



**AGENDA
REGULAR WORKSHOP OF THE
BOARD OF DIRECTORS**

**WEDNESDAY, JUNE 3, 2020
10:00 A.M.**

**INLAND EMPIRE UTILITIES AGENCY*
Telecon: (415) 856-9169/Conference ID: 917 978 929#**

PURSUANT TO THE PROVISIONS OF EXECUTIVE ORDER N-25-20 ISSUED BY GOVERNOR GAVIN NEWSOM ON MARCH 12, 2020, AND EXECUTIVE ORDER N-29-20 ISSUED BY GOVERNOR GAVIN NEWSOM ON MARCH 17, 2020 ANY BOARD MEMBER MAY CALL INTO THE BOARD MEETING WITHOUT OTHERWISE COMPLYING WITH ALL BROWN ACT'S TELECONFERENCE REQUIREMENTS.

TELECONFERENCE ACCESSIBILITY FOR THE GENERAL PUBLIC:

In all efforts to prevent the spread of COVID-19, until further notice, the Inland Empire Utilities Agency will be holding all Board and Committee meetings by teleconferencing.

The meeting will be accessible at: (415) 856-9169 / Conf Code: 917 978 929#

This meeting is being conducted virtually by video and audio conferencing. There will be no public location available to attend the meeting; however, the public may participate and provide public comment during the meeting by calling into the number provided above. The public may also view the meeting live through the Agency's website. Alternatively, you may email your public comments to the Board Secretary/Office Manager April Woodruff at awoodruff@ieua.org no later than 24 hours prior to the scheduled meeting time. Your comments will then be read into the record during the meeting.

CALL TO ORDER OF THE INLAND EMPIRE UTILITIES AGENCY BOARD OF DIRECTORS MEETING

FLAG SALUTE

PUBLIC COMMENT

Members of the public may address the Board on any item that is within the jurisdiction of the Board; however, no action may be taken on any item not appearing on the agenda unless the action is otherwise authorized by Subdivision (b) of Section 54954.2 of the Government Code. Those persons wishing to address the Board on any matter, whether or not it appears on the agenda, are requested to email the Board Secretary no later than 24 hours prior to the scheduled meeting time or address the Board during the public comments section of the meeting. Comments will be limited to three minutes per speaker. Thank you.

ADDITIONS TO THE AGENDA

In accordance with Section 54954.2 of the Government Code (Brown Act), additions to the agenda require two-thirds vote of the legislative body, or, if less than two-thirds of the members are present, a unanimous vote of those members present, that there is a need to take immediate action and that the need for action came to the attention of the local agency subsequent to the agenda being posted.

1. WORKSHOP

A. REGULATORY CHALLENGES AND POTENTIAL SOLUTIONS

- **RECYCLED WATER REGULATORY CHALLENGES**
- **PFAS MONITORING IN CHINO BASIN**
- **OPTIMUM BASIN MANAGEMENT PROGRAM**

2. GENERAL MANAGER'S COMMENTS

3. BOARD OF DIRECTORS' REQUESTED FUTURE AGENDA ITEMS

4. DIRECTORS' COMMENTS

5. CLOSED SESSION

A. PURSUANT TO GOVERNMENT CODE SECTION 54956.9(d)(2)(e)1 CONFERENCE WITH LEGAL COUNSEL - ANTICIPATED LITIGATION

One Case

B. PURSUANT TO GOVERNMENT CODE SECTION 54957(b)(1) – PUBLIC EMPLOYMENT

1. Board Secretary/Office Manager

6. ADJOURN

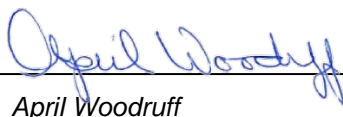
*A Municipal Water District

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Board Secretary (909) 993-1736, 48 hours prior to the scheduled meeting so that the Agency can make reasonable arrangements.

Declaration of Posting

Proofed by: shl

I, April Woodruff, Board Secretary/Office Manager of the Inland Empire Utilities Agency*, A Municipal Water District, hereby certify that a copy of this agenda has been posted by 5:30 p.m. at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA on Thursday, May 28, 2020.


April Woodruff

**WORKSHOP
ITEM**

1A

Recycled Water Regulatory Challenges



Stakeholder Engagement

- Over 20 workshops related to Salinity in Recycled Water since 2014 with IEUA member agencies
- Technical Committee Engagement
 - Technical Memorandum on Regulatory Challenges: April 21, 2020
 - Special Technical Committee Workshop: April 29, 2020
 - Comments due: May 18, 2020
 - No comments received to date

Regulatory Challenges | IEUA Permit Limits

Take Away

Need Advanced Water
Purification Facility (AWPF)
for NPDES TDS Permit &
Recharge compliance by
2030



NPDES TDS Permit: Recycled Water 550 mg/L,
12-month average



TDS trends, RW NPDES
permit limit will exceed by
2030, earlier w. drought

During 2014 drought,
the Recycled Water
TDS reached 535 mg/l
in 18 months



Recycled water for recharge
has regulations that mirror
drinking water quality limits

Recycled water
currently exceeds the
MCL/NL for 1,2,3-TCP
and PFOA

Regulatory Challenges | Permit Modification

Take Away

1. AWPf can be delayed if Permit modified by 2022
2. May violate permit & Max Benefit requirements prior to 2022
3. System online 2022-2030 to minimize risks & meet recharge regulations



2016: requested Regional Water Quality Control Board (RWQCB) modify TDS NPDES permit from 12-months to 10 years.



RWQCB: 10-year averaging not feasible; 3 to 5-year modification if supported by modeling.



