitations currently hamper decision making

Assumptions:

Green streets implemented on suitable rights-of-way (screened for slope and road functional class) to treat contributing parcel and roadway runoff.

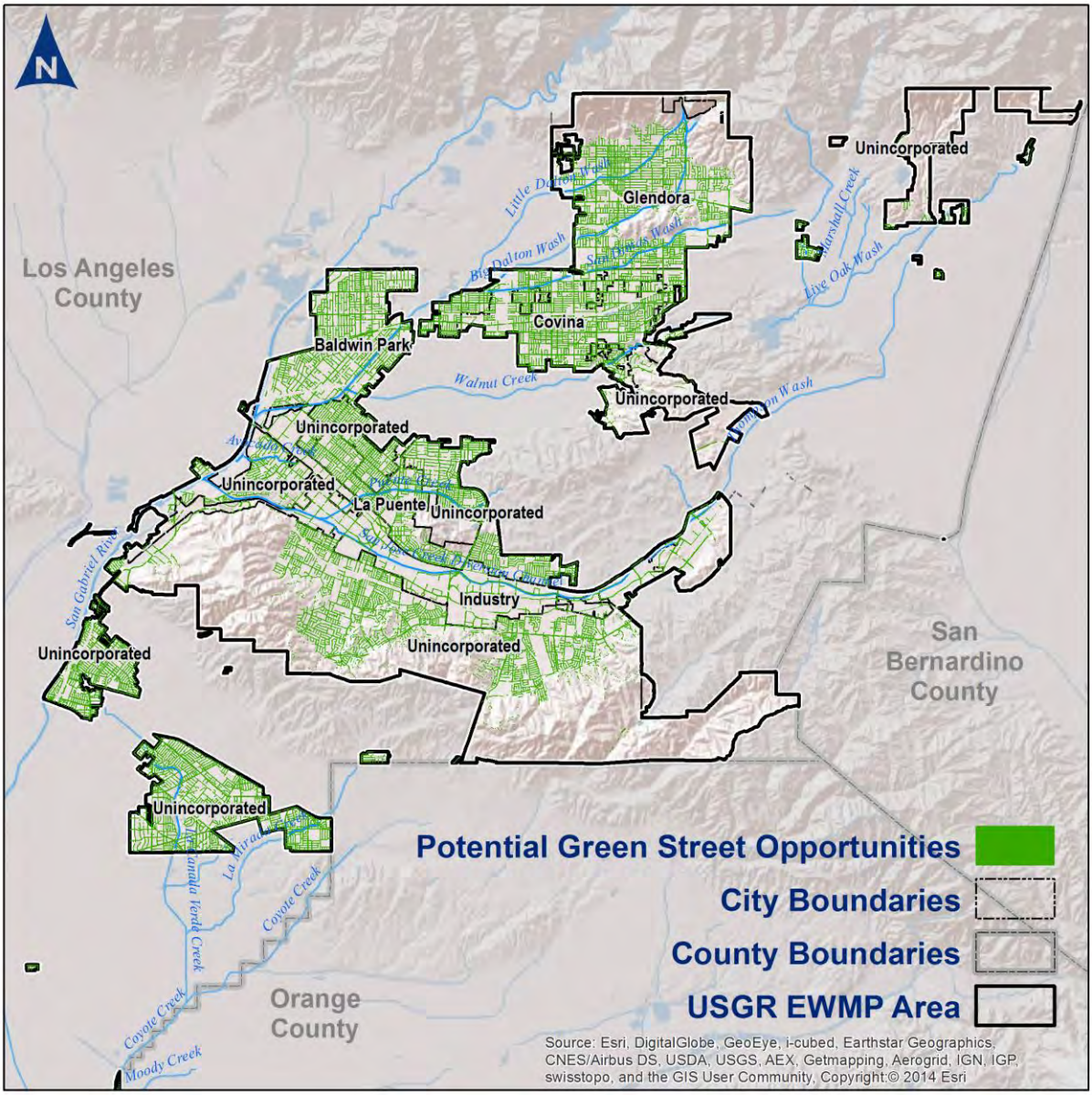
Green streets are typically implemented as linear bioretention/biofiltration practices installed parallel to roadways. Systems receive runoff from the gutter via curb cuts or curb extensions (sometimes called bump outs) and infiltrate it through native or engineered soil media. Permeable pavement can also be implemented in tandem, or as a standalone practice, in parking lanes of roads. The methods for screening potential street opportunities is discussed in **Appendix C-3** and the approach/design assumptions for representing green streets in the RAA is described in Section 4.3 and C-4, and C-5. The screening procedure identified over 1,700 linear miles of potential frontage length for green streets, as shown in **Figure 3-24**. The required extent of green street implementation (per the RAA) is presented in Section 5 and detailed in **Appendix C-5**.

Due to the large number of locations where green streets could be implemented, and the relative magnitude of green streets as a BMP category (compared to other BMPs) in the EWMP Implementation Plan, it is anticipated that a green streets program will be a key element of the compliance strategy for the EWMP. The development of a reliable, repeatable, and cost-effective program will require several considerations:

- Development and integration of standard specifications and drawings tailored to meeting EWMP objectives
- Development of data sets necessary to make street-scale site selection decisions
- Strategic identification and high-efficiency opportunity and prioritization of street-scale opportunities (which can significantly reduce capital costs)
- Coordination with existing street and/or utility rehabilitation programs
- Adaptation and/or enhancement of existing operations and maintenance (O&M) practices for roadside bioretention and permeable pavement
- BMP tracking systems

Although the green streets program will carry significant responsibility for achieving EWMP goals, effort on this program must be evaluated in conjunction with other programs, such as the residential LID program and the regional BMP program. For example, downstream of places where the residential LID program is heavily implemented, or upstream of locations where large regional projects are constructed, the need for green street retrofits within the same drainage area will be reduced. As with the other programs, it will be important to track the details of green street implementation, such as street length, retention design characteristics, and drainage area to compare to the assumptions/performance used in the RAA.

Figure 3-24
Opportunities for Green Streets



3.3 INSTITUTIONAL BMPS

A number of institutional control measures and MCMs are outlined in the EWMP, representing an array of practices to most effectively address pollutants at their source or affect their transport. In general, institutional control measures are able to achieve modest load reductions but may do so cost-effectively. As described further in Section 4, institutional control measures were either modeled explicitly or implicitly. This section presents the MCMs and low-impact development (LID) programs as institutional BMPs of this EWMP.

3.3.1 Minimum Control Measures (MCMs)

The MS4 Permit requires the implementation of MCMs in Parts VI.D.4 through VI.D.10. These MCMs are similar to the programs required under Order No. 01-182.

The Permit requires the continuation of existing MCMs until the EWMP is approved by the Regional Board. The existing MCMs, much like those proposed in the Permit, comprise six categories:

1) Public Information and Participation Program
2) Industrial/Commercial Facilities Program
3) Development Planning Program
4) Development Construction Program
5) Public Agency Activities Program
6) Illicit Connections and Illicit Discharges Elimination Program

In lieu of the requirements of Parts VI.D.4 through VI.D.10 of the Permit, Group Members may implement customized MCMs within each of the general categories. The opportunity for customization may benefit the Group Members by allowing the Group Members to assess the effectiveness of their current programs and modify their programs to better serve local conditions and objectives.

3.3.2 Enhanced MCMs

Enhanced MCMs are incorporated for the Covina, Glendora, Industry, and the County for 10% reduction, additional measures, such as enhanced street sweeping and installation of catch basins.

If during the adaptive management process, an effectiveness assessment is conducted on a specific MCM and it can be reasonably shown that customization of the MCM would result in equal or improved effectiveness on attitudes or knowledge, behavior or implementation, load reduction, or water quality, a defensible recommendation for modification of that activity can be made, resulting in greater resources freed up for more effective measures.

3.4 NON-STORMWATER DISCHARGE CONTROL MEASURES

The Permit effectively prohibits non-stormwater discharges and the SGR Metals TMDL includes milestones for attainment of dry weather RWLs. The EWMP Implementation Plan has assurance of eliminating non-stormwater discharges through implementation of the network of wet weather control measures. Additional information on control of non-stormwater discharges is provided in **Section 5.4.**

3.5 SUMMARY OF EWMP CONTROL MEASURES

The Group Members were surveyed to determine which of the institutional and structural control measures discussed in the preceding section are feasible and best align with existing planning efforts. These jurisdictional preferences are summarized in **Table 3-5** and provided the foundation for the control measure opportunities modeled in the RAA. The assumed opportunity for each control measure category is tabulated in **Table 3-6** and discussed in detail in **Section 4.3** and **Appendix C-3.**

Table 3-5
Summary of BMP Assumptions Survey

	Institu-tional[1]	LID Ordinance	Resident-ial LID	LID on Municipal Parcels	Permeable Pavement	Tier 1 Region-al	Tier 2 Region-al	Tier 3 Regional/ LID on Schools
Baldwin Park	5%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Covina	10%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Industry	10%	Yes	Yes	Yes	Yes	Yes	Yes	Yes
Glendora	10%	Yes	Yes	Yes	Yes	Yes	Yes	No
La Puente	5%	Yes	Yes	Yes	No	Yes	Yes	No
Unincorporated LA County	10%	Yes	Yes	Yes	Yes	Yes	Yes	Yes

[1] Load reduction attributed to MCMs or enhanced MCMs
[2] With green streets

Table 3-6
Summary of EWMP Control Measure Opportunities included in RAA

BMP Category	Type	Description of Program
Institutional	MCMs and/or Enhanced MCMs	For 5% reduction: implement new MCMs in 2012 Permit For 10% reduction (for Covina, Glendora, Industry and the County): identify control measures and schedule for implementation. Examples include enhanced street sweeping and implementation of catch basin inserts. Each agency needs to provide input on which control measures they will be implementing.
Low Impact Development	LID Ordinance (New/Redevelopment)	BMP implementation assumed to be equal redevelopment growth rates reported by Los Angeles Bureau of Sanitation (see Appendix C-4). Each agency will track redevelopment and verify that that LID is implemented at projected rate, based on capacities and schedules in Section 5.
	Existing and Planned BMPs	Planned LID BMPs will be implemented as planned, according to projects constructed after 2011 that were listed in the Work Plan.
	Residential LID	Starting in 2017, each agency will have a residential LID program that enrolls 1% of residential parcels per year. Each enrolled parcel will retain the 85th percentile storm (if less, then additional parcels will be enrolled). Each agency will track redevelopment and verify that that residential LID is implemented at projected rate, based on capacities and schedules in Section 5.
	LID on Public Parcels (Retrofits)	Each agency will implement LID projects on public land according to the specified capacities and schedule in Section 5. Projects are assumed to retain the 85th percentile storm.
Green Streets	Green Streets	Each agency will implement green street projects according to the specified capacities and schedule in Section 5.
Regional	Tier 1 projects on Public Parcels	Each agency will implement Tier 1 regional projects (top ranked 21 projects) according to the specified capacities in Section 5. The design details for the 10 signature Tier 1 projects are specified in Section 3.2.1.
	Tier 2 projects on Public (Group-Owned) Parcels	Each agency will implement Tier 2 regional projects (other regional projects on public land) according to the specified capacities in Section 5. These regional BMPs were assumed to be a 3-ft-deep infiltration basin.
	Tier 3 projects on Public (School) Parcels	If this category of BMP was elected, the agency will implement Tier 3 regional projects (regional BMPs on school properties) according to the specified capacities in Section 5. These regional BMPs were assumed to be a 3-ft-deep infiltration basin.
	on Private Parcels	Each agency will implement regional projects on private land (other regional according to the specified capacities in Section 5. Assumed 3-ft-deep infiltration basin at subwatershed outlets. During adaptive management, agencies will likely strive to find additional opportunities for BMPs on public land to avoid this category of BMP / land acquisition.

4 Reasonable Assurance Analysis

A key element of the EWMP is the RAA, which is prescribed by the Permit as a process to demonstrate "that the activities and control measures…will achieve applicable WQBELs and/or RWLs with compliance deadlines during the Permit term" (Permit section C.5.b.iv.(5), page 63 – RWQCB, 2012). While the Permit prescribes the RAA as a quantitative *demonstration* that control measures will be effective, the RAA also promotes a modeling process to support the EWMP Group with *selection* of control measures. In particular, the RAA was used to evaluate the many different scenarios/combinations of institutional, distributed and regional control measures (described in Section 3) that could potentially be used to comply with the RWLs and WQBELs of the Permit, and was then used to select the control measures specified in the EWMP Implementation Plan (described in Section 5). It is acknowledged that while the RAA is a critical element of the EWMP, the content can be rather technical and some readers may wish to skip to Section 5, which describes the EWMP Implementation Plan (i.e., the outcome of the RAA).

This section describes key elements of the RAA including the following:

- Modeling system used for the RAA (4.1)
- Baseline critical conditions and required pollutant reductions (4.2)
    - Baseline model calibration (4.2.1)
    - Water quality targets (4.2.2)
    - Critical conditions for wet weather and dry weather (4.2.3)
    - Selection of limiting pollutants (4.2.4)
    - Required interim and final pollutant reduction (4.2.5)
- Representation of control measures in RAA (4.3)
- Approach for selecting control measures for the EWMP Implementation Plan (4.4)

As referenced throughout this section, many details of the RAA are provided in the RAA Appendix that is attached as Appendix C (including several sub-appendices). In 2014, the Regional Board issued RAA Guidelines (RWQCB, 2014), which outline expectations for developing RAAs, and those guidelines were followed closely during development of this RAA.

4.1 MODELING SYSTEM USED FOR THE RAA

The Watershed Management Modeling System (WMMS) is the modeling system used to conduct the RAA for the USGR EWMP. WMMS is specified in the Permit as an approved tool to conduct the RAA. The LACFCD, through a joint effort with USEPA, developed WMMS specifically to support informed decisions for managing stormwater. The WMMS is a comprehensive watershed model of the entire Los Angeles County area that includes the unique hydrology and hydraulics features and characterizes pollutant loading and downstream transport for all of the key TMDL constituents (Tetra Tech 2010a, 2010b). The ultimate goal of WMMS is to identify cost-effective water quality improvement projects through an integrated, watershed-based approach. A version of WMMS5 is available for public download

[5] The version of WMMS used for this RAA was enhanced from the version available for download. Enhancements include updates to calibration parameters according to the RAA Guidelines (Regional Board, 2014), more refined BMP routing assumptions, and application of an updated two-tier, jurisdiction-based BMP optimization approach.

from Los Angeles County Department of Public Works website (http://dpw.lacounty.gov/wmd/wmms/res.aspx).

The entire WMMS domain encompasses Los Angeles County's coastal watersheds of approximately 3,100 square miles, representing 2,566 subwatersheds. Of those, the USGR EWMP area encompasses 258 subwatersheds[6] (**Figure 4-1**).

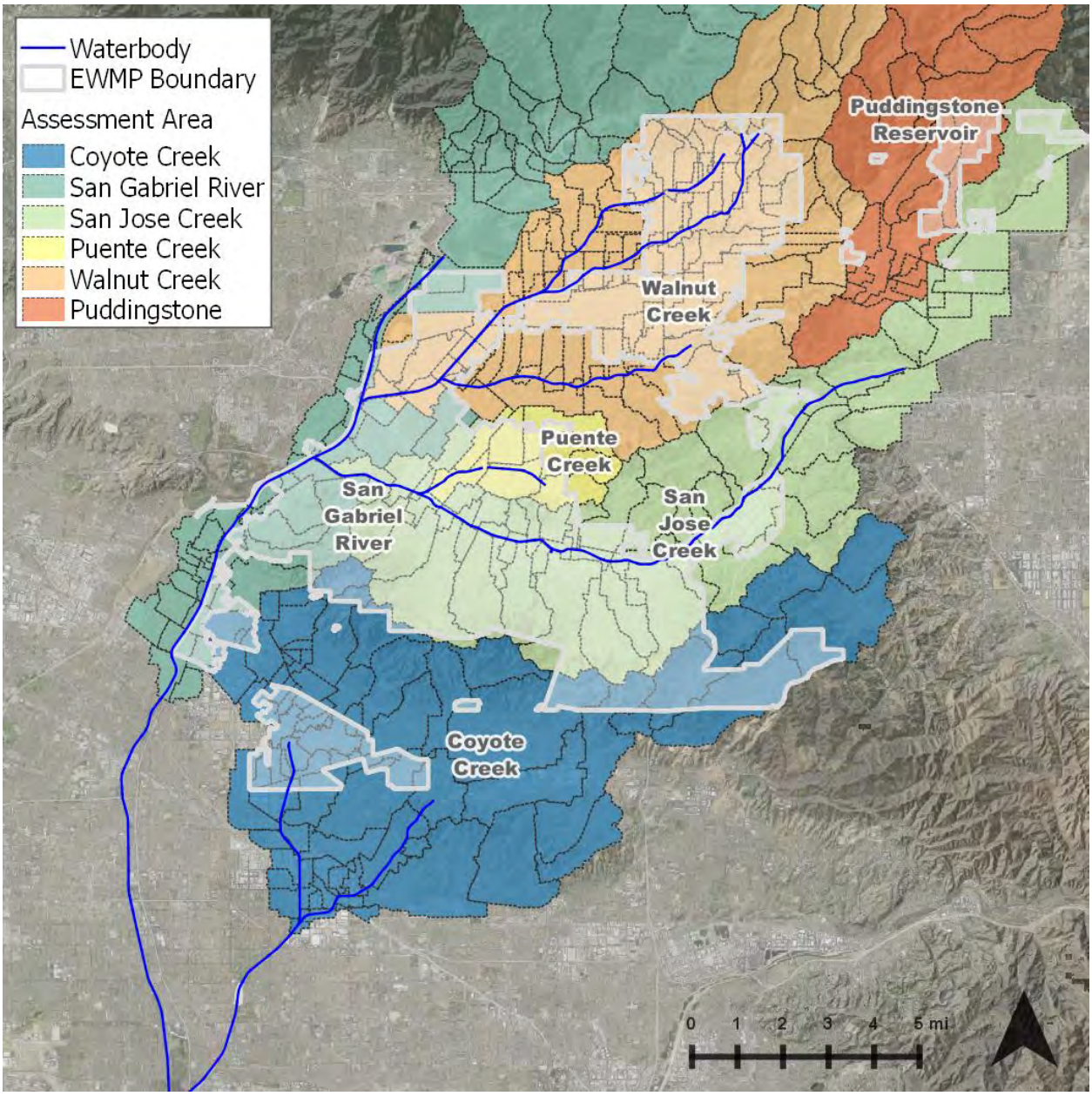
The WMMS is a suite of three modeling tools to support BMP planning:

1. A watershed model for prediction of baseline hydrology and pollutant loading (Loading Simulation Program – C+ [LSPC]);
2. A model for simulating the performance of control measures in terms of flow, concentration and load reduction (System for Urban Stormwater Treatment Analysis and Integration [SUSTAIN]); and
3. A tool for running millions of potential scenarios and optimizing/selecting control measures based on cost-effectiveness (also within SUSTAIN).

The LSPC and SUSTAIN models within WMMS are described in more detail in the following subsections.

[6] To support evaluation of regional BMPs, some of these subwatersheds were further grouped by "pour point" to receiving waters.

Figure 4-1
USGR EWMP Group Area and 258 Subwatersheds Represented by WMMS



4.1.1 Watershed Model - LSPC

The watershed model included within WMMS is the LSPC (Tetra Tech and USEPA 2002; USEPA 2003; Shen et al. 2004). LSPC is a watershed modeling system for simulating watershed hydrology, erosion, and water quality processes, as well as in-stream transport processes. LSPC also integrates a GIS, comprehensive data storage and management capabilities, and a data analysis/post-processing system into a convenient Windows-based environment. The algorithms of LSPC are identical to a subset of those in the Hydrologic Simulation Program–FORTRAN (HSPF) model with selected additions, such as algorithms to dynamically address land use change over time. USEPA's Office of Research and Development (Athens, Georgia) first made LSPC available as a component of USEPA's National TMDL Toolbox (http://www.epa.gov/athens/wwqtsc/index.html). LSPC has been further enhanced with expanded capabilities since its original public release.

4.1.2 BMP Performance and Selection Model – SUSTAIN

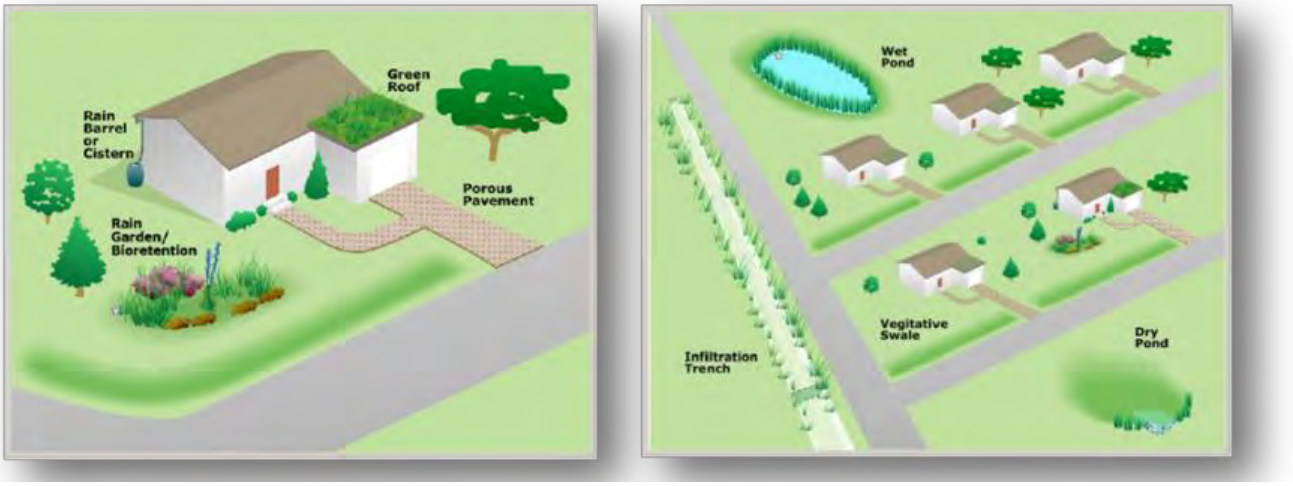
SUSTAIN was developed by the USEPA to support practitioners in developing cost-effective management plans for municipal stormwater programs and evaluating and selecting BMPs to achieve water quality goals (USEPA, 2009; http://www2.epa.gov/water-research/system-urban-stormwater-treatment-and-analysis-integration-sustain). SUSTAIN was specifically developed as a decision-support system for selection and placement of BMPs at strategic locations in urban watersheds (see **Figure 4-2**). It includes a process-based continuous simulation BMP module for representing flow and pollutant transport routing through various types of structural BMPs. This simulation provides the *primary application* of SUSTAIN – simulating the performance of selected stormwater control measures.

The *secondary application* of SUSTAIN is BMP selection, which is based on cost-benefit of different BMP alternatives. The SUSTAIN model in WMMS includes a cost database[7] comprised of typical BMP cost data from a number of published sources including BMPs constructed and maintained in Los Angeles County (Tetra Tech 2010a, 2010b). SUSTAIN considers certain BMP properties as "decision variables," meaning they are allowed to vary within a given range during model simulation to support BMP selection and placement optimization. As BMP sizes and locations change, so do cost and performance. SUSTAIN runs iteratively to generate a cost-effectiveness curve comprised of millions of BMP scenarios (e.g., the model was used for the EWMP to evaluate the different combinations of green infrastructure as compared to regional BMPs, and provides a recommendation on the most cost-effective scenario)[8].

[7] The BMP cost database from WMMS was updated for this EWMP, as described in Section 4.6.

[8] For the EWMP, optimization was conducted at the jurisdictional-level using SUSTAIN as opposed to the watershed-level using the Nonlinearity-Interval Mapping Scheme (NIMS) component of WMMS.

Figure 4-2
SUSTAIN Model Interface Illustrating BMP Opportunities in Watershed Settings



4.2 BASELINE CRITICAL CONDITIONS AND REQUIRED POLLUTANT REDUCTIONS

This section describes the application of the LSPC model to simulate current conditions, identify critical conditions and calculate required pollutant reductions. The calculated required reductions drive the extent of the control measures to be implemented by the EWMP under the EWMP Implementation Plan.

4.2.1 Baseline Model Development and Calibration

A fundamental element of the RAA is simulating baseline / existing conditions in the watershed prior to implementation of control measures. For the USGR RAA, baseline conditions were simulated using the LSPC watershed model in WMMS, including predictions of flow rate and pollutant concentrations over a 10-year period, as follows:

- The simulation period is October 1, 2001 to September 20, 2011[9].
- Simulated pollutants include total suspended solids, *E. coli*, total copper, total zinc, total lead, total nitrogen and total phosphorous. These are the seven (7) pollutants that are directly represented by WMMS.
- An hourly time step was used to simulate the flow rate and pollutant concentration at each of the 258 subwatershed outlets (see **Figure 4-1**) and the resultant downstream receiving water conditions.
- The model explicitly accounts for effects of major hydraulic structures in the watershed including Whittier Narrows, Santa Fe Dam, debris basins and multiple diversion structures.

In order to encourage accurate representation of existing/baseline conditions, the RAA Guidelines provide "model calibration criteria" for demonstrating the baseline predictions are accurate and to ensure the "calibrated model properly assesses all the variables and conditions in a watershed system" (Regional

[9] All stormwater control measures implemented prior to September 30, 2011 are assumed to be implicitly represented within the baseline conditions.

Board , 2014). Detailed hydrology and water quality calibrations were performed for the USGR RAA, as follows (see **Figure 4-3** for a map of water quality and hydrology calibration stations):

- Water quality calibration: the water quality calibration process for the USGR RAA leveraged two primary monitoring datasets:
    - Small-scale, land use-specific water quality monitoring data collected by the Southern California Coastal Water Research Program (LACDPW, 2010b) and
    - Large-scale receiving water monitoring data collected by Los Angeles County Department of Public Works (LACDPW) at mass emission stations in Coyote Creek (S13) and San Gabriel River (S14). All seven pollutants (i.e. total suspended solids, *E. coli*, total copper, total zinc, total lead, total nitrogen and total phosphorous) represented in WMMS were calibrated to the data from the mass emission stations.
- Hydrology calibration: a total of six stations were used for the hydrology calibration including gages along San Gabriel River, Coyote Creek, San Jose Creek and Dalton Wash. Gages along Fullerton Creek and Brea Creek were also used to assess the representation of the various flood control/water conservation structures (i.e., impoundments) in the watershed.

The comparison of the calibrated hydrology model to the RAA Guidelines is shown in **Table 4-1**, and the water quality calibration is shown in **Table 4-2**. The baseline (LSPC) model performs quite well for representing existing hydrologic and water quality conditions. Details of the baseline model development and calibration are presented in **Appendix C-1**.

Table 4-1
Summary of Hydrology Calibration Performance by Baseline Model

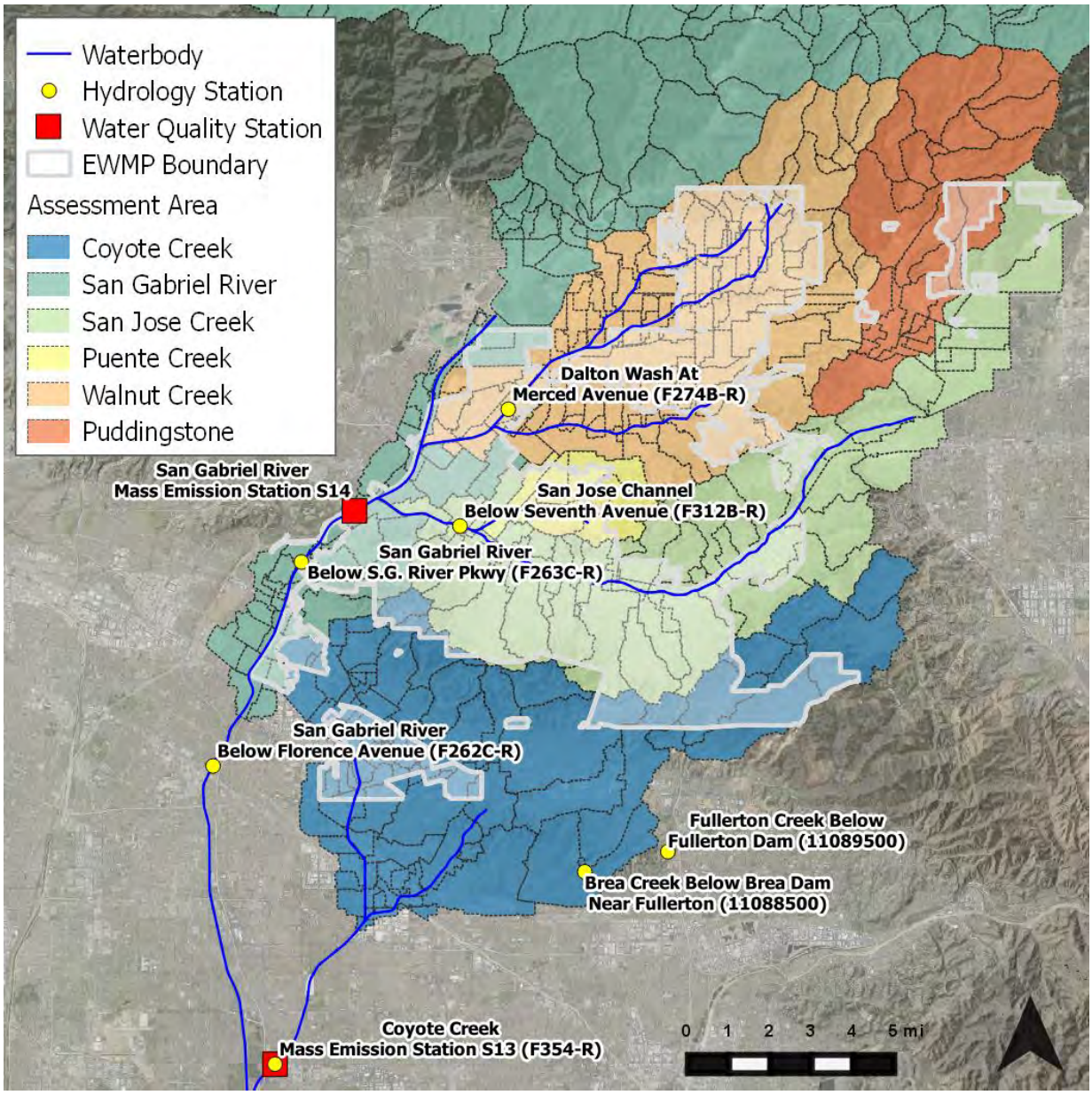
Location	Model Period	Hydrology Parameter	Modeled vs. Observed	RAA Guidelines Performance Assessment
Fullerton Creek below Fullerton Dam CA (United States Geological Survey (USGS) 11089500)	10/1/2002 – 9/30/2011	Annual Volume	-4.0%	Very Good
		Storm Volume	-14.8%	Good
Coyote Creek near Spring Street (LA DPW F354)	10/1/2003 – 9/30/2011	Annual Volume	-16.3%	Fair
		Storm Volume	5.2%	Very Good
Brea Creek below Brea Dam, Fullerton, CA (USGS 11088500)	10/1/2002 – 9/30/2011	Annual Volume	5.9%	Very Good
		Storm Volume	-4.0%	Very Good
San Gabriel River Below Florence Avenue (LA DPW F262C)	10/1/2002 – 9/30/2011	Annual Volume	17.5%	Fair
		Storm Volume	9.0%	Very Good
San Jose Channel Below Seventh Avenue (LA DPW F312B)	10/1/2002 – 9/30/2011	Annual Volume	-24.8%	Fair
		Storm Volume	8.1%	Good
Dalton Wash At Merced Avenue (LA DPW F274B)	10/1/2002 – 9/30/2011	Annual Volume	-19.4%	Fair
		Storm Volume	-10.0%	Good

Table 4-2
Summary of Water Quality Calibration Performance by Baseline Model

	San Gabriel River Mass Emission Station (S14)			Coyote Creek Mass Emission Station (S13)		
Water Quality Parameter	Sample Count	Modeled vs. Observed Load (% Error)	RAA Guidelines Performance Assessment	Sample Count	Modeled vs. Observed Load (% Error)	RAA Guidelines Performance Assessment
Total Sediment	23	7.6%	Very Good	59	2.9%	Very Good
Total Copper	22	-4.6%	Very Good	33	6.7%	Very Good
Total Zinc	22	8.7%	Very Good	33	-8.6%	Very Good
Total Lead	22	38.7%	Fair	33	32.6%	Fair
E.coli *	23	-30.1%	Fair	33	-26.7%	Fair
Total Nitrogen**	--	--	--	33	-11.9%	Very Good
Total Phosphorous	23	-4.3%	Very Good	33	-21.5%	Good

* *E. coli* was assumed to have a 1:1 translator with fecal coliform.
** Total Nitrogen was approximated using the sum of the observed Total Kjeldal Nitrogen (TKN) and nitrate/nitrite values.

