Recycled Water Pilot and Demonstration Projects at Hyperion

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LASAN - Carollo

6/20/2024

Agenda

- Hyperion Recycled Water Planning and Key Projects
- Hyperion AWPF Updates
- Hyperion MBR Pilot Updates
- Open Discussion

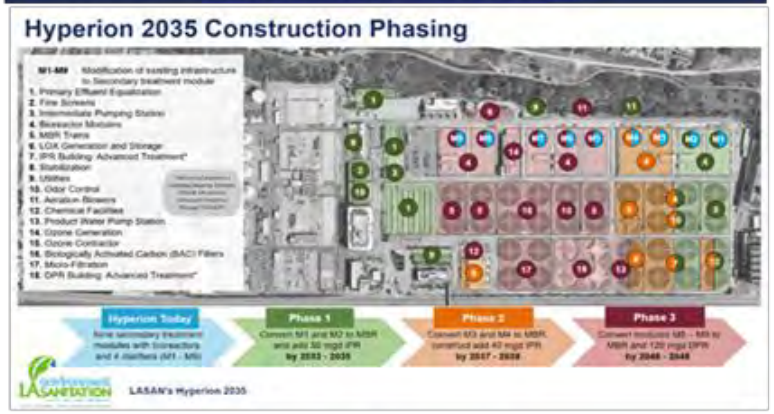
Hyperion Recycled Water Planning and Key Projects

Hyperion Program Involves Extensive Planning and Key Projects

Hyperion MBR Pilot Facility

Hyperion AWPF Project

Technical Studies



Program Planning

Phase 1	Phase 2
Completion: FEB 2035	Completion: AUG 2039
Total IPR Output at Completion: 50 MGD	Total IPR Output at Completion: 90 MGD

Key Upcoming Activities

Activity/Deliverable	Participants/Topic	Date
Upcoming Deliverable Milestones	TM 2 (Draft) - Secondary Process Integration	11/2/2023
Upcoming Deliverable Milestones	TM 7 (Draft) - Site Plan	11/10/2023
Upcoming TD 49 Workshops	Site Plan - Treatment Conveyance (Review)	11/14/2023
Upcoming TD 49 Workshops	Phasing, Packaging, Schedule (Initial)	11/15/2023

Legend:

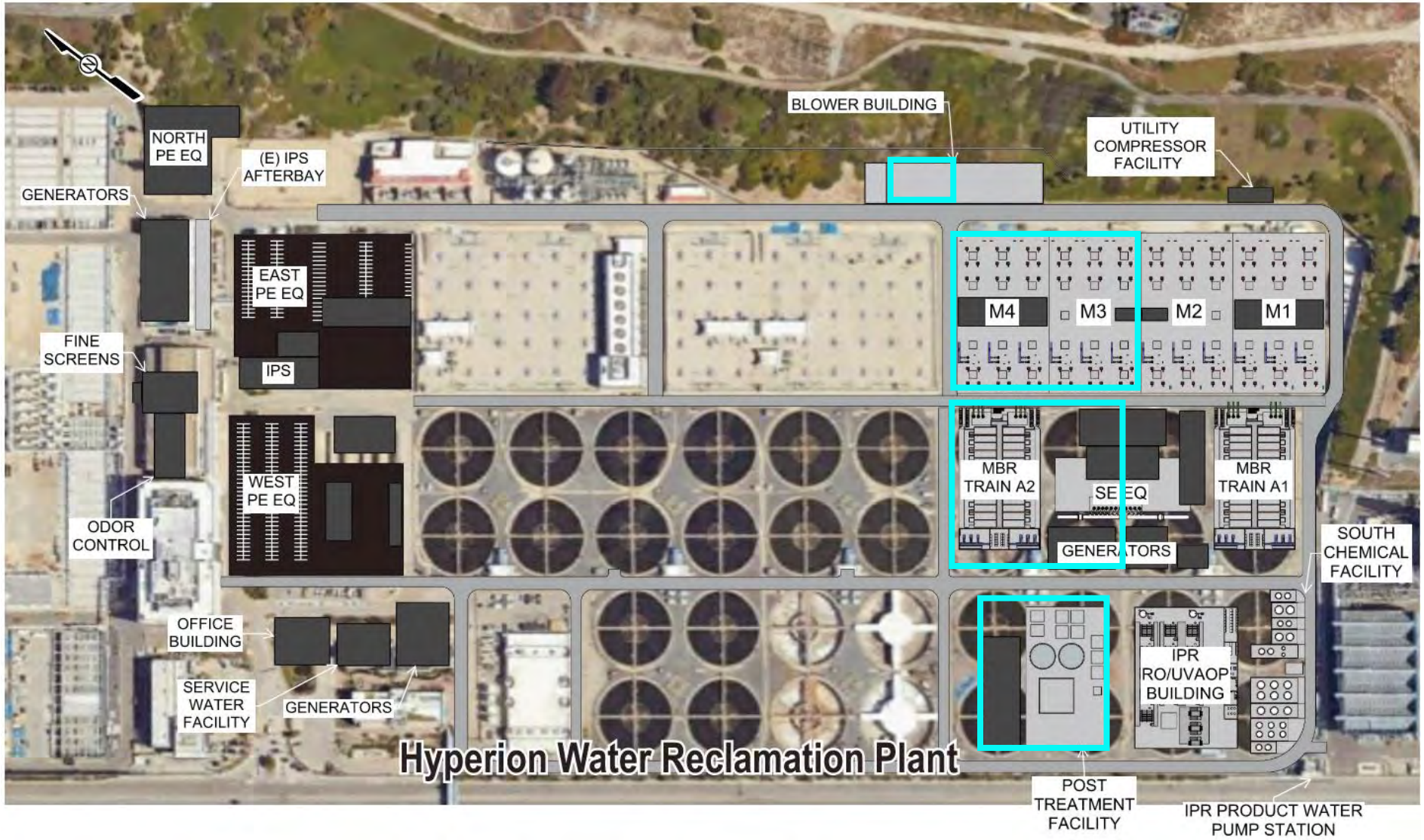
CEQA Permitting

Engagement

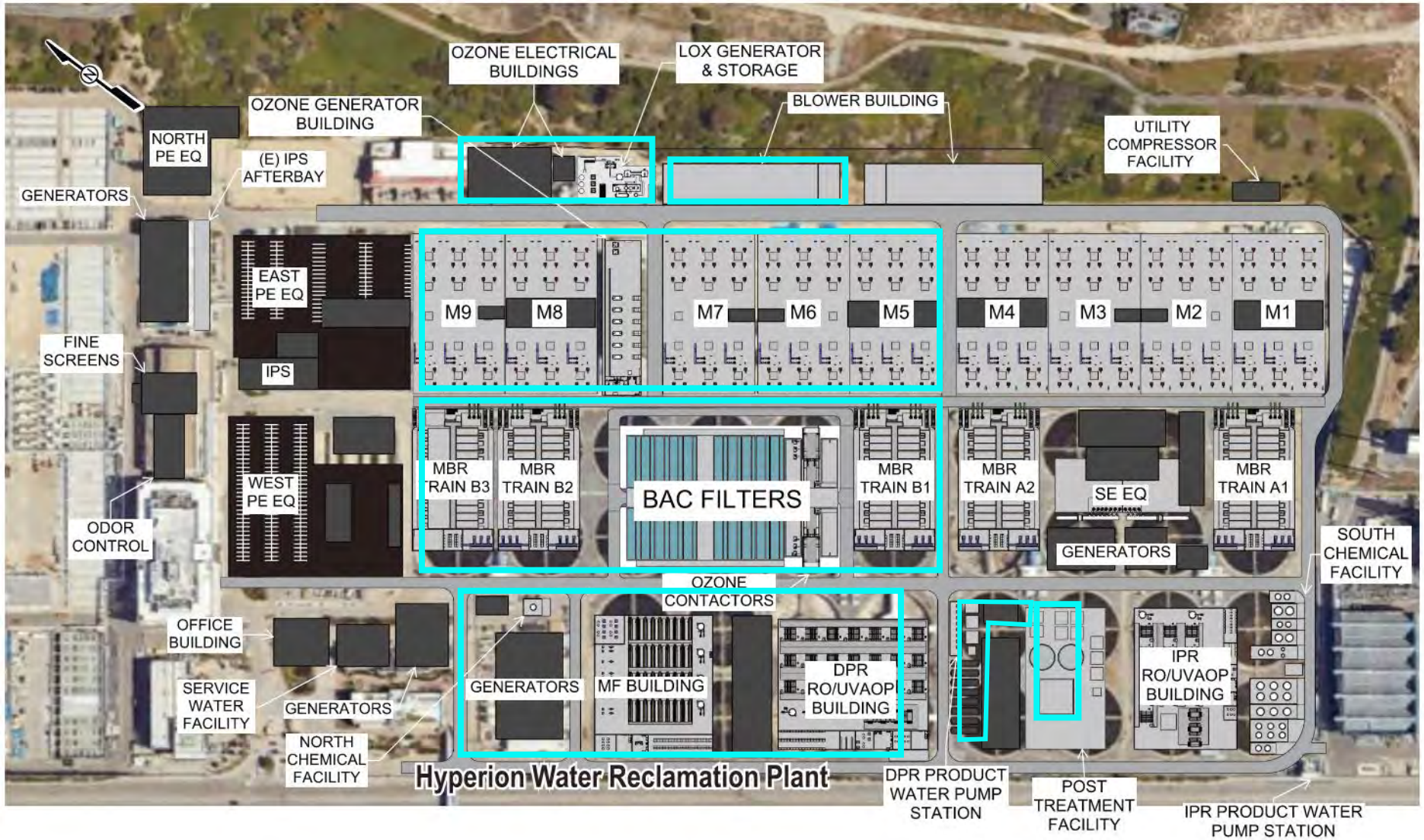
Informing Studies Lay the Ground for Full Scale Conversion to MBR in Phases: Phase I-A

Informing Studies Lay the Ground for Full Scale Conversion to MBR in Phases: Phase I-B

Informing Studies Lay the Ground for Full Scale Conversion to MBR in Phases: Phase 2



Informing Studies Lay the Ground for Full Scale Conversion to MBR in Phases: Phase 3



Hyperion AWPF Updates

HAWPF: Proof of Concept for the Full Scale Project

Water production anticipated beginning of 2025

Hyperion MBR Pilot

Hyperion MBR Pilot Updates

- Construction completed in 2024
- Clean water testing is in progress
- Actively collaborating with the Independent Advisory Panel (IAP)
- Wastewater testing will start once the permit is issued

THANK YOU

www.LACITYSAN.org/recycledwater

environment LASANITATION CITY OF LOS ANGELES
zero waste • zero wasted water
100% WATER RECYCLING

August 13, 2024

Salt Nutrient Management Plan

Status Update for Central Basin and West Coast Basin

WateReuse Meeting – Los Angeles Chapter

SECURING OUR WATER FUTURE TODAY

Agenda (RWQCB)

Introductions

Brief Background (WRD)

- CBWCB SNMP
- Projects in CBWCB
- Monitoring Activities

Agency Request (LARWQCB)

- Reasons and Purposes for Data Assessment
- Expectations of Data Assessment

Next Steps (WRD)

- Defined Responsibilities
- Preliminary Timeline

Brief Background (WRD)

- Recycled Water Policy approved in May 2009.
  - Establish uniform requirements for recycled water use and encourage development of Salt Nutrient Management Plans (SNMP).
- WRD selected to lead the project as the groundwater basin manager with input from many stakeholders and feedback / direction from LARWQCB.
- SNMP incorporated into Basin Plan for the Los Angeles Region (Resolution No. R15-001 on February 12, 2015).
- SWRCB adopted the basin plan by Resolution No. 2015-0048 on July 21, 2015.

The SNMP, which includes the *Monitoring Plan*, will be reviewed and updated as necessary every 10 years by the CBWCB stakeholders. However, based on results from the SNMP Monitoring Program, interim updates to the SNMP may be conducted when deemed necessary (Page 8, Executive Summary).

Process for Preparing SNMP

- Stakeholders submitted a Work Plan (10/24/11).
- Work Plan Approved by LARWQCB (12/13/11).
- SNMP Preparation Guided by Technical Memorandums.
    1. Goals, Objectives, and Management Measures (Nov 2012).
    2. Definitions & Key Concepts (Oct 2012).
    3. Hydrogeologic Conceptual Model (Jan 2013).
    4. Regional Groundwater Monitoring Program Plan (Apr 2013).
    5. Future Groundwater Quality & Assimilative Capacity (Apr 2013).
    6. Implementation Measures (Jun 2013).
    7. Groundwater Quality Mixing Model (Mar 2014).
- Final SNMP (02/12/15).
- Final Substitute Environmental Document (02/12/15).
- Basin Plan Amendments by LARWQCB & SWRCB.