IF RWQCB is amenable to NPDES Permit Modification, could result in changes to Max Benefit commitments in Basin Plan

Compliance Risk & Recommendations



Recycled water NPDES TDS permit limit projected to be exceeded by 2030



Drought and climate change may expedite TDS exceedance



Recycled water recharge regulatory MCL exceeded for 1,2,3-TCP and NL for PFAS



Ambient TDS water quality increasing trends demonstrates reduced assimilative capacity

Recommendations

Continue pursuit of permit modification

Purchase supplemental low TDS water

AWPF online by 2030

Develop local water supplies

Master Plans Schedule of Implementation

RW Regulatory Challenge Solutions	IRP 2015	RW Program Strategy 2015	Ten Year Forecast 2020	Chino Basin Program 2020
Advanced Water Purification Facility	✓ 2030+	✓ 2030+	✓ 2034	✓ 2026
Injection Wells for GWR	✓ 2030+			✓ 2026
Acquiring Additional Supplies	✓ 2015+	✓ 2015+		✓ 2026
Regional Water Pipeline	✓ 2020+			✓ 2026
Increase reliance on Imported Water	Conflicts with Objective of Reducing Reliance on Imported Water			

Take Away

AWPF is needed by 2030

- NPDES RW TDS limit
- GWR Regulations
- Wastewater Discharge limit

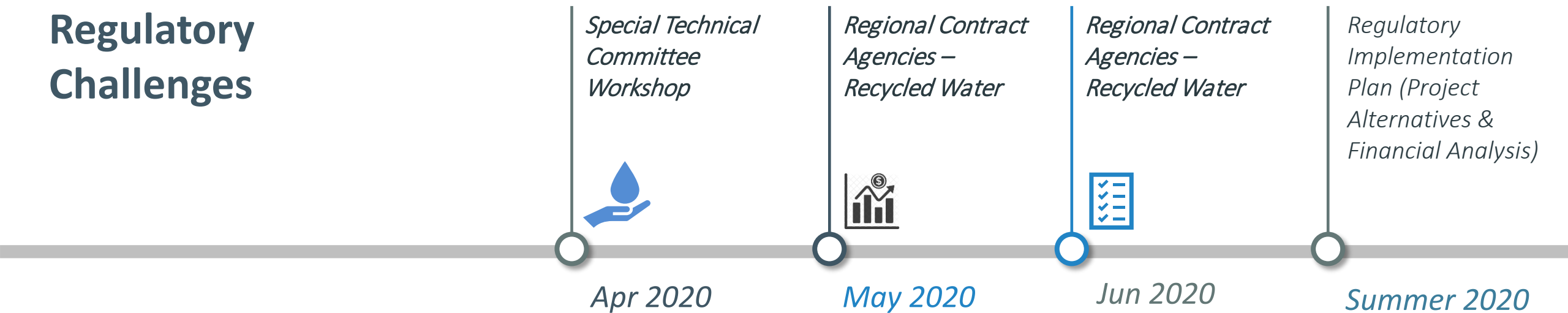
Discussion | Items under consideration

1. What are the best solutions to address challenges and mitigate risks?
 - a. Permit modification to increase the averaging period for TDS in NPDES Permit | Amend Basin Plan
 - b. Construction of Satellite Treatment Systems for GWR RW
 - c. Construction of Advanced Water Purification System
 - d. Buy additional imported water from MWD (IEUA Tier 1 allocation of 90 TAFY) to reduce source water TDS
 - e. Other?

2. Advanced Water Purification Facility addresses NPDES Permit & GWR Regulations, but...
 - a. When should it be online?
 - b. What capacity is needed?
 - c. Can it be phased?

Working Schedule

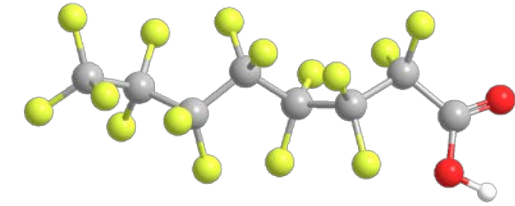
Regulatory Challenges



Per- and Polyfluoroalkyl Substances (PFAS) Monitoring in Chino Basin

IEUA Board Meeting
June 3, 2020

PFAS Compounds



- ▶ **Large group of synthetic chemicals (water and lipid resistance).**
 - Extensively used in consumer products such as: carpets, clothing, furniture, food packaging, cookware, and other waterproof, stain-resistant or non-stick products.
 - Fire-fighter foams (AFFF)
- ▶ **Exposure: food packaging, house dust, and drinking water.**
 - Soluble, extremely stable, resistant to biodegradation, and absorb to soil, bedrock, and particulates.
- ▶ **Health Effects:** Studies show exposure to PFAS related to many health effects, including increased risks for cancers, and effects to the immune system.