Figure 4-3
Hydrology and Water Quality Calibration Stations for USGR RAA



4.2.2 Water Quality Targets

The RAA is designed to achieve the RWLs and WQBELs of the MS4 Permit, which are derived from applicable TMDLs (see Attachment P of the Permit – RWQCB, 2012) and the Basin Plan (see Receiving Water Limitations, Section V of the Permit – RWQCB, 2012). In particular, the RAA addresses the Water Quality Priorities identified in Section 2. The RWLs and WQBELs serve as the "water quality targets", or loads or concentrations to be achieved through implementation of the control measures specified by the EWMP. Not all pollutants are directly modeled; the pollutants that are the most problematic and generally require the most stormwater treatment are directly modeled – total solids, zinc, copper, lead, nitrogen, phosphorous, and *E. coli*. The targets for *modeled* pollutants are listed in **Table 4-3**, organized by

pollutant class. For the remaining (non-modeled) Water Quality Priorities, the RAA uses analyses of monitoring data to demonstrate that control of one or more "limiting pollutants" will address the non-modeled pollutants (as discussed in the next subsection).

4.2.3 Critical Conditions

This following subsections describe the critical conditions for wet weather (stormwater) and dry weather (non-stormwater).

4.2.3.1 Wet Weather Critical Conditions

A key consideration of the RAA is the "critical condition" under which water quality targets must be achieved. Stormwater management for different size storms generally requires different size BMPs. For example, for most pollutants management of a 90th percentile storm requires larger BMPs than management of a median (50th percentile) storm. The RAA Guidelines specify the RAA for final compliance should be based on critical conditions, for example, the 90th percentile flow rates and/or the critical conditions specified by applicable TMDLs (Regional Board, 2014). For the USGR RAA, three primary *wet weather* critical conditions were considered as follows:

1. **90th percentile <u>metals</u> Exceedance Volume:** the SGR metals TMDL uses the 90th percentile daily flow rate as the critical condition. In turn, the USGR RAA analyzes the volume of runoff during each rolling 24-hour period[10] of the 10-year simulation when water quality targets were exceeded, referred to as the "Exceedance Volume" (see **Figure 4-4**). The storm that produces the 90th percentile Exceedance Volume[11] is the critical condition for metals and the overall primary critical condition for management[12] of stormwater by USGR EWMP. The Exceedance Volume differs for each metal (zinc, copper and lead) and for different subwatersheds (end-of-pipe) and assessment areas (instream) depending on land use, imperviousness, slope, etc. Shown in **Table 4-4** are the summary statistics for zinc Exceedance Volumes in USGR. The EWMP manages (retains and treats) the Exceedance Volume from each of the 258 subwatersheds in the USGR area to achieve metals RWLs.
2. **Annual average <u>nutrient and toxics</u> loading:** the USEPA TMDLs for Puddingstone Reservoir (nutrients, mercury and toxics/legacy pollutants) use annual average loading as the critical condition. For the RAA, the average year was defined as the 2007-08 Water Year. The pollutant loading that occurs over the course of 2007-08 is considered the average annual pollutant loading

[10] A duration of 24-hours was selected for several reasons. First, the SGR metals TMDL uses a daily flow rate as the critical condition and thus 24-hours is an analogous duration. Second, the 24-hour duration allows the Exceedance Volume to be directly compared to the runoff volume from the 85th percentile, 24-hour storm. Finally, stormwater control measures are generally sized to manage an individual storm – and thus the 24-hour Exceedance Volume is much more relevant to BMP sizing than an annual runoff volume.

[11] The Exceedance Volume is an appropriate metric for RAA critical conditions because the *volume* of stormwater to be managed ultimately drives the capacity of control measures in the EWMP. The Exceedance Volume allows the volume to be defined based on applicable RWLs and assures attainment of RWLs. For example, a storm that generates a large volume of stormwater runoff with pollutant concentrations slightly above the RWLs is more difficult to manage than a storm that generates a small volume of runoff with concentrations that greatly exceeds the RWLs. Also, the Exceedance Volume reflects the effect of varying water quality targets / RWLs – if a target / RWL is increased then the volume of stormwater to be managed is decreased.

[12] The term "manage" incorporates both retention and treatment approaches. Retention of the Exceedance Volume assures attainment of RWLs. Treatment of the Exceedance Volumes to concentrations below the RWLs also assures RWL attainment. Furthermore, institutional control measures reduce pollutant build-up on watershed surfaces and thus can also decrease the Exceedance Volume.

for the RAA. The EWMP manages (retains and treats) the annual runoff from in the USGR area to achieve WQBELs for nutrients, mercury and toxics/legacy pollutants.

3. **Critical bacteria storm:** for addressing *E. coli* impairments, the "critical bacteria storm" is the 90th percentile wet day when bacteria RWLs apply. Bacteria RWLs were assumed to *not* apply on days subject to the High Flow Suspension (all assessment areas except Puente Creek are subject to the HFS) and Allowable Exceedance Days. Using the Los Angeles River Bacteria TMDL as a template[13], non-HFS and HFS waterbodies are subject to an additional 10 and 15 Allowable Exceedance Days per year, respectively (**Table 4-4**). Within each water year between 2002 and 2012, the HFS days were excluded and then the 11th- or 16th- wettest day was determined (the first day with RWLs apply). For the 10-year simulation, there are 10 of those days (one per year) and the 2nd wettest is the critical bacteria storm (the 2nd highest of 10 values is the 90th percentile). The simulated critical bacteria storm is a 24-hour storm. The EWMP retains[14] the runoff from the critical bacteria storm (from each subwatershed outlet, prior to discharge to receiving waters) to achieve *E. coli* WQBELs.

[13] The Los Angeles River Bacteria TMDL was used as a basis for modeling because it is the most recent bacteria TMDL developed by the Regional Board for a large area. Similar to the SGR watershed, the Los Angeles River watershed is one of the largest watersheds in the region and has a variety of land uses, ranging from open space in the hills to highly urbanized areas in the downstream valley. At the time of RAA development, the SGR Bacteria TMDL had not been released and it will not be finalized until summer 2015 or effective until 2016. The USGR EWMP will be updated during adaptive management, as needed, to reflect the wasteload allocations in the SGR Bacteria TMDL after it is effective.

[14] Addressing bacteria though retention of the critical bacteria storm has several benefits for the RAA. First, the RAA for bacteria is essentially based on *hydrology* rather than prediction of bacteria concentrations / loads, which can be challenging given the variability of bacteria concentrations in the environment and multitude of potential bacteria sources. By emphasizing *retention* prior to discharge to receiving waters, the RAA acknowledges that few stormwater control measures are able to reliably treat bacteria to concentrations below applicable RWLs. In essence, the entire volume of runoff from the critical bacteria storm is assumed to be an Exceedance Volume. Note the depth of rainfall that generates the critical bacteria storm varies by subwatershed based on historic rainfall at rain gages in the EWMP area (e.g., generally larger storms at higher elevations and smaller storms at lower elevations). Subwatersheds where bacteria concentrations are predicted to be below *E. coli* RWLs in 100% of the time steps during the 10-year simulation are excluded from retaining the critical bacteria storm (generally, only watersheds with 0% impervious area meet this exclusion condition).

Table 4-3
Targets for Modeled Water Quality Priority Pollutants and RAA Approach for Addressing Pollutants

Pollutant Class	Pollutant	Target for RAA (units are ug/L except when noted otherwise)				Assessment Area where Target Applies to Address Water Quality Priority					
		Dry Weather	Source	Wet Weather	Source	San Gabriel River	Coyote Creek	San Jose Creek	Walnut Creek	Puente Creek	Pudding-stone Reservoir
Metals [1]	Copper	15.05	CTR	23.72	CTR	X		X	X	X	X
		15.05	CTR	24.71	TMDL		X				
	Zinc	192.5	CTR	192.5	CTR	X		X	X	X	X
		144.57	TMDL	144.57	TMDL		X				
	Lead	6.49	CTR	81.34	TMDL	X		X	X	X	X
		6.49	CTR	96.99	TMDL		X				
Bacteria [2]	*E. coli*	126 Most Probable Number (MPN) /100mL	Basin Plan	235 MPN/ 100mL	Basin Plan	X	X	X	X	X	X
Nutrients	Phosphorous	741 lbs / year			TMDL						X
	Nitrogen	3390 lbs / year			TMDL						X
Legacy	Chlordane	85.3% annual *sediment* reduction			TMDL						X
	PCBs	98.8% annual *sediment* reduction			TMDL						X
	Dieldrin	78.0% annual *sediment* reduction			TMDL						X
	DDT	28.4% annual *sediment* reduction			TMDL						X

1 – Based on total metals. When the SGR Metals TMDL specifies a WLA (the WQO source is "TMDL"), the WLA is used as the target. Where the TMDL does not apply (the WQO source is "CTR"), hardness assumed to be 175 mg/L as CaCO3, which is the hardness used to develop SGR WLAs in the SGR Metals TMDL. When applicable, dry weather targets were based on chronic WQOs and wet weather targets are based on acute WQOs.

2 – The High Flow Suspension applies to all assessment areas except Puente Creek. For the RAA, the targets of the LA River Bacteria TMDL were used – assessment areas that are subject to the HFS receive an additional 10 Allowable Exceedance Days per year, while Puente Creek receives an additional 15 Allowable Exceedance Days. Dry weather target based on 30-day geometric mean WQO while wet weather target is based on single sample maximum WQO.

Figure 4-4
Illustration of How Metals Exceedance Volume is Calculated for Critical Condition Determination

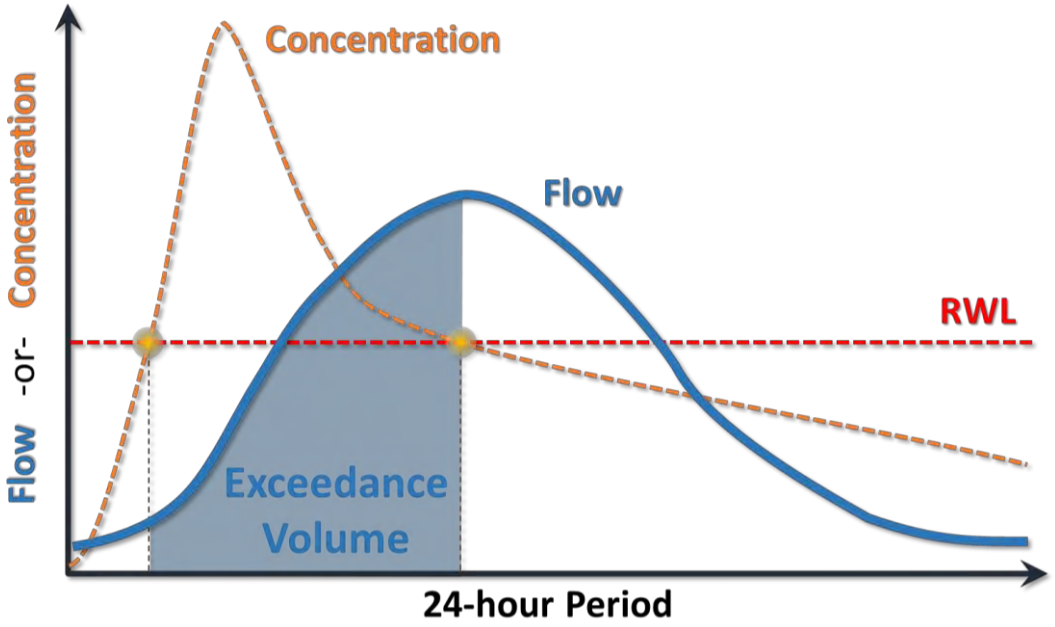


Table 4-4
Zinc Exceedance Volume Summary Statistics for USGR

Total Zinc Exceedance Volume (EV) Statistics (units of acre-feet)	RAA Assessment Area (at watershed mouth)					
	San Gabriel River	Coyote Creek	Walnut Creek	San Jose Creek	Puente Creek	Pudding-stone Reservoir
Number of rolling, 24-hour periods with an EV in 10-year simulation (out of a total of 87,660 periods)	3,505	6,308	3,264	5,898	6,691	4,329
Average EV	40.4	333.2	224.5	342.1	28.4	37.8
10^{th} percentile EV	4.1	43.7	34.2	59.0	2.4	5.2
25^{th} percentile EV	7.8	70.3	89.4	106.5	5.7	12.3
Median EV	21.7	170.3	164.6	200.1	15.9	25.2
75^{th} percentile EV	58.3	415.5	311.1	442.8	35.1	55.3
90^{th} percentile EV	98.0	831.9	458.1	827.0	75.8	88.9

Note: The storm that generates the 90^{th} percentile zinc EV is the critical condition for metals. The storm that generates the average zinc EV is the interim condition for metals.

4.2.3.2 Dry Weather Critical Conditions

A separate RAA was performed for dry weather conditions to assure that control measures in the EWMP attain dry weather WQBELs / RWLs and address non-stormwater discharges that are effectively prohibited. This subsection summarizes the development of the non-stormwater model developed for the dry weather RAA. A detailed description of the dry weather RAA is provided in **Appendix C-2**.

The Permit effectively prohibits discharges of non-stormwater[15] (dry weather runoff) and states that EWMPs shall "ensure that discharges…do not include non-stormwater discharges that are effectively prohibited." In addition, the Permit includes dry weather WQBELs for the San Gabriel River Metals TMDL. A baseline non-stormwater model was developed for the USGR EWMP based on the following components:

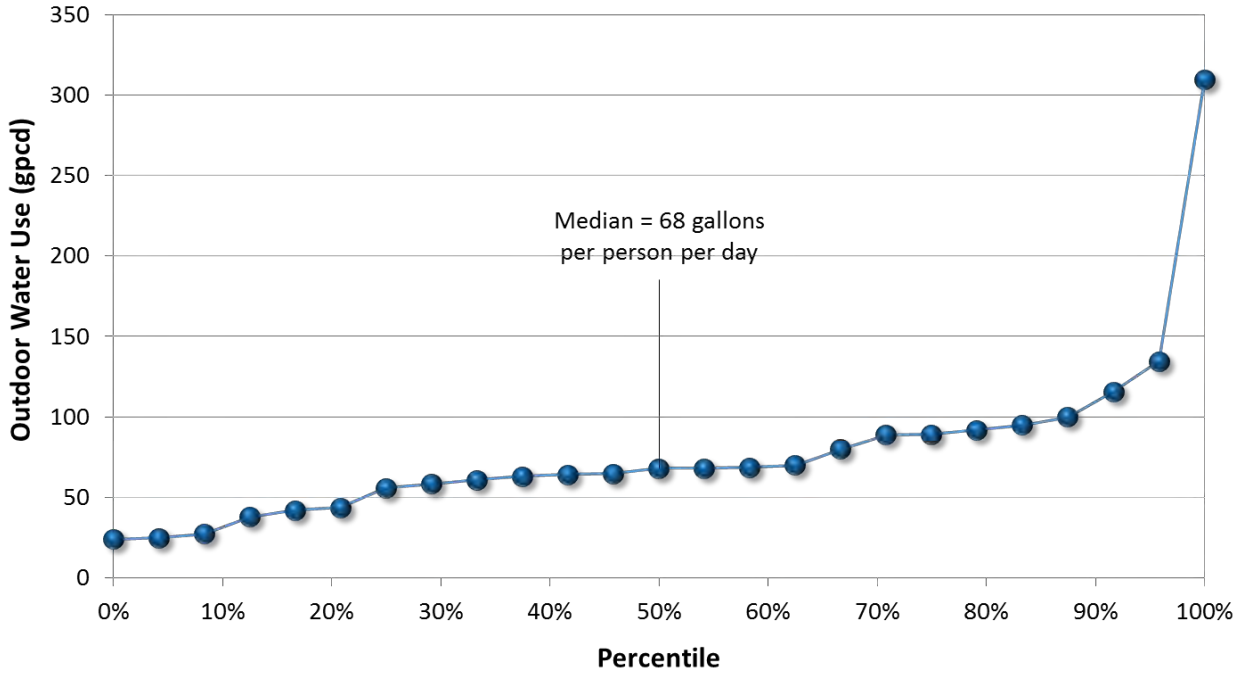
- **Simulation of non-stormwater sources that generate dry weather runoff:** the primary source of non-stormwater is outdoor water use. As such, the dry weather RAA is based on a simulation of non-stormwater whose *source* is outdoor water use[16] in each of the subwatersheds within the EWMP area and whose *sink* is evapotranspiration and retention by wet weather EWMP control measures.
- **Non-stormwater generated by outdoor water use based on extensive literature review:** the amount of non-stormwater generated in each USGR subwatershed was estimated as the product of [1] the estimated population based on U.S. census blocks and [2] the estimated per capita outdoor water use based on compilation of 25 estimates relevant to southern California (see **Figure 4-5**). The use of median historic outdoor water use is likely conservatively high, as outdoor water use has likely fallen during the recent drought.
- **Thirty (30) day simulation of critical dry period:** the period of the simulation was a critical dry period identified in the average water year (August 21, 2007 to September 20, 2007). This portion of the year (late August to September) historically receives the least amount of rainfall. The evapotranspiration during this period provides the weather boundary condition for the non-stormwater simulation.

While the critical conditions for dry and wet weather are uniquely defined, it is important that dry and wet weather conditions not be evaluated in separate silos – the EWMP includes a large network of wet weather BMPs that will eliminate a majority of non-stormwater discharges. The dry weather RAA quantifies the reduction of wet weather BMPs on non-stormwater discharges, and assures that TMDL milestones are attained on the required implementation timeline. The EWMP Implementation Plan for non-stormwater is presented in Section 5.

[15] Non-stormwater does not include all dry weather runoff. For example, permitted dry weather discharges (e.g., dewatering) and groundwater baseflow are exempted/allowed by the Permit.

[16] Non-stormwater volumes are not necessarily equal to dry weather runoff volumes in the EWMP area. Non-stormwater is the portion of dry weather runoff that is effectively prohibited by the Permit. Dry weather runoff would also include groundwater that is discharged through the MS4 system (if any), which is allowed by the Permit. By focusing on the non-stormwater portion of dry weather runoff, the non-stormwater analysis and dry weather RAA are focused on the portion of dry weather runoff that is required to be controlled by MS4s.

Figure 4-5
Outdoor Water Use Estimates from Literature Review



4.2.4 Limiting Pollutant Selection

The RAA Guidelines allow the EWMP to be developed with consideration of a "limiting pollutant", or the pollutant that drives BMP capacity (i.e., control measures that address the limiting pollutant will also address other pollutants). The detailed limiting pollutant selection and justification for each Water Quality Priority pollutant is provided in **Table 4-5**. The limiting pollutants are as follows:

- **Wet weather – zinc and *E. coli***: according to the Exceedance Volume analysis and review of monitoring data, control of zinc and *E. coli* requires BMP capacities that are the largest among the Water Quality Priority pollutants, and thus control of zinc and *E. coli* has assurance of addressing the other USGR wet weather Water Quality Priorities. The RAA for USGR first identifies the control measures to attain zinc RWLs (during the zinc critical condition) and then identifies additional capacity, if any, needed to achieve bacteria WQBELs (through retention of the critical bacteria storm).
- **Dry weather – *E. coli***: among all the pollutants monitored during dry weather at mass emission stations in the County, *E. coli* most frequently exceeds RWLs. During monitoring "snapshots" of over 100 outfalls along the LA River, over 85% of samples exceeded WQBELs for *E. coli* during dry weather the Bacteria Source Identification Study along the Los Angeles River (CREST, 2008). Of the 416 samples compiled from receiving water monitoring along San Gabriel River and San Jose Creek in the last five years, 188 (45%) exceeded the RWL for *E. coli*. Attainment of dry weather RWLs for *E. coli* will require extensive control measures and/or significant reductions in non-stormwater discharges. As such, control of *E. coli* during dry weather has assurance of addressing the other USGR dry weather Water Quality Priorities.

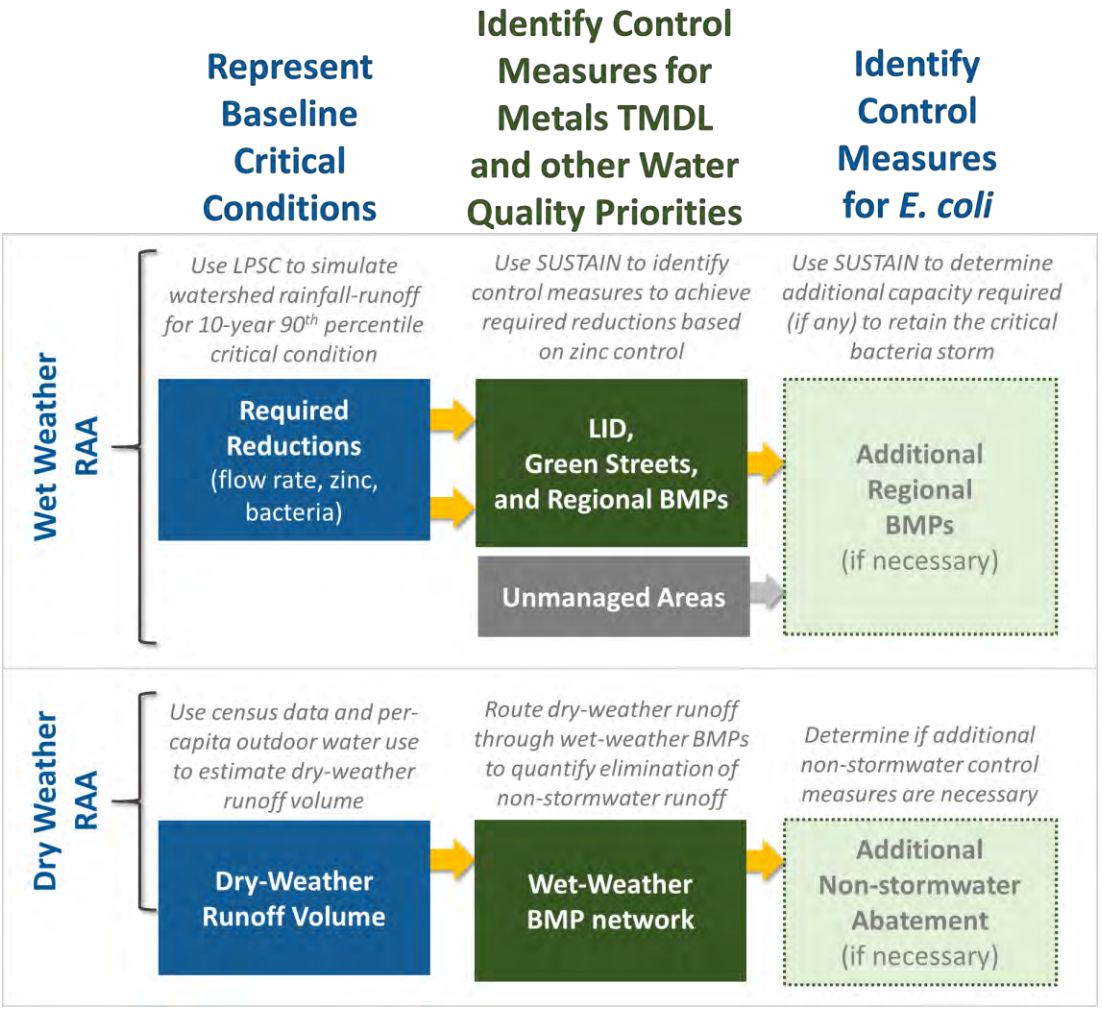
As shown in **Figure 4-6**, the RAA sequentially addresses the limiting pollutants in stormwater (wet weather RAA) and non-stormwater (dry weather RAA) based on the limiting pollutant analysis.

It is important to distinguish between reasonable assurance and required implementation actions when considering limiting pollutants. While control of zinc and *E. coli* has reasonable assurance of addressing other Water Quality Priorities, it is not *necessary* to fully control zinc and *E. coli* to address the other Water Quality Priorities. For example, as shown in **Table 4-5**, exceedances of metals during dry weather are rare and thus existing MCMs and control measures have reasonable assurance of attaining metals RWLs during dry weather. As such, if exceedances of metals during dry weather occur during EWMP implementation, then compliance determination should *not* be based on the status of implementation of zinc and *E. coli* control measures. Instead, compliance determination should be based on evaluation of whether the existing level of implementation for MCMs and control measures (as of June 2015) has been maintained.

Table 4-5
Limiting Pollutant Selection and Justification for RAA

Pollutant Class	Pollutant	RAA approach to Addressing Pollutant			
		Wet Weather RWLs: Addressed by	Justification for control approach	Dry Weather RWLs: Addressed by	Justification for control approach
Metals [1]	Zinc	Zinc controls	Zinc is one of two wet weather limiting pollutants.	Existing MCMs and BMPs	Exceedances of metals during dry weather are rare. Of 337 samples compiled from receiving water monitoring efforts in San Gabriel River and San Jose Creek during the last five years, a total of six samples exceeded the RWL for total copper. Of 227 samples for total zinc, zero exceeded the RWL. Of 219 samples for total lead, zero exceeded the RWL. Of 423 samples for selenium, five exceeded the RWL. Of 217 samples for total cadmium, zero exceeded the RWL.
	Copper		A large portion of copper loading is being phased out through brake pad replacement (AB346). The reduction will cause zinc to become limiting.		
	Lead		The volumes of stormwater to be managed for zinc control are greater than volumes for control of these metals.		
	Nickel				
	Selenium				
	Mercury				
	Cadmium				
Bacteria [2]	*E. coli*	*E. coli* controls	*E. coli* is one of two wet weather limiting pollutants.	*E. coli* controls	*E. coli* is the dry weather limiting pollutant.
Salts	Sulfate	Not applicable – not a Water Quality Priority for wet weather conditions.		*E. coli* controls	Volumes of non-stormwater to be managed for *E.coli* control are greater than volumes for control of these salts.
	Chloride				
	TDS				
Nutrients	Phosphorous	Annual load reduction achieved through zinc controls			Nutrient WQBELs apply to EWMP areas that drain to Puddingstone Reservoir, which will be subject to zinc controls. The volumes of stormwater to be managed for zinc control are greater than volumes for nutrient control.
	Nitrogen				
Legacy	Chlordane	Annual load reduction achieved through zinc controls (and residual source controls, if necessary)			These legacy pollutant WQBELs apply to EWMP areas that drain to Puddingstone Reservoir, which will be subject to zinc controls. The volumes of stormwater to be managed for zinc are greater than volumes for legacy pollutant control. Residual source controls will be implemented after zinc control implementation, if needed.
	PCBs				
	Dieldrin				
	DDT				
	PAHs	Annual load reduction achieved through zinc controls (and residual source controls, if necessary)			The volumes of stormwater to be managed for zinc control are greater than volumes for legacy pollutant control. Residual source controls will be implemented after zinc control implementation, if needed.
	Lindane				
	A.Endosulfan				

Figure 4-6
RAA Process for Establishing Critical Conditions and Addressing Water Quality Priorities



4.2.5 Required Interim and Final Pollutant Reductions

The RAA Guidelines specify that required pollutant reductions should be determined by comparing baseline/current pollutant loading to the allowable pollutant loading (RWQCB, 2014). With a set of defined critical conditions and identified limiting pollutants for USGR (as described in the previous two subsections), the required pollutant reductions for USGR can be determined, as shown in **Table 4-6**. The control measures to be implemented by the EWMP are designed to achieve these reductions, and the RAA provides assurance the required reductions will be achieved by the selected control measures. Each jurisdiction in the USGR EWMP Group is held to achieving the equitable reductions for the receiving waters / assessment areas to which they discharge.

An important consideration for the RAA and scheduling of control measures is the difference between interim and final requirements. While the *critical* condition (90th percentile) is used to define the required reductions for final compliance, interim compliance is based on *average* conditions according to the RAA Guidelines (RWQCB, 2014):

> "For interim WQBELs and/or receiving water limitations, the percent reduction based on annual average baseline loading may be used to set targets/goals for

BMPs/watershed control measures. A gradual phasing of percent load reduction for interim WQBELs/RWLs to final WQBELs/RWLs shall be applied over the course of the implementation schedule." [page 7]

For the USGR RAA, the gradual phasing is achieved by determining the ratio of loading during average to 90th percentile conditions, as shown in **Table 4-6**. Zinc loading during the interim/average condition is between 29% and 53% of the loading that occurs during the final/90th percentile condition. The approach for applying this ratio during scheduling of control measures for EWMP/TMDL milestones is described in **Section 2**.