Study Area – Central Basin and West Coast Basin (CBWCB)

SERVICE AREA = 420 SQUARE MILES

43 CITIES

POPULATION > 4 MILLION

550,000 ACRE FEET USED PER YEAR

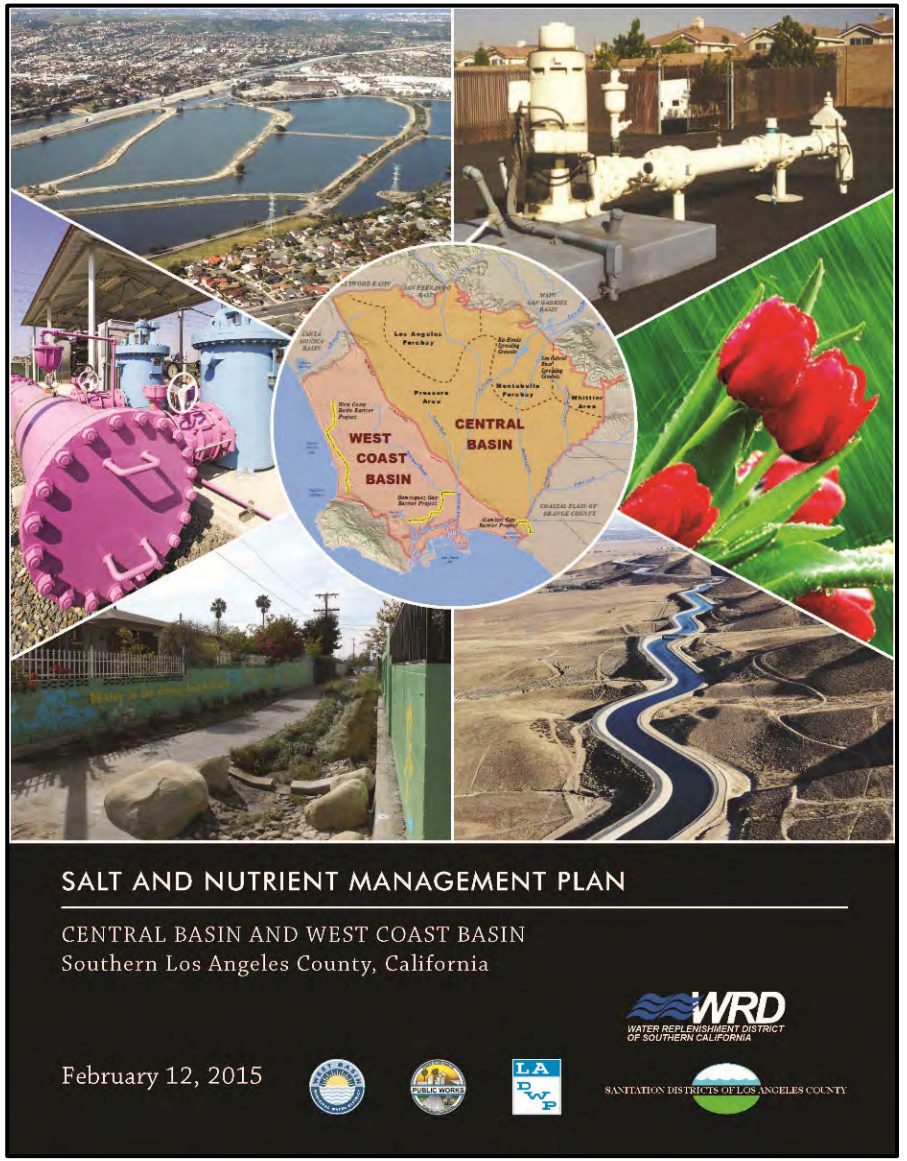
50% GROUNDWATER FROM LOCAL WATER WELLS

50% IMPORTED WATER

WRD SUPPLEMENTS NATURAL GROUNDWATER RECHARGE

Major Elements in SNMP

- Groundwater Basin Hydrogeology & Water Quality.
- Recycled Water and Stormwater Use / Recharge Goals & Objectives.
- Estimate Current and Future Salt / Nutrient Loading thru 2025.
- Assess Water Quality Impacts of Major Proposed Projects in the Basins.
- Establish Water Quality Monitoring Program including Constituents of Emerging Concern (CECs).
- Implementation Measures (Plans / Projects) to Manage Salt / Nutrient Loading.

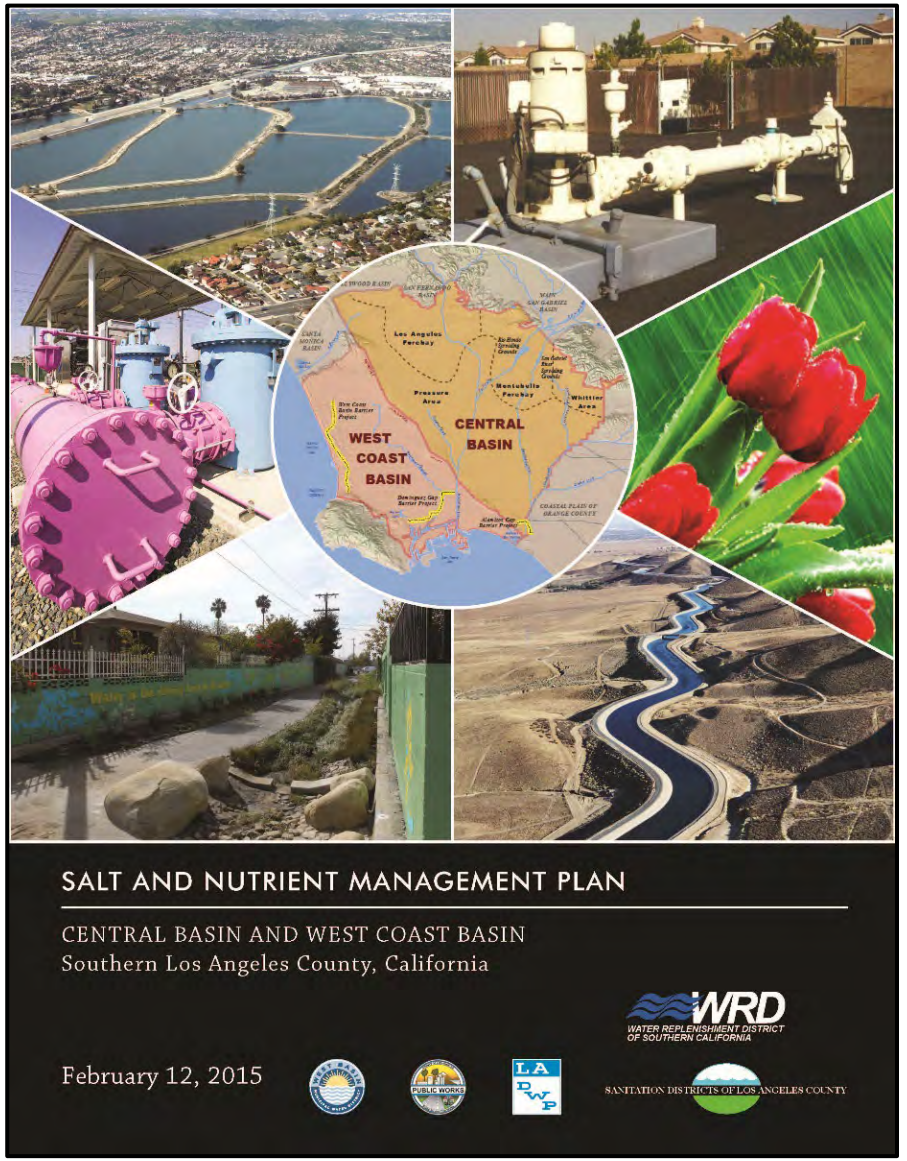


Major Elements in SNMP

Associated SNMP Documents

- CEQA SED
- Basin Plan Amendment

Notes:
WQ – water quality
AC – assimilative capacity
S/N – salt and nutrient
SNMP – Salt and Nutrient Management Plan
CEQA – California Environmental Quality Act
SED – Substitute Environmental Document



Water Quality Assessment in SNMP (Step 1 of 3)

Compile All Water Quality Data

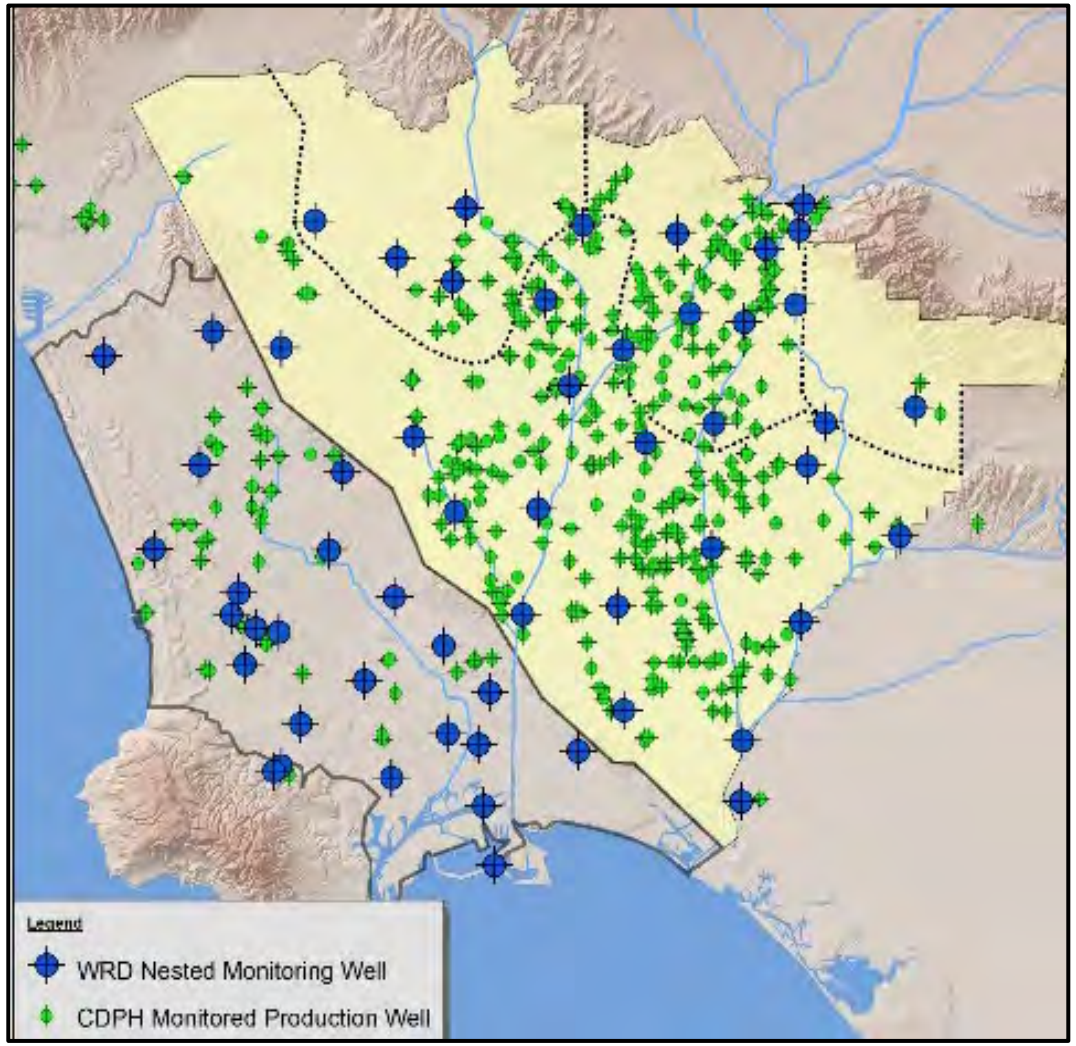
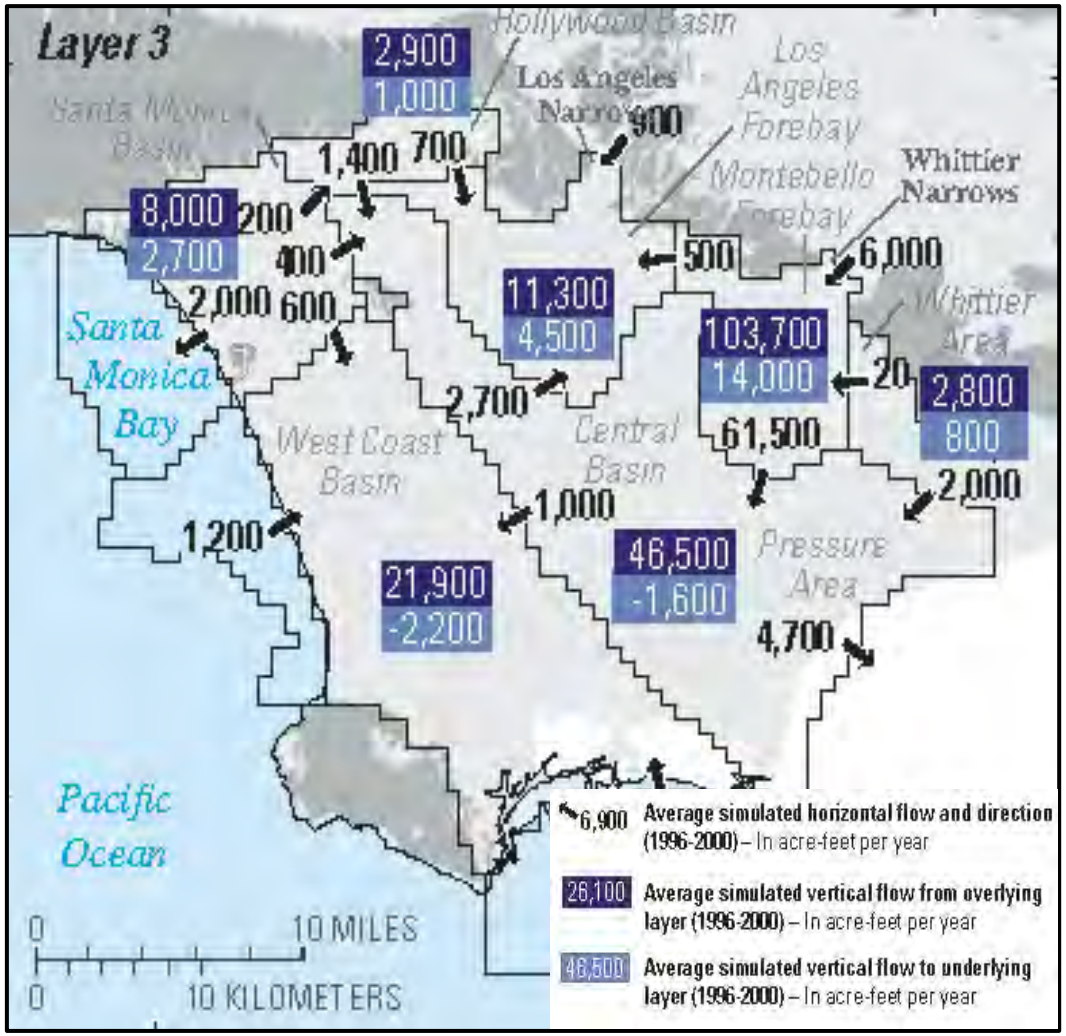