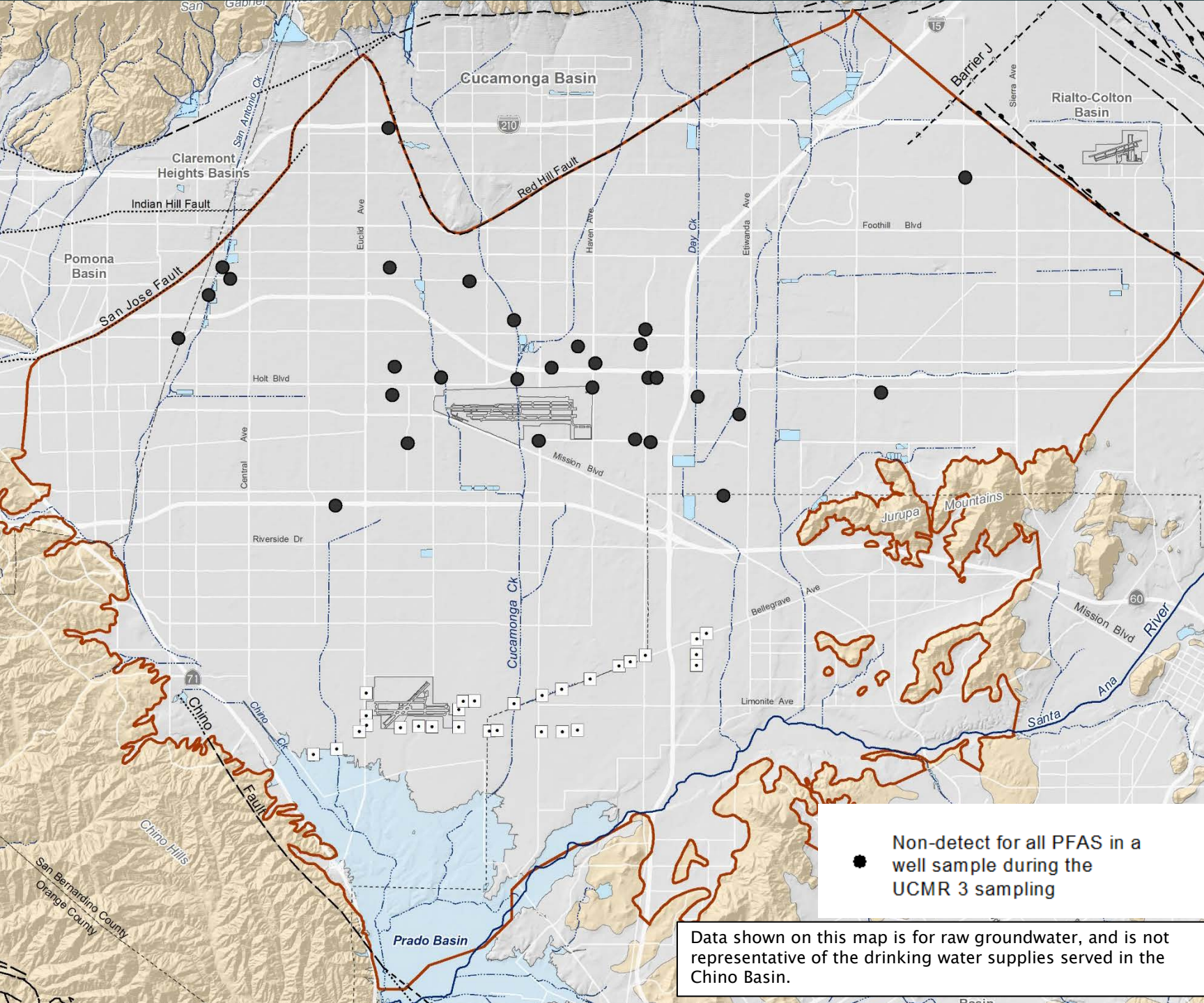
State Water Resources Control Board Division of Drinking Water (DDW)

Drinking Water Health-Based Advisory Levels for **PFOA** and **PFOS**

- ▶ **CA Notification Levels (July 2019)**
 - **PFOA = 5.1 ngl PFOS = 6.5 ngl**
 - Level DDW recommends that the utility inform its customers and consumers about the presence of the chemical, and about health concerns associated with exposure to it.
- ▶ **CA Response Levels (February 2020)**
 - **PFOA = 10 ngl PFOS = 40 ngl**
 - Recommended level that water systems consider taking a water source out of service or provide treatment if that option is available to them.
- ▶ **State Assembly Bill 756 – Effective January 2020 – provides for new requirements for actions and reporting for PFAS**

Historical Monitoring UCMR 3 (2013–2015)

- ▶ 6 PFAS compounds
- ▶ 30 Wells: ND for PFOA, PFOS, & 4 other PFAS
- ▶ High DLRS:
 - PFOA = 20 ngl
 - PFOS = 40 ngl



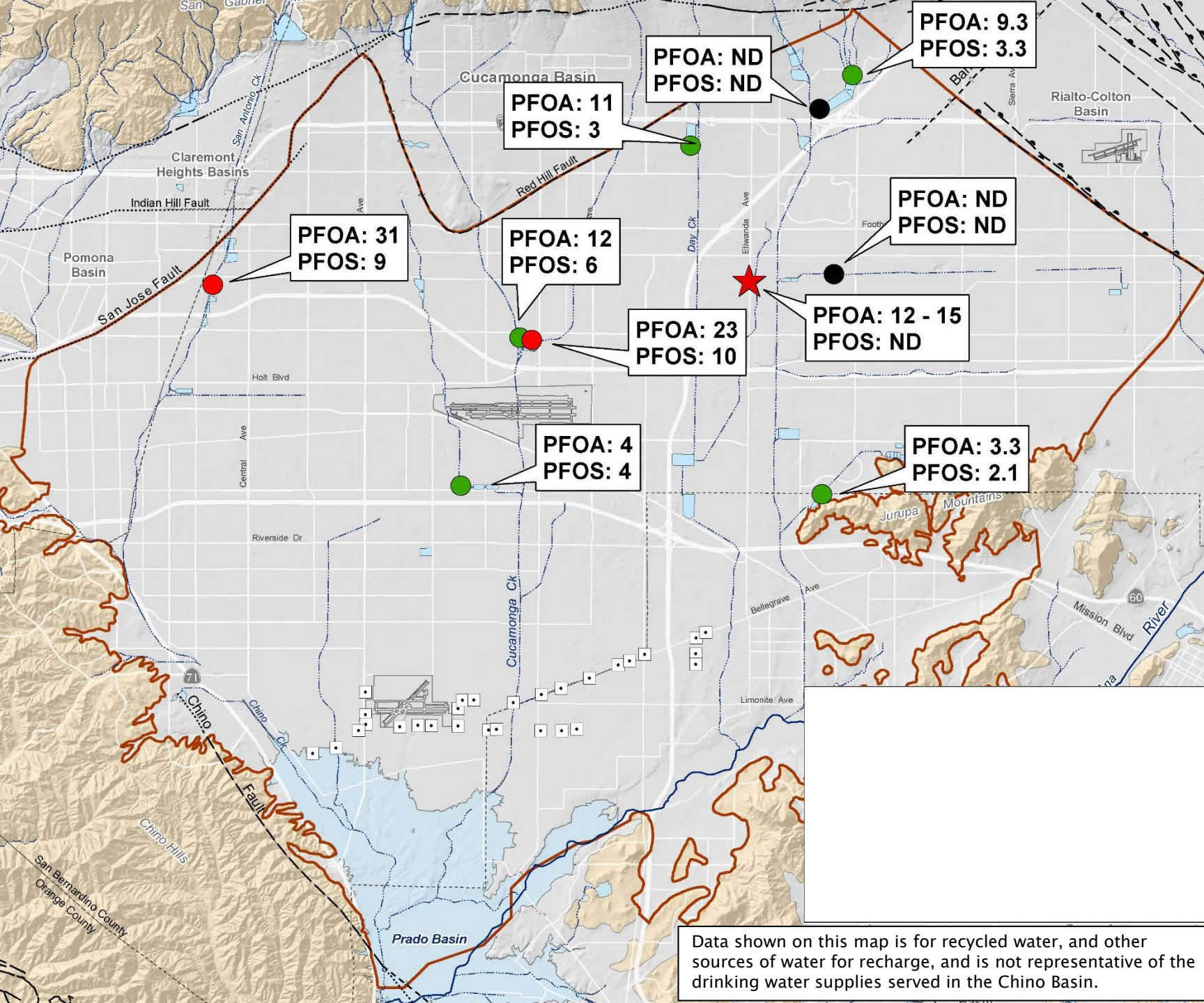
Historical Monitoring PFOA/PFOS Recycled Water Recharge Monitoring – 2018