Table 4-6
Required USGR Pollutant Reductions for Interim and Final Compliance

Condition and Pollutant Addressed	Reduction Metric	RAA Assessment Area					
		San Gabriel River	Coyote Creek	Walnut Creek	San Jose Creek	Puente Creek	Pudding-stone Reservoir
Final Compliance with Metals and Other Water Quality Priorities (except *E. coli*)	Required Load Reduction [1]	64%	67%	62%	67%	76%	78%
Interim Compliance with Metals and Other Water Quality Priorities (except *E. coli*)	Loading during average/interim condition (pounds) [2]	124	702	427	434	53	94
	Loading during 90th percentile/final condition (pounds) [3]	293	1,335	918	1,500	158	198
	Ratio used to gradually phase from interim to final required reduction	0.42	0.53	0.47	0.29	0.34	0.47
Final Compliance with *E. coli*	Runoff volume to be retained	Runoff from critical bacteria storm is retained prior to discharge to receiving water (excluding open space subwatersheds)					

1 – Based on control of zinc during storm that generates the 90th percentile zinc Exceedance Volume
2 – Loading of zinc at mouth of watershed from storm that generates the average zinc Exceedance Volume
3 – Loading of zinc at mouth of watershed from storm that generates the 90th percentile zinc Exceedance Volume

4.3 REPRESENTATION OF EWMP CONTROL MEASURES

Once the model is set up to accurately simulate baseline hydrology and water quality conditions, the targets have been calculated, and the required reductions estimated, the next stage of the RAA determines the optimal combination of BMP types to achieve applicable RWLs and WQBELs. This step requires a

robust set of assumptions to define the watershed-wide extent and configuration of each of the types of control measures (an overview of control measure categories is provided in Section 3).

The representation of control measures in the model is an important element of the RAA, as it provides the link between future watershed activities, model-predicted water quality improvement, and, ultimately, compliance. Since the BMP modeling parameters will greatly influence the outcome of the RAA, it is imperative that the suite of BMP assumptions are based on the best available data and represent the opportunity and limitations that will be faced by designers, contractors, and maintenance crews in the field as these BMPs are implemented over time, Further, the technical rigor of the analysis must be appropriately balanced with the resolution of the modeling system and the accuracy of the key datasets.

This section will present and review the three primary elements for representing BMPs in the RAA model, as follows:

- ***Opportunity*** – Where can these BMPs be located and how many can be accommodated?
- ***System Configuration*** – How is the runoff routed to and through the BMP and what is the maximum BMP size?
- ***Cost Functions*** – What is the relationship between BMP volume/footprint/design elements and costs?

The following sections provide an overview of methods, summarize key assumptions, and highlight potential data limitations. Cost functions used for BMP optimization are presented in Section 7. **Appendices C-3** through **C-6**, as summarized in the following subsections, contain additional information including details on how each type of control measure (LID, green streets, regional BMPs) was represented in the modeling system (SUSTAIN).

4.3.1 BMP Opportunities

BMPs can only feasibly be implemented at certain locations in the watershed and foremost, BMPs may only be implemented within certain practical bounds throughout the watershed. While physical constraints may limit implementation in some areas (e.g., high slopes, insufficient space), practical or preferential constraints are also an important consideration for each jurisdiction (e.g., parcel ownership, redevelopment rates). To ensure that the spatial and temporal extent of BMP opportunities were accurately accounted for in the model, a BMP opportunity assessment was customized for each individual BMP category and type. The best available data and GIS layers were specifically selected to screen out inappropriate opportunities and/or identify high priority project opportunities (e.g. regional projects on public parcels). A summary of these methods was provided earlier in **Section 3** and detailed methods and screening results are provided in **Appendix C-3**.

In addition to the spatial opportunity screening process which highlighted on potential roadblocks to BMP implementation, the preferences of the Group (presented in Section 3.5) were incorporated into the RAA to allow the EWMP Implementation Plan to be customized to each jurisdiction.

4.3.2 System Configuration

BMP configuration is determined by a combination of [1] physical watershed properties that are generally unchangeable (e.g., location of parcels or streets, soil types, drainage areas, space available for BMPs) and [2] BMP design assumptions which are at the discretion of the responsible agency (e.g., standard BMP profiles, underdrain configurations, soil media mixes). **Table 4-7** provides a brief overview of BMP

configuration assumptions and **Appendix D-4** provides details on how variables were defined for each BMP categories/types, including the following:

- **Drainage Area –** Determined by the physical setup of the watershed and the placement of the BMP, drainage area ultimately defines how much water and pollutant load could possibly arrive at the site. A typical (or specific, where possible) drainage area is estimated for each category of BMP in **Appendix C-3** and **C-4**.
- **Infiltration Rate –** Determined by the soil types in the area, infiltration rate defines the rate at which water exits the BMP into the soil. **Appendix C-3** provides details for how infiltration rates were spatially estimated.
- **Routing –** Determined by the drainage network in the local area, the runoff conveyance method is critical to determining how much of the runoff and associated pollutants are accessible to the BMP. Conveyance systems that are underground or well below-grade often require pumping to lift the runoff to a BMP. **Table 4-7** provides details on when pumping is assumed.
- **BMP Design –** Determined by the physical space available at the site and the standard profile assumed, BMP design defines the spatial footprint, depth, and internal hydraulic routing of runoff through the BMP. **Appendix C-4** provides BMP design details for each individual BMP category and type.
- **BMP Efficacy –** Determined by the BMP type selected, BMP efficacy defines the pollutant removal rates for overflow or underdrain effluent from the BMP. **Appendix C-4** provides BMP efficacy details.

Careful analyses were performed to specifically tailor each of the above variables for every individual BMP category and type. This required a thorough understanding of the watershed setting (to determine common available BMP footprints, typical drainage areas, and conditions that warranted pumping), innovative use of existing datasets to estimate spatially varied infiltration rates, familiarity with local codes and standard BMP design practices to set design profiles, and access to a large database of BMP performance metrics to estimate pollutant load removal effectiveness. The results of these analyses has yielded a robust and defensible suite of BMP configuration assumptions that truly and reasonably represent future BMP implementation in the watershed.

Table 4-7
Summary of BMP Design Assumptions for Final Compliance RAA

BMP Category	Type	Key Design Parameters
Institutional	MCMs and/or Enhanced MCMs	None, not modeled explicitly.
Low Impact Development	LID Ordinance (New/Redevelopment)	Bioretention/Biofiltration sized to capture 85th percentile runoff from parcel. Underdrains required if subsoil infiltration rate less than 0.3 in/hr.
	Existing and Planned BMPs	Bioretention/Biofiltration sized to capture 85th percentile runoff from parcel. Underdrains required if subsoil infiltration rate less than 0.3 in/hr.
	Residential LID	Bioretention sized to approximately 4% of parcel area (typical sizing to capture 85th percentile runoff)
	LID on Public Parcels (Retrofits)	Bioretention/Biofiltration sized to capture 85th percentile runoff from parcel. Underdrains required if subsoil infiltration rate less than 0.3 in/hr.
Green Streets	Green Streets	Bioretention/biofiltration is 4-ft wide. Permeable pavement/subsurface storage is 5-ft wide and used in tandem with bioretention/biofiltration. 50% of street length retrofittable. Underdrains required if subsoil infiltration rate less than 0.3 in/hr.
Regional	Tier 1 projects on Public Parcels	BMP footprint delineated and ponding depth specified based on site configuration, topography, depth to groundwater, and infrastructure. Pump specified if greater than 100 ft from major storm drain using optimum diversion rate (0.07 cfs/ac). For Duck Pond, 15 acres of stormwater wetland, with 1-ft temporary ponding depth and 2-5 day drawdown period. Pump specified with optimum diversion rate (0.07 cfs/ac).
	Tier 2 Projects on Public (Group-Owned) Parcels and Tier 3 projects on Public (School) Parcels	Same as Tier 1 except ponding depth was assumed to be 3 ft (rather than based on site-specific configuration). Also, drainage areas and footprints are coarser due to the large number of these projects.
	on Private Parcels	Assumed 3-ft-deep infiltration basin at subwatershed outlets. Pumping assumed with no diversion limitations. Maximum footprint = 5% of contributing area.

4.3.3 Cost Functions

As discussed in the next section, the RAA selects a cost-effective combination of BMPs by weighing long-term implementation costs versus the attained load reduction benefits. Because the assumed BMP unit costs can greatly impact the spatial and temporal compliance strategy, the cost functions must be robust and consider life-cycle costs in addition to construction. Unit cost functions for optimization were therefore specified for each BMP type based on best-available local data and included 20 years of O&M costs. Details on the cost functions are provided in the documentation for the WMMS model (http://dpw.lacounty.gov/wmd/wmms/res.aspx).

4.4 SELECTION OF CONTROL MEASURES FOR POLLUANT REDUCTION PLAN

The RAA process is an important tool for assisting EWMP agencies with selection of control measures for EWMP implementation (known as the EWMP Implementation Plan). A major challenge associated with stormwater planning is the multitude of potential types and locations of control measures and the varying performance and cost of each scenario. This subsection describes the process for selecting the control measures for the EWMP Implementation Plan by each jurisdiction.

4.4.1 Selection of Control Measures for Final Wet Weather Compliance

The SUSTAIN model within WMMS provides a powerful tool for considering millions of scenarios of control measures and recommending a solution based on cost-effectiveness. The cost functions described in the previous subsection are used to weigh the cost of different BMP scenarios with benefits in terms of pollutant load reduction. As shown in **Figure 4-6**, the RAA process for USGR first determines the control measures to achieve zinc RWLs under critical conditions and then determines the additional capacity (if any) to retain the critical bacteria storm. The optimization modeling is conducted stepwise to determine the control measures for final compliance that are selected for the EWMP Implementation Plan, as follows:

1. **Determine the cost-effective BMP solutions <u>for each subwatershed</u> in the EWMP area:** an example set of "BMP solutions" is shown in **Figure 4-7**, which shows thousands of scenarios considered for an individual subwatershed in the EWMP area. The scenarios are based on the available opportunity (e.g., the available footprints for regional BMPs and length of right-of-way for green streets) and predicted performance for controlling zinc if BMPs were implemented at those opportunities with varying sizes. The most cost-effective BMP solutions for each of the 258 subwatersheds in the EWMP area provide the basis for cost optimization.
2. **Determine the cost-effective scenarios <u>for each jurisdiction</u> in the EWMP Group:** by rolling up the BMP solutions at the subwatershed level, the most cost-effective scenarios for each jurisdiction can be determined for a wide range of required zinc reductions. These "cost optimization curves" provide a potential EWMP Implementation Plan for a range of required reductions. **Figure 4-8** shows example cost optimization curves for the jurisdictions that drain to the mainstem of the San Gabriel River. Each scenario is a "recipe for compliance" for all the subwatersheds in the jurisdictional area (for a given percent reduction). The complete set of cost optimization curves for the USGR EWMP is presented in **Appendix C-7**.
3. **Extract the cost-effective scenarios <u>for the required reduction</u>:** the required zinc reductions specified in **Table 4-4** determine the specific scenario that is selected from the cost optimization curves. All jurisdictions within the assessment areas are held to the same percent reduction. The selected scenarios become the EWMP Implementation Plan. **Figure 4-9** illustrates the process for extracting the control measures to achieve zinc RWLs from the cost optimization curve. The extracted control measures comprise a detailed recipe for compliance with RWLs for metals and other Water Quality Priorities for each subwatershed in the jurisdictional area.
4. **Route the critical bacteria storm through the control measures in the extracted scenario:** the effectiveness of the selected control measures for retaining the critical bacteria storm is evaluated. The additional capacity (if any) to retain the critical bacteria storm is determined for each subwatershed.

The resulting EWMP Implementation Plan for final compliance is presented in **Section 5**.

Figure 4-7
Example BMP Solutions for a Selected Subwatershed and Advantage of Cost-Benefit Optimization

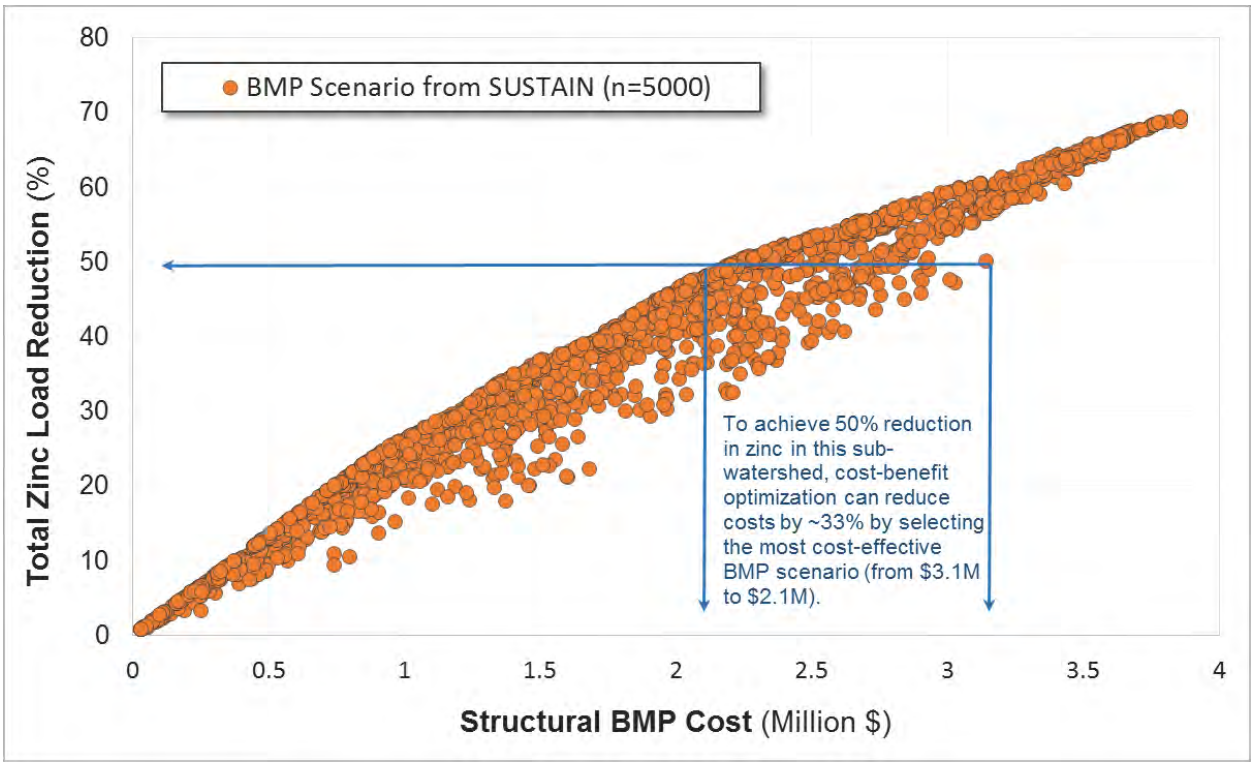


Figure 4-8
Example Cost Optimization Curves for a Watershed: San Gabriel River (mainstem)

This example for San Gabriel River shows the set of optimized BMP solutions for USGR EWMP jurisdictions that drain directly to the mainstem San Gabriel River. Each optimization curve represents over 1 million BMP scenarios that were evaluated for cost-effectiveness. See Appendix C-7 for the complete set of cost optimization curves. All jurisdictions are held to an equitable 64% reduction, but the curves differ among jurisdictions due to differing BMP opportunities.

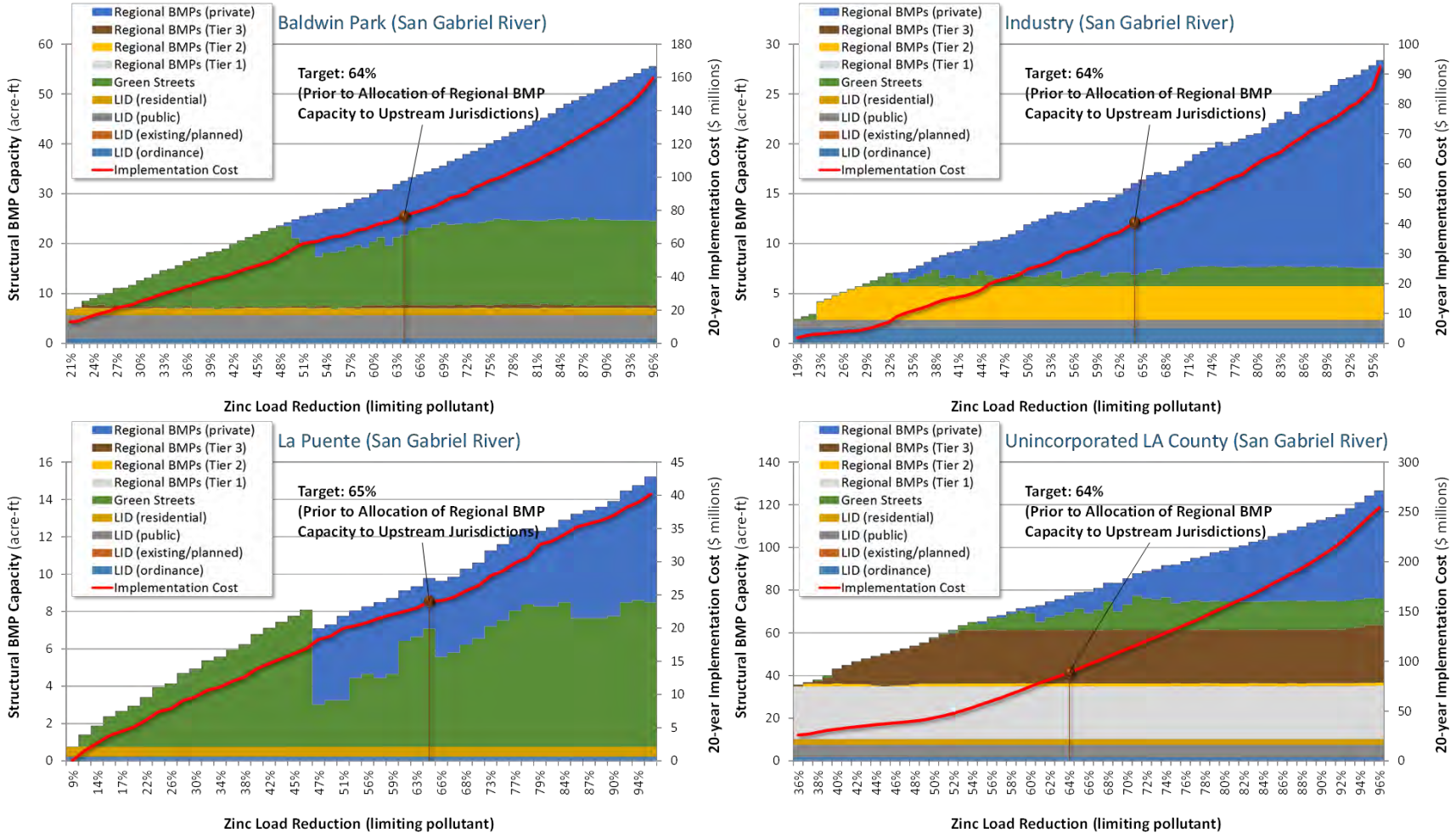
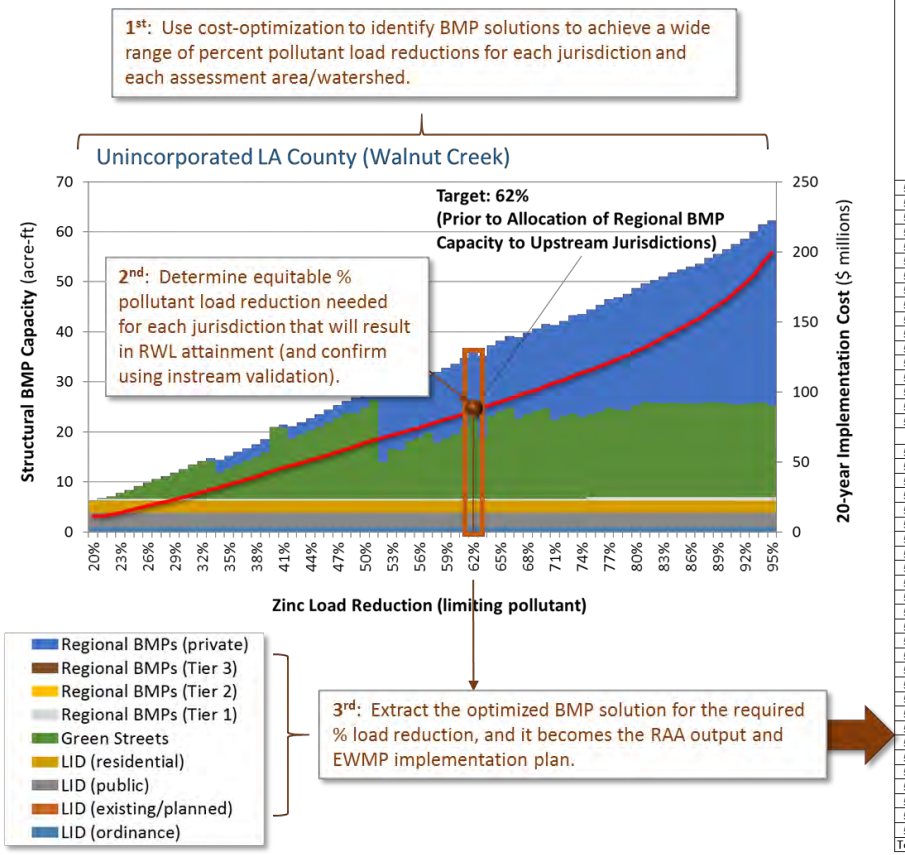


Figure 4-9
Illustration of how the EWMP Implementation Plan is Extracted from a Cost Optimization Curve

This illustration uses the Unincorporated LA County jurisdiction in Walnut Creek watershed as an example. Three steps are shown for RAA development: cost-optimized BMP solutions are developed for a wide range of % load reductions (1st, uppermost text box), followed by determination of the equitable % load reduction needed to attain RWLs for the corresponding receiving water (2nd, middle text box), and then the corresponding BMP solution is extracted to complete the RAA and determine the EWMP Implementation Plan for the jurisdictional area (3rd, bottom text box). The EWMP Implementation Plan for all jurisdictions and assessment areas is presented in Section 5. Note that while all jurisdictions in an assessment area/watershed are held to an equivalent % reduction, subwatersheds *within* a jurisdiction may have variable reductions based on optimization (which is why some subwatersheds have high % reductions [red shaded rows in table] and others have low % reductions).



Subwatershed ID	COMPLIANCE TARGET: BMP GOAL: For Metals by 2026: 24-hour Volume Managed (acre-ft)	COMPLIANCE TARGET: BMP GOAL: For Bacteria by 2040: Additional 24-hour Volume to be Managed (acre-ft)	EWMP IMPLEMENTATION PLAN: % Load Reduction Critical Condition	Low-Impact Development: Ordinance	Low-Impact Development: Planned LID	Low-Impact Development: Public LID	Low-Impact Development: Residential LID	Streets: Green Streets	Regional BMPs: Tier 1 (public, owned)	Regional BMPs: Tier 2 (public, owned)	Regional BMPs: Tier 2 (public, non-owned)	Regional BMPs: Private	Total BMP Capacity (acre-ft)	Regional BMPs (private)	Total BMP Capacity (acre-ft)
	For Metals Attainment by 2026													For Bacteria Attainment by 2040	
536083	0.14	0.68	13%	0.09	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.1	0.68	0.8
536283	6.84	0.24	68%	0.08	---	0.43	0.36	4.96	0.34	0.00	0.00	0.00	6.2	0.24	6.4
536383	0.03	0.16	13%	0.02	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.16	0.2
536483	0.00	0.00	0%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
536683	0.01	0.05	14%	0.01	---	---	0.00	0.00	0.44	0.00	0.00	0.00	0.4	0.05	0.5
536783	0.02	0.01	35%	0.00	---	---	0.00	0.02	0.01	0.00	0.00	0.00	0.0	0.01	0.0
537183	0.03	0.09	13%	0.01	---	---	0.02	0.00	0.00	0.00	0.00	0.00	0.0	0.09	0.1
537683	0.07	0.19	14%	0.01	---	---	0.06	0.00	0.00	0.00	0.00	0.00	0.1	0.19	0.3
538483	0.00	0.01	10%	0.00	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.01	0.0
538683	0.27	0.03	26%	0.01	---	---	0.05	0.15	0.00	0.00	0.00	0.00	0.2	0.03	0.2
538783	1.11	0.13	52%	0.02	---	0.00	0.07	0.84	0.01	1.58	0.00	0.00	2.5	0.13	2.7
538983	3.92	0.38	64%	0.05	---	1.11	0.14	0.00	0.33	0.00	0.00	0.00	1.6	0.38	2.0
539083	8.43	0.00	91%	0.11	---	---	0.24	3.52	11.27	0.00	0.00	2.51	17.6	0.00	17.6
539183	0.03	0.07	15%	0.01	---	---	0.03	0.00	0.00	0.00	0.00	0.00	0.0	0.07	0.1
539283	1.67	0.44	40%	0.06	---	---	0.13	1.27	0.00	0.00	0.00	0.00	1.5	0.44	1.9
539383	0.24	0.24	26%	0.02	0.00	0.00	0.01	0.30	0.00	0.34	0.00	0.00	0.7	0.24	0.9
539483	1.96	0.06	65%	0.03	---	0.00	0.13	1.43	0.00	0.00	0.00	0.00	1.6	0.06	1.6
⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮	⋮
541283	0.00	0.00	11%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
541683	0.00	0.00	0%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
542383	19.32	0.00	86%	0.22	0.00	1.30	0.81	4.54	0.00	0.00	0.17	9.12	16.2	0.00	16.2
542883	0.08	0.06	15%	0.01	---	---	0.05	0.01	0.00	0.00	0.00	0.00	0.1	0.06	0.1
543283	0.28	0.23	14%	0.05	0.00	---	0.21	0.00	0.00	0.00	0.00	0.00	0.3	0.23	0.5
543883	0.00	0.00	10%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
544083	0.00	0.00	17%	0.00	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
544683	0.00	0.00	0%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
544983	0.00	0.00	0%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
545083	0.00	0.00	0%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
545383	0.03	0.02	15%	0.01	---	---	0.02	0.00	0.00	0.00	0.00	0.00	0.0	0.02	0.1
545483	0.01	0.01	13%	0.00	---	---	0.01	0.00	0.00	0.00	0.00	0.00	0.0	0.01	0.0
545883	0.00	0.00	15%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
545983	0.00	0.01	11%	0.00	---	---	0.00	0.00	0.00	0.00	0.00	0.00	0.0	0.01	0.0
546083	0.00	0.00	10%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
546183	0.18	0.02	46%	0.00	---	---	0.00	0.12	0.00	0.00	0.00	0.00	0.1	0.02	0.2
546383	0.19	0.01	56%	0.00	---	---	0.00	0.13	0.00	0.00	0.00	0.00	0.1	0.01	0.1
546883	0.15	0.06	50%	0.00	---	---	0.01	0.10	0.00	0.00	0.00	0.00	0.1	0.06	0.2
546983	0.00	0.00	10%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
547283	0.00	0.00	10%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
548483	0.00	0.00	10%	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
548583	0.00	0.01	10%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.01	0.0
548683	0.00	0.01	10%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.01	0.0
548783	0.00	0.02	10%	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.02	0.0
548883	0.00	0.00	10%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
548983	0.00	0.00	10%	0.00	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
570183	0.00	0.00	0%	---	---	---	---	0.00	0.00	0.00	0.00	0.00	0.0	0.00	0.0
Total	45.8	3.[illegible]	62%	0.9	0.0	2.9	2.4	17.9	12.4	1.9	0.2	11.6	50.3	3.7	54.0

RED = Subwatersheds with highest required % load reductions
BLUE = Subwatersheds with highest BMP capacities within a BMP category

4.4.2 Selection of Control Measures for Interim Wet Weather Compliance

With the EWMP Implementation Plan for final compliance determined, the remaining step for the wet weather RAA is scheduling of control measures *over time* to achieve interim milestones. The following wet weather milestones were utilized for development of the USGR EWMP, primarily based on the milestones of the SGR Metals TMDL:

- Achieve 10% of the reduction for zinc[17] (2017)
- Achieve 35% of the reduction for zinc (2020)
- Achieve 65% of the reduction for zinc (2023)
- Final compliance with zinc RWLs (2026)
- Final compliance with bacteria WQBELs (2040)[18]

As described in **Section 4.2.5**, the applicable critical condition gradually phases from average conditions for interim milestones to critical conditions (90^{th} percentile) for final compliance. The approach for determining the control measures that correspond to each milestone was as follows:

1. **Simulate the BMP performance of increasing levels of control measure implementation:** multiple increments of "percent completion" of the final EWMP Implementation Plan were simulated to determine the relative performance as control measures are implemented toward final compliance. The result is a curve of Percent of Final Reduction versus Percent of Final Capacity (see **Figure 4-10**).
2. **Incorporate the gradual phasing from average the critical conditions:** the gradual phasing was accomplished by applying the average: final ratios in **Table 4-6** to the BMP sequencing. An illustration of the phasing approach is shown in **Figure 4-10**. The orange "translator" from average to final phases from relying entirely on average conditions at 0% completion and phases to relying entirely on final conditions at 100% completion. The formulation of the orange translator line is based on the quadratic equation, as detailed in **Appendix D-8**.