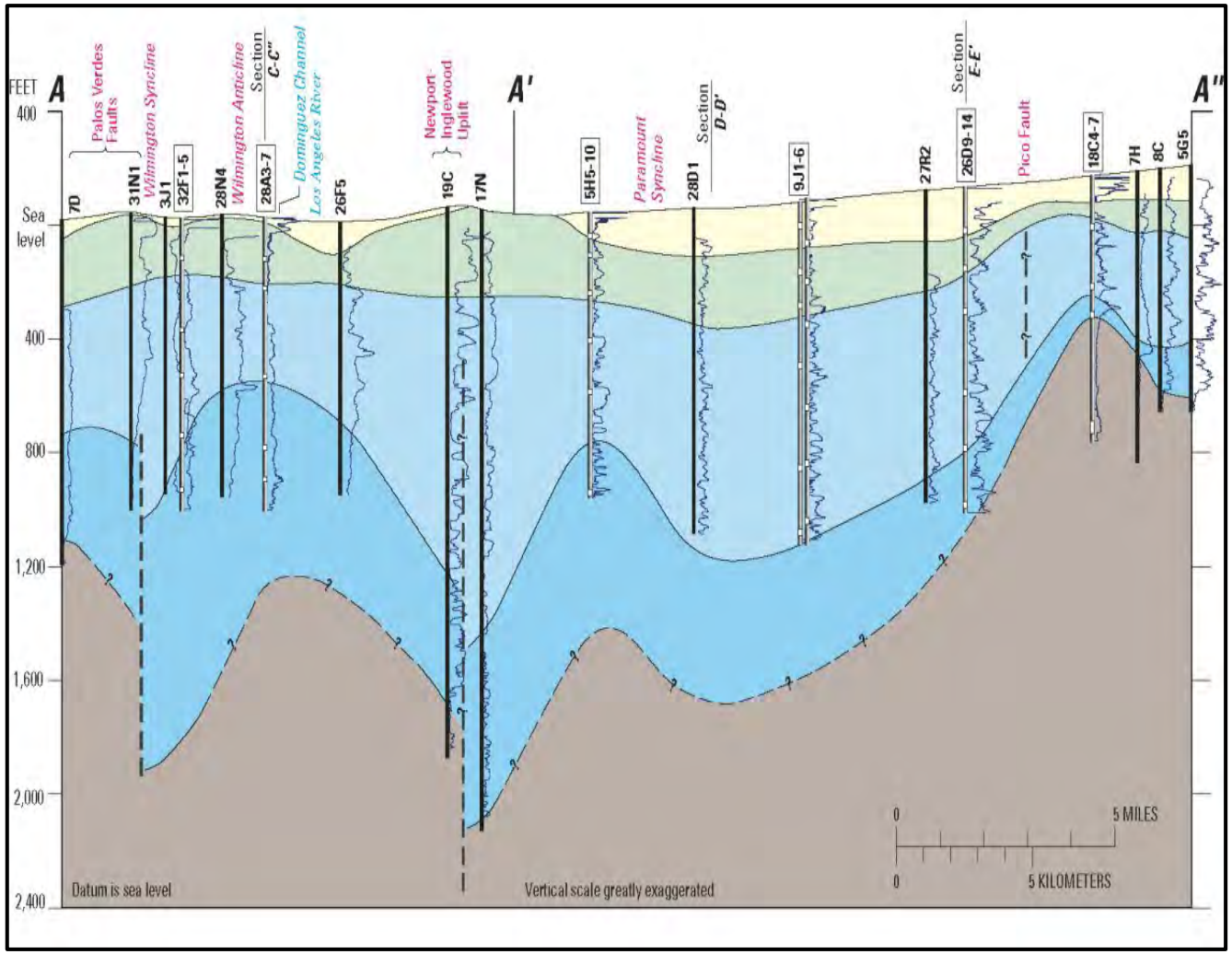
Table 22 Summary of Wells Used for Water Quality Evaulation

Well Type	Total	Central Pressure	West Coast Basin	Los Angeles Forebay	Montebello Forebay	Whittier Area
Model Layer 1						
TDS						
# of WRD Nested MWs	8	4	0	NA	4	NA
# of Production Wells	5	0	0	NA	5	NA
# of other MWs	8	0	0	NA	8	NA
TOTAL	**21**	**4**	**0**	**NA**	**17**	**NA**
Chloride						
# of WRD Nested MWs	8	4	0	NA	4	NA
# of Production Wells	5	0	0	NA	5	NA
# of other MWs	10	0	0	NA	10	NA
TOTAL	**23**	**4**	**0**	**NA**	**19**	**NA**
Nitrate as N						
# of WRD Nested MWs	8	4	0	NA	4	NA
# of Production Wells	2	0	0	NA	2	NA
# of other MWs	10	0	0	NA	10	NA
TOTAL	**20**	**4**	**0**	**NA**	**16**	**NA**
Model Layer 2						
TDS						
# of WRD Nested MWs	48	19	14	3	11	1
# of Production Wells	65	25	3	2	35	0
# of other MWs	2	0	0	0	2	0
TOTAL	**115**	**44**	**17**	**5**	**48**	**1**
Chloride						
# of WRD Nested MWs	48	19	14	3	11	1
# of Production Wells	65	25	3	2	35	0
# of other MWs	2	0	0	0	2	0
TOTAL	**115**	**44**	**17**	**5**	**48**	**1**
Nitrate as N						
# of WRD Nested MWs	48	19	14	3	11	1
# of Production Wells	36	12	1	1	22	0
# of other MWs	2	0	0	0	2	0
TOTAL	**86**	**31**	**15**	**4**	**35**	**1**

Water Quality Assessment in SNMP (Step 2 of 3)

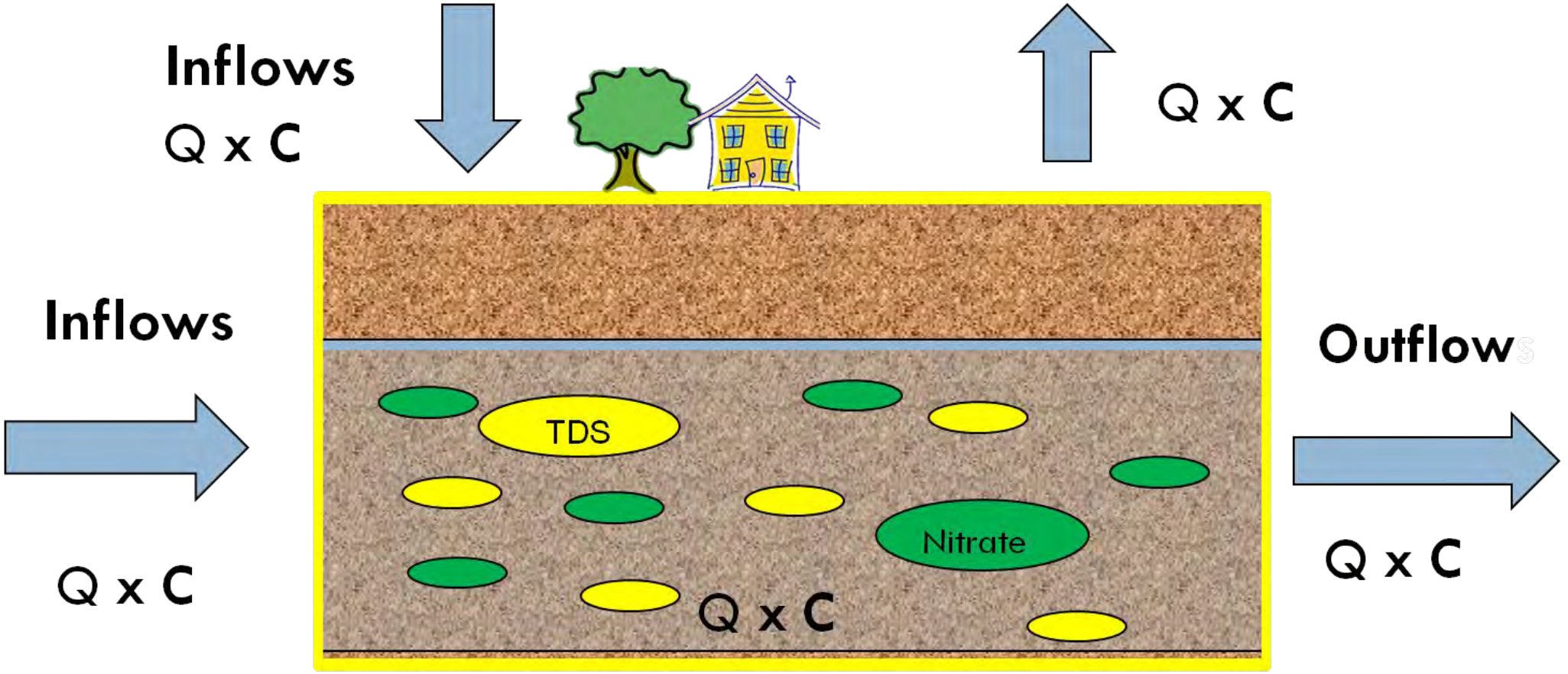
Use Existing Groundwater Model – Obtain Flows & Volumes





Water Quality Assessment in SNMP (Step 3 of 3)

Develop Mixing Model – Calculate Future Water Quality & Mass Loading to 2025



Purpose of the SNMP

- Manage salts and nutrients from all sources on a "**basin wide basis**" in a manner consistent with preserving beneficial use and facilitates attainment of Water Quality Objectives (WQOs).
- Key constituents were reviewed and approved by LARWQCB.
- Chloride (Cl), Total Dissolved Solids (TDS), and Nitrate-Nitrogen (NO3-N) were determined to be the most appropriate indicators of salts and nutrients in the CBWCB.
- Boron eliminated as its naturally occurring (Appendix G).
- Sulfate was eliminated as its already included in the calculation for TDS.
- Salt and nutrient constituent list recently confirmed in email communication between Brian Partington (WRD) and Jeong-Hee Lim (LARWQCB) on March 27, 2024.

Salt & Nutrient Concentrations for Cl, TDS, & NO_3-N

Water Source	TDS (mg/L)	Chloride (mg/L)	Nitrate (mg/L)
Advanced Treated Recycled Water (RW)	65 - 98	9 - 37	0.26 - 1.13
Stormwater	259 - 297	40 - 46	1.16 - 1.58
Treated Imported Water	218 - 481	25 - 84	0.09 - 0.61
Spreading Grounds Influent	286 - 492	37 - 107	1.45 - 3.07
Untreated Imported Water	251 - 624	68 - 88	0.21 - 0.67
CB Groundwater Average	**529**	**67**	**0.28**
CB WQO	**700**	**150**	**10**
Tertiary RW @ Spreading Grounds	533 - 626	105 - 149	3.41 - 6.31
Tertiary RW Irrigation	533 - 825	109 - 211	1.01 - 5.63
WCB Groundwater Average	**890**	**306**	**0.05**
WCB WQO	**800**	**250**	**10**

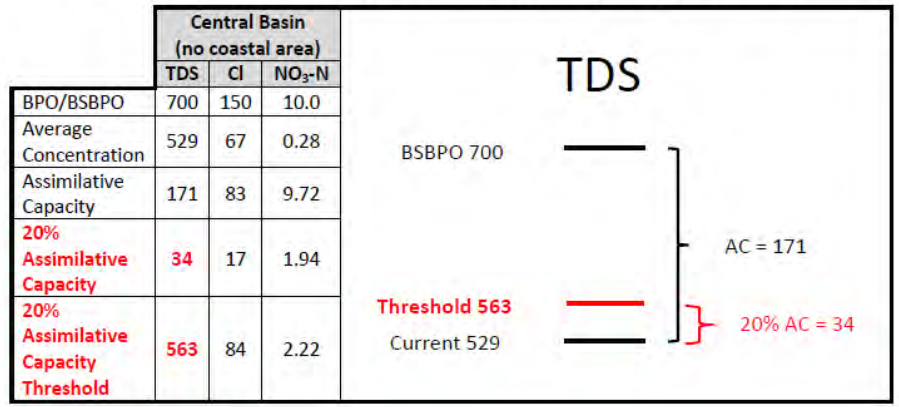
Source: SNMP (Feb. 2015) https://www.wrd.org/files/18f40ae8b/Salt+Nutrient+Management+Plan%2C+2015.pdf

Assimilative Capacity

- Used to evaluate projects in the interim while developing SNMP.
- Assimilative Capacity (AC) is the difference between the current concentration and the Basin Plan Objective (BPO, aka WQO).
- Example illustrates how to calculate "20% of the AC". Result is added to the current concentration to obtain "Threshold Value".
- Provides a buffer between current concentration and BPO (WQO).
- No longer applicable for individual projects since adopting a "basin wide" approach in the SNMP.