Monitoring of recycled water recharge and blending sources for recharge

10 sources sampled.

Based on old NLs of 14 ngl (PFOS) and 13 ngl (PFOA):

- 3 – PFOA **above** NL (15–31 ngl)
- 5 – PFOA/PFOS **below** NL (3–12 ngl)
- 2 – PFOA/PFOS non-detect



Monitoring for PFAS in 2019

State Board Monitoring Orders

- April 2019 – Phase 1
- Wells within 2 miles airports and 1 mile landfill; impacted sources UCMR 3
- 4 Watermaster parties (17 wells)
- Quarterly samples

Voluntary Monitoring

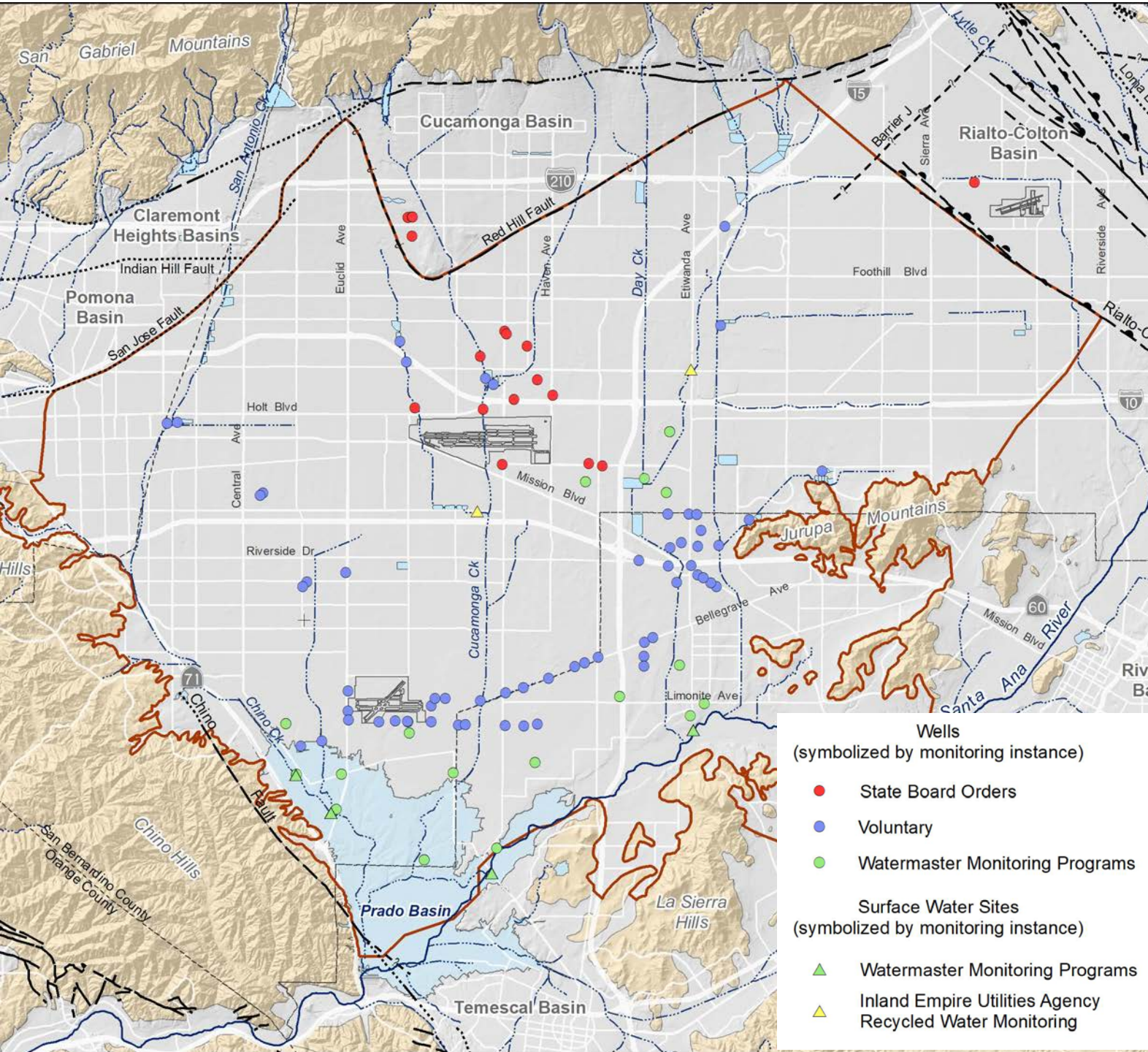
- 4 Watermaster parties (59 wells)