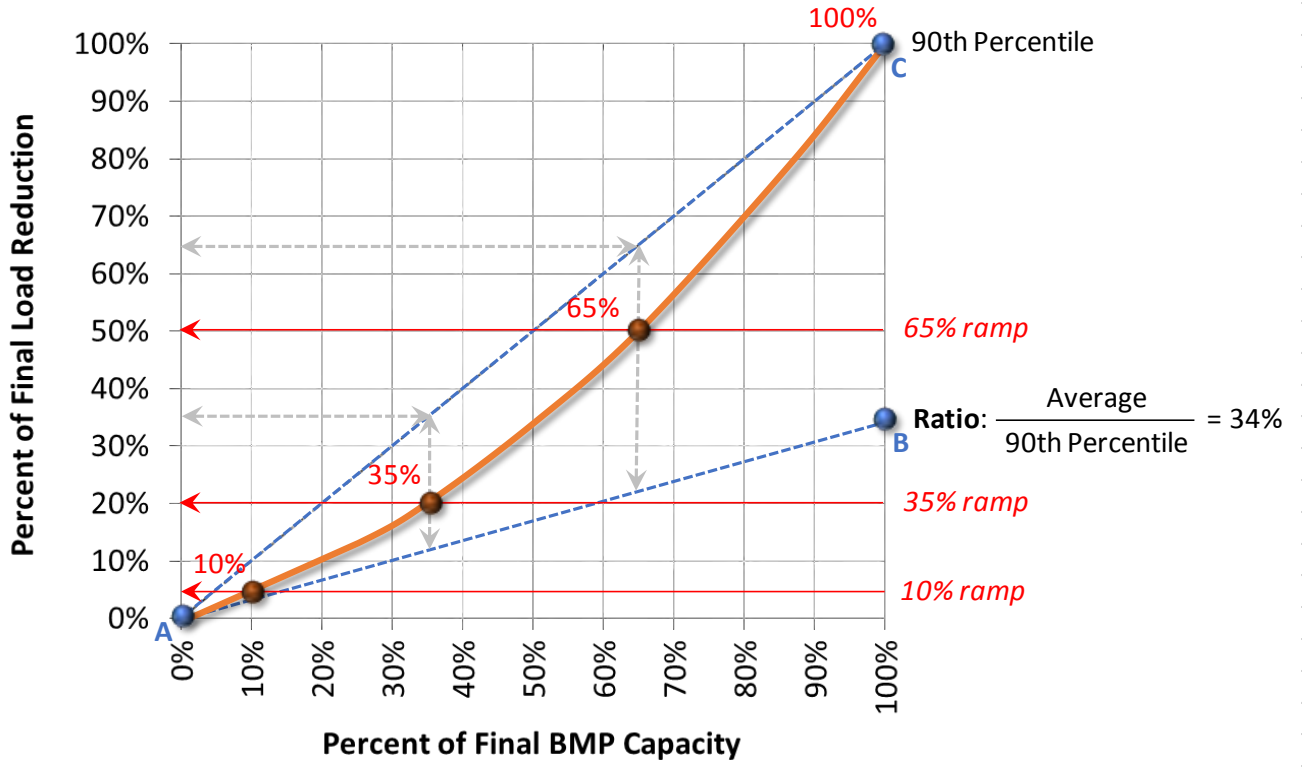
The scenario of control measures that corresponds to each of the EWMP / TMDL milestones was extracted and used for scheduling of the EWMP Implementation Plan, as presented in the next section.

[17] While these milestones are expressed as reduction in zinc, because zinc is a limiting pollutant (see Section 4.2.4), achievement of zinc RWLs by these dates assures even greater reduction in other Water Quality Priority pollutants.

[18] The compliance date of 2040 is selected for attainment of bacteria WQBELs matches the timeline used for the LA River Bacteria TMDL (25 years for wet weather compliance).

Figure 4-10
Illustration of Gradually Phasing from Average to Critical Conditions for Interim Milestones

The orange "translator" line phases from average to final by relying entirely on average conditions at 0% final BMP capacity and then phases to relying entirely on final conditions at 100% BMP capacity. In the example, the average to final ratio is 0.34 (see right hand side of figure). The percent BMP completion based on the final compliance target (critical conditions) is represented by the top blue line [segment A→C], while percent BMP completion based on the interim target (average conditions) is represented by bottom blue line [segment A→B]. The orange curve represents the "translator" for phasing of the pollutant reduction target from average to critical conditions to match the approach recommended by the RAA Guidelines (and account for the average to final ratio of 0.34). A reduction of 35% under average conditions represents a 20% reduction under final conditions. A 65% reduction under average conditions represents a 50% reduction under final conditions. The relative difference depends on the average to final ratio, which is watershed-specific (see **Table 4-6**). As the ratio approaches 1.0, average and final conditions become identical.



5 EWMP Implementation Plan

The EWMP Implementation Plan is the "recipe for compliance" of each jurisdiction to address Water Quality Priorities and comply with the provisions of the MS4 Permit. Through the RAA, a series of quantitative analyses were used to identify the capacities of LID, green streets and regional BMPs that comprise the EWMP Implementation Plan and assure those control measures will address the Water Quality Priorities per the milestones/compliance schedules. The EWMP Implementation Plan includes individual recipes for each jurisdiction and each watershed/assessment area – San Gabriel River (mainstem), Coyote Creek, San Jose Creek, Puente Creek and Walnut Creek (see **Figure 4-1** for a map of these assessment areas). Implementation of the EWMP Implementation Plan will provide a BMP-based compliance pathway for each jurisdiction under the MS4 Permit. This section describes the EWMP Implementation Plan and the pace of its implementation to achieve applicable milestones, through the following subsections:

- Elements of the EWMP Implementation Plan (5.1)
- Stormwater control measures to be implemented by 2040 for final compliance (5.2)
- Scheduling of stormwater control measures to achieve TMDL and EWMP milestones (5.3)
- Non-stormwater control measures (5.4)

5.1 ELEMENTS OF THE EWMP IMPLEMENTATION PLAN

The EWMP Implementation Plan is expressed in terms of [1] the volumes[19] of stormwater and non-stormwater to be managed by each jurisdiction to address Water Quality Priorities and [2] the control measures that will be implemented to achieve those volume reductions. The two primary elements of the EWMP Implementation Plan are as follows:

- **Compliance Targets**: for MS4 compliance determination purposes, the ultimate metric for EWMP implementation is the volume of stormwater managed by implemented control measures. The stormwater volume to be managed[20] is considered a measurable goal that could be used to assess BMP-based compliance. To support future compliance determination and adaptive management, the volume of stormwater is reported along with the capacities of control measures to be implemented by each jurisdiction in the EWMP Implementation Plan.
- **EWMP Implementation Plan**: the network of control measures that has reasonable assurance of achieving the Compliance Targets is referred to as the EWMP Implementation Plan. The identified BMPs (and BMP preferences) will likely evolve over the course of adaptive

[19] Volume is used rather than pollutant loading because volume reduction is more readily tracked and reported by MS4 agencies. As described in Section 4.2.3, the volume reductions are actually a *water quality* improvement metric based on required pollutant reductions.

[20] The volume is determined by reporting the amount of water that would be retained (infiltrated) by BMPs over the course of a 24-hour period under the critical 90th percentile storm condition. Additional volume would be *treated* by these BMPs, but that additional treatment is *implici*t to the reported Compliance Targets.

[19] While the EWMP Implementation Plan reports the *total* BMP capacity to be implemented, that capacity is not a compliance target because some BMP capacities are sized to reflect a BMP program rather than sized to achieve the required reduction. For example, the BMPs implemented by the LID ordinance and the residential LID program were sized to retain the 85th percentile, 24-hour storm but that volume may be larger than is needed to achieve zinc RWLs. If those BMPs were replaced by a different type of BMP (e.g., regional BMP), the total BMP capacity may be smaller but just as effective.

management in response to "lessons learned". As such, it is anticipated the BMP capacities within the various subcategories will be reported to the Regional Board but *not* tracked explicitly by the Regional Board for compliance determination. As BMPs are substituted over the course of EWMP implementation (e.g., replace green street capacity in a subwatershed with additional regional BMP capacity), the Group will show equivalency for achieving the corresponding Compliance Target.

5.2 STORMWATER CONTROL MEASURES TO BE IMPLEMENTED BY 2040 FOR FINAL COMPLIANCE

The EWMP will guide stormwater management for the coming decades, and the control measures to be implemented have the potential to transform communities including widespread green infrastructure. The EWMP Implementation Plan identifies the location and type of control measures to be implemented by each jurisdiction for final compliance by 2040, which includes to addressing all Water Quality Priorities including the limiting pollutants zinc and *E. coli* (as described in Section 4.2.4). The EWMP Implementation Plan for final compliance is presented as the following components:

- **Summary of total capacity of control measures to be implemented by each jurisdiction across the entire EWMP area:** bar graphs are used to summarize the control measure capacities that comprise the EWMP Implementation Plan. Shown in **Figure 5-1** are the bar graphs that detail the various sub-categories of control measures to be implemented by each jurisdiction across the entire EWMP area.
- **Summary of total capacity of control measures to be implemented in each assessment area:** the control measures to be implemented within each watershed/assessment are shown in **Figure 5-2**, organized by jurisdiction.
- **Detailed recipe for compliance including volumes of stormwater to be managed and control measure capacities:** the EWMP Implementation Plan is detailed for each subwatershed in the EWMP area (generally 1 to 2 square mile drainages). Shown in **Figure 5-3** is a map of the "density" of control measure capacities to be implemented to address metals and other Water Quality Priorities (through controlling zinc) and **Figure 5-4** shows the additional capacity to address *E. coli*. The maps are shown in detailed tables in **Appendix D-1** which present for each jurisdiction the volumes of stormwater to be managed in each subwatershed (Compliance Targets) and the control measures to achieve those volume reductions (EWMP Implementation Plan). Separate Compliance Targets and EWMP Implementation Plans are provided for Metals and Other Water Quality Priorities and *E. coli*. For reference, the additional control measure capacity to address *E. coli*, beyond those needed for zinc is presented in **Figure 5-5.**

The network of control measures in the EWMP Implementation Plan is extensive and its implementation would represent a sea change in how stormwater will be managed in the USGR. The next subsection describes the timeline/sequencing for implementing the EWMP Implementation Plan. The costs and financial strategy for the EWMP are presented in **Section 7**.

Figure 5-1
USGR EWMP Implementation Plan for Final Compliance by 2040

The two panels show the total structural BMP capacity required for each USGR EWMP jurisdiction to attain RWLs. The top panel groups the BMP types into LID, green streets and regional BMPs, while the bottom panel provides more resolution for the BMP subcategories.

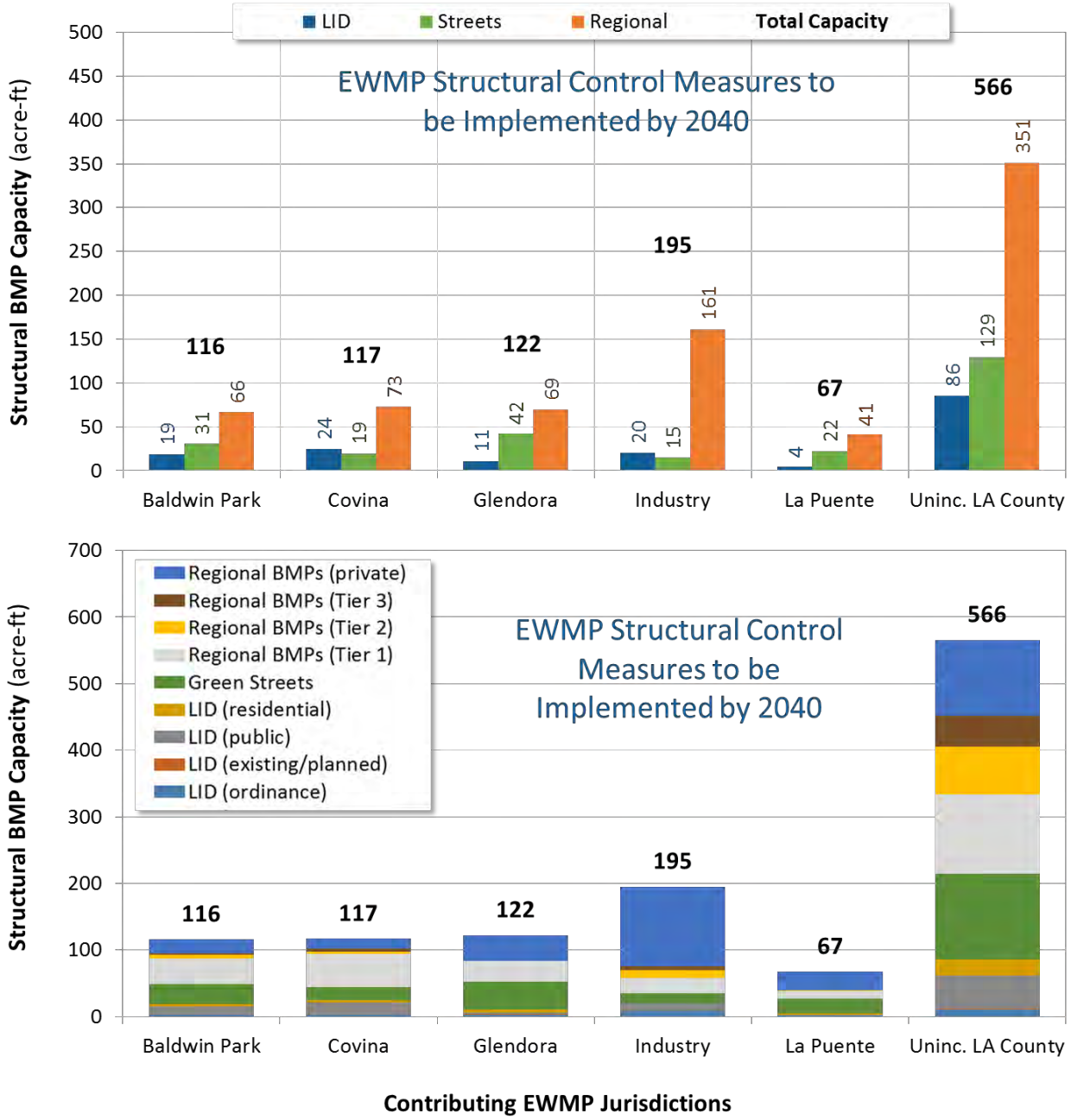


Figure 5-2
EWMP Implementation Plan for each Watershed / Assessment Area in the USGR

This figure shows the same control measure capacities as the previous figure, except organized by watershed / assessment area.

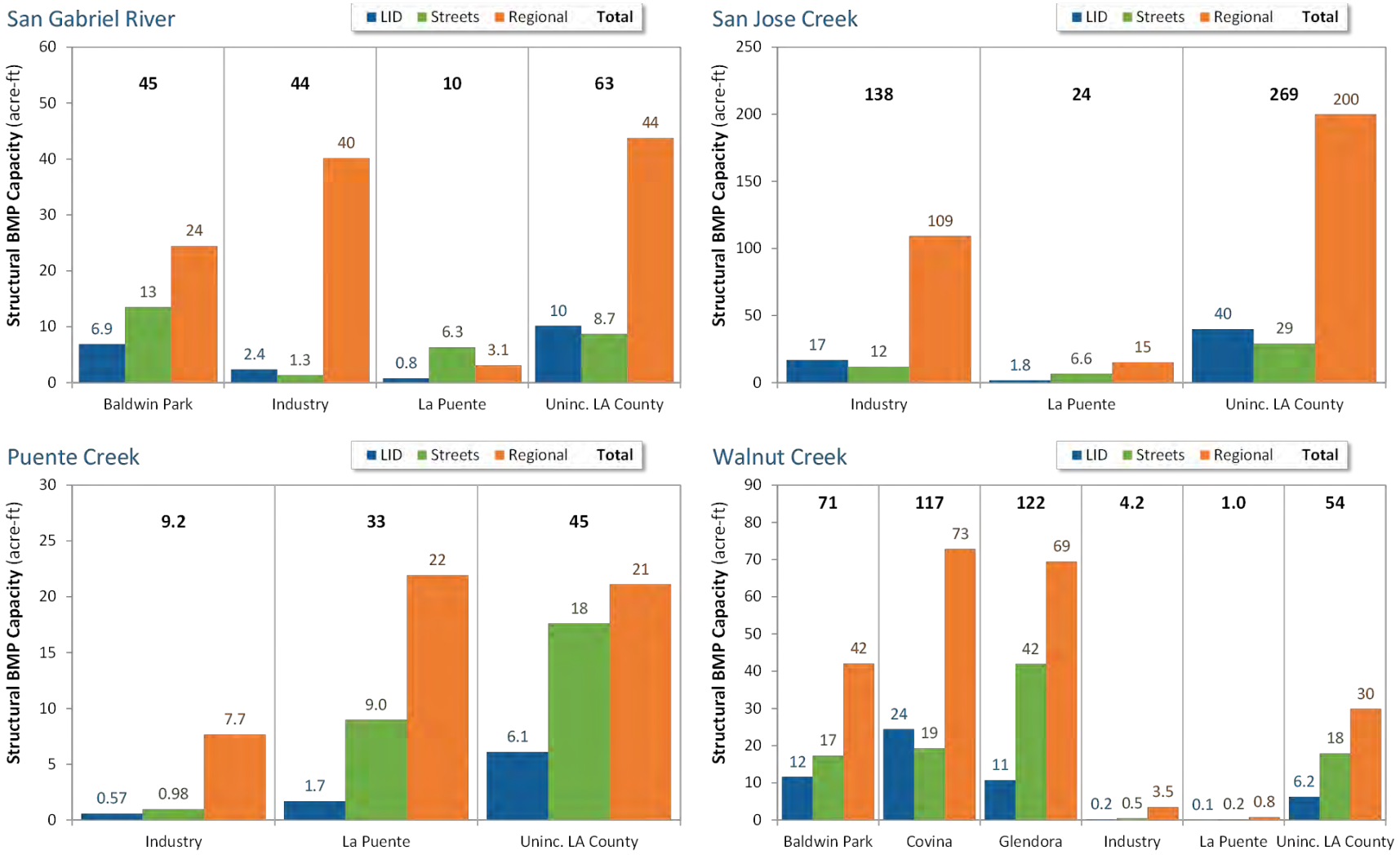


Figure 5-2 (continued)
EWMP Implementation Plan for each Watershed / Assessment Area in the USGR

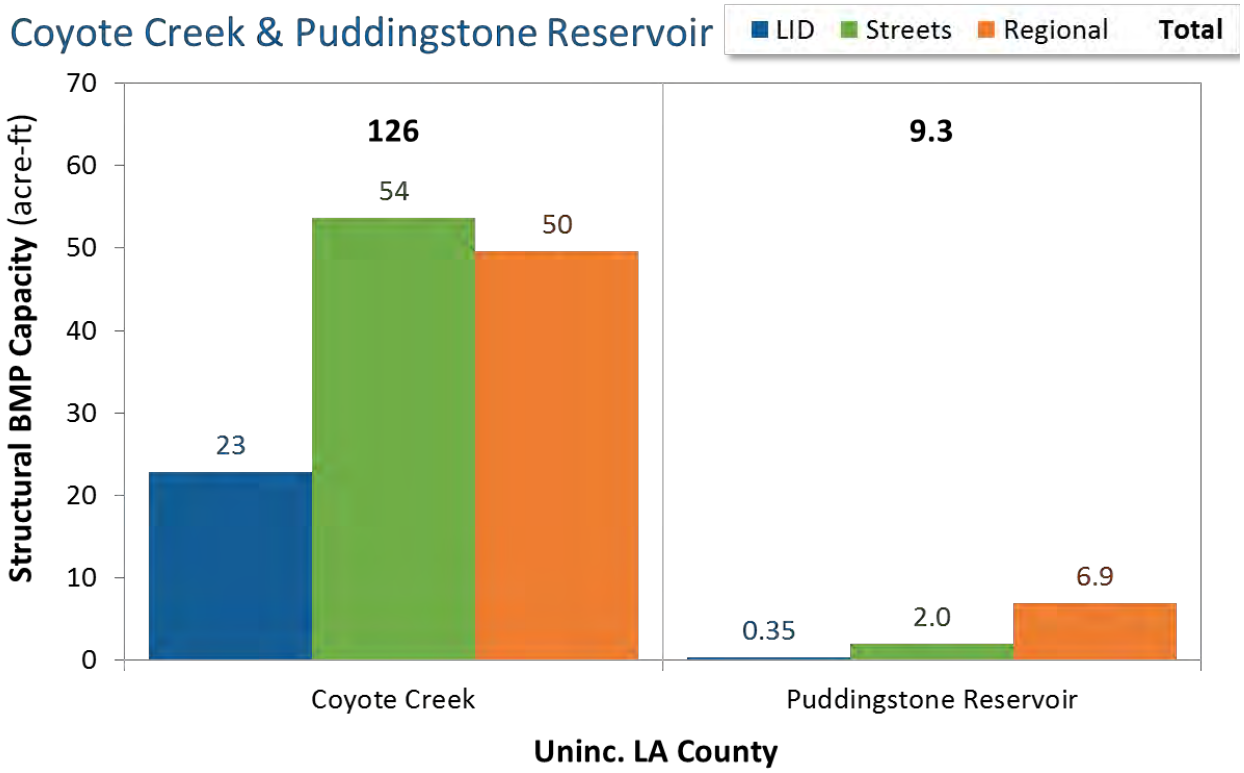


Figure 5-3
EWMP Implementation Plan by Subwatershed for Metals and Other Water Quality Priorities (except *E. coli*)

This map presents the EWMP Implementation Plan for Metals and Other Water Quality Priorities as control measure "density" by subwatershed. The BMP density is higher in some areas [dark blue] because either [1] relatively high load reductions are required or [2] BMPs in those areas were relatively cost-effective (e.g., due to high soil infiltration rates). The BMP capacities are normalized by area (i.e., the BMP capacity for each subwatershed [in units of acre-feet] was divided by the subwatershed area [in units of acres] to express the BMP capacity in units of depth [inches]). The tabular version of this map is presented as a series of tables in in **Appendix D-2**. Note that while all jurisdictions in an assessment area/watershed are held to an equivalent % reduction, subwatersheds *within* a jurisdiction may have variable reductions based on optimization (another reason why some subwatersheds within a jurisdiction are dark blue while others are light blue).

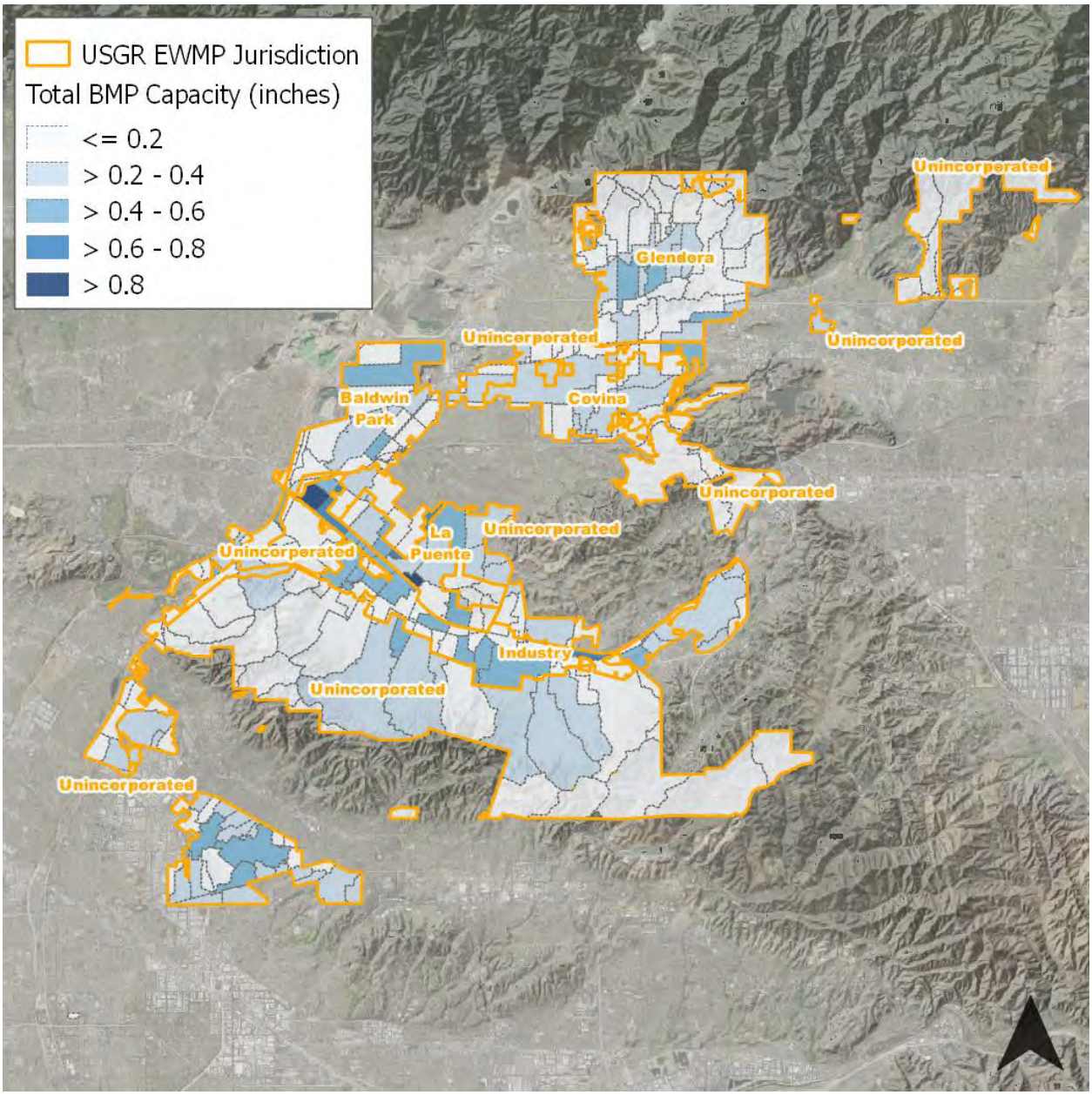


Figure 5-4
Additional Control Measures in EWMP Implementation Plan to Address *E. coli*

This map uses the same approach as **Figure 5-4** to presents the additional capacity in the EWMP Implementation Plan to address *E. coli* (beyond the control measures to be implemented to address Metals and Other Water Quality Priorities). Note the BMP capacities are much less than in **Figure 5-4** because the control measures for Metals and Other Water Quality Priorities retain much of the critical bacteria storm. Some subwatersheds are not shaded because zero additional capacity is required. The tabular version of this map is presented as a series of tables in in **Appendix D-2.**

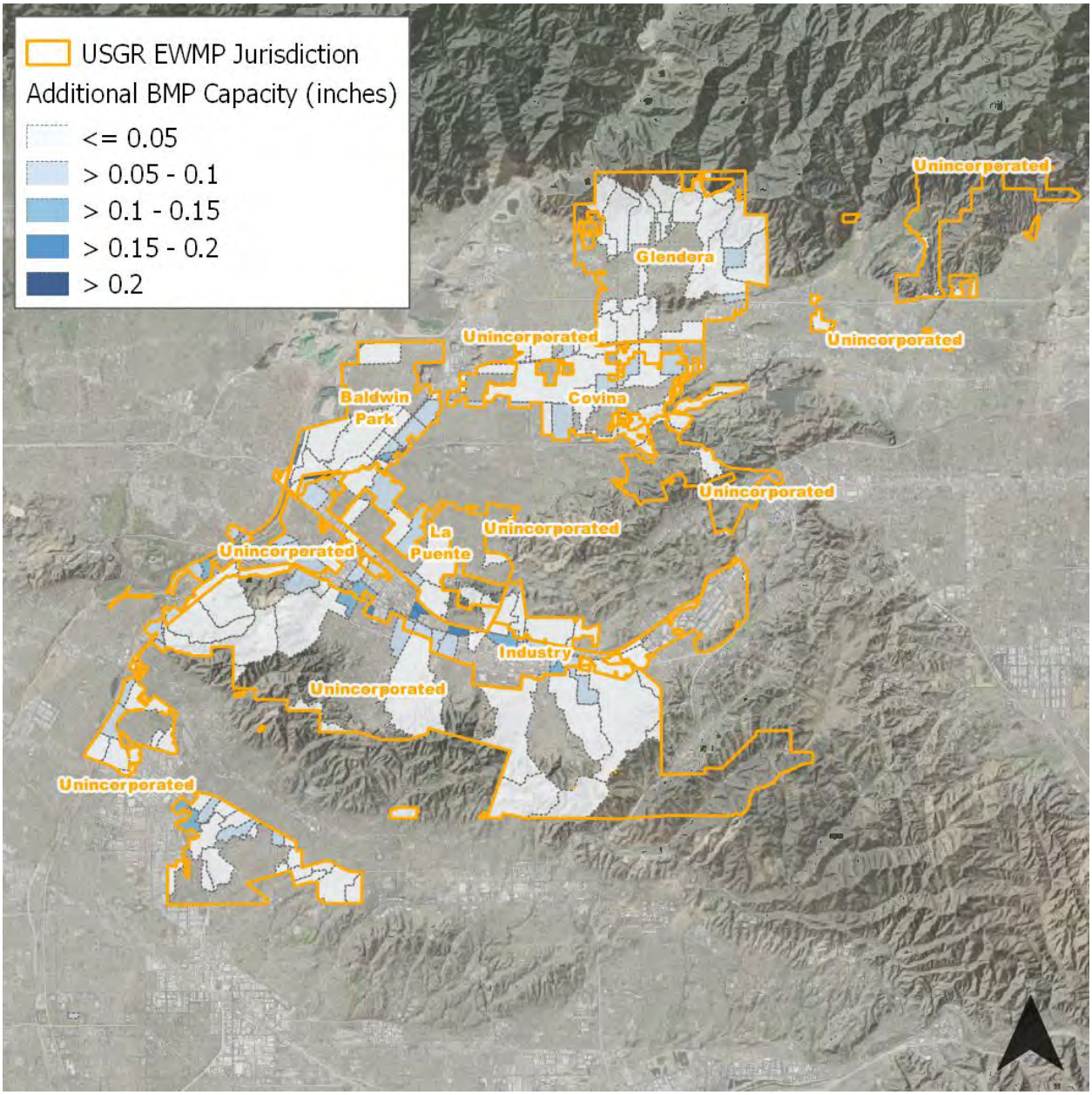
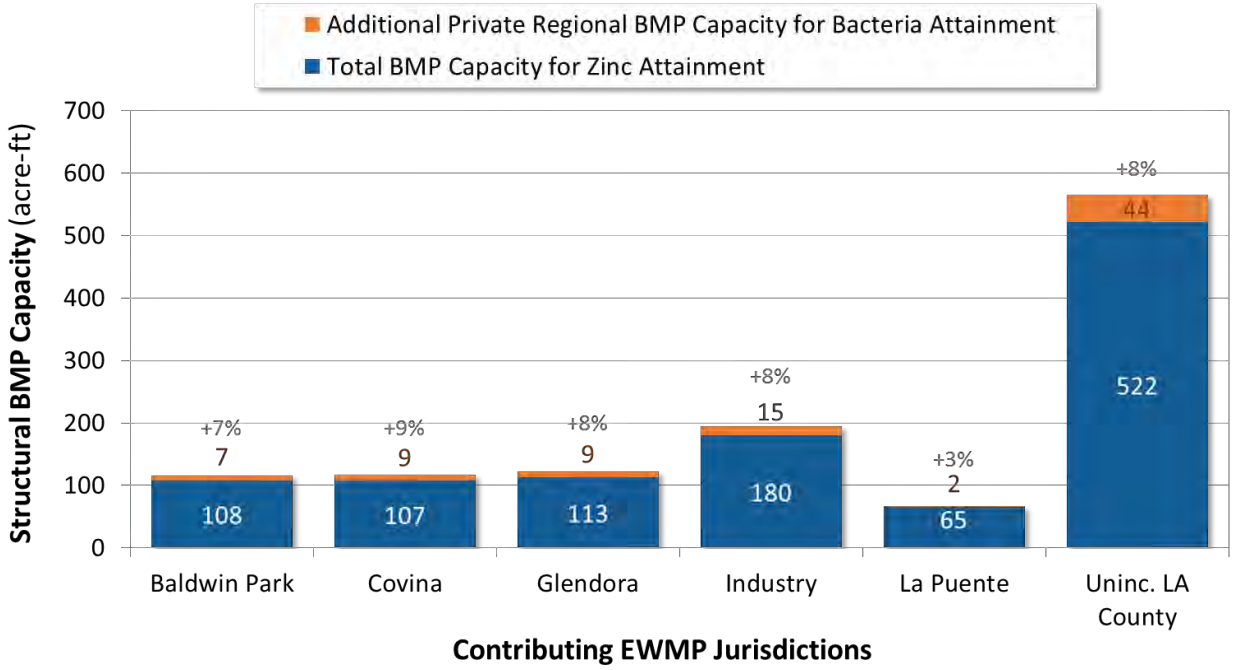


Figure 5-5
Additional Control Measures in EWMP Implementation Plan to Address *E. coli*



5.3 SCHEDULING OF STORMWATER CONTROL MEASURES TO ACHIEVE EWMP AND TMDL MILESTONES

As described in Section 2, scheduling of control measure implementation by the EWMP Implementation Plan is based on the milestones of the SGR Metals TMDL and an additional implementation period to address Puddingstone Reservoir TMDLs by 2032 and SGR-wide *E. coli* impairments by 2040, as follows:

- Achieve 10% of the reduction for zinc[21] (2017)
- Achieve 35% of the reduction for zinc (2020)
- Achieve 65% of the reduction for zinc (2023)
- Final compliance with zinc RWLs (2026)
- Final compliance with nutrient and toxics RWLs in Puddingstone (2032)
- Final compliance with bacteria WQBELs (2040)[22]

The scheduling of the EWMP Implementation Plan is presented as the following components:

- **Summary of control measure capacities to be implemented by each jurisdiction by assessment area/watershed:** the LID, green streets and regional BMP capacities that will be

[21] While these milestones are expressed as reduction in zinc, because zinc is a limiting pollutant (see Section 4.2.4), achievement of zinc RWLs by these dates assures an even greater reduction in all metals and other Water Quality Priority pollutants (except *E. coli*).