Table 14 Calculation of Assimilative Capacity Threshold

	Central Basin (no coastal area)		
	TDS	Cl	NO_3-N
BPO/BSBPO	700	150	10.0
Average Concentration	529	67	0.28
Assimilative Capacity	171	83	9.72
20% Assimilative Capacity	**34**	17	1.94
20% Assimilative Capacity Threshold	**563**	84	2.22



All values in milligrams per liter
TDS – total dissolved solids
Cl – chloride
NO_3-N – nitrate as nitrogen
BPO/BSBPO – Basin Plan Objective/Basin-Specific Basin Plan Objective
AC – assimilative capacity
Coastal area – Seaward side of the seawater intrusion barrier

Simulated Conditions in the SNMP

Table 16 Summary of Simulated Conditions for the SNMP Mixing Model Scenarios

Scenario [a]	SIMULATED CONDITIONS										
	Average Baseline Precipitation and Mountain Front Infiltration, Pumping, Subsurface Flows	Irrigation with Recycled Water			WCBB/DGB/AGB		Desalters		MFSG		
		Average Baseline	Increased Volume and Baseline Average WQ	Increased Volume and WQ at MCL/SMCLs	Average Baseline	Increased Injection Volume with AWT Recycled Water	Average Baseline	Increased Well Pumping & Treatment	Average Baseline	Tertiary-Treated and AWT Recycled Water	Tertiary-Treated Recycled Water
1. No Future Projects	✓	✓			✓		✓				
2. Increased Recycled Water for Irrigation (baseline period average WQ)	✓		✓		✓		✓		✓		
3. Increased Recycled Water for Irrigation (WQ at MCL/SMCLs)	✓			✓	✓		✓		✓		
4. Seawater Intrusion Barriers (increased injection volume and AWT RW)	✓	✓				✓	✓		✓		
5. Desalters – Increased Groundwater Pump & Treat (West Coast Basin only)	✓	✓			✓			✓	✓		
6. GRIP A (10K AFY AWT & 11K AFY tertiary-treated RW)	✓	✓			✓		✓			✓	
7. GRIP B (21K AFY tertiary-treated RW)	✓	✓			✓		✓				✓
8. Combined Scenarios (2 + 4 + 5 + 6 + Minor Future Changes)	✓		✓			✓		✓		✓	
9. Combined Scenarios (2 + 4 + 5 + 7 + Minor Future Changes)	✓		✓			✓		✓			✓
10. Combined Scenarios (3 + 4 + 5 + 6 + Minor Future Changes)	✓			✓		✓		✓		✓	
11. Combined Scenarios (3 + 4 + 5 + 7 + Minor Future Changes)	✓			✓		✓		✓			✓

a – Minor Future Changes, as referenced for all combined scenarios (8, 9, 10, and 11), include decreased imported water use for supply in the Central Basin, slightly increased imported water for supply in the West Coast Basin, and increased stormwater capture at the DGSG and other facilities

WQ – water quality
MCL – primary maximum contaminant level
SMCL – secondary maximum contaminant level
K – thousand
AFY – acre-feet per year
– baseline conditions

DGSG – Dominguez Gap Spreading Grounds
MFSG – Montebello Forebay Spreading Grounds
GRIP – Groundwater Reliability Improvement Program
GRIP A – GRIP Recycled Water Project A
GRIP B – GRIP Recycled Water Project B
– future change

AGB – Alamitos Gap Seawater Intrusion Barrier
DGB – Dominguez Gap Seawater Intrusion Barrier
WCBB – West Coast Basin Seawater Intrusion Barrier
AWT – advanced water treatment
RW – recycled water

Source: SNMP (Feb. 2015) https://www.wrd.org/files/18f40ae8b/Salt+Nutrient+Management+Plan%2C+2015.pdf

Simulated Conditions in the SNMP

Table 17 Future Projects – Groundwater Quality Impacts and Use of Available Assimilative Capacity

Scenario	FUTURE PROJECTS - CHANGE IN GROUNDWATER QUALITY AND USE OF AVAILABLE ASSIMILATIVE CAPACITY																											
	1. No Future Projects			2. Increased Recycled Water Irrigation (Baseline period average RW quality)						3. Increased Recycled Water Irrigation (RW quality at MCL/SMCLs)						4. Seawater Barriers						5. Desalters						6. GRIP A (Tertiary and AWT RW)					
Subarea/Basin				Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]			Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]			Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]			Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]			Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]		
	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N
LOS ANGELES FOREBAY [e]																																	
Change (2010 to 2025) (mg/L)	2.4	1.3	0.15	4.0	1.7	0.15	1.6	0.4	0.00	4.7	2.5	0.15	2.3	1.2	0.0	2.4	1.3	0.15	0.0	0.0	0.00	2.4	1.3	0.15	0.0	0.0	0.00	2.4	1.3	0.15	0.0	0.0	0.00
A.C. Used (2010 to 2025) (%)	4.0%	1.9%	1.5%	6.7%	2.4%	1.5%	2.7%	0.6%	0.0%	7.9%	3.7%	1.5%	3.9%	1.8%	0.0%	4.0%	1.9%	1.5%	0.0%	0.0%	0.0%	4.0%	1.9%	1.5%	0.0%	0.0%	0.0%	4.0%	1.9%	1.5%	0.0%	0.0%	0.0%
MONTEBELLO FOREBAY [e]																																	
Change (2010 to 2025) (mg/L)	-62.9	-2.1	0.02	-61.8	-1.9	0.02	1.1	0.2	0.00	-61.7	-1.4	0.02	1.2	0.6	0.0	-62.9	-2.1	0.02	0.0	0.0	0.00	-62.9	-2.1	0.02	0.0	0.0	0.00	-64.7	-0.8	0.16	-1.8	1.2	0.14
A.C. Used (2010 to 2025) (%)	-37.9%	-3.4%	0.3%	-37.3%	-3.0%	0.2%	0.7%	0.3%	0.0%	-37.2%	-2.3%	0.3%	0.7%	1.0%	0.0%	-37.9%	-3.4%	0.3%	0.0%	0.0%	0.0%	-37.9%	-3.4%	0.3%	0.0%	0.0%	0.0%	-39.0%	-1.4%	1.8%	-1.1%	2.0%	1.6%
WHITTIER AREA [e]																																	
Change (2010 to 2025) (mg/L)	-36.1	-2.9	0.05	-34.8	-2.5	0.05	1.3	0.3	0.00	-34.2	-1.8	0.05	1.9	1.1	0.0	-36.1	-2.9	0.05	0.0	0.0	0.00	-36.1	-2.9	0.05	0.0	0.0	0.00	-36.1	-2.9	0.05	0.0	0.0	0.00
A.C. Used (2010 to 2025) (%)	NC	-9.8%	0.5%	NC	-8.6%	0.5%	NC	1.2%	0.0%	NC	-6.0%	0.5%	NC	3.8%	0.0%	NC	-9.8%	0.5%	NC	0.0%	0.0%	NC	-9.8%	0.5%	NC	0.0%	0.0%	NC	-9.8%	0.5%	NC	0.0%	0.0%
CENTRAL BASIN PRESSURE AREA [e]																																	
Change (2010 to 2025) (mg/L)	21.5	7.9	0.13	22.5	8.2	0.13	1.0	0.3	0.00	22.9	8.7	0.13	1.5	0.8	0.0	19.0	7.5	0.13	-2.5	-0.4	0.00	21.5	7.9	0.13	0.0	0.0	0.00	21.7	8.1	0.13	0.3	0.2	0.00
A.C. Used (2010 to 2025) (%)	9.3%	8.4%	1.3%	9.8%	8.6%	1.3%	0.5%	0.3%	0.0%	10.0%	9.2%	1.3%	0.6%	0.8%	0.0%	8.2%	8.0%	1.3%	-1.1%	-0.4%	0.1%	9.3%	8.4%	1.3%	0.0%	0.0%	0.0%	9.4%	8.5%	1.3%	0.1%	0.2%	0.0%
CENTRAL BASIN [e]																																	
Change (2010 to 2025) (mg/L)	**4.6**	**5.1**	**0.11**	**5.8**	**5.4**	**0.11**	**1.2**	**0.3**	**0.00**	**6.2**	**5.9**	**0.11**	**1.6**	**0.8**	**0.00**	**2.8**	**4.8**	**0.11**	**-1.8**	**-0.3**	**0.00**	**4.6**	**5.1**	**0.11**	**0.0**	**0.0**	**0.00**	**4.1**	**5.5**	**0.14**	**-0.5**	**0.4**	**0.03**
A.C. Used (2010 to 2025) (%)	**2.7%**	**6.1%**	**1.1%**	**3.4%**	**6.4%**	**1.1%**	**0.7%**	**0.3%**	**0.0%**	**3.6%**	**7.1%**	**1.1%**	**0.9%**	**1.0%**	**0.0%**	**1.6%**	**5.8%**	**1.1%**	**-1.1%**	**-0.3%**	**0.0%**	**2.7%**	**6.1%**	**1.1%**	**0.0%**	**0.0%**	**0.0%**	**2.4%**	**6.6%**	**1.4%**	**-0.3%**	**0.5%**	**0.3%**
WEST COAST BASIN [e]																																	
Change (2010 to 2025) (mg/L)	**-23.0**	**-23.6**	**0.07**	**-21.3**	**-23.0**	**0.07**	**1.7**	**0.6**	**0.00**	**-20.6**	**-22.4**	**0.07**	**2.4**	**1.3**	**0.00**	**-41.0**	**-28.3**	**0.06**	**-18.0**	**-4.7**	**0.00**	**-36.6**	**-29.4**	**0.07**	**-13.6**	**-5.8**	**0.00**	**-23.0**	**-23.6**	**0.07**	**0.0**	**0.0**	**0.00**
A.C. Used (2010 to 2025) (%)	**NC**	**NC**	**0.7%**	**NC**	**NC**	**0.7%**	**NC**	**NC**	**0.0%**	**NC**	**NC**	**0.7%**	**NC**	**NC**	**0.0%**	**NC**	**NC**	**0.6%**	**NC**	**NC**	**0.0%**	**NC**	**NC**	**0.7%**	**NC**	**NC**	**0.0%**	**NC**	**NC**	**0.7%**	**NC**	**NC**	**0.0%**

Scenario	1. No Future Projects			7. GRIP B (Tertiary RW)						8. Combined Projects/Scenarios (2 + 4 + 5 + 6 + Minor Future Changes) [d]						9. Combined Project/Scenarios (2 + 4 + 5 + 7 + Minor Future Changes) [d]						10. Combined Projects/Scenarios (3 + 4 + 5 + 6 + Minor Future Changes) [d]						11. Combined Projects/Scenarios (3 + 4 + 5 + 7 + Minor Future Changes) [d]					
Subarea/Basin				Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]			Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]			Overall Scenario [a]			Scenario minus Baseline Conditions [b]			Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]			Overall Scenario [a,c]			Scenario minus Baseline Conditions [b,c]		
	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N	TDS	Cl	NO_3-N
LOS ANGELES FOREBAY [e]																																	
Change (2010 to 2025) (mg/L)	2.4	1.3	0.15	2.5	1.3	0.15	0.1	0.0	0.00	-1.3	0.8	0.15	-3.7	-0.5	0.00	-1.2	0.8	0.15	-3.6	-0.5	0.00	-0.6	1.6	0.15	-3.0	0.3	0.00	-0.5	1.6	0.15	-2.9	0.4	0.00
A.C. Used (2010 to 2025) (%)	4.0%	1.9%	1.5%	4.2%	1.9%	1.5%	0.2%	0.0%	0.0%	-2.2%	1.1%	1.5%	-6.2%	-0.8%	0.0%	-2.0%	1.1%	1.5%	-6.0%	-0.7%	0.0%	-1.0%	2.4%	1.5%	-5.0%	0.5%	0.0%	-0.9%	2.4%	1.5%	-4.9%	0.5%	0.0%
MONTEBELLO FOREBAY [e]																																	
Change (2010 to 2025) (mg/L)	-62.9	-2.1	0.02	-45.7	3.8	0.22	17.2	5.9	0.20	-66.4	-1.1	0.16	-3.5	1.0	0.14	-47.4	3.6	0.22	15.5	5.7	0.20	-66.1	-0.7	0.16	-3.2	1.4	0.14	-47.1	4.0	0.22	15.8	6.0	0.20
A.C. Used (2010 to 2025) (%)	-37.9%	-3.4%	0.3%	-27.5%	6.2%	2.5%	10.4%	9.5%	2.2%	-40.0%	-1.7%	1.8%	-2.1%	1.6%	1.6%	-28.6%	5.8%	2.5%	9.4%	9.1%	2.2%	-39.8%	-1.1%	1.8%	-1.9%	2.2%	1.6%	-28.4%	6.4%	2.5%	9.5%	9.8%	2.2%
WHITTIER AREA [e]																																	
Change (2010 to 2025) (mg/L)	-36.1	-2.9	0.05	-36.1	-2.9	0.05	0.0	0.0	0.00	-42.1	-3.8	0.05	-6.0	-0.9	0.00	-42.1	-3.8	0.05	-6.0	-0.9	0.00	-41.5	-3.1	0.05	-5.4	-0.2	0.00	-41.5	-3.1	0.05	-5.4	-0.2	0.00
A.C. Used (2010 to 2025) (%)	NC	-9.8%	0.5%	NC	-9.8%	0.5%	NC	0.0%	0.0%	NC	-12.8%	0.5%	NC	-3.1%	0.0%	NC	-12.8%	0.5%	NC	-3.1%	0.0%	NC	-10.5%	0.5%	NC	-0.7%	0.0%	NC	-10.5%	0.5%	NC	-0.7%	0.0%
CENTRAL BASIN PRESSURE AREA [e]																																	
Change (2010 to 2025) (mg/L)	21.5	7.9	0.13	22.9	8.4	0.13	1.4	0.4	0.01	18.4	7.6	0.13	-3.1	-0.4	0.01	19.5	7.9	0.14	-2.0	-0.1	0.01	18.8	8.2	0.13	-2.6	0.2	0.01	20.0	8.4	0.14	-1.5	0.5	0.01
A.C. Used (2010 to 2025) (%)	9.3%	8.4%	1.3%	9.9%	8.9%	1.3%	0.6%	0.5%	0.1%	8.0%	8.0%	1.4%	-1.3%	-0.4%	0.1%	8.5%	8.3%	1.4%	-0.8%	-0.1%	0.1%	8.2%	8.6%	1.4%	-1.1%	0.2%	0.1%	8.7%	8.9%	1.4%	-0.6%	0.5%	0.1%
CENTRAL BASIN [e]																																	
Change (2010 to 2025) (mg/L)	**4.6**	**5.1**	**0.11**	**7.7**	**6.4**	**0.15**	**3.1**	**1.3**	**0.04**	**0.7**	**5.0**	**0.14**	**-4.0**	**-0.1**	**0.03**	**4.2**	**5.9**	**0.15**	**-0.4**	**0.8**	**0.04**	**1.1**	**5.6**	**0.14**	**-3.5**	**0.5**	**0.03**	**4.7**	**6.5**	**0.15**	**0.1**	**1.3**	**0.04**
A.C. Used (2010 to 2025) (%)	**2.7%**	**6.1%**	**1.1%**	**4.5%**	**7.7%**	**1.5%**	**1.8%**	**1.5%**	**0.4%**	**0.4%**	**6.0%**	**1.4%**	**-2.3%**	**-0.1%**	**0.3%**	**2.5%**	**7.1%**	**1.5%**	**-0.2%**	**0.9%**	**0.4%**	**0.7%**	**6.7%**	**1.4%**	**-2.0%**	**0.6%**	**0.3%**	**2.8%**	**7.8%**	**1.5%**	**0.1%**	**1.6%**	**0.4%**
WEST COAST BASIN [e]																																	
Change (2010 to 2025) (mg/L)	**-23.0**	**-23.6**	**0.07**	**-23.0**	**-23.6**	**0.07**	**0.1**	**0.0**	**0.00**	**-57.4**	**-34.7**	**0.06**	**-34.4**	**-11.1**	**0.00**	**-57.3**	**-34.7**	**0.06**	**-34.3**	**-11.1**	**0.00**	**-56.8**	**-34.1**	**0.06**	**-33.8**	**-10.5**	**0.00**	**-56.7**	**-34.1**	**0.06**	**-33.7**	**-10.4**	**0.00**
A.C. Used (2010 to 2025) (%)	**NC**	**NC**	**0.7%**	**NC**	**NC**	**0.7%**	**NC**	**NC**	**0.0%**	**NC**	**NC**	**0.6%**	**NC**	**NC**	**0.0%**	**NC**	**NC**	**0.6%**	**NC**	**NC**	**0.0%**	**NC**	**NC**	**0.6%**	**NC**	**NC**	**0.0%**	**NC**	**NC**	**0.6%**	**NC**	**NC**	**0.0%**