Watermaster Monitoring

- 39 wells (18 locations)
- 4 surface water sites

IEUA Recycled Water Monitoring

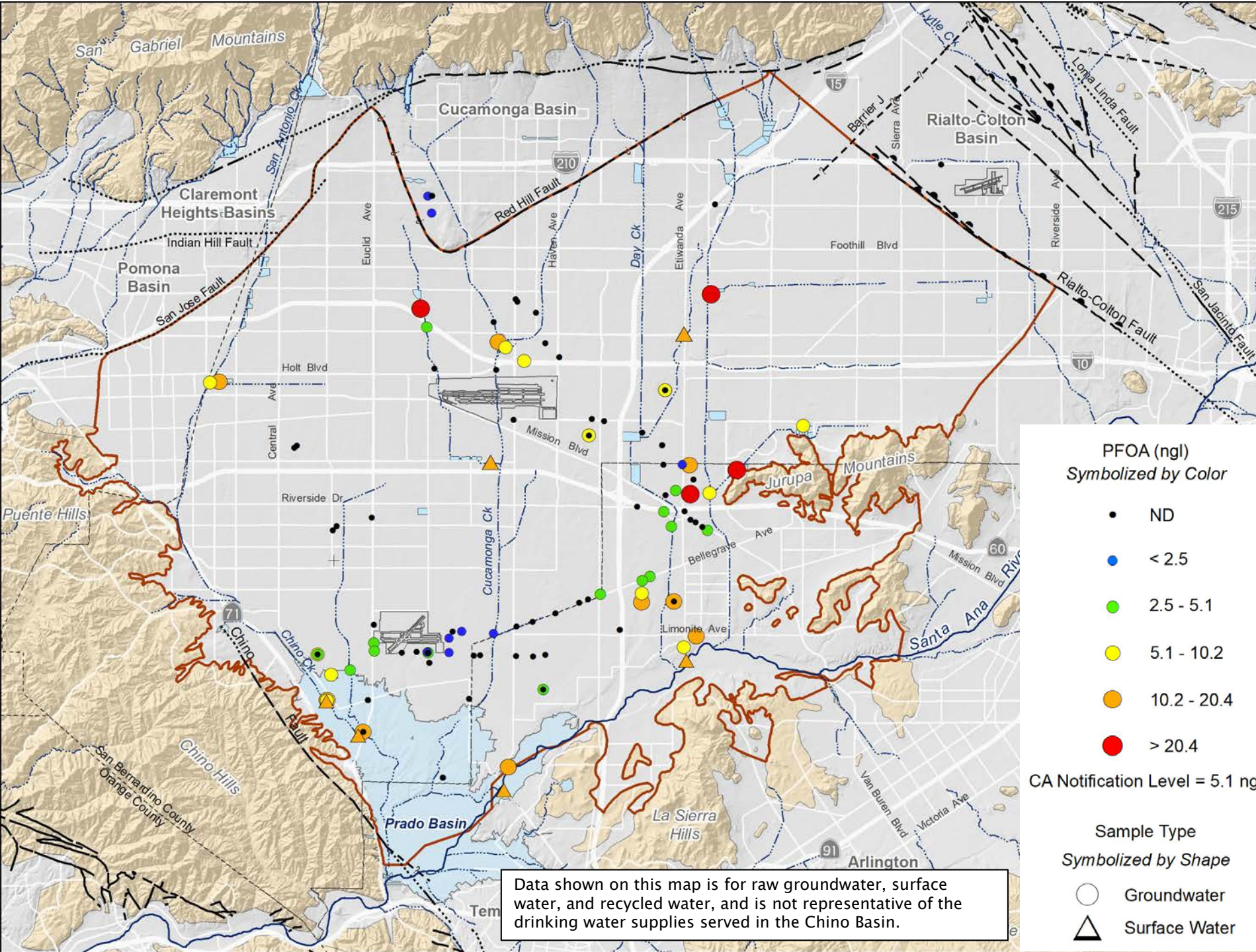
- 2 locations – recharge sources



EPA Method 537.1 – 18 PFAS Compounds

Analyte (Chain length)	Acronym	CASRN	DL ng/L	LCMRL ng/L
Hexafluoropropylene oxide dimer acid	HFPO-DA	13252-13-6	1.9	4.3
N-ethyl perfluoroactanesulfonamido-acetic acid	NEtFOSAA	2991-50-6	2.8	4.8
N-methyl perfluorooctanesulfonamidoacetic acid	NMeFOSAA	2355-31-9	2.4	4.3
Perfluorobutanesulfonic acid (C4)	PFBS	375-73-5	1.8	6.3
Perfluorodecanoic acid (C10)	PFDA	335-76-2	1.6	3.3
Perfluorododecanoic acid (C12)	PFDoA	307-55-1	1.2	1.3
Perfluoroheptanoic acid (C7)	PFHpA	375-85-9	0.71	0.63
Perfluorohexanesulfonic acid (C6)	PFHxS	355-46-4	1.4	2.4
Perfluorohexanoic acid (C6)	PFHxA	307-24-4	1.0	1.7
Perfluorononanoic acid (C9)	PFNA	375-95-1	0.70	0.83
Perfluorooctanesulfonic acid (C8)	PFOS	1763-23-1	1.1	2.7
Perfluorooctanoic acid (C8)	PFOA	335-67-1	0.53	0.82
Perfluorotetradecanoic acid (C14)	PFTA	376-06-7	1.1	1.2
Perfluorotridecanoic acid (C13)	PFTTrDA	72629-94-8	0.72	0.53
Perfluoroundecanoic acid (C11)	PFUnA	2058-94-8	1.6	5.2
11-chloroeicosafluoro-3-oxaundecane-1-sulfonic acid	11Cl-PF3OUdS	763051-92-9	1.5	1.5
9-chlorohexadecafluoro-3-oxanone-1-sulfonic acid	9Cl-PF3ONS	756426-58-1	1.4	1.8
4,8-dioxa-3H-perfluorononanoic acid	ADONA	919005-14-4	0.88	0.55