[22] The compliance date of 2040 is selected for attainment of bacteria WQBELs matches the timeline used for the LA River Bacteria TMDL (25 years for wet weather compliance).

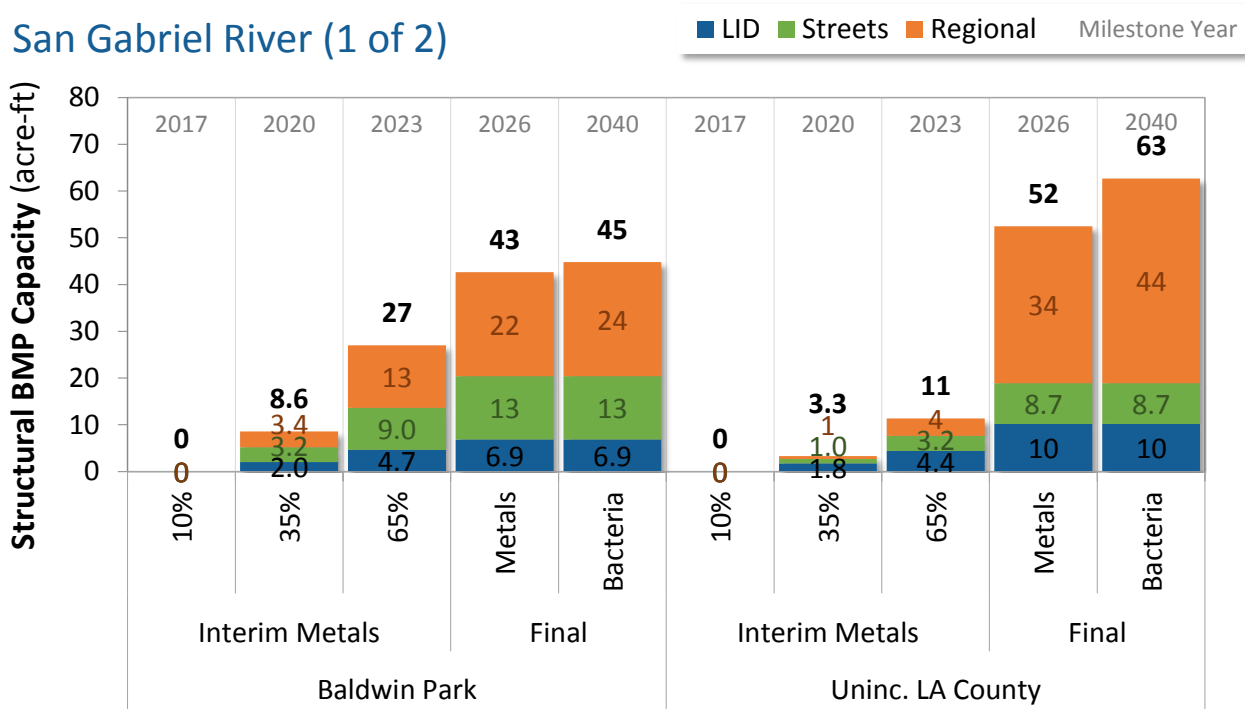
implemented over time to achieve milestones are shown in **Figure 5-6**. Separate panels are shown for each assessment area/watershed – San Gabriel River (mainstem), Coyote Creek, San Jose Creek, Puente Creek and Walnut Creek.

- **Detailed scheduling for each jurisdiction including volumes of stormwater to be managed and control measure capacities:** detailed tables that present the scheduling by assessment area and jurisdiction including volumes of stormwater (Compliance Targets) to be managed are presented in **Appendix D-3**. Each jurisdiction has a standalone recipe for each assessment area/watershed.

The pace of implementation for the EWMP Implementation Plan is rapid due to the milestones of the SGR Metals TMDL. The pace of implementation is directly proportional to required internal and financial resources, and the additional required resource to implement the EWMP will be significant. The costs and financial strategy for the EWMP are presented in **Section 7**.

Figure 5-6
Scheduling of EWMP Implementation Plan to Achieve EWMP / TMDL Milestones

This panel presents the LID, green streets and regional BMP capacities to be implemented by each jurisdiction in San Gabriel River (mainstem). The bold number is the total capacity.



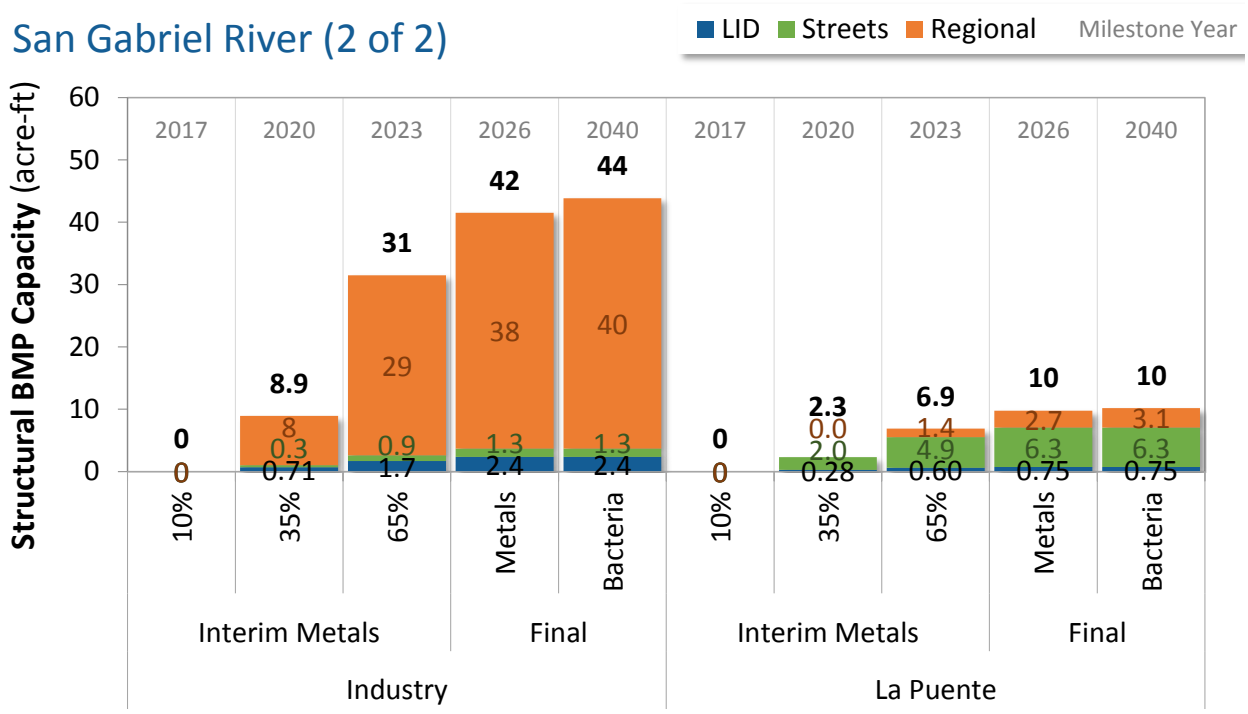


Figure 5-6 (continued)
Scheduling of EWMP Implementation Plan to Achieve EWMP / TMDL Milestones

This panel presents the LID, green streets and regional BMP capacities to be implemented by each jurisdiction in Walnut Creek. The bold number is the total capacity.

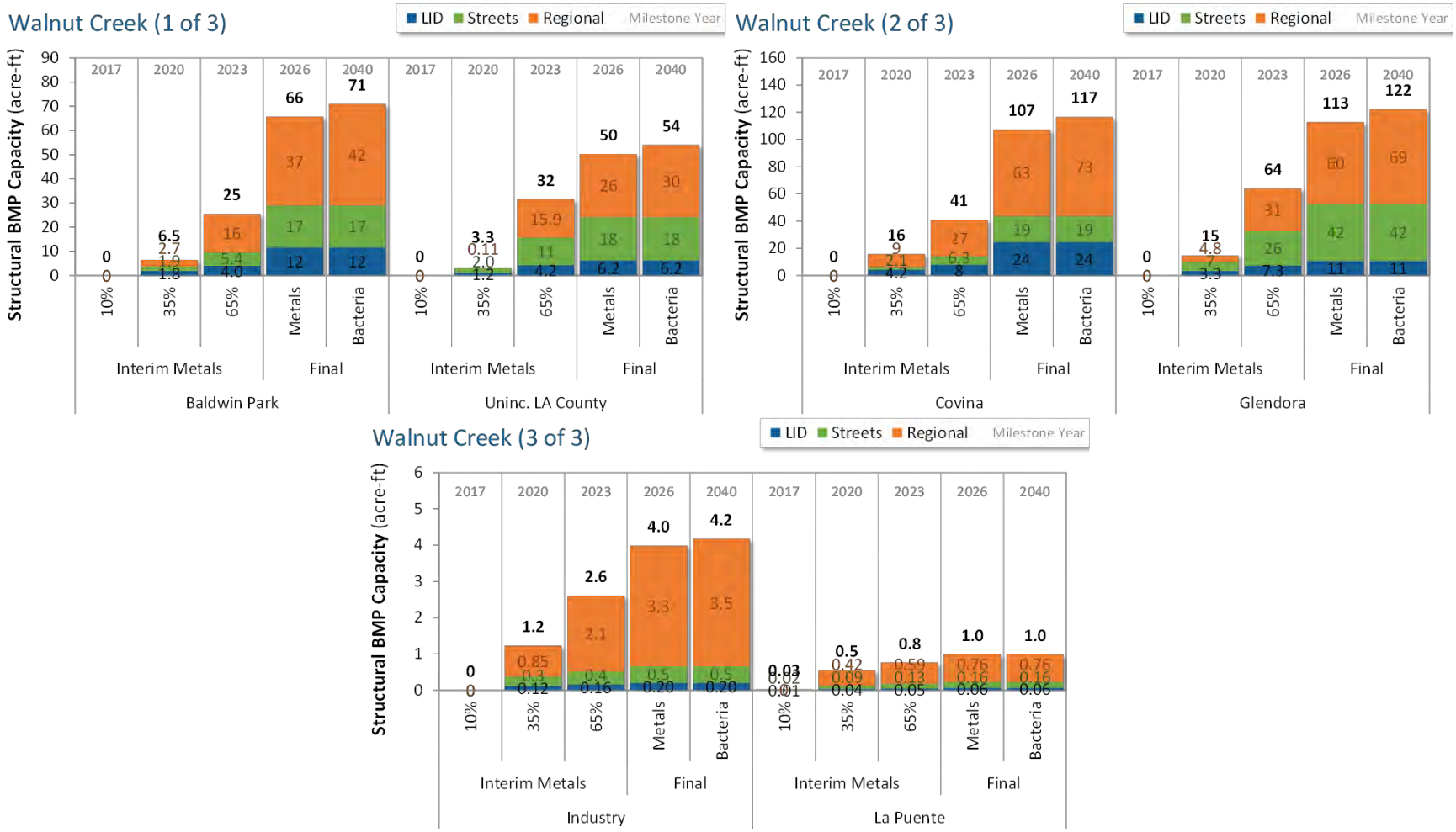
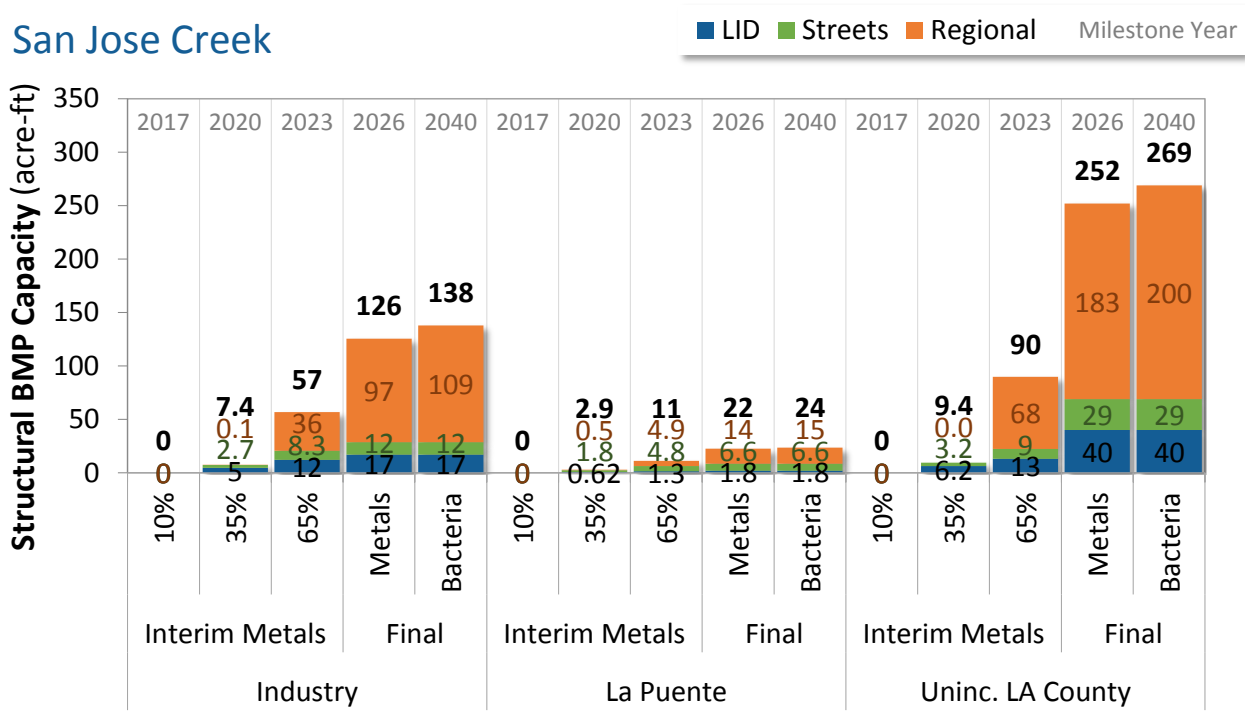


Figure 5-6 (continued)
Scheduling of EWMP Implementation Plan to Achieve EWMP / TMDL Milestones

This panel presents the LID, green streets and regional BMP capacities to be implemented by each jurisdiction in San Jose Creek (top) and Puente Creek (bottom). The bold number is the total capacity.



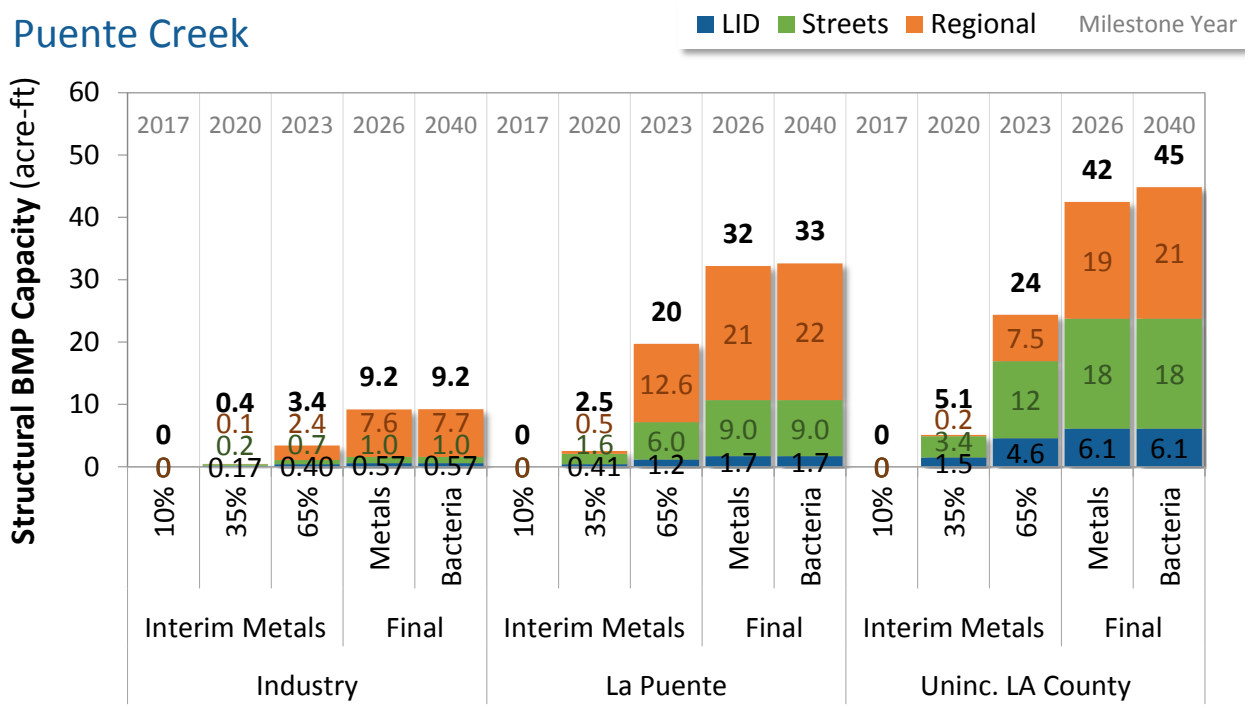
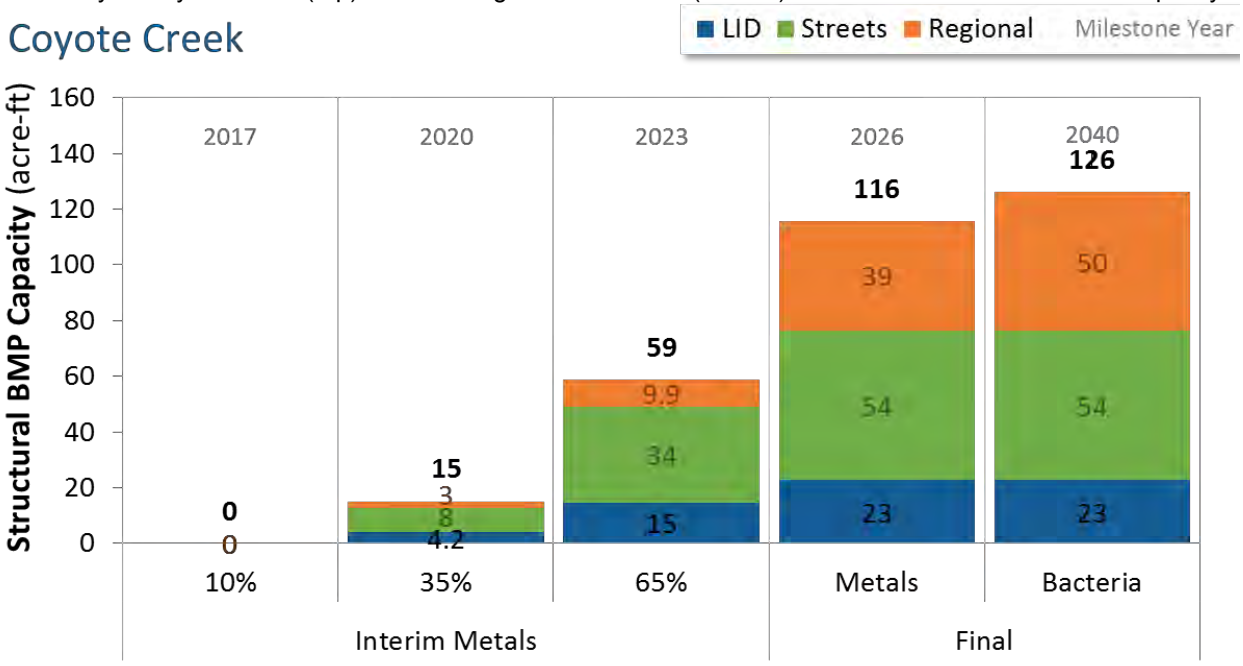
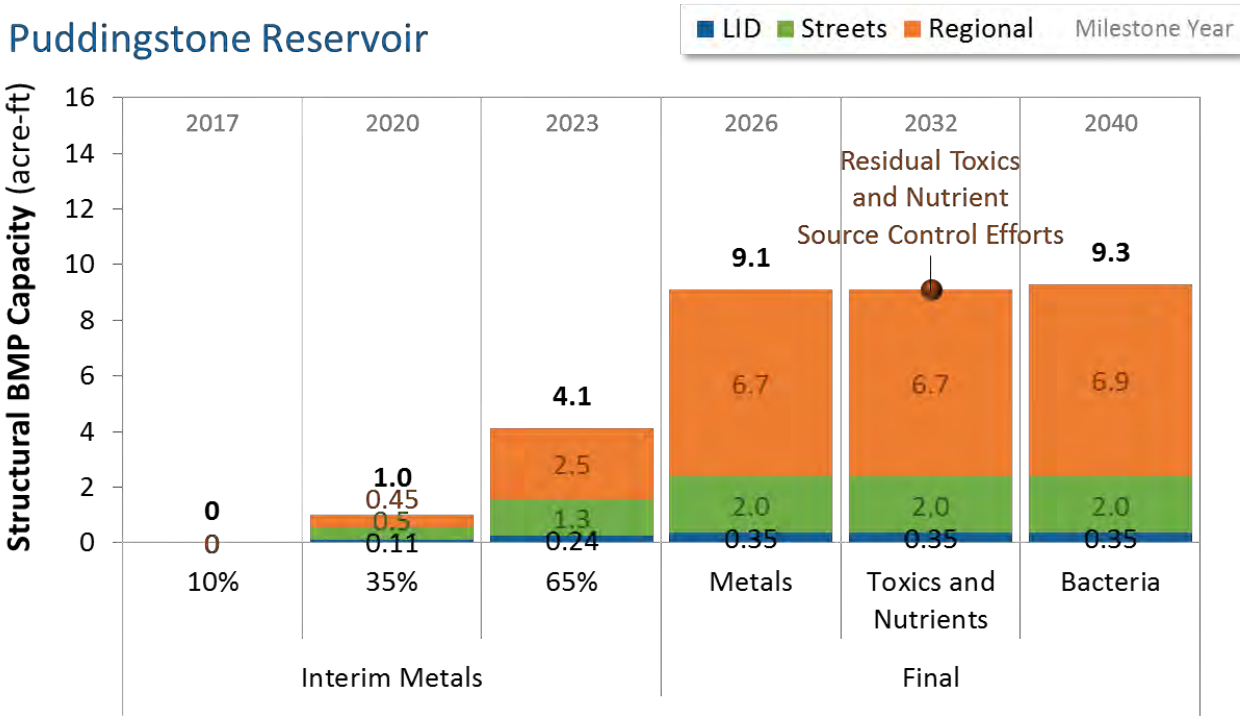


Figure 5-6 (continued)
Scheduling of EWMP Implementation Plan to Achieve EWMP / TMDL Milestones

This panel presents the LID, green streets and regional BMP capacities to be implemented by Unincorporated LA County in Coyote Creek (top) and Puddingstone Reservoir (bottom). The bold number is the total capacity.





5.4 NON-STORMWATER CONTROL MEASURES

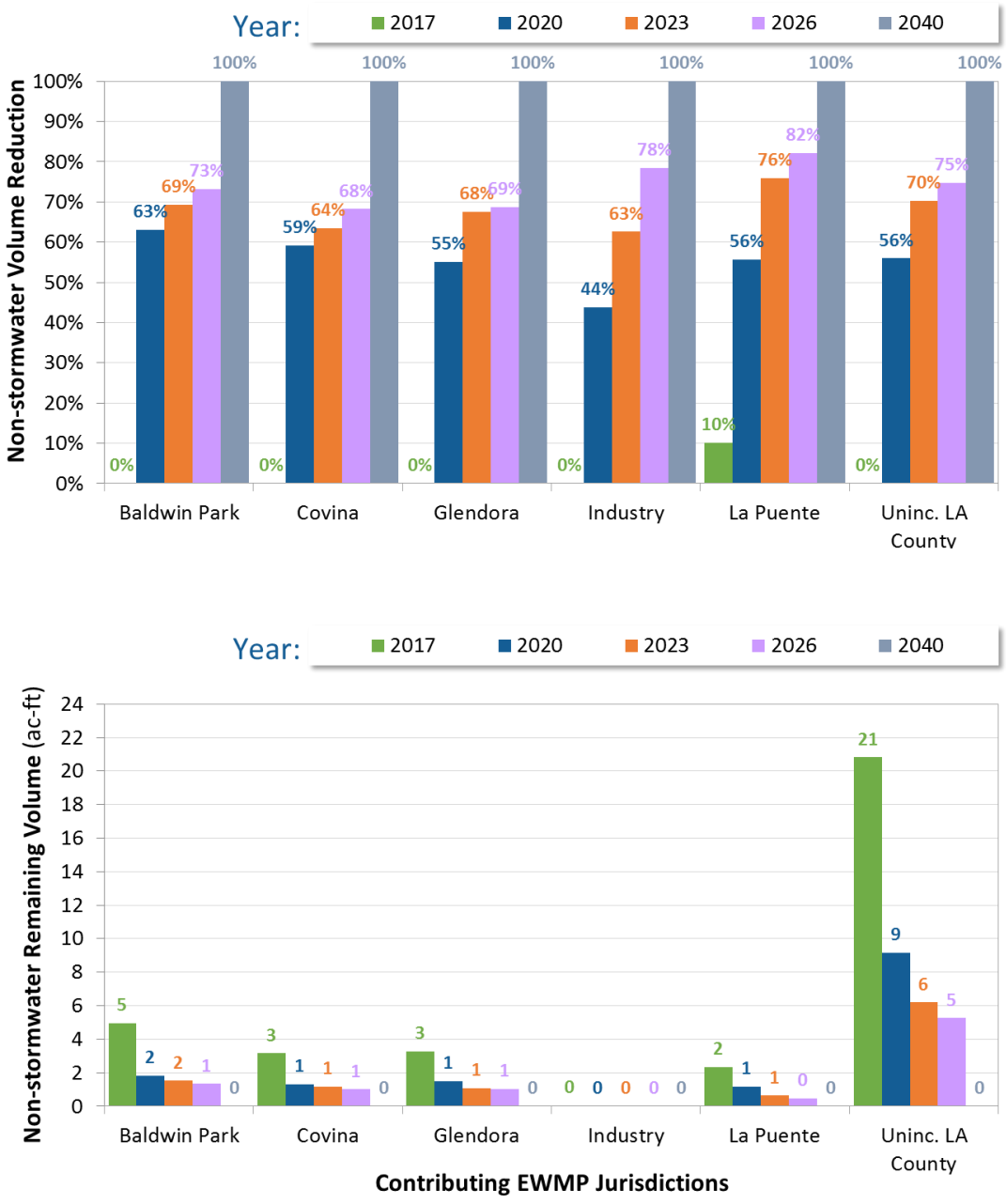
The MS4 permit effectively prohibits non-stormwater discharges and the SGR Metals TMDL includes milestones for attainment of dry weather RWLs. The EWMP Implementation Plan has assurance of eliminating non-stormwater discharges through implementation of the network of wet weather control measures. As shown in **Figure 5-7**, the EWMP Implementation Plan achieves 100% elimination of non-stormwater flows by 2040. The dry weather milestones of the SGR Metals TMDL have assurance of being addressed for the following reasons:

1. During dry weather, exceedances of metals RWLs are rare, as described in Section 4.2.4. As such, existing MCMs and control measures have reasonable assurance of attaining metals RWLs (see **Table 4-5**).
2. By 2020, which is the 70% reduction milestone of the Metals TMDL, between 44% and 66% of non-stormwater flows will be completely eliminated.
3. By 2023, which the final compliance date for the Metals TMDL, approximately 70% of non-stormwater flows will be eliminated in USGR, which is sufficient for TMDL attainment.
4. By 2026, the final dry weather compliance date in the draft SGR Bacteria TMDL, between 62% and 82% of non-stormwater flows will be eliminated in USGR, which is sufficient for TMDL attainment.
5. The non-stormwater screening, investigation and abatement programs being conducted under the CIMP for the Group will increase the rate of eliminating non-stormwater flows beyond the reductions provided by the control measures of the EWMP Implementation Plan. In other words, the non-stormwater abatement programs provide a "margin of safety" for the assurance demonstrated in **Figure 5-7**.
6. An additional margin of safety is provided by the assumed outdoor water use in the dry weather RAA (**Appendix D-2**). The non-stormwater volumes in the non-stormwater analysis were based on existing median outdoor water use rates. Most water supply agencies have initiatives to significantly reduce outdoor water use in the coming years and thus the rate of elimination of non-stormwater flows should be more rapid than shown in **Figure 5-7**.