Source: SNMP (Feb. 2015) https://www.wrd.org/files/18f40ae8b/Salt+Nutrient+Management+Plan%2C+2015.pdf

How projects could affect S/N

Description	Impact to S/N Loading to Groundwater	Impact to S/N Concentrations in Groundwater	Example Project
Replace current water with lower TDS water	Decrease	Decrease	Seawater intrusion barriers replacing imported water with AWT recycled water
Add lower TDS water	Increase	Decrease	New stormwater capture project; new AWT recycled water injection wells [a]
Replace current water with higher TDS water	Increase	Increase	Existing irrigation that replaces imported water with tertiary-treated recycled water
Add higher TDS water	Increase	Increase	New irrigation with tertiary treated recycled water
Increase saline plume pumping	Decrease	Decrease	Desalters
Increase well pumping	Decrease	None	Typical groundwater production

TDS – total dissolved solids AWT – advanced water treatment S/N – salt and nutrient

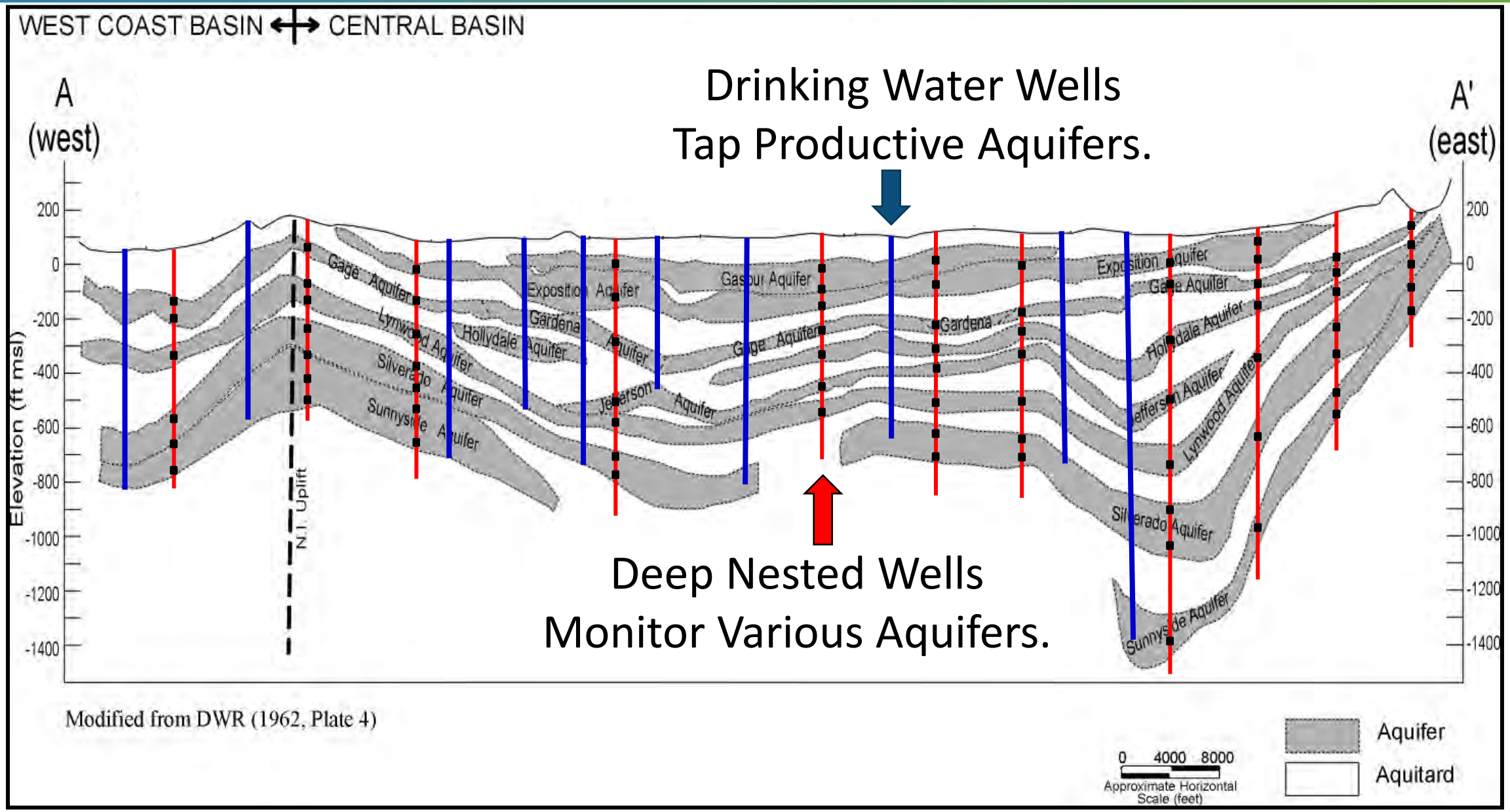
a – New injection of AWT recycled water via wells (not replacing an existing water source) is currently a conceptual implementation measure

Source: Table J-5 SNMP (Feb. 2015) https://www.wrd.org/files/18f40ae8b/Salt+Nutrient+Management+Plan%2C+2015.pdf

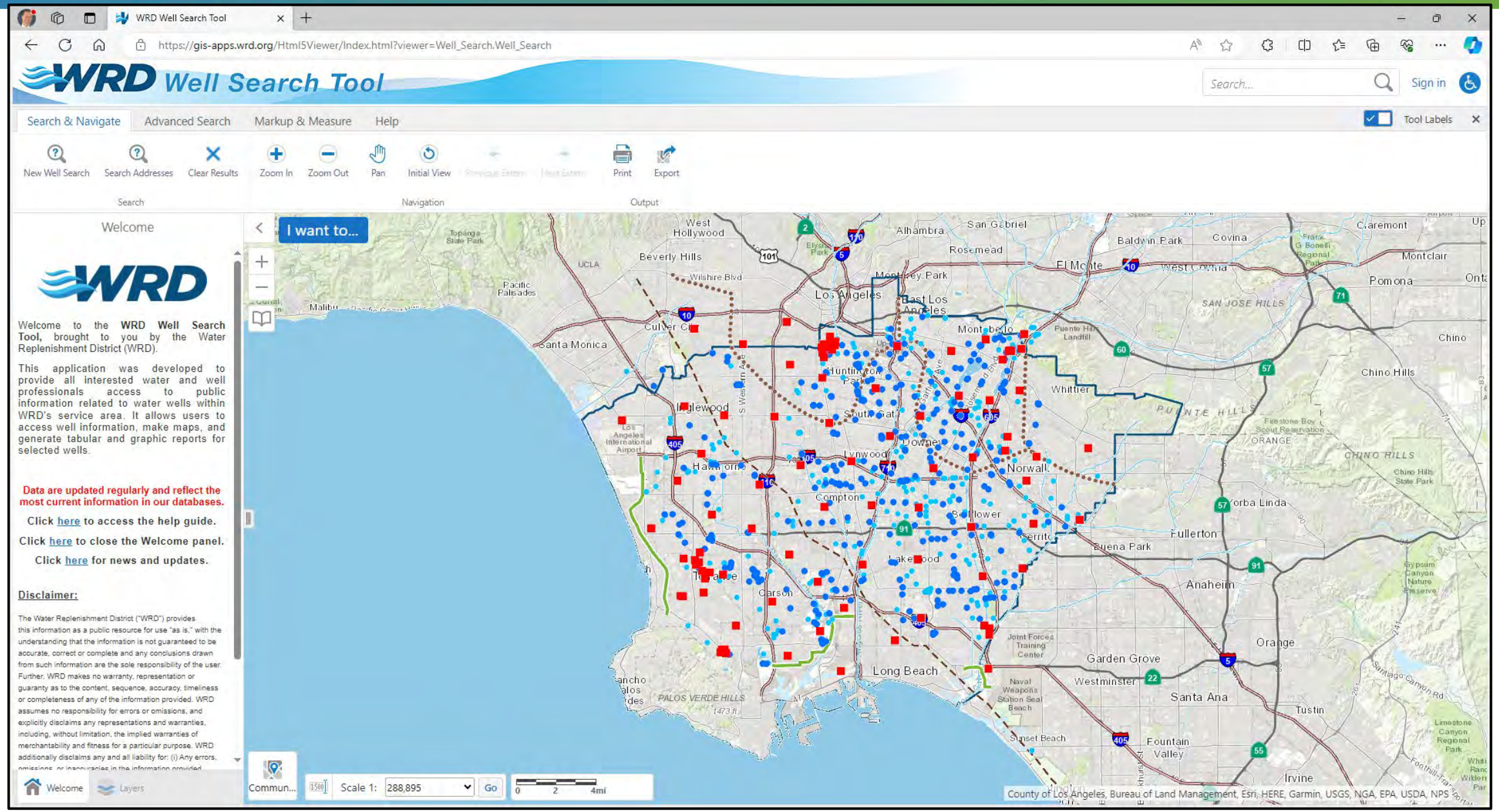
Groundwater Monitoring Plan for the SNMP

- 25+ years of installing deep, nested monitoring wells with the USGS.
- 63 borings have been installed since the early 1990s. Deepest well was drilled to 3,004 Ft BGS (Lynwood #1).
- Multiple wells placed in a single boring with 20-foot screens, each zone is isolated with Grout Seals.
- 354 Wells, deepest screens are completed greater than 1,000 Ft BGS.
- 69 nested monitoring wells selected to be part of the SNMP. 13 locations across the Central Basin and West Coast Basin.