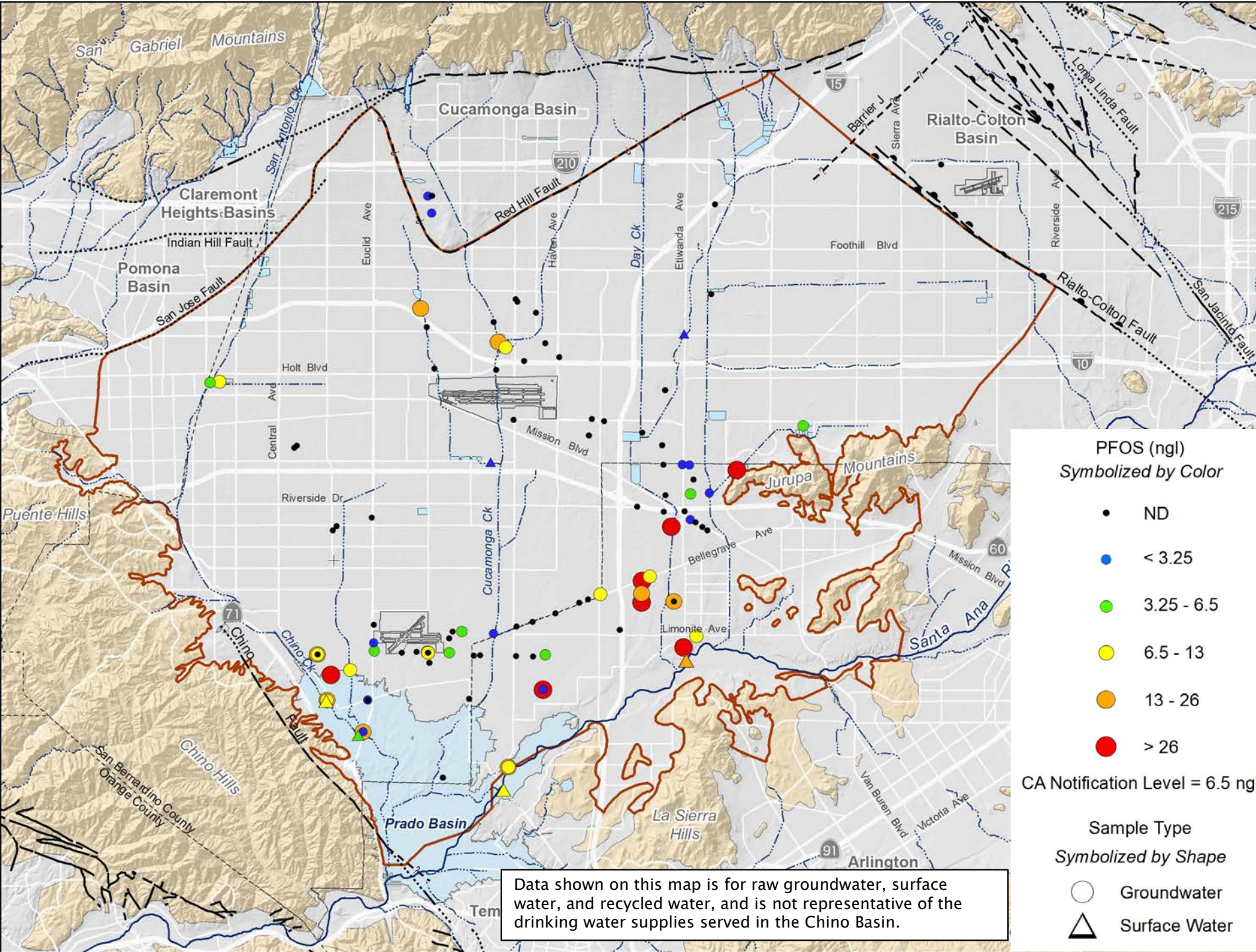
2019 – PFOA Concentrations compared to NL



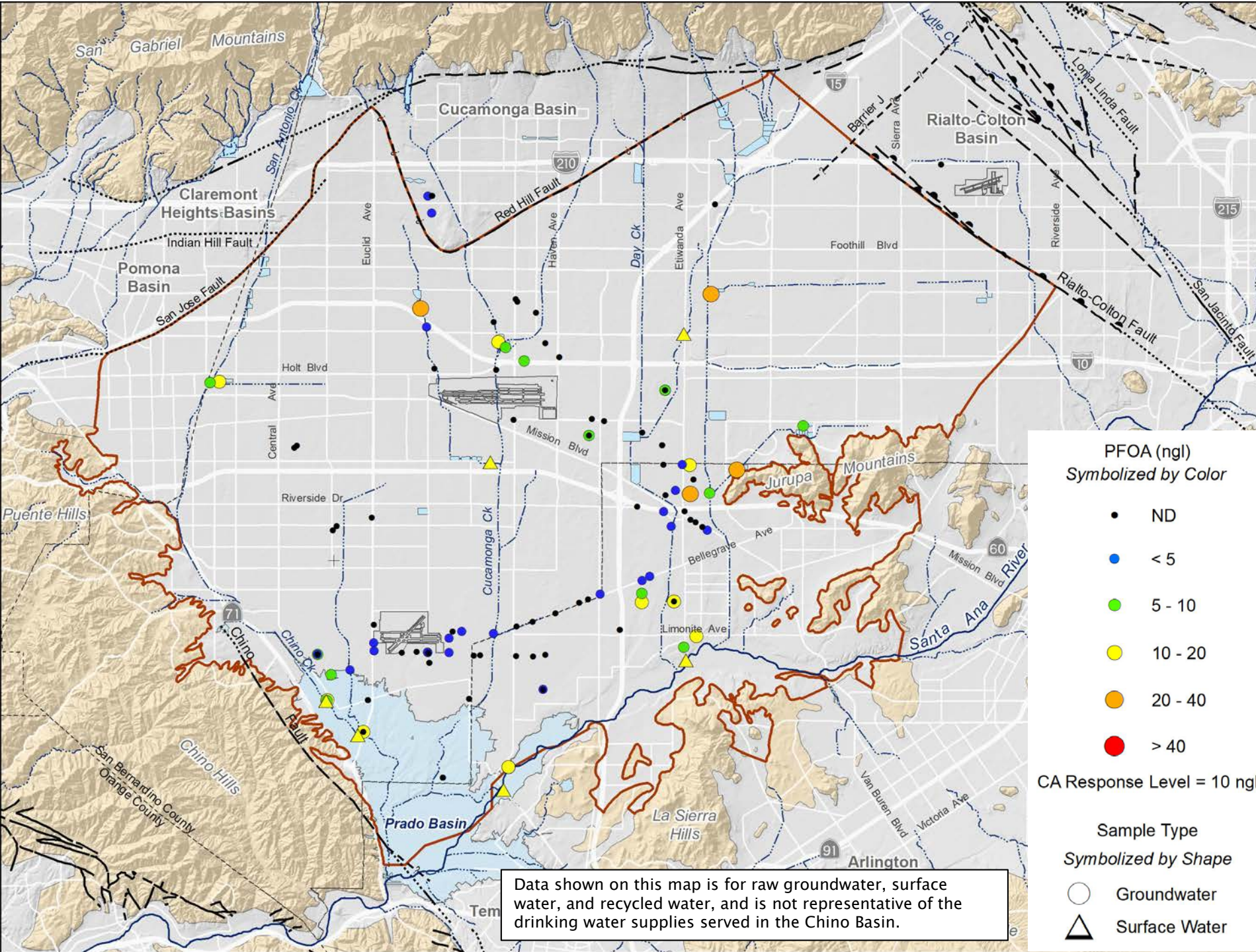
- 29 out of 115 wells sampled exceed NL
- 4 out of 4 surface water sites sampled exceed NL
- 2 out of 2 recycled water sample locations exceed NL