Overall, the EWMP Implementation Plan and related non-stormwater reduction programs are expected to effectively eliminate non-stormwater flows in USGR

Figure 5-7
Schedule for Eliminating Non-Stormwater Discharges in USGR

The figure shows the effect of the EWMP Implementation Plan on non-stormwater discharges in USGR. The top panel shows the schedule for volume reductions in non-stormwater discharges, while the bottom panel shows the non-stormwater volumes remaining. Over time, the wet weather control measures will eliminate non-stormwater discharges. The reductions to be achieved by the dry weather compliance dates from the SGR Metals TMDL are sufficient to achieve the milestones.



6 Assessment and Adaptive Management Framework

The EWMP is intended to be implemented as an adaptive program. As new program elements are implemented and information is gathered over time, the EWMP will undergo modifications to reflect the most current understanding of the watershed and present a sound approach to addressing changing conditions. As such, the EWMP will employ an adaptive management process that will allow the EWMP to evolve over time.

Part VI.C.8 of the Permit details the adaptive management process to be included in the EWMP that includes the following requirements:

i. Permittees shall adapt the EWMP to become more effective every two years from the date of program approval based on, but not limited to a consideration of:
   (1) progress toward achieving WQBELs and/or RWLs;
   (2) Permittee monitoring data;
   (3) achievement of interim milestones;
   (4) re-evaluation of water quality priorities and source assessment;
   (5) non-Permittee monitoring data;
   (6) Regional Board recommendations; and
   (7) Recommendations through a public participation process.

ii. Permittees shall report any modifications to the EWMP in the annual report.

iii. Permittees shall implement any modifications to the EWMP upon approval by the Regional Board or within 60 days of submittal if the Regional Board expresses no objections.

6.1 ADAPTIVE MANAGEMENT PROCESS

As new program elements are implemented and information is gathered over time, the EWMP will undergo modifications to reflect the most current understanding of the watershed and present a sound approach to address changing conditions. The adaptive management process includes a re-evaluation of water quality priorities, an updated source assessment, an effectiveness assessment of watershed control measures, and a RAA. The CIMP will gather additional data on receiving water conditions and stormwater/non-stormwater quality to inform these analyses. This process will be repeated every two years as part of the adaptive management process.

6.1.1 Re-characterization of Water Quality Priorities

Water quality within the WMP area will be re-characterized using data collected as a result of the CIMP implementation to include the most recent data available. WBPCs may be updated as a result of changing water quality. These classifications will be important for refocusing improvement efforts and informing the selection of future watershed control measures.

6.1.2 Source Assessment Re-evaluation

The assessment of possible sources of water quality constituents will be re-evaluated based on new information from the CIMP implementation efforts. The identification of non-MS4 and MS4 pollutant sources is an essential component of the WMP because it determines whether the source can be controlled by watershed control measures. As further monitoring is conducted and potential sources are better understood, the assessment becomes more accurate and informed.

6.1.3 Effectiveness Assessment of Watershed Control Measures

The evaluation of BMP effectiveness is an important part of the adaptive management process and the overall WMP. Implementation of the CIMP can provide a quantitative assessment of structural BMP effectiveness as it relates to actual pollutant load reduction to determine how selected BMPs have performed at addressing established water quality priorities. In addition, the adaptive management process is a required step for the customization of MCMs as detailed in Section 4. Effectiveness assessment becomes important for the selection of future control measures to be considered.

6.1.4 Update of Reasonable Assurance Analysis

The data gathered as a result of the CIMP will support adaptive management at multiple levels, including (1) generating data not previously available to support model updates and (2) tracking improvements in water quality over the course of WMP implementation. As described in Section 5, the RAA is an iterative process that depends on the continuous refinement and calibration of the watershed models used.

6.1.4.1 RAA Adaptive Management Considerations

While the BMP representation in the model is based upon the latest data, tailored to specific agency preferences, and designed for optimization, the following limitations should be noted:

- **BMP Opportunity Input Data** – Identifying watershed-wide BMP opportunities is based upon GIS layers, such as land ownership, street types, and soil contamination. While these data are useful, more details about the suitability of each site (e.g., GIS layers of parkway widths, BMP barriers) may be necessary to further screen or prioritize opportunities – especially for green streets and regional projects**.**
- **Model Resolution** – Input parameters for the model are set up and summarized at the subwatershed scale. While this is helpful for computational efficiency, this also ensures that the analysis does not outstrip the resolution and accuracy of the data. As a result of this resolution, BMP opportunities are lumped together in hundreds of parcels or streets. This may ignore the fact that some opportunities at the sub-subwatershed scale are superior to others. It is likely that more refined strategic identification of project-scale opportunities could yield significant cost savings for BMP implementation.
- **Design Assumptions** – Routing, drainage areas, and site-scale BMP footprints are generally assumed to be uniform for individual BMP types. Many BMPs are represented as "typical" versions of green infrastructure or regional BMPs throughout the watershed (with the notable exception of Tier 1 regional BMPs). It is likely that the range of BMP implementation will vary greatly to include high- and low-efficiency versions of the typical representation at the site scale.

These limitations provide ample opportunity for adaptive management and are possible focus areas for constructive feedback and data collection that might further improve the efficiency of BMP implementation and reduce the overall costs of the EWMP. Specifically, as the EWMP is implemented over time, it is likely that refined strategies will identify a different suite of opportunities or a divergent

BMP design from that which was assumed for the RAA. It will, therefore, be necessary to track BMP implementation so adjustments can be made when checking progress towards compliance with the EWMP water quality objectives. An example of how this might work is provided below.

Adaptive Management Example

Figure 6-2 defines the current EWMP compliance recipe for subwatershed 516442 (per **Appendix D-1**) with a series of example adaptive management scenarios. The table is split to emphasize that the compliance targets (on the left-hand side) are BMP goals, which may be updated based on monitoring data from the CIMP, and the plan (on the right-hand side) may be adjusted through adaptive management. The objective is for each agency to meet the compliance target of capturing a certain amount of runoff in a 24-hour period (left-hand side) with a suite of BMPs. The right-hand side represents the "optimized" suite of BMPs identified by the model based on the assumptions described in Section 4. However, as discussed above, there remains ample opportunity to improve and/or customize the BMP opportunities and design assumptions in such a way that the overall constructed size (and associated cost) of the suite of BMPs shrinks.

For subwatershed 516442 (the top portion of **Figure 6-2**), note that the plan currently identifies 2.00 ac-ft of storage necessary for green streets. Consider Adaptive Management Scenario 1 – a hypothetical example scenario where a street-scale analysis reveals that an additional 2 ac-ft of high-efficiency green street opportunities exist in the subwatershed, bringing the total green street implementation to 4.00 ac-ft. The Scenario 1 row in **Figure 6-2** demonstrates how this additional green street capacity can offset the need for other BMPs in the subwatershed; in this case, Tier 2 regional capacity. It is important to realize, however, that an even exchange of BMP volumes between programs is not appropriate (e.g. green street capacity increases by 2 ac-ft, but Tier 2 regional capacity is reduced by nearly 4 ac-ft). This discontinuity exists because (1) green streets perform differently than regional BMPs, (2) the BMPs treat different land uses, and (3) the BMPs experience different infiltration rates. Adaptive management therefore requires a reasonable assurance "translator" to demonstrate that, together, the new suite opportunities satisfy the compliance goals on the left-hand side of the table (particularly when filtration practices remove pollutants but do not reduce a commensurate amount of runoff volume).

Taking the example a step further, Scenario 2 demonstrates a scenario where residential LID programs progress at twice the pace assumed in the RAA (a hypothetical adoption rate of 2 percent of residential parcels per year versus the planned 1 percent). The additional capacity offsets the required regional capacity for metals compliance in lieu of constructing regional BMPs on private parcels. Again in this scenario, the additional residential volume (0.4 ac-ft) translates to an offset of 0.23 ac-ft of regional capacity because residential LID perched high in the watershed is less efficient per unit volume than regional BMPs located near the subwatershed outlet. Despite requiring double the structural capacity, substantial cost savings could be realized from this hypothetical adaptive management scenario because the unit cost of residential LID is less than 5 percent that of private regional BMPs.

In Scenario 3, consider a situation where a private parcel is acquired at the outlet of the subwatershed. Assuming redevelopment and residential LID will progress in the subwatershed regardless of other control measures; a BMP could be installed on the private parcel and optimized to satisfy the remaining compliance target runoff volume, eliminating the need for any other remaining BMPs in the subwatershed. The upstream BMPs are not perfectly efficient, yet the cumulative BMP capacity is less than the 24-hour compliance target due to infiltration in the BMP during storm events. In this scenario the overall construction, operational, and maintenance costs for BMPs would be greatly reduced for this subwatershed.

The above scenarios provide only a handful of examples where adaptive management can significantly improve implementation efficiency and reduce EWMP implementation costs. It is anticipated that, over the course of implementation, agencies will continue to innovate, customize BMP configurations, and strategically locate BMP opportunities that will shrink the overall burden of BMP implementation. This adaptive management must rely on tools that can easily translate between BMP volumes to assure that changes in the implementation plan relate back to the intent of the EWMP.

6.2 REPORTING

Annual reporting will be completed each year as part of the CIMP. In additional to assessing the overall progress of the WMP, the CIMP reporting will detail the implemented BMPs and demonstrate the cumulative BMP capacities achieve the interim targets. Data obtained through CIMP monitoring will be used to determine the overall effectiveness of the EWMP and will the next phases of EWMP implementation during the adaptive management process. **Figure 6-1** below shows the CIMP monitoring locations.

Figure 6-1
CIMP Monitoring Locations

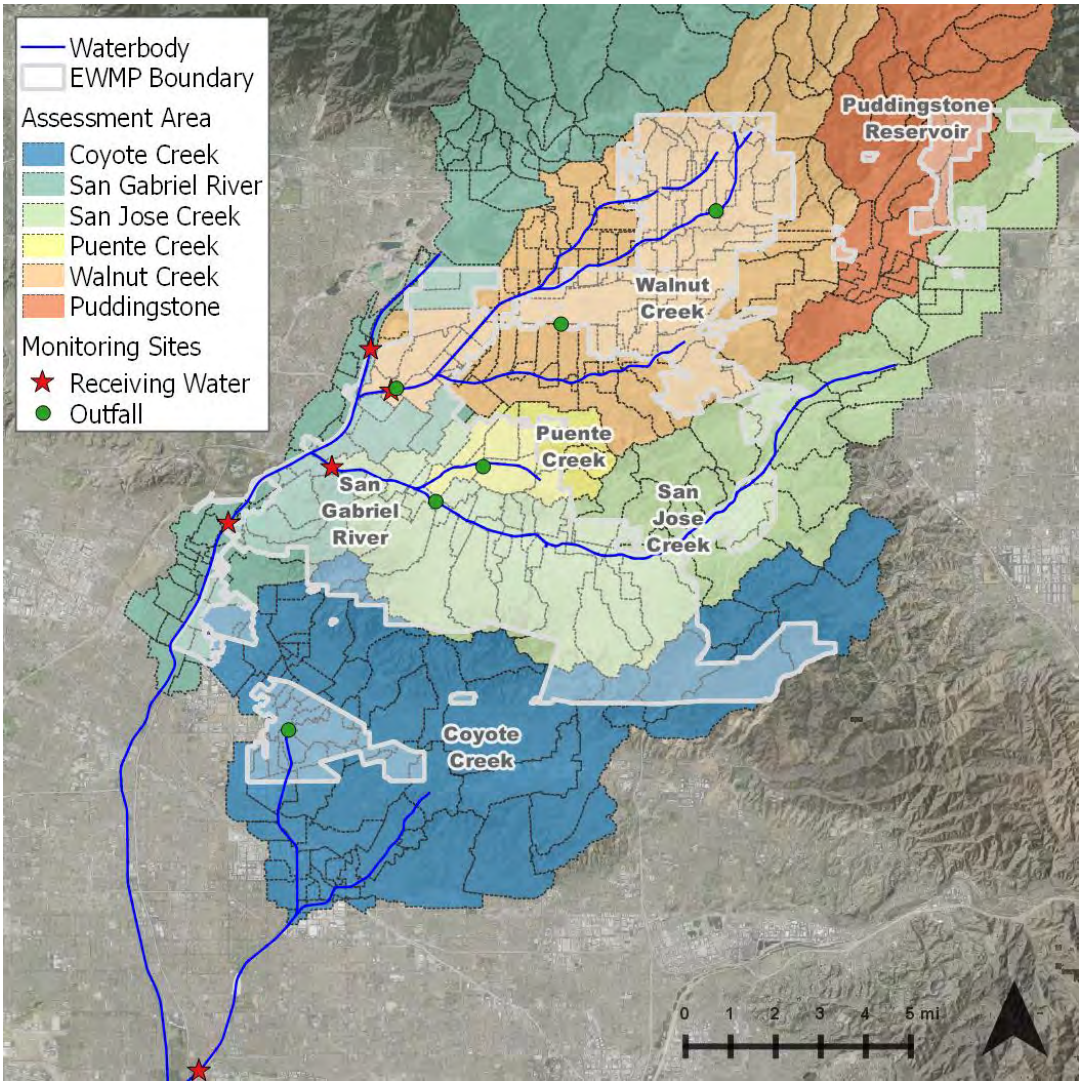


Figure 6-2
Hypothetical Alternative Scenarios for Subwatershed 516442 to Attain the Compliance Targets

(Update per CIMP) (Flexible)

COMPLIANCE TARGETS: BMP GOAL		EWMP IMPLEMENTATION PLAN: APPROACH TO ACHIEVE COMPLIANCE TARGETS, SUBJECT TO ADAPTIVE MANAGEMENT (BMP capacity expressed in units of acre-feet)												
For Metals by 2026	For Bacteria by 2040	For Metals Attainment by 2026											For Bacteria Attainment by 2040	
			Low-Impact Development				Streets	Regional BMPs						
24-hour Volume Retained (acre-ft)	Additional 24-hour Volume to be Retained (acre-ft)	% Load Reduction Critical Condition	Ordinance	Planned LID	Public LID	Residential LID	Green Streets, All Components	Tier 1 (public, owned)	Tier 2 (public, owned)	Tier 2 (public, non-owned)	Private	Total BMP Capacity (acre-ft)	Regional BMPs (private)	Cummulative BMP Capacity (acre-ft)
7.93	0.23	86%	0.15	---	0.31	0.39	2.00	0.00	4.98	0.00	0.00	**7.8**	0.23	**8.1**
		86%	0.15	---	0.31	0.39	4.00	0.00	1.00	0.00	0.00	**5.85**	0.23	**6.08**
		86%	0.15	---	0.31	0.90	2.00	0.00	4.98	0.00	0.00	**8.3**	---	**8.3**
		86%	0.15	---	---	0.39	---	---	---	---	6.00	**6.5**	---	**6.5**

Scenario 1:

Adaptive Management: Burden Transferred from Regional Projects to Newly Identified High-Efficiency Green Street Opportunities

Scenario 2:

Adaptive Management: Additional Capacity for Bacteria Treatment is Provided by Residential LID

Scenario 3:

Adaptive Management: Regional BMP Located at Subwatershed Outlet Manages Remaining Runoff to Achieve Compliance Target

7 EWMP Implementation Costs and Financial Strategy

The purpose of this section is to present the financial strategy for addressing the additional costs of compliance with the 2012 MS4 permit as a result of the extensive set of BMPs or "recipe for compliance", identified in Section 6. The definition of a financial strategy varies across industries. In the context of the EWMP, the financial strategy is deemed to represent the strategic options available to the permittees for financing the program costs associated with the new MS4 Permit.

This section identifies the estimated order-of-magnitude cost of the activities, and potential funding options that the EWMP Group will be pursuing to fund the program.

7.1 BASIS OF EWMP COST ESTIMATES

The costs for structural BMPs provided here are considered to be planning level only (order of magnitude), and can be refined as EWMP implementations progresses with the use of actual BMP implementation costs. The following assumptions were made when developing the costs for EWMP implementation:

- BMP capacity is assumed to be constructed at an even rate between BMP milestones.
- BMP geometry based on typical values for each type, as discussed in Section 3.
- Costs provided are in 2015 dollars.
- Costs for enhanced minimum control measures and other institutional BMPs have not been included.
- Routine maintenance was assumed to occur annually, while intermittent maintenance activities were assume to occur every four years.
- Replacement costs were not considered under the assumption that systems will be properly maintained and functional throughout and beyond the implementation schedule.

The costs are based on generic, modular cost functions developed for various BMP types specific to Los Angeles County. For structural BMP projects, costs include planning, design, permits, construction, operation and maintenance (O&M), and post construction monitoring. To support BMP optimization, cost functions were developed for each type of structural BMP. A summary of the BMP cost functions, expressed as a function of BMP geometry is presented in **Table 7-1**.

Table 7-1
Summary of BMP Cost Functions for Final Compliance RAA

BMP Category	BMP types	Functions for Estimating Total Costs [1]	
		Capital Costs	Annual O&M
LID and Green Streets	Bioretention with Underdrain	*Cost = 9.438 (A) + 2.165 (Vt) + 2.64 (Vm) + 3.3 (Vu)*	*Cost = 2.54 (A)*
	Bioretention without Underdrain	*Cost = 9.438 (A) + 2.165 (Vt) + 2.64 (Vm)*	*Cost = 2.54 (A)*
	Residential LID	*Cost = 4.000 (A)*	--
	Permeable Pavement with Underdrain	*Cost = 65.849 (A) + 3.3 (Vu)*	*Cost = 1.74 (A)*
	Permeable Pavement without Underdrain	*Cost = 57.599 (A)*	*Cost = 1.74 (A)*
Regional BMPs	Pump	*Cost = 56,227*(Pump Capacity$_{cfs}$) + $1,207,736*	
	Regional Project on Public Parcel	*Cost = 10.01 (A) + 2.296 (Vt) + 2.8 (Vm)*	*Cost = 1.918 (A)*
	Regional Project on Private Parcel	*Cost = 10.01 (A) + 2.296 (Vt) + 2.8 (Vm) + 139.01 (A)*	*Cost = 1.918 (A)*

1 – Formulas describe annualized life cycle costs including routine and intermittent O&M using the following variables: (A) is the area of the BMP footprint in square feet, (Vt) is the total volume of the BMP in cubic feet, (Vm) is the volume of the BMP soil media in cubic feet, and (Vu) is the volume of the BMP underdrain in cubic feet.

2 – The resolution of WMMS output precludes the certain estimation of pump station quantity and capacity. Note that incidental costs associated with pump station operation will likely be incurred during implementation.

7.2 ESTIMATED EWMP PROGRAM COSTS

The EWMP described in earlier sections of this document identifies a variety of watershed control measures (BMPs) including non-structural methods, regional projects, and distributed projects. The purpose of this section is to present the order-of-magnitude cost estimates to implement the EWMP including all of the various BMPs.

The estimated costs are based on the total structural BMP capacity of the USGR EWMP implementation plan of 1,120 acre-feet, which is equivalent to the volume of nearly four Rose Bowl stadiums. **Appendix D-1** provides the summaries of BMP capacities for each jurisdiction by assessment area.

Based on the cost functions, the total cost through full implementation including O&M is at approximately $2 billion. **Table 7-2** and **Figure 7-1** provide a cost estimate summary, and **Table 7-3** through **Table 7-8** and **Figure 7-2** and **Figure 7-3** provide a breakdown by jurisdiction. The costs provided here are considered to be planning level only (order of magnitude), and can be refined as EWMP implementations progresses with the use of actual BMP implementation costs.

Table 7-2
EMWP Implementation Cost Summary by Jurisdiction

Jurisdiction	Total BMP Capacity (acre-feet)	Total Capital Costs	Total O&M Costs	Total Cost of Implementation
Baldwin Park	**96**	**$ 98,186,202**	**$ 86,068,895**	**$ 184,255,097**
Covina	97	$ 62,708,990	$ 85,369,309	$ 148,078,299
Glendora	108	$ 114,740,224	$ 106,174,045	$ 220,914,269
Industry	201	$ 307,629,945	$ 143,270,089	$ 450,900,034
La Puente	62	$ 71,893,848	$ 57,652,072	$ 129,545,920
Uninc. LA County	554	$ 418,239,813	$ 474,132,246	$ 892,372,059
Grand Total	**1,119**	**$ 1,073,399,021**	**$ 952,666,657**	**$ 2,026,065,679**

Figure 7-1
EWMP Implementation Cost Breakdown

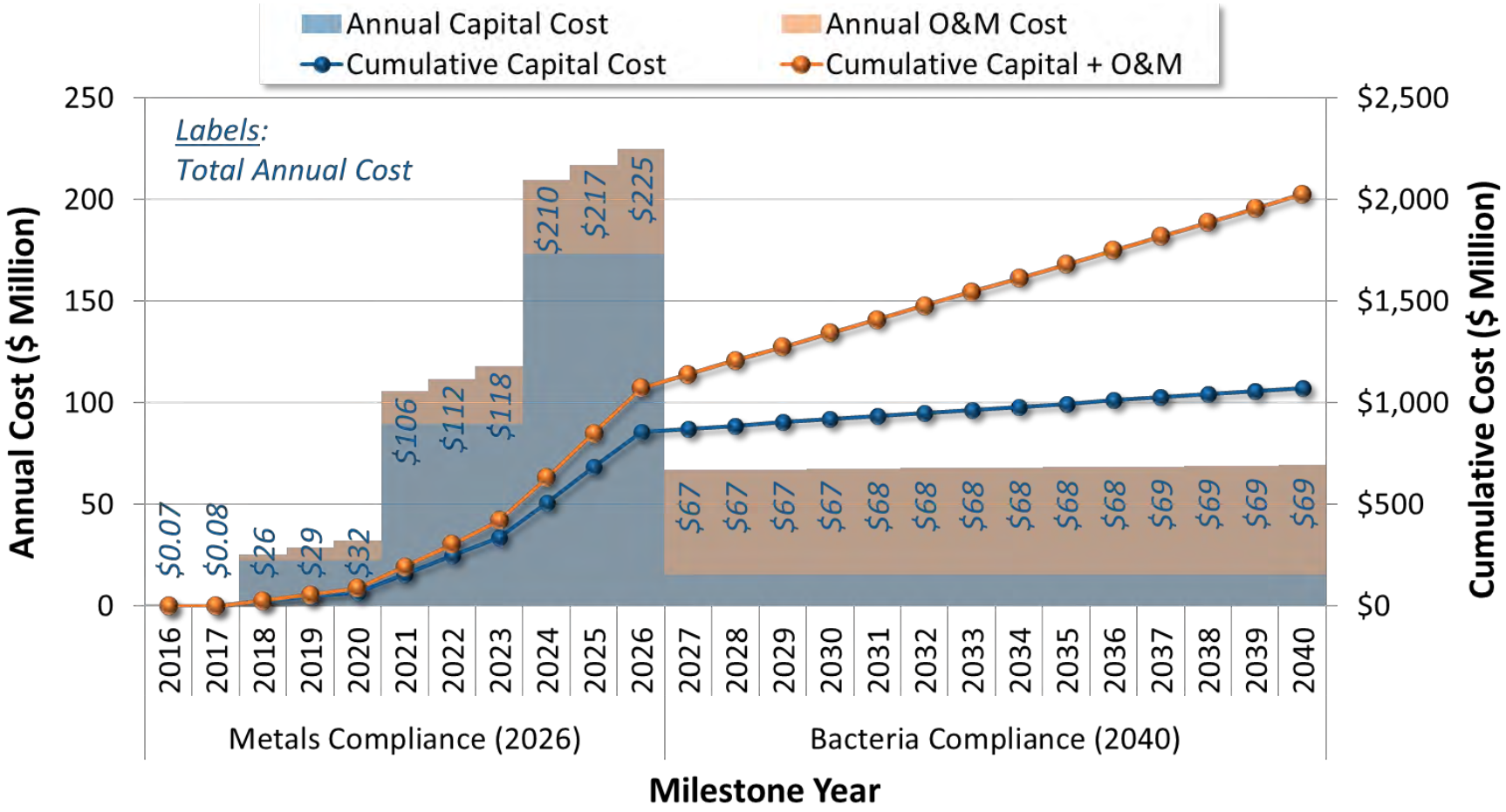


Table 7-3
EWMP Implementation Cost for Baldwin Park

Jurisdiction	Cumulative Total Capacity	Annual Capital Costs	Annual O&M	Total Annual Costs
Baldwin Park				
2016	0.0	$ -	$ -	$ -
2017	0.0	$ -	$ -	$ -
2018	6.7	$ 2,300,642	$ 363,653	$ 2,664,295
2019	13.3	$ 2,300,642	$ 727,306	$ 3,027,947
2020	20.0	$ 2,300,642	$ 1,090,959	$ 3,391,600
2021	29.4	$ 5,343,866	$ 1,596,841	$ 6,940,707
2022	38.7	$ 5,343,866	$ 2,102,724	$ 7,446,590
2023	48.1	$ 5,343,866	$ 2,608,607	$ 7,952,473
2024	60.9	$ 17,599,483	$ 3,258,520	$ 20,858,003
2025	73.7	$ 17,599,483	$ 3,908,434	$ 21,507,917
2026	86.4	$ 17,599,483	$ 4,558,347	$ 22,157,830
2027	87.1	$ 1,603,873	$ 4,577,744	$ 6,181,617
2028	87.8	$ 1,603,873	$ 4,597,140	$ 6,201,014
2029	88.5	$ 1,603,873	$ 4,616,537	$ 6,220,410
2030	89.2	$ 1,603,873	$ 4,635,934	$ 6,239,807
2031	89.9	$ 1,603,873	$ 4,655,330	$ 6,259,204
2032	90.6	$ 1,603,873	$ 4,674,727	$ 6,278,600
2033	91.3	$ 1,603,873	$ 4,694,123	$ 6,297,997
2034	92.0	$ 1,603,873	$ 4,713,520	$ 6,317,394
2035	92.7	$ 1,603,873	$ 4,732,917	$ 6,336,790
2036	93.4	$ 1,603,873	$ 4,752,313	$ 6,356,187
2037	94.1	$ 1,603,873	$ 4,771,710	$ 6,375,584
2038	94.8	$ 1,603,873	$ 4,791,107	$ 6,394,980
2039	95.5	$ 1,603,873	$ 4,810,503	$ 6,414,377
2040	96.2	$ 1,603,873	$ 4,829,900	$ 6,433,773
			Total	**$ 184,255,097**

Table 7-4
EWMP Implementation Cost for Covina

Jurisdiction	Cumulative Total Capacity	Annual Capital Costs	Annual O&M	Total Annual Costs
Covina				$ -
2016	0.0	$ -	$ -	$ -
2017	0.0	$ -	$ -	$ -
2018	5.5	$ 1,753,436	$ 261,627	$ 2,015,063
2019	11.0	$ 1,753,436	$ 523,253	$ 2,276,690
2020	16.5	$ 1,753,436	$ 784,880	$ 2,538,316
2021	26.7	$ 3,270,231	$ 1,263,694	$ 4,533,925
2022	36.9	$ 3,270,231	$ 1,742,508	$ 5,012,739
2023	47.1	$ 3,270,231	$ 2,221,322	$ 5,491,553
2024	60.5	$ 8,520,325	$ 3,029,804	$ 11,550,129
2025	73.9	$ 8,520,325	$ 3,838,285	$ 12,358,610
2026	87.3	$ 8,520,325	$ 4,646,767	$ 13,167,092
2027	88.0	$ 1,576,930	$ 4,665,838	$ 6,242,767
2028	88.7	$ 1,576,930	$ 4,684,909	$ 6,261,838
2029	89.4	$ 1,576,930	$ 4,703,979	$ 6,280,909
2030	90.1	$ 1,576,930	$ 4,723,050	$ 6,299,980
2031	90.8	$ 1,576,930	$ 4,742,121	$ 6,319,050
2032	91.5	$ 1,576,930	$ 4,761,192	$ 6,338,121
2033	92.1	$ 1,576,930	$ 4,780,262	$ 6,357,192
2034	92.8	$ 1,576,930	$ 4,799,333	$ 6,376,263
2035	93.5	$ 1,576,930	$ 4,818,404	$ 6,395,334
2036	94.2	$ 1,576,930	$ 4,837,475	$ 6,414,404
2037	94.9	$ 1,576,930	$ 4,856,546	$ 6,433,475
2038	95.6	$ 1,576,930	$ 4,875,616	$ 6,452,546
2039	96.2	$ 1,576,930	$ 4,894,687	$ 6,471,617
2040	96.9	$ 1,576,930	$ 4,913,758	$ 6,490,688
			Total	**$ 148,078,299**

Table 7-5
EWMP Implementation Cost for Glendora

Jurisdiction	Cumulative Total Capacity	Annual Capital Costs	Annual O&M	Total Annual Costs
Glendora				$ -
2016	0.0	$ -	$ -	$ -
2017	0.0	$ -	$ -	$ -
2018	6.9	$ 2,513,142	$ 408,049	$ 2,921,191
2019	13.8	$ 2,513,142	$ 816,099	$ 3,329,241
2020	20.7	$ 2,513,142	$ 1,224,148	$ 3,737,290
2021	33.0	$ 8,446,603	$ 1,959,852	$ 10,406,455
2022	45.2	$ 8,446,603	$ 2,695,555	$ 11,142,158
2023	57.5	$ 8,446,603	$ 3,431,258	$ 11,877,861
2024	71.4	$ 20,614,681	$ 4,170,677	$ 24,785,358
2025	85.4	$ 20,614,681	$ 4,910,096	$ 25,524,777
2026	99.3	$ 20,614,681	$ 5,649,515	$ 26,264,196
2027	99.9	$ 1,429,782	$ 5,666,807	$ 7,096,589
2028	100.6	$ 1,429,782	$ 5,684,098	$ 7,113,880
2029	101.2	$ 1,429,782	$ 5,701,389	$ 7,131,171
2030	101.8	$ 1,429,782	$ 5,718,680	$ 7,148,462
2031	102.4	$ 1,429,782	$ 5,735,972	$ 7,165,754
2032	103.0	$ 1,429,782	$ 5,753,263	$ 7,183,045
2033	103.7	$ 1,429,782	$ 5,770,554	$ 7,200,336
2034	104.3	$ 1,429,782	$ 5,787,845	$ 7,217,627
2035	104.9	$ 1,429,782	$ 5,805,136	$ 7,234,918
2036	105.5	$ 1,429,782	$ 5,822,428	$ 7,252,210
2037	106.1	$ 1,429,782	$ 5,839,719	$ 7,269,501
2038	106.8	$ 1,429,782	$ 5,857,010	$ 7,286,792
2039	107.4	$ 1,429,782	$ 5,874,301	$ 7,304,083
2040	108.0	$ 1,429,782	$ 5,891,593	$ 7,321,375
			Total	**$ 220,914,269**