Groundwater Monitoring Plan for the SNMP

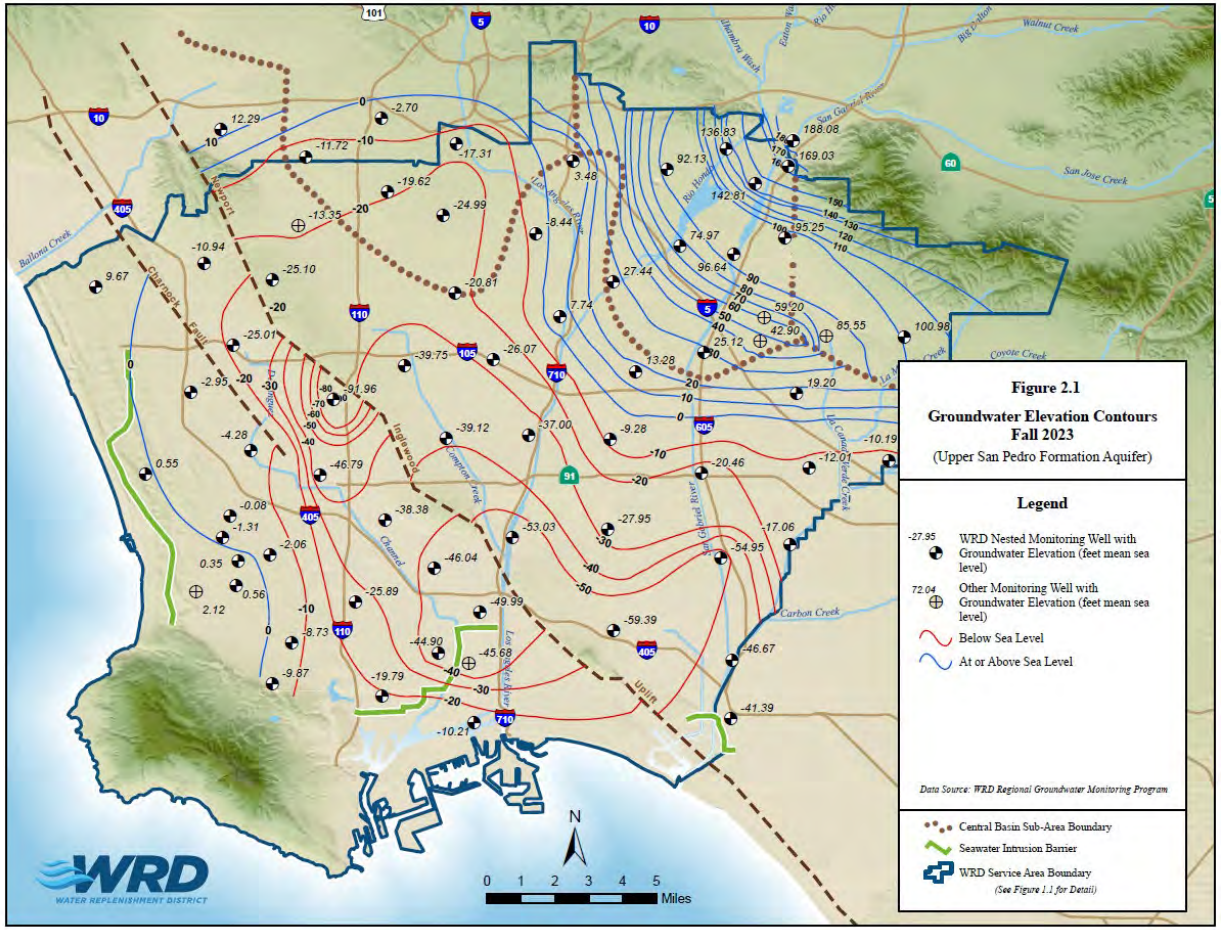


Groundwater Monitoring Plan for the SNMP

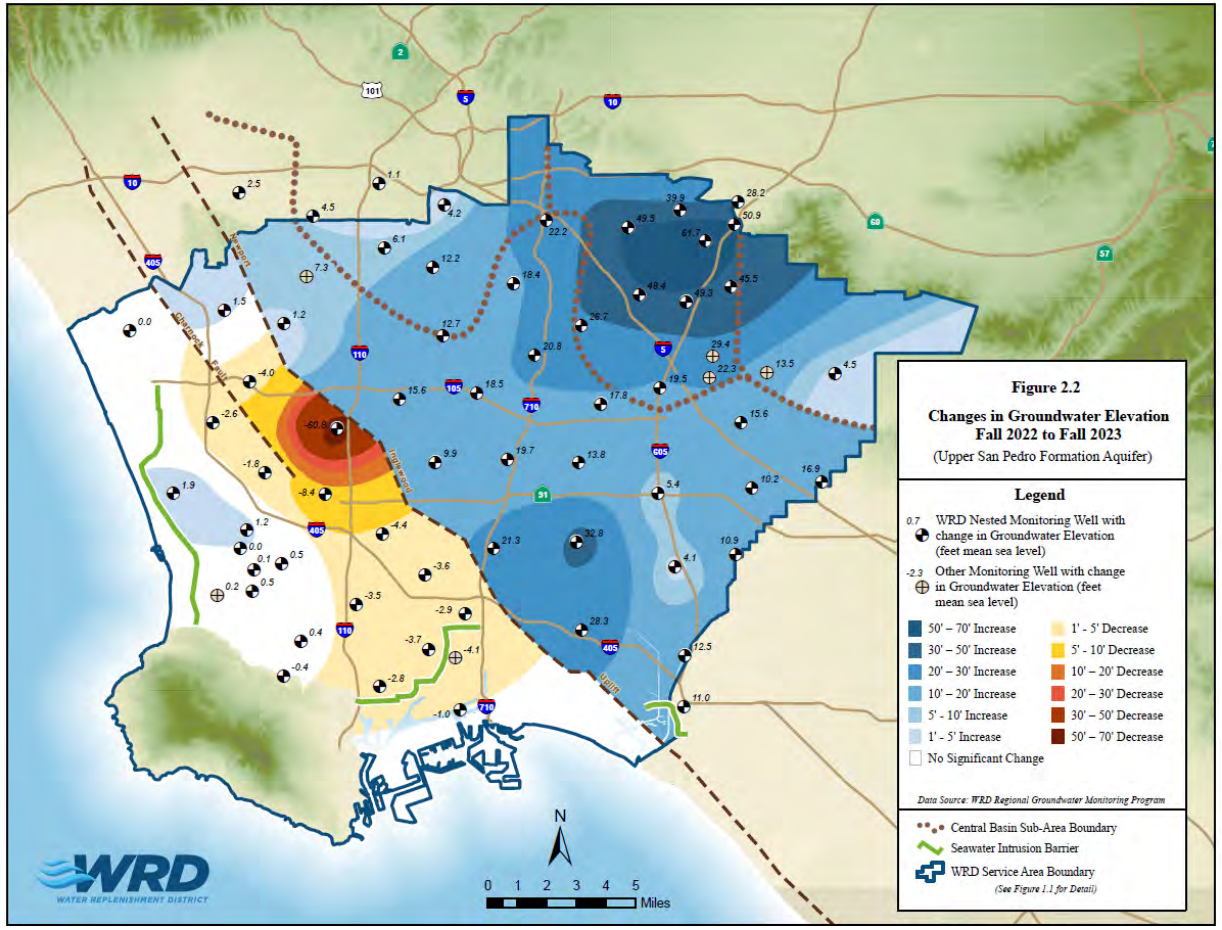


Groundwater Monitoring Plan for the SNMP

Water Level Contours

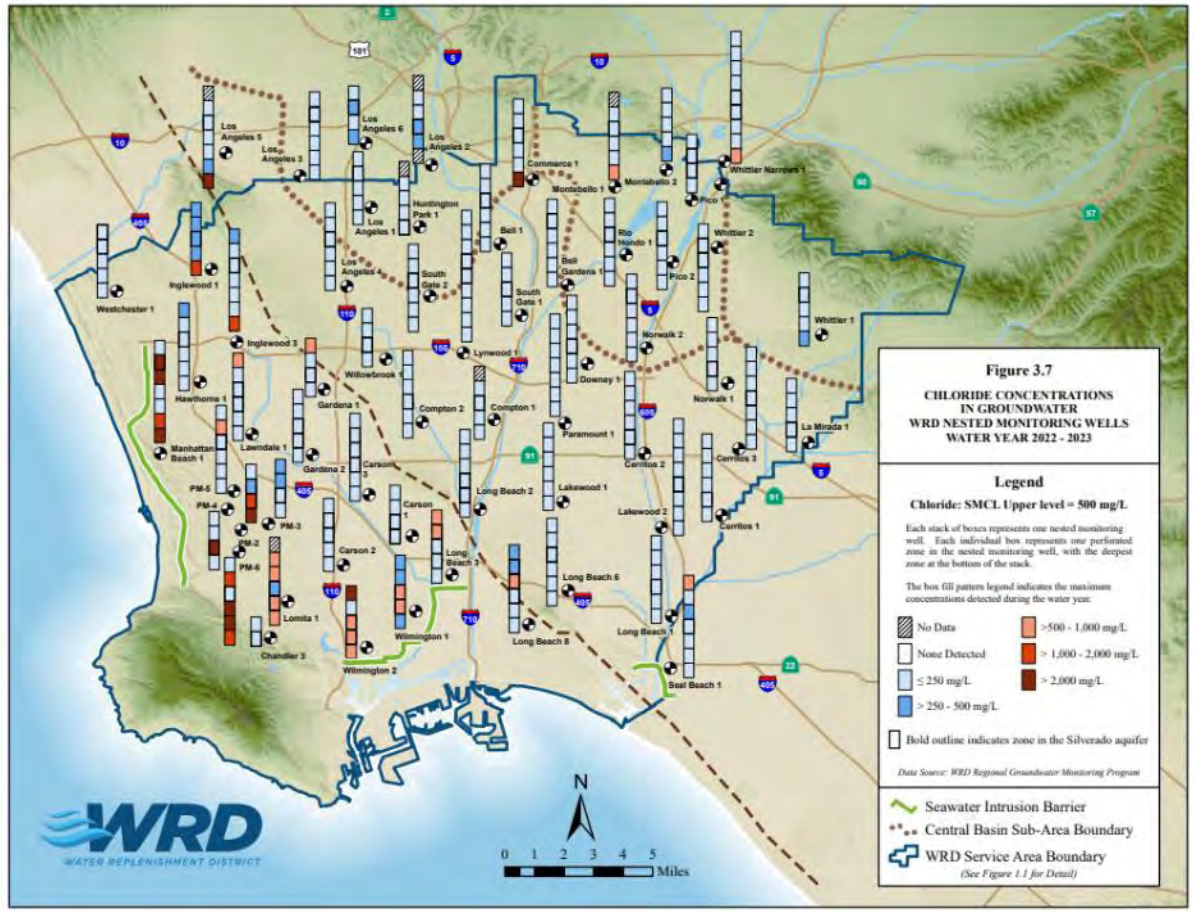


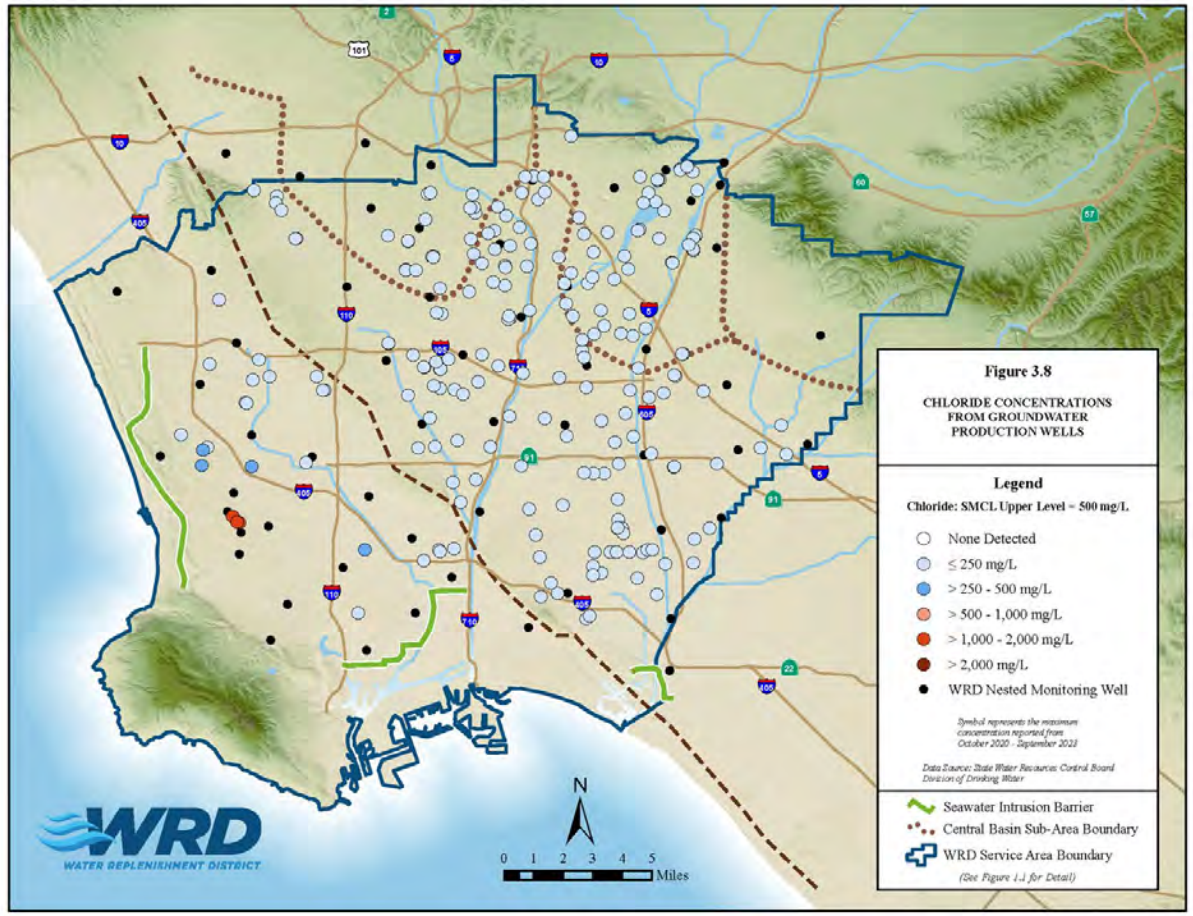
Change in Elevation



Groundwater Monitoring Plan for the SNMP

Chloride – Mostly within a "trapped" saline plume in the West Coast Basin





Groundwater Monitoring Plan for the SNMP

SECTION 4

SALT AND NUTRIENTS IN GROUNDWATER

In February 2009, the SWRCB adopted Resolution No. 2009-0011, which established a statewide Recycled Water Policy. This Policy encourages increased use of recycled water and local stormwater for groundwater recharge across the State. It also requires local entities to develop a Salt and Nutrient Management Plan (SNMP) for each groundwater basin in California to monitor groundwater quality and any impact due to increased use of recycled water and stormwater for recharge.

A SNMP Workplan was jointly prepared by the CBWCB stakeholders and approved by the Los Angeles Regional Water Quality Control Board in December 2011. The SNMP for the CBWCB was finalized on February 12, 2015, and adopted in July 2015. The full text of the "*Salt Nutrient Management Plan*" (WRD, 2015) can be found at https://www.wrd.org/other-reports.