2019 – PFOS Concentrations compared to NL

- 27 out of 115 wells sampled exceed NL
- 3 out of 4 surface water sites sampled exceed NL
- 0 out of 2 recycled water sample locations exceed NL

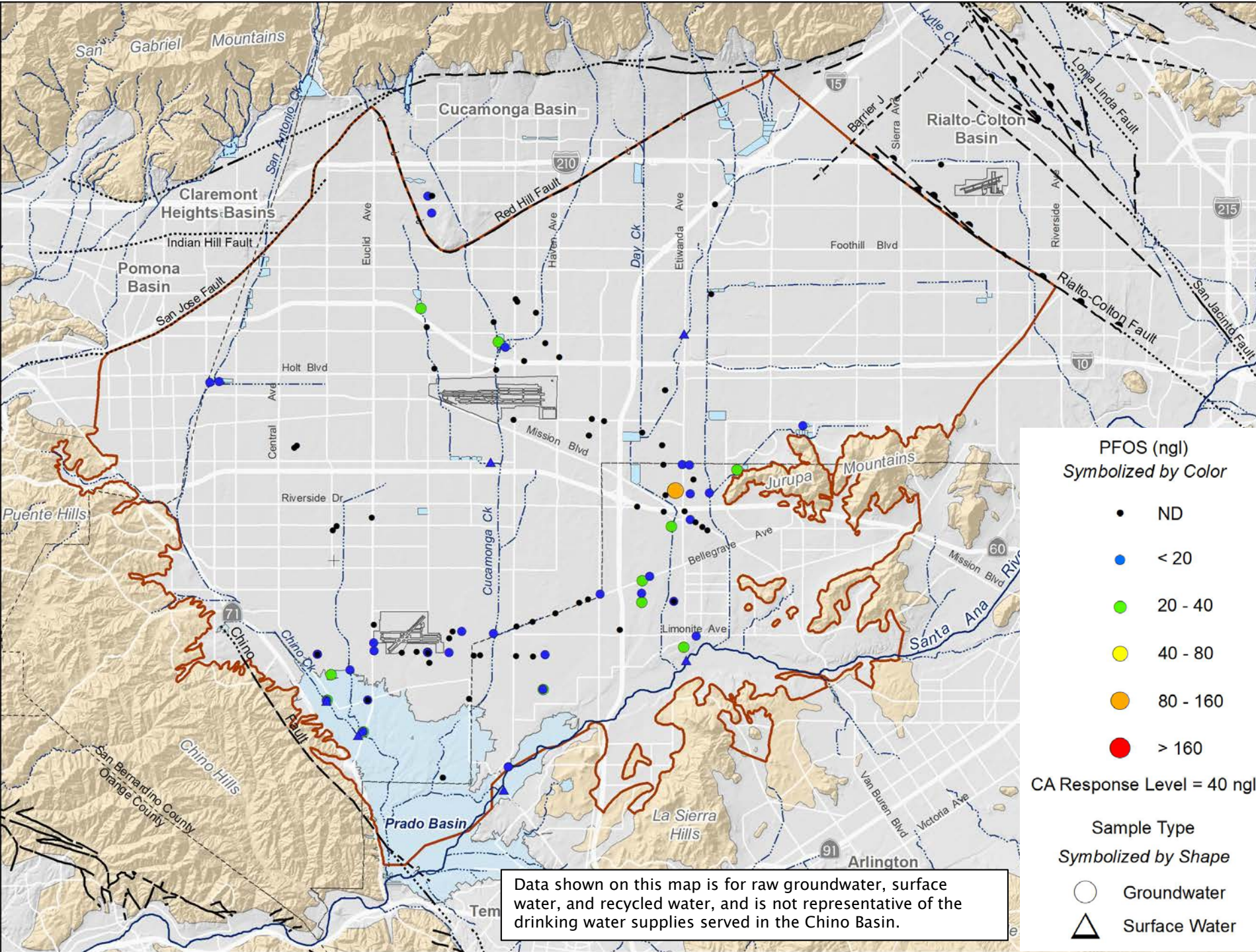


2019 – PFOA Concentrations Compared to RL



- 15 out of 115 wells sampled exceed RL
- 4 out of 4 surface water sites sampled exceed RL
- 2 out of 2 recycled water sample locations exceed RL