Table 7-6
EWMP Implementation Cost for Industry

Jurisdiction	Cumulative Total Capacity	Annual Capital Costs	Annual O&M	Total Annual Costs
Industry				$ -
2016	0.0	$ -	$ -	$ -
2017	0.0	$ -	$ -	$ -
2018	14.0	$ 5,516,847	$ 644,655	$ 6,161,502
2019	28.0	$ 5,516,847	$ 1,289,310	$ 6,806,157
2020	42.0	$ 5,516,847	$ 1,933,965	$ 7,450,812
2021	64.3	$ 35,839,158	$ 2,804,944	$ 38,644,103
2022	86.6	$ 35,839,158	$ 3,675,924	$ 39,515,082
2023	108.8	$ 35,839,158	$ 4,546,903	$ 40,386,061
2024	133.9	$ 48,020,707	$ 5,536,368	$ 53,557,075
2025	159.0	$ 48,020,707	$ 6,525,833	$ 54,546,540
2026	184.1	$ 48,020,707	$ 7,515,298	$ 55,536,005
2027	185.3	$ 2,821,415	$ 7,549,419	$ 10,370,834
2028	186.5	$ 2,821,415	$ 7,583,540	$ 10,404,955
2029	187.7	$ 2,821,415	$ 7,617,661	$ 10,439,076
2030	189.0	$ 2,821,415	$ 7,651,782	$ 10,473,197
2031	190.2	$ 2,821,415	$ 7,685,904	$ 10,507,318
2032	191.4	$ 2,821,415	$ 7,720,025	$ 10,541,440
2033	192.6	$ 2,821,415	$ 7,754,146	$ 10,575,561
2034	193.9	$ 2,821,415	$ 7,788,267	$ 10,609,682
2035	195.1	$ 2,821,415	$ 7,822,388	$ 10,643,803
2036	196.3	$ 2,821,415	$ 7,856,509	$ 10,677,924
2037	197.5	$ 2,821,415	$ 7,890,630	$ 10,712,045
2038	198.8	$ 2,821,415	$ 7,924,751	$ 10,746,166
2039	200.0	$ 2,821,415	$ 7,958,873	$ 10,780,287
2040	201.2	$ 2,821,415	$ 7,992,994	$ 10,814,409
			Total	**$ 450,900,034**

Table 7-7
EWMP Implementation Cost for La Puente

Jurisdiction	Cumulative Total Capacity	Annual Capital Costs	Annual O&M	Total Annual Costs
La Puente				$ -
2016	0.2	$ 60,949	$ 9,604	$ 70,553
2017	0.4	$ 60,949	$ 19,208	$ 80,157
2018	5.2	$ 1,743,057	$ 301,534	$ 2,044,591
2019	9.9	$ 1,743,057	$ 583,859	$ 2,326,916
2020	14.6	$ 1,743,057	$ 866,185	$ 2,609,242
2021	21.3	$ 6,285,199	$ 1,208,602	$ 7,493,801
2022	28.0	$ 6,285,199	$ 1,551,020	$ 7,836,218
2023	34.7	$ 6,285,199	$ 1,893,437	$ 8,178,636
2024	42.7	$ 13,168,165	$ 2,274,437	$ 15,442,602
2025	50.7	$ 13,168,165	$ 2,655,437	$ 15,823,602
2026	58.8	$ 13,168,165	$ 3,036,437	$ 16,204,602
2027	59.0	$ 584,478	$ 3,043,506	$ 3,627,983
2028	59.3	$ 584,478	$ 3,050,574	$ 3,635,052
2029	59.5	$ 584,478	$ 3,057,643	$ 3,642,120
2030	59.8	$ 584,478	$ 3,064,711	$ 3,649,189
2031	60.1	$ 584,478	$ 3,071,780	$ 3,656,257
2032	60.3	$ 584,478	$ 3,078,848	$ 3,663,326
2033	60.6	$ 584,478	$ 3,085,917	$ 3,670,394
2034	60.8	$ 584,478	$ 3,092,985	$ 3,677,463
2035	61.1	$ 584,478	$ 3,100,053	$ 3,684,531
2036	61.3	$ 584,478	$ 3,107,122	$ 3,691,600
2037	61.6	$ 584,478	$ 3,114,190	$ 3,698,668
2038	61.8	$ 584,478	$ 3,121,259	$ 3,705,736
2039	62.1	$ 584,478	$ 3,128,327	$ 3,712,805
2040	62.3	$ 584,478	$ 3,135,396	$ 3,719,873
			Total	**$ 129,545,920**

Table 7-8
EWMP Implementation Cost for Unincorporated Los Angeles County

Jurisdiction	Cumulative Total Capacity	Annual Capital Costs	Annual O&M	Total Annual Costs
Uninc. LA County				$ -
2016	0.0	$ -	$ -	$ -
2017	0.0	$ -	$ -	$ -
2018	24.8	$ 8,421,252	$ 1,314,779	$ 9,736,031
2019	49.6	$ 8,421,252	$ 2,629,558	$ 11,050,810
2020	74.4	$ 8,421,252	$ 3,944,337	$ 12,365,589
2021	139.2	$ 30,324,819	$ 7,251,665	$ 37,576,483
2022	203.9	$ 30,324,819	$ 10,558,992	$ 40,883,810
2023	268.6	$ 30,324,819	$ 13,866,319	$ 44,191,138
2024	348.6	$ 65,658,656	$ 17,810,342	$ 83,468,998
2025	428.5	$ 65,658,656	$ 21,754,366	$ 87,413,022
2026	508.5	$ 65,658,656	$ 25,698,389	$ 91,357,045
2027	511.8	$ 7,501,831	$ 25,789,113	$ 33,290,944
2028	515.0	$ 7,501,831	$ 25,879,838	$ 33,381,669
2029	518.3	$ 7,501,831	$ 25,970,562	$ 33,472,393
2030	521.5	$ 7,501,831	$ 26,061,286	$ 33,563,117
2031	524.8	$ 7,501,831	$ 26,152,011	$ 33,653,842
2032	528.0	$ 7,501,831	$ 26,242,735	$ 33,744,566
2033	531.3	$ 7,501,831	$ 26,333,459	$ 33,835,290
2034	534.6	$ 7,501,831	$ 26,424,184	$ 33,926,015
2035	537.8	$ 7,501,831	$ 26,514,908	$ 34,016,739
2036	541.1	$ 7,501,831	$ 26,605,632	$ 34,107,463
2037	544.3	$ 7,501,831	$ 26,696,356	$ 34,198,187
2038	547.6	$ 7,501,831	$ 26,787,081	$ 34,288,912
2039	550.8	$ 7,501,831	$ 26,877,805	$ 34,379,636
2040	554.1	$ 7,501,831	$ 26,968,529	$ 34,470,360
			Total	**$ 892,372,059**

Figure 7-2
Total Capital Cost by Jurisdiction

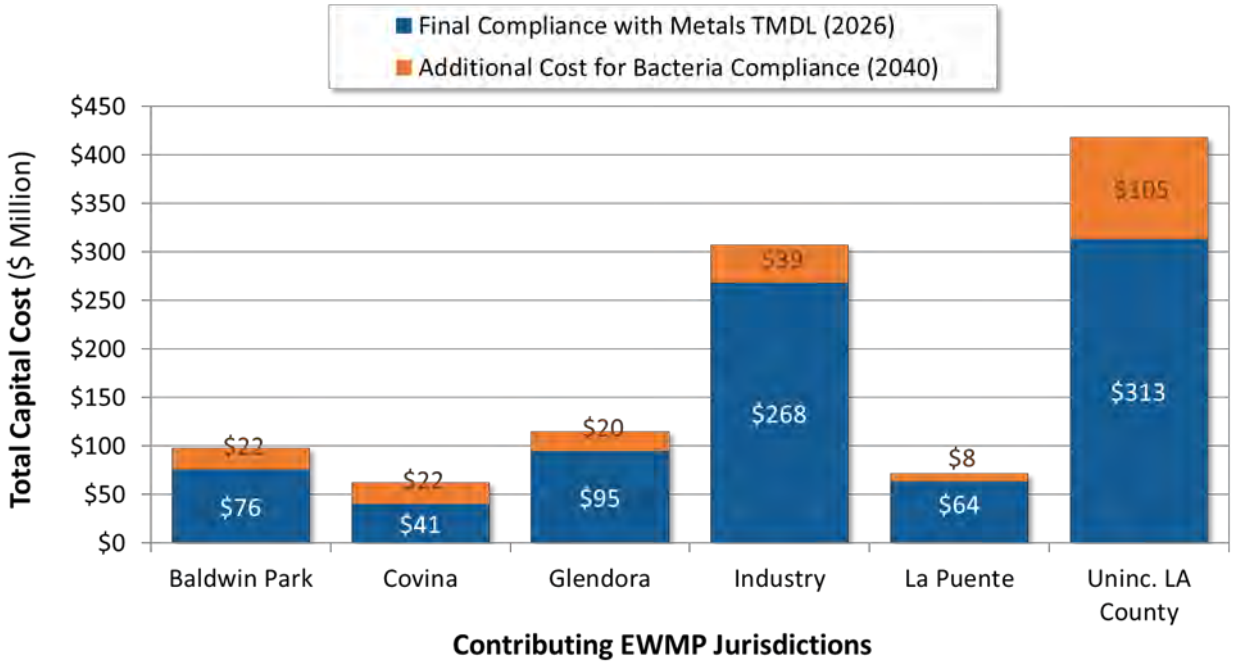
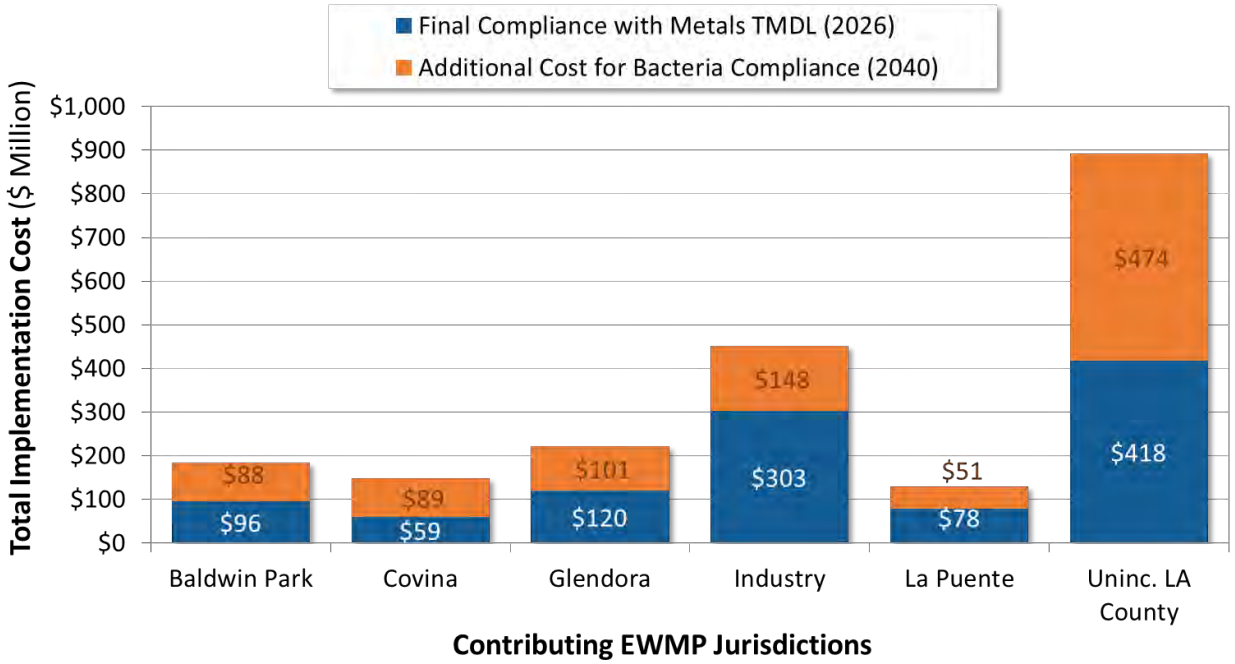


Figure 7-3
Total EWMP Implementation Cost by Jurisdiction



7.3 FUNDING STRATEGIES

A sound funding strategy, like an engineering or strategy for watershed management requires a coordinated regional approach,. Capital operating, and maintenance costs for watershed programs are significant and and often span decades. In addition, projects vary widely in complexity and cost. As such, there is no standardized strategy to finance these programs. Instead, the financial strategy presented in this EWMP outlines multiple approaches that will allow each permittee to select those strategies that best fit their specific circumstances and project.

The detailed financial strategy for EWMP costs will be highly dependent and will vary between the permittees. Each permittee has different resources available; therefore, each one will use a different set of financing options to achieve their funding goals. The following are high-level, conceptual alternatives that can be further honed based on each permittees specific circumstances. The alternatives should all be examined as each permittee moves forward, either as an individual agency or within a group. All potential sources of revenue to implement the EWMP will be considered as a funding source for activities described in the EWMP.

The following sections summarize the potential funding alternatives and are categorized by type. Acknowledgement is given to *Stormwater Funding Options – Providing Sustainable Water Quality Funding in Los Angeles County*, a report authored by Ken Farfsing and Richard Watson (May 21, 2014).

7.3.1 EWMP Funding Subcommittee

A key part of a successful financial strategy is the establishment of a EWMP subcommittee compromised of key financial representatives from each permittee. The purpose of the subcommittee is to discuss coordinated financial activities; evaluate the timing and overall level of project costs; and to address barriers to financial participation. Representatives on this subcommittee should have the authority to make decisions on behalf of their respective governments, subjected to final governmental approvals. Joint efforts in debt issuance, public outreach, and other activities take advantage of economies of scale and best available expertise; these advantages benefit all permittees, especially smaller agencies.

7.3.2 Sanitation Districts of Los Angeles County 2015 Legislative Proposal

Integral to any funding effort is the permittees' ability to receive funding and have authority over their stormwater. The Sanitation Districts of Los Angeles County (Districts) have put forth a 2015 Legislative Policy that reflects this goal. The proposed language would "supplement the existing powers of the Districts and would allow each District to acquire, construct, operate, maintain, and furnish facilities…" in order to manage their stormwater. Specific purposes include:

- Diversion of stormwater and dry weather runoff from the stormwater drainage system;
- Management and treatment of stormwater and dry weather runoff;
- Discharge of the water to the stormwater drainage system or receiving waters; and
- The beneficial use of the water.

The authority sought by the Districts will be key to them securing funding and properly financing their EWMP activities. As such, it will be key for the permittees as the law change would "cost effectively aid jurisdictions in complying with their stormwater related regulatory requirements."

7.3.3 Grants

Grant opportunities available to the permittees include:

DESCRIPTION
Apply for grants through the recently passed Prop 1 – 2014 Water Bond. Over $400M is available for stormwater capture, IRWMP and urban creek restoration projects.
Apply for other grants (state and federal) for stormwater improvement, beach water quality improvement, and green infrastructure projects. (e.g. Prop. 84, CBI, etc.)

7.3.4 Fees and Charges

The potential financial strategies available to the permittees associated with fees and charges are:

DESCRIPTION
Use existing revenue streams for stormwater/water supply/flood control projects to support stormwater quality projects
AB 2403 – Use new state law to pass rate increase for stormwater projects that have a water supply benefit and minimize the Proposition 218 process.
Use revenue generated from a Stormwater Impact Fee (or “In-Lieu” Fee) to comply with LID ordinances to fund mitigation bank for regional projects.
Increase solid waste management fees to cover the cost of enhanced street sweeping and other measures to reduce trash for compliance with TMDLs.
Consider adopting water conservation fees that would provide funding for reducing irrigated runoff in order to both conserve groundwater and reduce dry weather pollution.
Consider assessments on car rentals since some of the pollution in our waterways is from cars driven on local streets.

7.3.5 Legislative and Policy

The potential financial strategies available to the permittees that are more legislative and policy driven are:

DESCRIPTION
Continue to pursue a county-wide stormwater parcel tax initiative (modified after the 2012 Clean Water Clean Beaches Initiative). This could be tied to AB 2403 too.
Develop stormwater retention credit trading market to use private equity.
Ask the Metropolitan Water District (MWD) of Southern California to reevaluate their approach for managing the Local Resource Program (LRP) to fund stormwater capture and use projects that offset the use of imported water supplies.
Pursue pollutant source control legislation patterned after SB 346 that either limits pollutants of concerns in products (e.g. copper in brake pads, or zinc in tires) or assesses a fee on those products that can be used by local governments to mitigate those pollutants.
Form Special Assessment Districts and fees tailored to the Watershed Management Groups.
Explore the use of Enhanced Infrastructure Finance Districts tailored to the Watershed Management Group, as outlined in recently adopted (2014) California legislation SB628.
2014 Water Resources Reform and Development Act of 2014 (WRRDA). Various funding opportunities should be explored.

7.3.6 Next Steps

The financial strategies mentioned herein are options for funding sources, some or all of which will need to be implemented to develop a comprehensive financial solution. As each Member determines the appropriate funding source, they will need to consider the following items as well:

- Development of a more formal Stormwater Program Financial Plan which would typically include the following components:
    - Implementation of New Fee or Charge at the State or local level;
    - Establishment of New Enterprise Fund;
    - Cash and Debt Financing;
    - Operating and Capital Reserves;
    - Cash Flow Modeling.

The Group as a whole, as well as individual members are currently prioritizing and selecting the specific financing strategies that best fit their needs. It is anticipated that a more fully developed financial plan will be developed and implemented by the Group and/or its individual members in the coming months and years that incorporates the future steps identified above.

8 References

CREST Consulting Team. 2010. Los Angeles River Watershed Bacteria TMDL – Technical Report Section 3: Numeric Targets. Prepared for CREST (Cleaner Rivers Through Effective Stakeholder-Led TMDLs

Hastie, C. 2003. *The Benefit of Urban Trees*. A summary of the benefits of urban trees accompanied by a selection of research papers and pamphlets. Warwick District Council. <http://www.naturewithin.info/UF/TreeBenefitsUK.pdf>. Accessed September 2010.

Kloss, Christopher; Crystal Calarusse. Rooftops to Rivers – Green strategies for controlling stormwater and combined sewer overflows. Natural Resource Defense Council. June 2006. <http://www.nrdc.org>.

Kou, F., and W. Sullivan. 2001a. Environment and Crime in the Inner City: Does Vegetation Reduce Crime. *Environment and Behavior* 33(3):343–367.

Kuo, F., and W. Sullivan. 2001b. Aggression and Violence in the Inner City: Effects of Environment via Mental Fatigue. *Environment and Behavior* 33(4):543–571.

Kuo, F. 2003. The Role of Arboriculture in a Healthy Social Ecology. *Journal of Arboriculture* 29(3).

LACDPW (Los Angeles County Department of Public Works). 2006. Hydrology Manual. January 2006.

LACDPW (Los Angeles County Department of Public Works). 2010a. Los Angeles County Watershed Model Configuration and Calibration—Part I: Hydrology. Prepared for County of Los Angeles Department of Public Works, Watershed Management Division, Los Angeles County, CA, by Tetra Tech, Pasadena, CA.

LACDPW (Los Angeles County Department of Public Works). 2010b. Los Angeles County Watershed Model Configuration and Calibration—Part II: Water Quality. Prepared for County of Los Angeles Department of Public Works, Watershed Management Division, Los Angeles County, CA, by Tetra Tech, Pasadena, CA.

LACDPW (Los Angeles County Department of Public Works). 2013. Los Angeles County 2012-2013 Annual Stormwater Monitoring. December 12.

Northeastern Illinois Planning Commission (NIPC). 2004. Sourcebook on Natural Landscaping for Local Officials.<http://www.nipc.org/environment/sustainable/naturallandscaping/natural%20landscaping%20sourcebook.pdf>. Accessed September 2010.

RWQCB 2012. Water Discharge Requirements for Municipal Separate Storm Sewer Systems (MS4s) Discharges within the Coastal Watersheds of Los Angeles County, Except Those Discharges Originating from the City of Long Beach MS4. Order No. R4-2012-0175. NPDES No. CAS004001. December 6.

RWQCB. 2014. Guidelines for Conducting Reasonable Assurance Analysis in a Watershed Managmeent Program, Including an Enhanced Watershed Management Program. LARWQCB, Los Angeles, CA.

Shen, J., A. Parker, and J. Riverson. 2004. A New Approach for a Windows-based Watershed Modeling System Based on a Database-supporting Architecture. Environmental Modeling and Software, July 2004.

Shultz, S., and N. Schmitz. 2008. How Water Resources Limit and/or Promote Residential Housing Developments in Douglas County. University of Nebraska-Omaha Research Center, Omaha, NE. <http://unorealestate.org/pdf/UNO_Water_Report.pdf>. Accessed September 1, 2008.

Stenstrom, Michael K. and Haejin Lee. 2005. Final Report Industrial Storm Water Monitoring Program Existing Statewide Permit Utility and Proposed Modifications. Civil and Environmental Engineering Department, UCLA. Los Angeles, California.

Tetra Tech and USEPA (U.S. Environmental Protection Agency). 2002. The Loading Simulation Program in C++ (LSPC) Watershed Modeling System – User's Manual. Tetra Tech, Fairfax, VA, and U.S. Environmental Protection Agency, Washington, DC.

Tetra Tech. 2010a. Los Angeles County Watershed Model Configuration and Calibration—Part I: Hydrology. Prepared for County of Los Angeles Department of Public Works, Watershed Management Division, Los Angeles County, CA, by Tetra Tech, Pasadena, CA.

Tetra Tech. 2010b. Los Angeles County Watershed Model Configuration and Calibration—Part II: Water Quality. Prepared for County of Los Angeles Department of Public Works, Watershed Management Division, Los Angeles County, CA, by Tetra Tech, Pasadena, CA.

USEPA (U.S. Environmental Protection Agency). 2003. Fact Sheet: Loading Simulation Program in C++. USEPA, Watershed and Water Quality Modeling Technical Support Center, Athens, GA. Available at: http://www.epa.gov/athens/wwqtsc/LSPC.pdf

USEPA (U.S. Environmental Protection Agency). 2009. SUSTAIN—A Framework for Placement of Best Management Practices in Urban Watersheds to Protect Water Quality. EPA/600/R-09/095. U.S. Environmental Protection Agency, Office of Research and Development, Edison, NJ.

Ward, B., E. MacMullan, and S. Reich. 2008. The Effect of Low-impact Development on Property Values. ECONorthwest, Eugene, Oregon.

Wolf, K. 2008. With Plants in Mind: Social Benefits of Civic Nature. <www.MasterGardenerOnline.com>. Winter 2008.

Wolf, K.1998. Urban Nature Benefits: Psycho-Social Dimensions of People and Plants. Human Dimension of the Urban Forest. Fact Sheet #1. Center for Urban Horticulture. University of Washington, College of Forest Resources.

All appendices to the EWMP are available for review at the front counter of the City of Industry administrative offices or by email upon request to: jdballas@cityofindustry.org.

CITY COUNCIL

ITEM NO. 6.2

CNC
ENGINEERING
Consulting Civil Engineers · Surveyors

MEMORANDUM

TO:	Kevin Radecki, Executive Director	**DATE:**	June 11, 2015
FROM:	Upendra Joshi Joshua Nelson	**JOB NO.:**	JN-9152
SUBJECT:	Covenant and Agreement to Hold Property as One Parcel – 425 9th Avenue		

ShineShine Butter Company, LLC is the property owner of the land located west of Ninth Avenue and north of Don Julian Road, APN: 8208-002-023 and 8208-002-024.

ShineShine has a single building with a portion of the parking lot and truck yard on an adjacent lot. The development should have always been one parcel. The lot coverage calculations have been calculated as if it was one. This covenant and agreement will be recorded against the land and shall run with the land unless otherwise released by authority of the City Engineer of the City of Industry.

It is hereby recommended that the City Council approve the attached Covenant and Agreement to Hold Property as One Parcel and authorize the execution of the document by the appropriate persons.

Please return the executed agreement for further processing.

By: Upendra Joshi Signature: _____
Project Manager

By: Joshua Nelson Signature: _____
Project Manager

UJ/JN:jv

255 N. Hacienda Blvd., Suite 222 · City of Industry, CA 91744 · Phone 626-333-0336 · Fax 626-336-7076 · http//www.cnc-eng.com

RECORDED AT THE REQUEST OF AND
MAIL TO:

City of Industry
P.O. B ox 3366
City of Industry, CA 91744
Attention: Josh Nelson

APN:8208-002-023, 8208-002-024

SPACE ABOVE THIS LINE FOR RECORDER'S USE

COVENANT AND AGREEMENT TO HOLD PROPERTY AS ONE PARCEL

The undersigned hereby certify that we are the owner(s) of the hereinafter legally described real property located in the City of Industry, County of Los Angeles, State of California:

Per legal description, Exhibit "A" and as shown on map Exhibit "B" attached here to
(legal description)

This covenant and agreement is executed for the purpose of creating a single building site and holding two Parcels as one

This property is located at and is known by the following assessor's parcel numbers:

8208-002-023 and 8208-002-024

JOB ADDRESS:

425 9TH Avenue, City of Industry, CA 91746

As regulated by Section 16.12.040 of the Industry Municipal Code we do hereby covenant and agree with said City that the above legally described land shall be held as one parcel and no portion shall be sold separately.

This covenant and agreement shall run with the land and shall be binding upon ourselves, and future owners, encumbrancers, their successors, heirs, assignees and shall continue in effect until such time that the Industry Municipal Code unconditionally permits the use or purpose herein above referred to or unless otherwise released by authority of the City Engineer of the City of Industry.

Dated this 12th day of June, 20 15.

SUNSHINE BUTTER COMPANY, LLC by

Hank Perkins

CITY OF INDUSTRY

Mark Radecki – Mayor — Date

Cecelia Dunlap – Deputy City Clerk — Date

SIGNATURES MUST BE NOTARIZED

EXHIBIT 'A'

LEGAL DESCRIPTION

THOSE PORTIONS OF LOTS 7 AND 8 OF BLOCK 18 OF TRACT NO. 1343, IN THE CITY OF INDUSTRY, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, AS PER MAP RECORDED IN BOOK 20, PAGES 10 AND 11 OF MAPS, IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY, DESCRIBED AS FOLLOWS:

BEGINNING AT THE NORTHEASTERLY CORNER OF SAID LOT 8; THENCE ALONG THE NORTHEASTERLY LINE OF SAID LOT 8, NORTH 50 DEGREES 39 MINUTES 28 SECONDS WEST 321.75 FEET TO THE SOUTHEASTERLY CONTINUATION OF THAT CERTAIN CURVE DESCRIBED AS BEING CONCAVE SOUTHERLY, HAVING A RADIUS OF 328.27 FEET, IN PARCEL A OF THE DEED TO H. H. ROBERTSON COMPANY, RECORDED MARCH 3, 1967, AS INSTRUMENT NO. 940 IN BOOK D-3573 PAGE 323, OFFICIAL RECORDS OF SAID COUNTY; THENCE NORTHWESTERLY ALONG SAID CONTINUATION AND ALONG SAID CURVE THROUGH A CENTRAL ANGLE OF 22 DEGREES 59 MINUTES 46 SECONDS AN ARC DISTANCE OF 131.75 FEET TO A LINE WHICH IS PARALLEL WITH AND 450.00 FEET NORTHWESTERLY MEASURED AT RIGHT ANGLES FROM THE SOUTHEASTERLY LINE OF SAID LOT 8; THENCE ALONG SAID PARALLEL LINE SOUTH 39 DEGREES 20 MINUTES 25 SECONDS WEST 311.91 FEET TO A LINE WHICH IS PARALLEL WITH AND 338.00 FEET SOUTHWESTERLY, MEASURED AT RIGHT ANGLES, FROM THE NORTHEASTERLY LINE OF SAID LOT 8; THENCE ALONG SAID LAST MENTIONED PARALLEL LINE SOUTH 50 DEGREES 39 MINUTES 28 SECONDS EAST 450.00 FEET TO THE SOUTHEASTERLY LINE OF SAID LOT 8; THENCE ALONG SAID SOUTHEASTERLY LINE OF SAID LOT 8, NORTH 39 DEGREES 20 MINUTES 25 SECONDS EAST 338.00 FEET TO THE POINT OF BEGINNING.