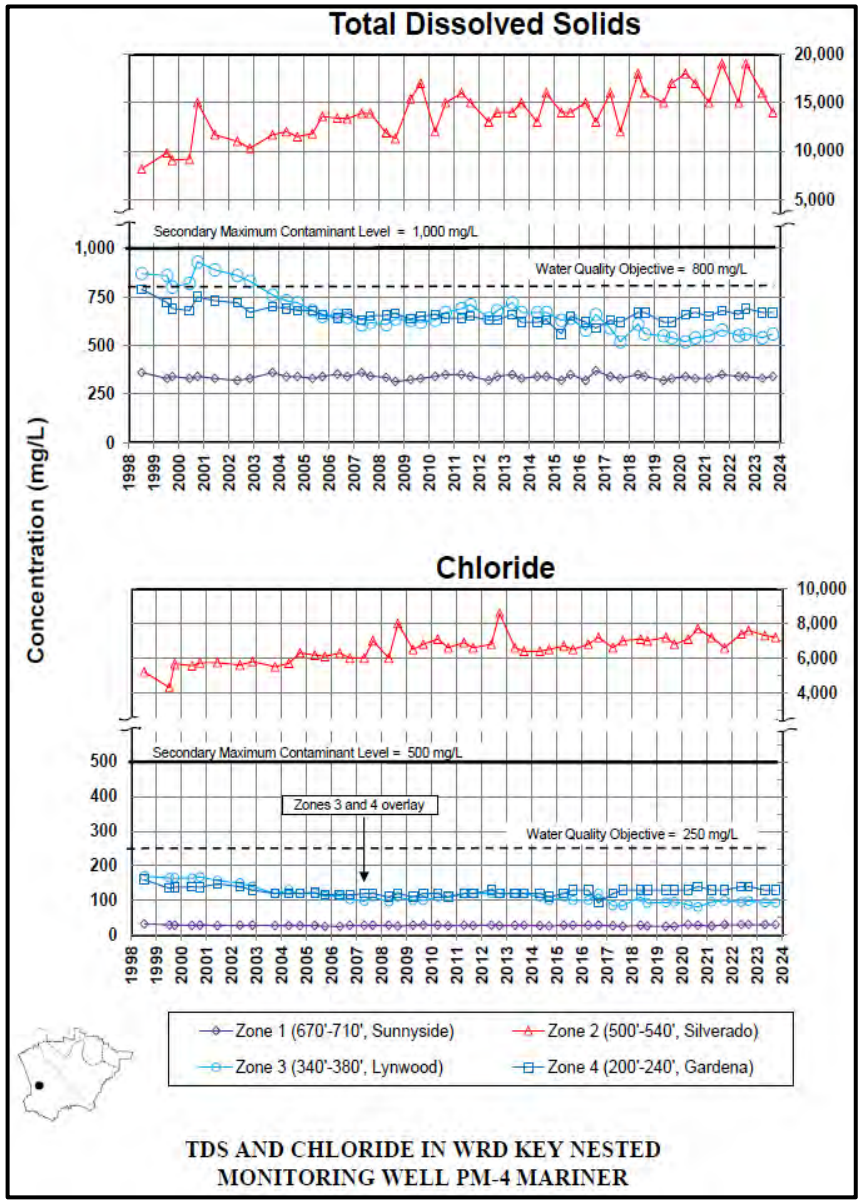
The objective of the SNMP is to manage salts and nutrients from all sources "… on a basin wide or watershed-wide basis in a manner that ensures attainment of water quality objectives and protection of beneficial uses." Future groundwater quality and assimilative capacity were calculated based on predicted salt and nutrient loading through 2025 in the CBWCB. Accordingly, current and proposed projects through 2025 were identified and used to develop strategies to manage salt and nutrient loading. The SNMP included the following:

- Stormwater and Recycled Water Use/Recharge Goals and Objectives,
- Characterization of the Hydrogeologic Conceptual Model/Water Quality,
- Estimation of Current and Future Salt and Nutrient Loading,
- A Basin Wide Water Quality Monitoring Plan,
- Estimation of Salt and Nutrient Assimilative Capacity,
- An Anti-degradation Analysis,
- Implementation Measures to Manage Salt and Nutrient Loading, and
- California Environmental Quality Act analysis of the SNMP.

4-1

Regional Groundwater Monitoring Report
Section 4
Salt and Nutrients in Groundwater

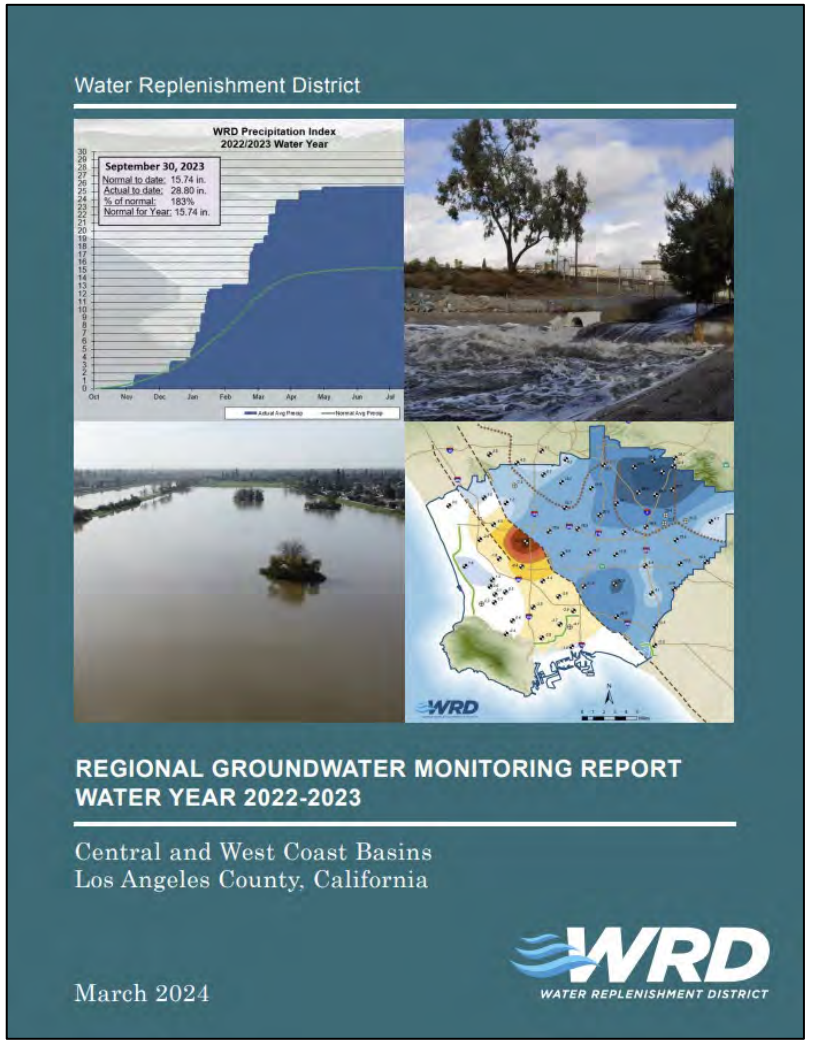
13 Locations
69 Well Screens
Sample Semiannually
Trend Graphs: Cl/TDS



TDS AND CHLORIDE IN WRD KEY NESTED MONITORING WELL PM-4 MARINER

Groundwater Monitoring Plan for the SNMP

- 354 wells sampled semiannually - 60,000 results (600 Samples x 100 Constituents).
- Majority of groundwater continues to remain high quality and meets drinking water standards established by the SWRCB.
- Localized areas of poor water quality due to natural or man-made contaminants, tracked closely by WRD.
- Main natural contaminants are chloride and total dissolved solids due to seawater intrusion and naturally occurring metals (mainly Fe & Mn).
- Main man-made contaminants are associated the industrial operations (mainly VOCs).
- Results are published in our Regional Groundwater Monitoring Report (RGWMR), annually each March.
- Data publicly available via our Interactive Well Search Website. (http://gis.wrd.org/)



How close did we get to what was planned in the SNMP?

Scenarios	Baseline (2001-2010)	Planned (10/11 – 24/25)	Actual (10/11 – 22/23)	Planned vs. Actual
Increase Recycled Water for Irrigation	10,610	23,140	18,482 (1)	(4,658)
Seawater Barriers (Increase Volume)	27,098	31,700	27,249	(4,451)
Seawater Barriers (Increase ATW)	10,303	31,700	14,863	(16,837)
Increase Pumping at Desalter	1,867	5,500	3,360 (2)	(2,140)
GRIP, now ARC (Increase ATW)	0	10,000	11,000 (2)	1,000
GRIP, now ARC (Increase 3° RW)	44,633	71,000	53,054	(17,946)

Notes:
ARC = Albert Robles Center for Water Recycling & Environmental Learning
(1) Data provided by West Basin Municipal Water District. Existing recycled water irrigation in 2022.
(2) Facility monthly operational volumes are approximately 280 AF.
(3) ARC started operations in Jan. 2020. Facility monthly operational volumes are approximately 980 AF. Facility off for several months due to historically high rainfall in water years 2022/23 and 2023/24.

Sources:
SNMP (Feb. 2015) https://www.wrd.org/files/18f40ae8b/Salt+Nutrient+Management+Plan%2C+2015.pdf
Engineering Survey & Report (June 2024) https://www.wrd.org/files/aa3a18719/WRD+2024+ESR+-+June+%28FINAL%29.pdf

Plans for a Locally Sustainable Water Supply for Region

WIN
WATER INDEPENDENCE NOW






Complete groundwater sustainability

WIN 4 ALL
THE 2040 PLAN FOR REGIONAL WATER INDEPENDENCE

Regional groundwater reliance

WIN4ALL

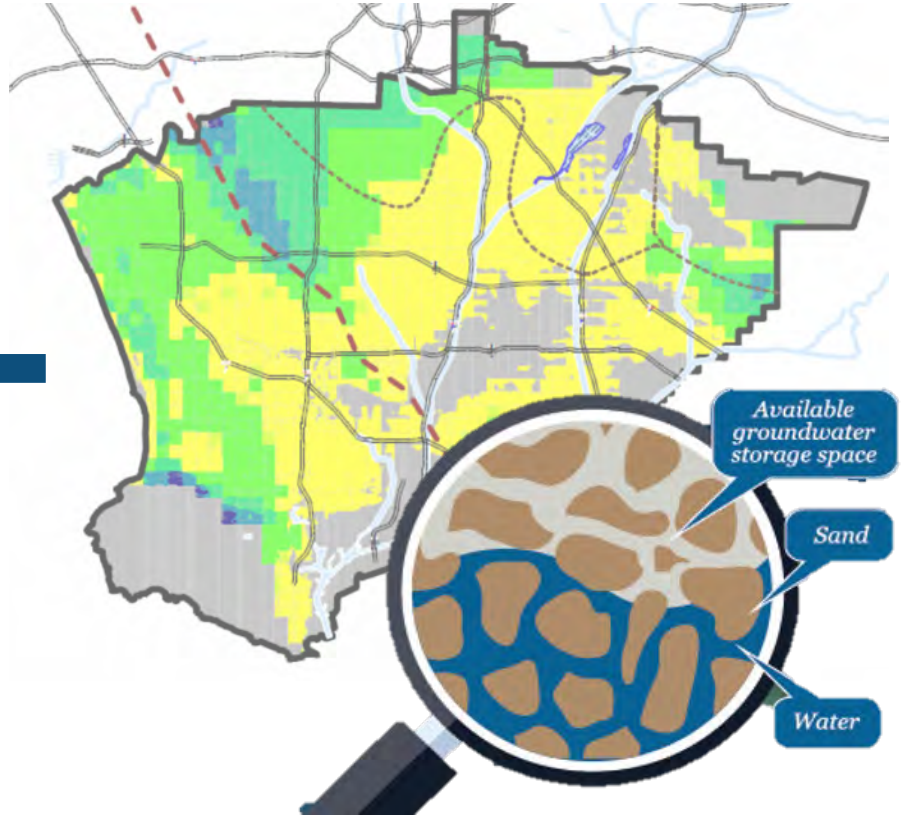
Unused Local Water Supplies

Stormwater

Recycled Water

+

Available Groundwater Storage Space



450,000 acre-feet
(150 billion gallons)

=

Locally Sustainable Water Supply for Region

WIN 4 ALL
THE 2040 PLAN FOR REGIONAL WATER INDEPENDENCE

Working with Regional Partners to Implement WIN4ALL

WIN 4 ALL
THE 2040 PLAN FOR REGIONAL WATER INDEPENDENCE

SANITATION DISTRICTS OF LOS ANGELES COUNTY

LA DWP

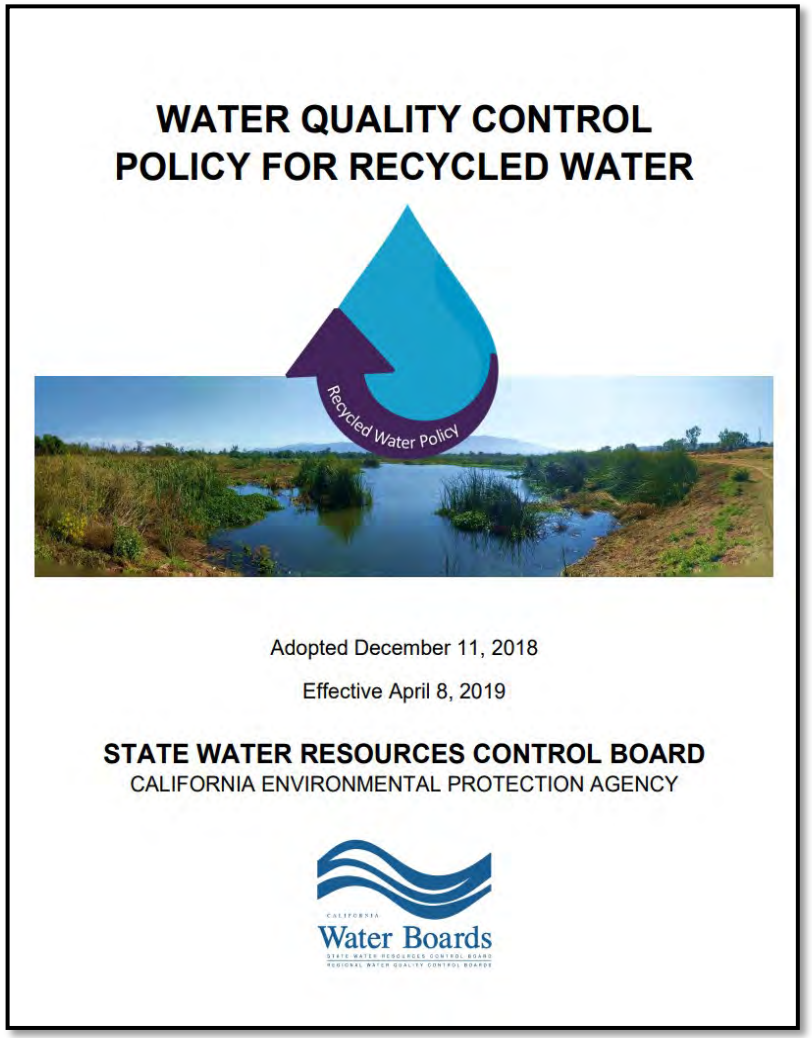
LA Environment SANITATION
CITY OF LOS ANGELES

Groundwater Pumpers

Agency Request – Data Assessment (LARWQCB)

Reasons and Purposes

- Basin Plan Amendment (adopted Feb. 12, 2015, through Resolution No. R15-001) requires CBWCB SNMP to update SNMP:
  - As necessary to reflect changing conditions in CBWCB;
  - where results from the SNMP Monitoring Program indicate that revisions/modifications are warranted; and/or
  - at the end of the planning horizon (i.e. 2025);
- Recycled Water Policy (Amended in December 2018)
  - State Water Board Amended Recycled Water Policy in December 2018
  - Added data assessment requirements (section 6.2.6)
  - Data assessment every five years, or based on Basin Plan Amendment (BPA)
  - To update available AC evaluation
  - To determine whether SNMP updates or revisions are needed



Agency Request – Data Assessment (LARWQCB)

Expectations:

- Data assessment shall evaluate:
  - Observed trends in water quality vs predicted trends in SNMP;
  - Sufficiency of monitoring network;
  - Data gaps;
  - Impact on GW quality predicted in SNMP, based on recent trends and SNMP models;
  - Projects foreseeable in data assessment but not included during SNMP development.
- To be completed in a timely manner

Next Steps (WRD)

- Responsibilities:
  - LARWQCB - Regulatory agency reviewing and approving SNMP.
  - WRD – Led agency overseeing SNMP.
  - Stakeholders – Participate in updating the SNMP.

- Preliminary Timeline of Data Assessment (Discussion Only)

Fiscal Year Ending June 2025
- Meet with stakeholders / RWQCB
- Develop scope for MOUs.
- Scope concurrence from RWQCB.
- Finalize stakeholder MOU's.

Fiscal Year Ending June 2026
- Hire consultant via RFQ.
- Workshops with RWQCB.
- Submit work plan to RWQCB.
- Work plan approved by RWQCB.

Fiscal Year Ending June 2027
- Conduct data assessment & submit report to RWQCB.
- Incorporate comments and submit final report to RWQCB.
- Approval letter from RWQCB.

Contact Information

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Los Angeles Regional Water Quality
Control Board

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LOS ANGELES COUNTY
SANITATION DISTRICTS
Converting Waste Into Resources

WateReuse Legislative Update, LA Chapter

Phillip Vander Klay

August 13, 2024

Legislative Update

Bills - Appropriations Committee

The Budget - $74.5 million for RW

Proposition 4 – AKA the Climate Bond

Regulatory Update

Recycled Water Fees

- September 18 Board Meeting for Fee Adoption

Clean Water SRF

- Modified “Scenario D” Eliminates gap year
- IUP cutoff score of 12 and cap of $50 million

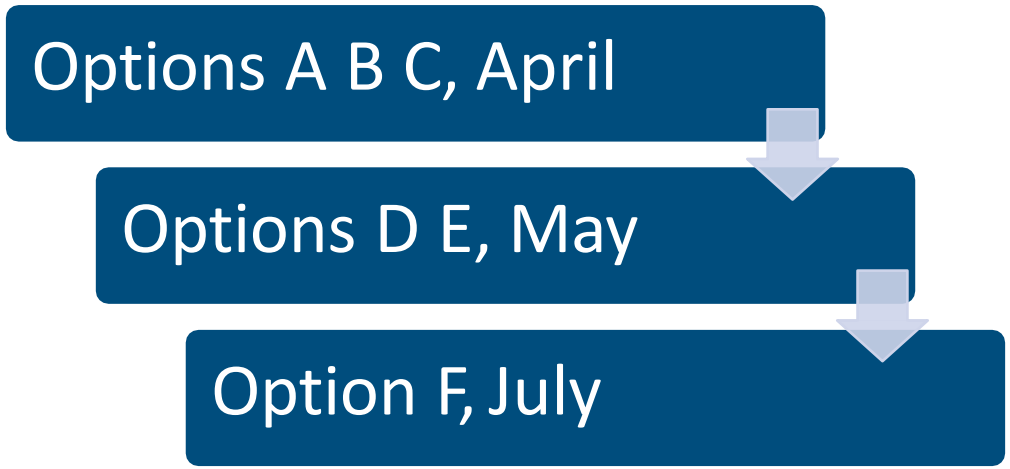
Fee Development Process and Timeline

April 18	May 22	June 13	July 18	August 1	Sept 18
Recycled Water Fees Meeting	Recycled Water Fees Meeting	Water Quality Fees Meeting	Recycled Water Fees Meeting	Water Quality Fees Meeting	Board Meeting

Fee Authority for Recycled Water Facilities

Clean-up to Water Code sections 13260 and 13523 to provide explicit authority to assess fees for recycled water facilities to ensure adequate oversight and resources for timely permitting of recycled water projects.

Recycled Water Fee Option Iterations



Option F: Fee by Production Type and Distribution/Use

Fee based on production type of potable and non-potable or distribution and/or use.

Recycled Water Production	Potable Fee	Non-Potable Fee
Permits issued for recycled water production	$16,000	$2,800

Recycled Water Distribution and/or Use	Fee
Permits issued for recycled water distribution and/or use only	$1,500

Regulatory Update

Recycled Water Fees

- September 18 Board Meeting for Fee Adoption

Clean Water SRF

- Modified “Scenario D” Eliminates gap year
- IUP cutoff score of 12 and cap of $50 million

Recycled Water Permits Fees Stakeholder Meeting

July 18, 2024

CALIFORNIA
Water Boards

Division of Administrative Services – Fee Branch

Staff Presentation

- Fee Development Process
- Stakeholder Feedback
- Updated Fee Option
- Open Discussion
- Next Steps

Fee Development Process and Timeline

April 18	May 22	June 13	July 18	August 1	Sept 18
Recycled Water Fees Meeting	Recycled Water Fees Meeting	Water Quality Fees Meeting	Recycled Water Fees Meeting	Water Quality Fees Meeting	Board Meeting

Fee Authority for Recycled Water Facilities

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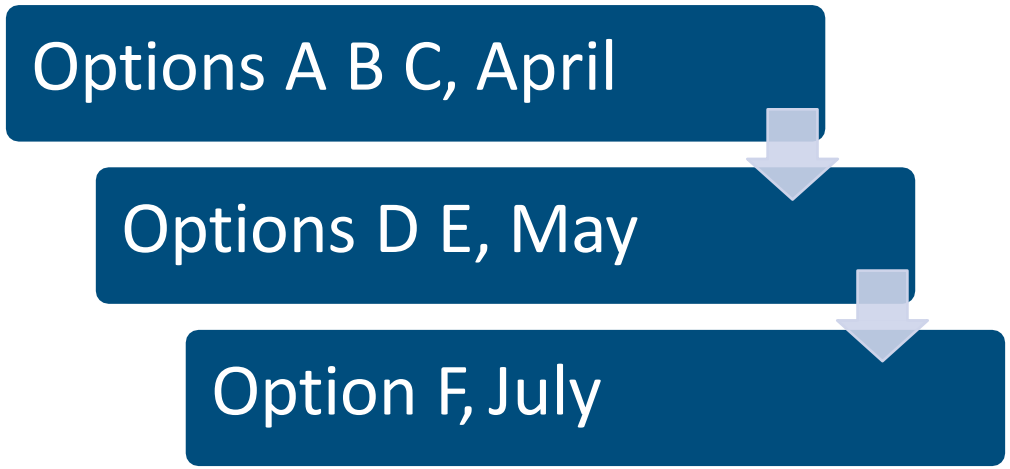
Recycled Water Fee Option Iterations



Recycled Water Fees Stakeholder Feedback

- Spread the Fees Broadly
- Sizing, design flow, and volume
- Duplicative Fees & Fee-for-Service
- Inequities in previously proposed fee options

Option F: Fee by Production Type and Distribution/Use

Fee based on production type of potable and non-potable or distribution and/or use.

Recycled Water Production	Potable Fee	Non-Potable Fee
Permits issued for recycled water production	$16,000	$2,800

Recycled Water Distribution and/or Use	Fee
Permits issued for recycled water distribution and/or use only	$1,500

Option F: Fee Examples

Recycled Water Production	Potable Fee	Non-Potable Fee
Permits issued for recycled water production	$16,000	$2,800

Permit Type	Base Fee*	Potable Fee Total	Non-Potable Fee Total
WDR – TTWQ/CPLX Rating: 2B	$26,785	$42,785	$29,585
NPDES – Design Flow: 2.5 MGD	$19,384	$35,384	$22,184
Water Recycling Requirements	N/A	$16,000	$2,800
Enrollee under General WRRs 2016-0068-DDW	$1,500	--	--

*FY 2023-24 Fee Amount

Open Discussion

Next Steps

- July 25 – Comments Due on Proposed Option F
  - Submit comments to: FeeBranch@waterboards.ca.gov
- August 1 – Water Quality Fees Stakeholder Meeting
- September 18 – Board Meeting for FY 2024-25 Fee Schedule Adoption

Division of Drinking Water Regulatory Update

THOMAS TSUI, P.E.

WATEREUSE LA CHAPTER MEETING

AUGUST 13, 2024

DPR update

- Office of Administrative Law (OAL) approved Direct Potable Reuse (DPR) regulations on August 6, 2024
- Effective date is October 1, 2024
- https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/direct_potable_reuse/sbddw-23-001-dpr-reg-text-oal-final.pdf

CCCPH update

- Water Board adopted the Cross-Connection Control Policy Handbook (CCCPH) in December 2023
- Effective date is July 1, 2024
- https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/docs/2023/cccph-adopt-2023-12-19.pdf

Cr (IV) update

- Water Board adopted hexavalent chromium Maximum Contaminant Level (MCL) of 0.010 mg/L on April 17, 2024
- OAL approved hexavalent chromium MCL on July 24, 2024
- Effective date is October 1, 2024

Questions?

Thomas Tsui

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RWU General email

ddwrecycledwater@waterboards.ca.gov

Chapter Trustee Updates
WATEREUSE LA Chapter – August 13, 2024

Last Board of Trustees Meeting: July 9, 2024

WRCA Strategic Planning

Background

- Expansion of WRCA membership, engagement initiatives, and evolving practices prompted the need to develop a new strategic plan.

Recommendation

- Hiring MatterLogic to complete the next WRCA 3-year Strategic Plan

Budget Implications

- Cost of next plan: $47,575
  - Total net assets: $1,103,484.93
  - Balance Expected: $890,493.93

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"DIREKT" Initiative

(**D**PR **I**nvestment In **R**esearch **E**nhancing **K**nowledge **T**ransfer)

- Objective: Collectively address issues included in DPR regulations and Implementation of DPR

Initiatives

- Combined IPR/DPR Systems
- Post-RO Treatment
- AWPF Optimization & Best Practices
- Non-Targeted Analysis (NTA) Methods
- Treatment Credit Validation
- Public Acceptance

Next Steps

- NWRI Scoping Workshops

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2024 WateReuse California Annual Conference

- September 15th-17th
  - Hyatt Regency – 11999 Harbor Blvd. Garden Grove, CA
- Advanced Registration Deadline: September 3rd
- Hotel Reservation Deadline: August 26th
- Over 700 leader from Water reuse industry are expected to be in attendance.

Chapter Trustee Updates
WATEREUSE LA Chapter – August 13, 2024

Last Board of Trustees Meeting: July 9, 2024

Turning the Tide Towards Water Reuse

- Celebrating 40 years of the WateReuse Symposium!
- Presentation Deadline: August 16, 2024
- Focus areas include and not limited to…
  - Policies and Regulations Advancing Water Recycling
  - Planning, Operations, Maintenance, and Management of Water Reuse systems
  - Water Reuse around the World

Chapter Trustee Updates
WATEREUSE LA Chapter – August 13, 2024

Last Board of Trustees Meeting: July 9, 2024

Strategic Planning & Summer Board of Trustees Meeting

- **Vision**: "A nation in which every community Uses water Recycling to safeguard public health and achieve environmental an economic resilience."
- **Mission:** "To empower communities and businesses to embrace water recycling as a cornerstone to safe, resilient, and sustainable water source."
- Strategic Goals and objectives divided into 3 categories
  - **1.** Advocacy,
  - **2.** Programs & Communications,
  - **3.** Membership, Sections and Operations

WATEREUSE LOS ANGELES

LA Chapter Updates

- Communications:
  Oliver Slosser
  oslosser@lvmwd.com
- Rising Professionals Committee:
  Seto Cherchian
  SCherchian@mwdh2o.com
- Technical Topics:
  Alex Franchi
  alex.franchi@aecom.com
  Dinaz Kureishy
  dinaz.kureishy@santamonica.gov
- Agricultural Committee:
  (Volunteer Opportunity)
  Seto Cherchian
  SCherchian@mwdh2o.com
- Recycled Water Users Manual:
  John Lockett
- Meeting Summaries:
  (Volunteer Opportunity)
  Thank you!
  Karina Gonzalez and Annie Chen, LA Sanitation & Environment
- Ad Hoc Urban Irrigation Manual Update Committee:
  Co-chairs: Monica Sanchez/LACSD, Erika Bensch/LACSD, Jesus Gonzalez/LADWP

WATEREUSE
LOS ANGELES

Member Agency Roundtable

WATEREUSE LOS ANGELES WATEREUSE ORANGE COUNTY

Save the Date!

Los Angeles and Orange County WateReuse Summit

Ripple Effect: Recycle, Recharge, Repeat!

October 8, 2024

11 am – 3 pm

Long Beach Aquarium of the Pacific
100 Aquarium Way
Long Beach, CA 90802

Pacific Visions Auditorium Capacity of 190 Attendees!

Featuring:

- Expert panel discussion
- Presentations by local reuse leaders
- Networking opportunities
- Complimentary parking and lunch!

WATEREUSE LOS ANGELES WATEREUSE ORANGE COUNTY

Los Angeles and Orange County WateReuse Summit

Don't Miss the Opportunity to Sponsor!

Blue Whale Sponsorship $1000

20-minute presentation on water reuse topic

Company/agency logo on event flyer, handouts, and intro slides

Limited slots remaining!
Must respond by August 23, 2024

Dolphin Sponsorship $500

Company/agency logo on event flyer, handouts, and intro slides

Contact Alex Waite (alex.waite@santamonica.gov) or LA & OC chapter board member for more information.