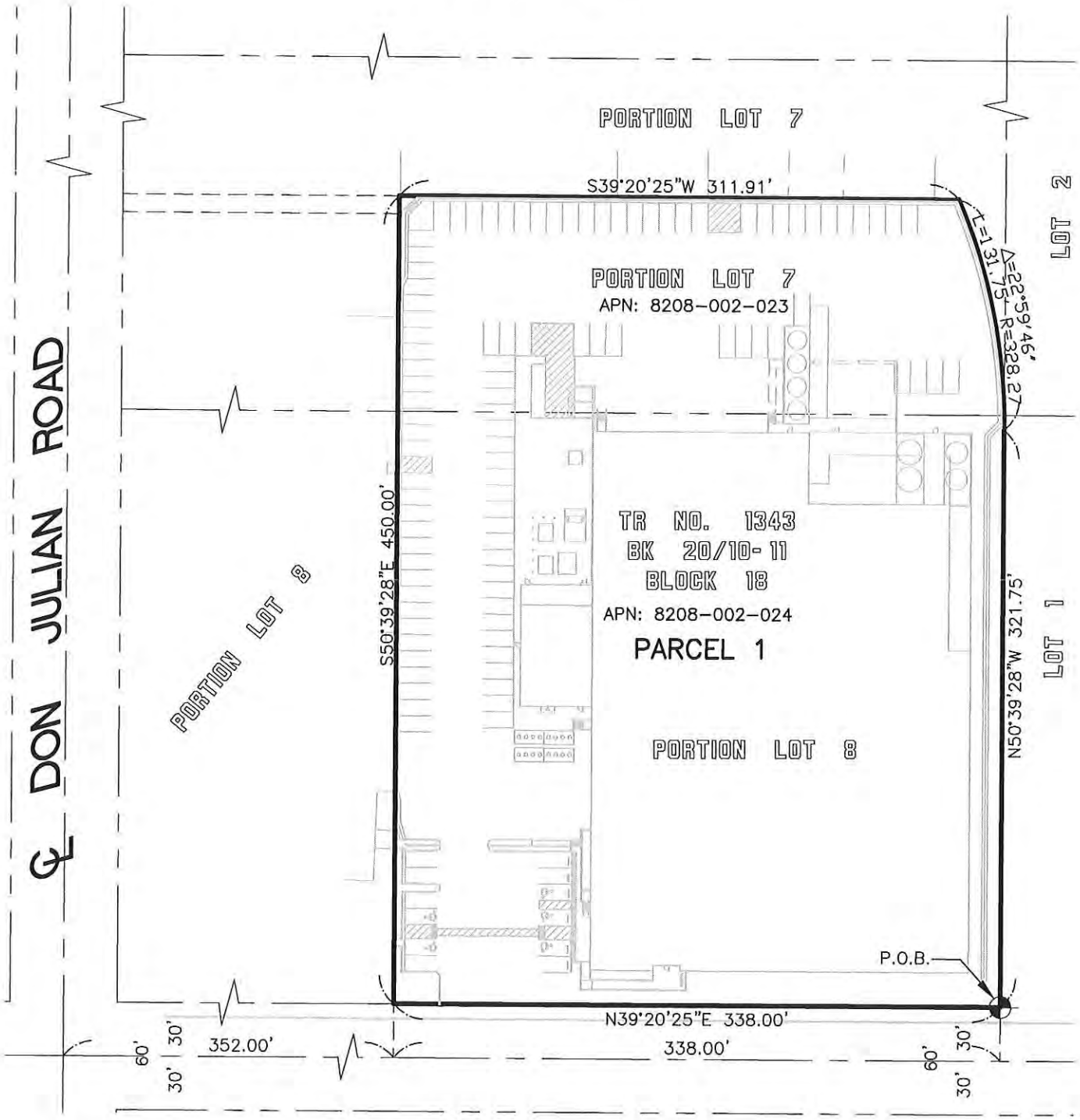
EXCEPT ALL MINERALS AND MINERAL RIGHTS OF EVERY KIND AND CHARACTER NOW KNOWN TO EXIST OR HEREAFTER DISCOVERED, INCLUDING WITHOUT LIMITING THE GENERALITY OF THE FOREGOING, OIL AND GAS AND RIGHTS THERETO, TOGETHER WITH THE SOLE, EXCLUSIVE AND PERPETUAL RIGHT TO EXPLORE FOR, REMOVE AND DISPOSE OF SAID MINERALS BY ANY MEANS OR METHODS SUITABLE TO THE GRANTORS, THEIR SUCCESSORS AND ASSIGNS BUT WITHOUT ENTERING UPON OR USING THE SURFACE OF THE LANDS HEREBY CONVEYED, AND IN SUCH MANNER AS NOT TO DAMAGE THE SURFACE OF SAID LANDS OR TO INTERFERE WITH THE USE THEREOF BY THE GRANTEE, ITS SUCCESSORS OR ASSIGNS AS RESERVED BY B. C. WOODWARD AND CITIZENS NATIONAL TRUST AND SAVINGS BANK OF LOS ANGELES, AS TRUSTEES UNDER THE WILL OF AUGUST V. HANDORF, DECEASED, IN DEED RECORDED FEBRUARY 20, 1957, IN BOOK 53698 PAGE 126, OFFICIAL RECORDS, AS INSTRUMENT NO. 1304, OFFICIAL RECORDS.

APN: 8208-002-023 & 8208-002-024

PREPARED BY:
DCi ENGINEERING, INC.
LAND SURVEYING & CIVIL ENGINEERING
4420 E. MIRALOMA AVENUE, SUITE "A"
ANAHEIM, CA. 92807
PHONE : (714) 779-3828 FAX (714) 779-3829

DAVID R CHAPIN P.L.S. 6761

EXHIBIT 'B'



SCALE: 1"=80'

PROFESSIONAL LAND SURVEYOR
DAVID R. CHAPIN
No. 6761
EXP. 9/30/16
STATE OF CALIFORNIA

PREPARED BY:
DCi ENGINEERING, INC.
LAND SURVEYING & CIVIL ENGINEERING
4420 E. MIRALOMA AVENUE, SUITE "A"
ANAHEIM, CA. 92807
PHONE : (714) 779-3828 FAX (714) 779-3829

DAVID R CHAPIN P.L.S. 6761

ACKNOWLEDGMENT

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
County of San Bernardino)

On June 12, 2015 before me, Edith L. Housen, Notary Public
(insert name and title of the officer)

personally appeared Hank Perkins,
who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

EDITH L. HOUSEN
Commission # 1979572
Notary Public - California
San Bernardino County
My Comm. Expires May 25, 2016

Signature Edith L Housen (Seal)

CITY COUNCIL

ITEM NO. 6.3

CITY OF INDUSTRY

P.O. Box 3366 • 15625 E. Stafford St. • City of Industry, CA 91744-0366 • (626) 333-2211 • FAX (626) 961-6795

MEMORANDUM

TO: Honorable Mayor and Members of the City Council

FROM: John Ballas

DATE: June 3, 2015

SUBJECT: **Conveyance of Treated Water from the Northrup Grumman Plant Through the City of Industry Waterworks System to Rowland Water District**

Attached for your consideration is the Second Amended and Restated Water Supply Agreement between the City of Industry and La Puente Valley County Water District to facilitate the conveyance of treated water from 111 Hudson Avenue easterly to Azusa Avenue and into the Rowland Water District potable water system. Northrup Grumman (NG) has entered into a purchase and sale agreement with the Successor Agency to purchase the property located at 111 Hudson Avenue for the construction of a $20M treatment facility, which will produce 1,500 gallons per minute of highly treated groundwater. In turn, NG is entering into an agreement with La Puente Water District to operate the plant, and has agreed to make certain improvements to both La Puente's and the City of Industry Waterworks (CIWS) systems to convey the treated water to Rowland Water District's system on Azusa Avenue.

Rowland Water District will not only pay La Puente for delivering this treated water, but will also be securing the water rights from the main San Gabriel Basin, which enables NG to extract the ground water for treatment. La Puente is proposing to amend the Restated Water Supply Agreement as a way of compensating the City of Industry for its use of the CIWS system and additional efforts to pump water up to and over the Industry Hills property. Please see the attached Supply and Distribution Maps to illustrate how the treated water will flow to Rowland.

The compensation formula is based upon the La Puente's share of the actual electrical costs incurred in pumping water to the existing above ground reservoirs at Industry Hills and for the ongoing maintenance costs for the CIWS facilities as a per acre "wheeling" fee. The exact wheeling fee has yet to be determined and will be calculated once the system is operating and adjusted annually. It will primarily pay for the ongoing maintenance of the pumps within pump station No. 1 & 2 together with any mainline maintenance and repairs.

The formula is also based upon how much water is supplied by CIWS and La Puente into each of the local pressure zones and how much is extracted by each entity. The reservoirs are a part of pressure zone 775 while the pipelines in Hudson, Nelson Ave, Glendora Ave and Temple Ave are within the 488 pressure zone. La Puente will measure the amount of water passing through each of the various interconnections between CIWS and the La Puente system at the 488 zone and also at the 775 zone. Depending on the flow rates, the cost to La Puente for the use of the CIWS will be determined.

There is also a provision that if either party were to use more water from the other without replacing it within 12 months, the supplying party would receive the cost of replenishment water, production assessments, power costs and a wheeling fee.

Staff, therefore, recommends that the agreement be approved for a term of 40 years.

JDB:mk

SUPPLY LINES TO CIWS 2X2.5 MG TANKS AT INDUSTRY HILLS

TEMPLE AVENUE
HACIENDA BLVD
HILL STREET
SAN JOSE AVE
GLENDORA AVENUE
STAFFORD
STREET
GLENDORA AVENUE
MAIN STREET
GOLD VALLEY BOULEVARD
VALLEY BOULEVARD
HACIENDA BLVD

LEGEND:

- 18" CIWS POTABLE WATER LINE PUMPING 6PM TO NOON EACH DAY
- 14"/16" LA PUENTE VALLEY WATER POTABLE LINE PUMPING NOON TO 6PM EACH DAY
- 16" LA PUENTE VALLEY WATER POTABLE FLOWS 6PM TO NOON
- 16" CIWS LINE PUMPS 6PM TO NOON TO 2x2.5 MG TANKS

(A) NORTHRUP GRUMMAN TREATMENT PLANT 1,200 TO 1,500 GPM CONSTANT FLOW

(B) CIWS PUMPSTATION NO. 1

(C) CIWS PUMPSTATION NO. 2

(D) CIWS 2.5 MILLION GALLON TANKS (X2) = 5.0 MG RESERVOIR

DISCHARGE LINES FROM 2X2.5 MG TANKS TO ROWLAND WATER DISTRICT

LEGEND:

16" LA PUENTE VALLEY WATER LINE

16" CIWS WATER LINE

SCALE: 1" = 200'

WATER TREATMENT WITHIN EXISTING PUMP STATION

SECOND AMENDED

AND RESTATED

WATER SUPPLY AGREEMENT

1. Identification. This Second Amended and Restated Water Supply Agreement ("Agreement") is effective as of July 1, 2015 (the "Effective Date"), and is between the LA PUENTE VALLEY COUNTY WATER DISTRICT ("District") and the CITY OF INDUSTRY ("City").

2. Recitals.

2.1 District and City own water supply systems which presently contain interconnections between the two systems.

2.2 On June 11, 2009, District and City entered into a Restated Water Supply Agreement ("Prior Agreement") relating to the interconnections between the two water supply systems to allow for the delivery of water supplies from one system to the other for emergency purposes, and another Water Supply Agreement relating to the provision of water service to certain District customers located on Holguin Place in the City of La Puente (the "Holguin Agreement").

2.3 On October 14, 2010, District and City entered into an Amended and Restated Water Supply Agreement (the "Restated Agreement") wherein the parties agreed that all interconnections between them be operated on an as-needed basis and not just for emergency purposes, certain problems concerning pressure and flow in the District's service area known as Zone Three were addressed, and the ownership, operation, use and maintenance obligations of the parties with respect to each interconnection was summarized and set forth, thereby incorporating and superseding the Prior Agreement and Holguin Agreement.

2.4 The District has entered into an agreement with Northrup Grumman, dated October 8, 2014, to receive additional water supplies into its system from the proposed Puente Valley Operable Unit Intermediate Zone Project ("PVOU IZ"). In order to facilitate such additional water, the District plans to construct certain improvements to the City's water system and establish additional water supply interconnections with it. The additional water supply, to be supplied to Rowland Water District ("RWD") by an interconnection between the District and RWD, will provide increased water supply reliability to RWD customers located within the City. Additionally, the PVOU IZ project will improve the water quality generally within the basin, from which the City extracts its water.

2.5 By this Agreement, the District and City desire to set forth the duties and responsibilities of the parties in relation to the planned improvements, additional interconnections, and water supply described in Paragraph 2.4, above, confirm the identification and location of all the interconnections between the District and City, and set forth the terms of use, ownership, operation, and maintenance obligations with respect to said interconnections.

2.6 This Agreement incorporates, supersedes, and terminates the Restated Agreement.

3. Agreements. It is agreed as follows:

3.1 The District plans to construct, or cause to be constructed, a 12-inch metered connection between its system and the City's system located at 111 Hudson Avenue, City of Industry, which location is identified as location 2 on Exhibit A. Said construction shall be in accordance with the District's plans and specifications and at the District's sole expense,

3.2 The District plans to construct, or cause to be constructed, a metered connection located between its system and the City's System at the Industry Hills Pump Station No. 1 site located at 16200 Temple Avenue, City of Industry, which location is identified as location 3A on Exhibit A. Said construction shall be in accordance with the District's plans and specifications and at the District's sole expense.

3.3 The District plans to construct, or cause to be constructed, pump improvements at the Industry Hills Pump Station No. 1 and Pump Station No. 2, located at 16200 Temple Avenue, City of Industry, which location is identified as location 3 on Exhibit A, to efficiently pump PVOU IZ water. . Said construction shall be subject to approval by the City, in accordance with the District's plans and specifications, and be at the District's sole expense. Once completed, these improvements will become the property of the City.

3.4 The District plans to construct, or cause to be constructed, improvements to the Industry Hills Pump Station No. 3 located on Industry Hills Parkway, City of Industry, which location is identified as location 7 on Exhibit A. These improvements will include a chloramination facility within the existing pump station, a flow control valve, and an emergency water supply pump to serve the Industry Hills service area. Said construction shall be subject to approval by the City, in accordance with the District's plans and specifications, and be at the District's sole expense.

3.5 The improvements set forth in Paragraphs 3.1 through 3.4, above, are contingent upon the completion of the PVOU IZ. Should water supplies from the PVOU IZ not be made available by July 1, 2020, said improvements shall not be constructed, and Paragraphs 3.1 through 3.4 shall be stricken from this Agreement. The District shall promptly notify the City in this event, and an amendment to this Agreement shall be prepared. The remainder of this Agreement shall remain in full force and effect.

3.6 All interconnections between the water systems of the District and City, including the interconnections planned in Paragraphs 3.1 and 3.2, above, are set forth in Exhibit **A** attached hereto which identifies the location, type, flow direction and hydraulic zone of the various interconnection facilities.

3.7 The maintenance and repair of the interconnections shall be performed by the District and the cost of such maintenance and repairs shall be borne by the party receiving water from that particular interconnection (i.e. flow direction). The maintenance requirements for the interconnections are set forth in Exhibit **B** attached hereto.

3.8 The interconnections shall be operated on an as-needed basis by the District to ensure efficient use and management of both water systems.

3.9 All water flows through the interconnections shall be metered and monitored by the District. The District shall generate and prepare reports of the meter readings and provide them to City within fifteen days after the end of each quarter, commencing October 15, 2015. Said reports shall clearly indicate the amount of water delivered by each party at each hydraulic zone.

3.10 The party receiving water shall compensate the party supplying water as follows:

A. Delivering an equivalent quantity of water at the same hydraulic zone within 12 months of receipt of the quarterly meter reading in which the party supplying water made its delivery. When a party delivers water at a lower hydraulic zone but receives its delivery of water back at a higher hydraulic zone, that party shall also pay a wheeling charge (as established by the parties pursuant to Section 3.11, below) and the actual incremental costs of electrical power. A sample calculation of the wheeling charge and incremental electrical power costs is set forth in Exhibit **C** attached hereto.

B. If the water exchange as described in 3.10 (A) cannot be accomplished, whether in part or in full, the receiving party shall pay the supplying party for the amount per acre-foot of water delivered but not replaced by exchange at the dollar amount per acre-foot of water that is equal to the full cost of replenishment water at the then applicable published rate set by the Upper San Gabriel Municipal Water District, including all groundwater production assessment costs, electrical power, and the wheeling charge as set forth in Exhibit **C,** within 60 days after expiration of the 12-month period following receipt of the quarterly meter reading in which the delivery took place.

3.11 The wheeling charge applicable in Section 3.10 is assessed to offset the cost of water system maintenance (i.e. repair and maintenance of booster pumps, waterlines, and reservoirs) and shall be established by subsequent agreement of the parties retroactive to the Effective Date. Once established, it shall be attached to this

Agreement by amendment, and incorporated by reference as part of the Agreement. The wheeling charge shall be subject to verification annually from the Effective Date, and may be modified by agreement of the parties. If necessary, the parties shall meet and confer to verify the appropriate wheeling charge. In no event, however, shall the wheeling charge increase from year to year by more than three percent (3%).

3.12 Neither party guarantees the pressure, flow, nor quality of the water delivered or exchanged.

3.13 This Agreement shall not constitute a transfer of any water or capacity rights other than the contract right under this Agreement.

3.14 The term of this Agreement shall be forty (40) years from the Effective Date, and after such time shall continue until terminated by either party upon sixty (60) days written notice.

3.15 All notices shall be given by personal delivery or certified mail, return receipt requested, addressed as follows:

"City"

City of Industry
15625 East Stafford Street
City of Industry, California 91749
Attn: City Manager

"District"

La Puente Valley County Water District
112 North First Street
La Puente, California 91744-4710
Attn: General Manager

Executed by duly authorized Officers of the District and City.

CITY OF INDUSTRY

By: _____

Its: _____

LA PUENTE VALLEY COUNTY WATER DISTRICT

By: _____
John P. Escalera, President

APPROVED AS TO FORM:

By: _____

City Attorney

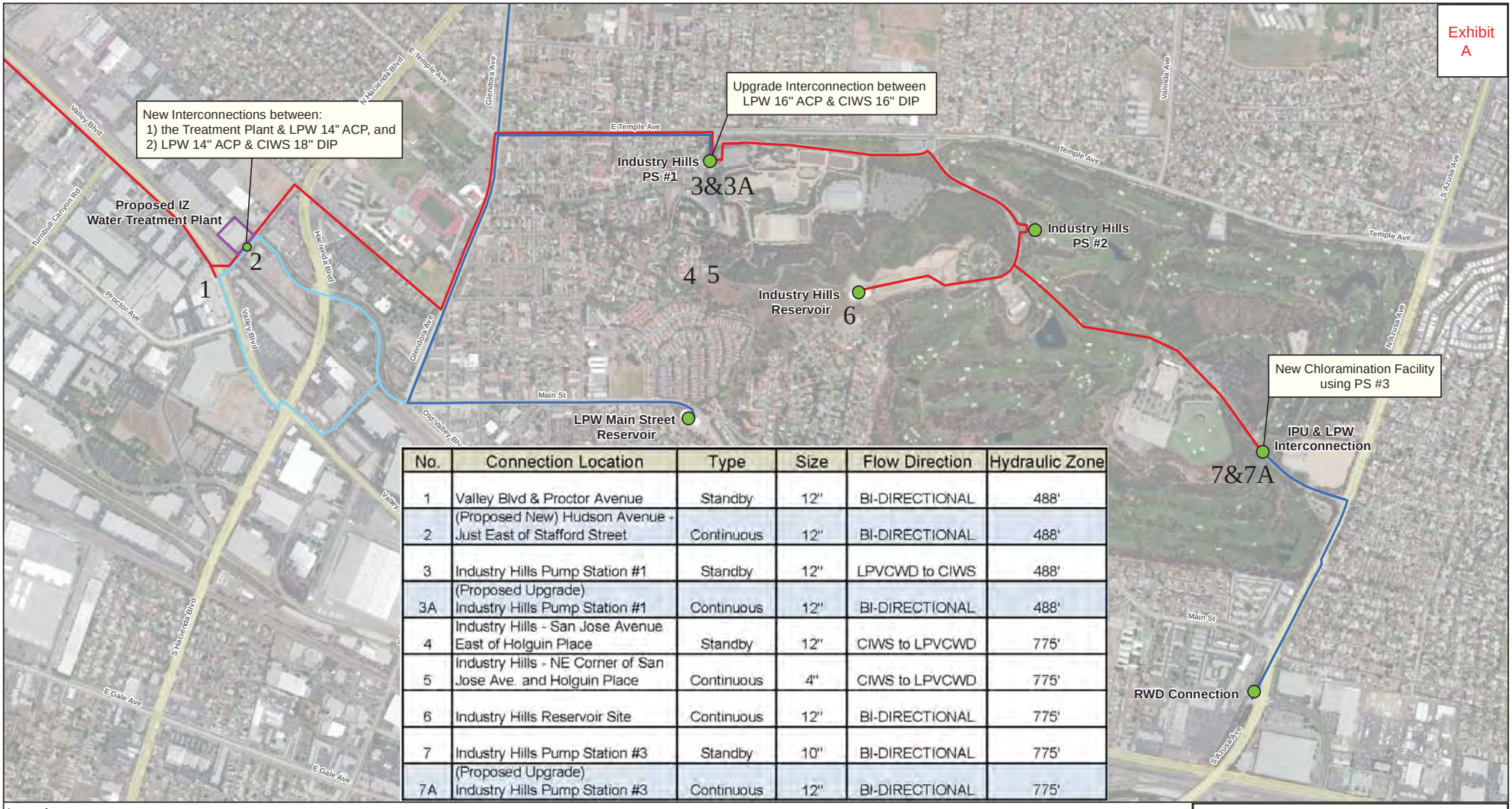
APPROVED AS TO FORM:

LAGERLOF, SENECAL,
GOSNEY & KRUSE, LLP

By:_____

Roland Trinh
District General Counsel

Exhibit A



No.	Connection Location	Type	Size	Flow Direction	Hydraulic Zone
1	Valley Blvd & Proctor Avenue	Standby	12"	BI-DIRECTIONAL	488'
2	(Proposed New) Hudson Avenue - Just East of Stafford Street	Continuous	12"	BI-DIRECTIONAL	488'
3	Industry Hills Pump Station #1	Standby	12"	LPVCWD to CIWS	488'
3A	(Proposed Upgrade) Industry Hills Pump Station #1	Continuous	12"	BI-DIRECTIONAL	488'
4	Industry Hills - San Jose Avenue East of Holguin Place	Standby	12"	CIWS to LPVCWD	775'
5	Industry Hills - NE Corner of San Jose Ave. and Holguin Place	Continuous	4"	CIWS to LPVCWD	775'
6	Industry Hills Reservoir Site	Continuous	12"	BI-DIRECTIONAL	775'
7	Industry Hills Pump Station #3	Standby	10"	BI-DIRECTIONAL	775'
7A	(Proposed Upgrade) Industry Hills Pump Station #3	Continuous	12"	BI-DIRECTIONAL	775'

Legend

- 14" Existing LPW Waterline
- 16" Existing LPW Waterline
- 16" or Greater IPU Waterlines

Notes:
ACP - asbestos cement pipe
CIWS - City of Industry Waterworks System
DIP - ductile iron pipe
IPU - Industry Public Utilities
IZ - Intermediate Zone
LPW - La Puente Valley County Water District
PS - Pump Station
RWD - Rowland Water District

N

0 1,000 Feet

Interconnection between the City of Industry Water Works System and the La Puente Valley County Water District

May 2015

Interconnections Between LPVCWD and CIWS
(Maintenance Responsibilities)

No.	Connection Location	Flow Direction	Equipment Required to Provide Water for Flow Direction	Regular Maintenance	Payee
*1	Valley Blvd & Proctor Avenue	CIWS-LPVCWD	Meter, Pressure Regulating Valve, Isolation Valves, Piping	Meter Testing, Valve Maintenance / Repair	CIWS
*1	Valley Blvd & Proctor Avenue	LPVCWD - CIWS	Meter, Check Valve, Valves, Piping	Meter Testing, Valve Maintenance / Repair	LPVCWD
2	(Proposed New) Hudson Avenue - Just East of Stafford Street	BI-DIRECTIONAL	Meter, Pressure Regulating Valve, Valves, Piping	Meter Testing, Valve Maintenance / Repair	LPVCWD
3	Industry Hills Pump Station #1	LPVCWD - CIWS	Meters, 3-Booster Pumps, Electrical Equipment, Piping	Meter Testing, Pump Maintenance, Valve Maintenance / Repair	CIWS
3A	(Proposed Upgrade) Industry Hills Pump Station #1	BI-DIRECTIONAL	Meter, Pressure Regulating Valve, Valves, Piping	Meter Testing, Valve Maintenance / Repair	LPVCWD
4	Industry Hills - San Jose Avenue East of Holguin Place	CIWS-LPVCWD	Meter, Pressure Regulating Valve, Valves, Piping	Meter Testing, Valve Maintenance / Repair	LPVCWD
5	Industry Hills - NE Corner of San Jose Ave. and Holguin Place	CIWS-LPVCWD	Meter, Pressure Regulating Valve, Valves, Piping	Meter Testing, Valve Maintenance / Repair	LPVCWD
6	Industry Hills Reservoir Site	BI-DIRECTIONAL	Meter, Check Valve, Valves, Piping, Booster Pumps	Meter Testing, Valve Maintenance / Repair	LPVCWD
7	Industry Hills Pump Station #3	LPVCWD - CIWS	Meters, Booster Pump, Electrical Equipment, Piping	Meter Testing, Pump Maintenance, Valve Operation	CIWS
7A	(Proposed Upgrade) Industry Hills Pump Station #3	CIWS-LPVCWD	Meter, Pressure Regulating Valve, Valves, Piping, Chemical Feed System	Meter Testing, Valve Maintenance / Repair, Chemical Feed System Maintenance / Repair	LPVCWD

* Interconnection provides bi-directional flow of water; the maintenance requirements are based on the facilities that provide the flow of water in a specific direction (i.e., CIWS to LPVCWD or LPVCWD to CIWS)

CIWS
LPVCWD

Exhibit B

CIWS-LPVCWD WATER EXCHANGE SUMMARY

EXAMPLE

Factoring the Cost of Water Delivery for each Hydraulic Zone					
Zone	**Replacement Water**	**Production Assessments**	**Power Cost**	**"Wheeling Charge" (As Described in Section 3.11)**	**Total (Example cost per acre foot)**
Cost Required to Convey Water to Zone 488	Upper San Gabriel Valley Municipal Water District Current Rate of Replenishment Water = $673/AF	Watermaster Assessments (Admin., In-Lieu, Water Resource Development) = $15 + $10 + $20 = $45/AF	Cost to lift water from well source to Zone 448 = $67/AF	$20	$673 + $45 + $67 + $20 = $805
Cost Required to Convey Water to Zone 775	Upper San Gabriel Valley Municipal Water District Current Rate of Replenishment Water = $673/AF	Watermaster Assessments (Admin., In-Lieu, Water Resource Development) = $15 + $10 + $20 = $45/AF	Cost to lift water from well source to Zone 448 = $67/AF + cost to lift water from 448 to the 775 (e.g.- pump station no. 1 = $41/AF & no. 2 = $43) = $151/AF	$20 + $20 = $40	$805 + $84 + $20 = $909
Cost Difference Between Zones	**$0.00**	**$0.00**	**$84.00**	**$20.00**	**$104**

Deliveries from LPVCW to CIWS

	Zone 488 Deliveries							Zone 775 Deliveries								Combined	
QTR	**Connection 1**	**Connection 2**	**Connection 3**	**Connection 3A**	**Zone 488 Total**	**Zone 488 Running Total**	**Zone 488 Previous Year As described in Section 3.10(A)**	**Connection 4**	**Connection 5**	**Connection 6**	**Connection 7**	**Connection 7A**	**Zone 775 Total**	**Zone 775 Running Total**	**Zone 775 Previous Year As described in Section 3.10(A)**	**Total**	**Running Total**
Prior Period	0	0	0	0	0	0	0			0	0	0	0	0	0	0	0
14-15 QTR 1	5	300	0	200	505	505	0			0	0	0	0	0	0	505	505
14-15 QTR 2	0	300	0	200	500	1005	0			0	0	0	0	0	0	500	1005
14-15 QTR 3	4	300	0	200	504	1509	0			0	0	0	0	0	0	504	1509
14-15 QTR 4	0	300	0	200	500	2009	0			0	0	0	0	0	0	500	2009
15-16 QTR 1	5	300	0	200	505	2514	505			20	0	0	20	20	0	525	2534
15-16 QTR 2	8	300	0	200	508	3022	500			20	0	0	20	40	0	528	3062
15-16 QTR 3	0	300	0	200	500	3522	504			20	0	0	20	60	0	520	3582
15-16 QTR 4	0	300	0	200	500	4022	500			20	0	0	20	80	0	520	4102

Deliveries from CIWS to LPVCWD

	Zone 488 Deliveries							Zone 775 Deliveries								Combined	
QTR	**Connection 1**	**Connection 2**	**Connection 3**	**Connection 3A**	**Zone 488 Total**	**Zone 488 Running Total**	**Zone 488 Previous Year (As described in Section 3.10(A))**	**Connection 4**	**Connection 5**	**Connection 6**	**Connection 7**	**Connection 7A**	**Zone 775 Total**	**Zone 775 Running Total**	**Zone 488 Previous Year (As described in Section 3.10(A))**	**Total**	**Running Total**
Prior Period	0	0		0	0	0	0	0	0	0	0	0	0	0	0	0	0
14-15 QTR 1	0	0		0	0	0	0	2	3	15	0	500	520	520	0	520	520
14-15 QTR 2	0	0		0	0	0	0	2	3	15	0	500	520	1040	0	520	1040
14-15 QTR 3	0	0		0	0	0	0	2	3	15	0	500	520	1560	0	520	1560
14-15 QTR 4	0	0		0	0	0	0	2	3	15	0	500	520	2080	0	520	2080
15-16 QTR 1	5	0		0	5	5	0	2	3	15	0	500	520	2600	520	525	2605
15-16 QTR 2	0	0		0	0	5	0	2	3	15	0	500	520	3120	520	520	3125
15-16 QTR 3	4	0		0	4	9	0	2	3	15	0	500	520	3640	520	524	3649
15-16 QTR 4	0	0		0	0	9	0	2	3	15	0	500	520	4160	520	520	4169

Delivery Summary

					A	B				C	D	E
Quarter	LPVCWD Total to CIWS	CIWS Total to LPVCWD	Difference	LPVCWD to CIWS in 488	CIWS to LPVCWD in 488	Amount CIWS unable to exchange in 488 (per provision 3.10)	CIWS owes $ to LPVCWD for 448 Deliveries	LPVCWD to CIWS in 775	CIWS to LPVCWD in 775	Amount LPVCWD unable to exchange in 775 (per provision 3.10)	LPVCWD owes $ to CIWS for 775 Deliveries	LPVCWD Owes $ to CIWS
Prior Period	0	0	0	0	0	0	$0	0	0	0	$0	$0
14-15 QTR 1	505	520	15	505	0	0	$0	0	520	0	$0	$0
14-15 QTR 2	500	520	20	500	0	0	$0	0	520	0	$0	$0
14-15 QTR 3	504	520	16	504	0	0	$0	0	520	0	$0	$0
14-15 QTR 4	500	520	20	500	0	0	$0	0	520	0	$0	$0
15-16 QTR 1	525	525	0	505	5	500	$402,500	20	520	500	$454,500	$52,000
15-16 QTR 2	528	520	-8	508	0	500	$402,500	20	520	500	$454,500	$52,000
15-16 QTR 3	520	524	4	500	4	500	$402,500	20	520	500	$454,500	$52,000
15-16 QTR 4	520	520	0	500	0	500	$402,500	20	520	500	$454,500	$52,000

Notes:

Column A represents water delivered in Zone 488 that was not redilivered within 12 months.

Column B represents the undelivered amout multiplied by the agreed the cost to convery water to the 448 zone as detailed in example table above.

Column C represents water delivered in Zone 775 that was not redilivered within 12 months.

Column D represents the undelivered amout multiplied by the agreed the cost to convery water to the 775 zone as detailed in example table above.

Column E represents the difference between what each party owes. In this case LPVCWD owes CIWS the amount shown.