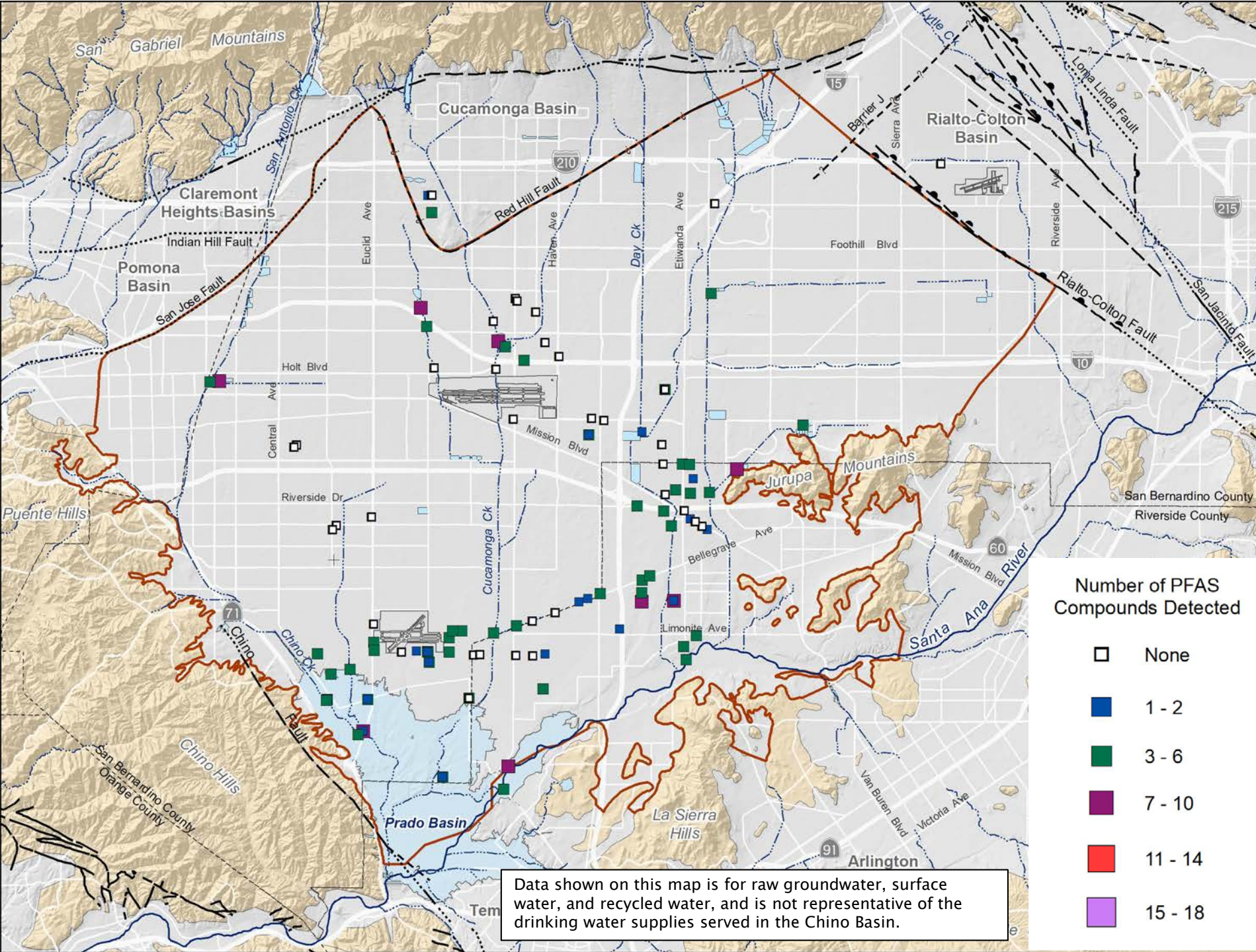
2019– PFOS Concentrations Compared to RL



- 1 out of 115 wells sampled exceed RL
- 0 out of 4 surface water sites sampled exceed RL
- 0 out of 2 recycled water sample locations exceed RL

Number of PFAS Compounds Detected out of 18 Analyzed

- 38 wells with no detected PFAS
- 20 wells/sites with 1–2 PFAS detected
- 52 wells/sites with 3–6 PFAS detected
- 9 wells/sites with 7–10 PFAS detected
- 0 wells with >10 PFAS detected



Summary Table of PFAS Detected in Chino Basin Area

Compound	Number of Detects (out of 115 wells)	% Detect (out of 115 wells)
Perfluorohexanesulfonic acid (PFHxS)	56	49%
(Perfluorobutanesulfonic acid) (PFBS)	49	43%
Perfluorooctanoic acid (PFOA)	49	43%
Perfluorohexanoic acid (PFHxA)	49	43%
Perfluorooctanesulfonic acid (PFOS)	45	39%
Perfluoroheptanoic acid (PFHpA)	27	23%
Perfluoroundecanoic acid (PFUnA)	17	15%
Perfluorononanoic acid (PFNA)	13	11%
Perfluorodecanoic acid (PFDA)	6	5%
Perfluorododecanoic acid (PFDoA)	2	2%
11-chloroeicosafluoro-3-oxaundecane sulfonic acid (11CL-PF3OUds)	1	1%
4,8-dioxa-3H-perfluorononanoic acid (ADONA)	1	1%
Perfluorotridecanoic acid (PFTrDA)	1	1%
Perfluorotetradecanoic acid (PFTA)	0	0%
9-chlorohexadecafluoro-3-oxanone-sulfonic acid (9Cl-PF3ONS)	0	0%
N-methyl perfluorooctanesulfonamidoacetic acid (NEtFOSAA)	0	0%
Hexafluoropropylene oxide dimer acid (HFPO-DA)	0	0%
N-ethyl Perfluorooctanesulfonamido-acetic acid (NMeFOSAA)	0	0%

*Data shown is for raw groundwater and is not representative of the drinking water supplies served in the Chino Basin.

Future for PFAS:

DDW Required Monitoring in Chino Basin:

- ▶ Phase I Monitoring Order for the Ontario International Airport – Sampling in 2020.
- ▶ Phase II/III Monitoring Orders – Chrome Plating Facilities (five in Chino Basin), WWTPS, refineries, and bulk terminals.
- ▶ Additional groundwater monitoring for water systems – ordered under new CA law Assembly Bill 756.

CA Drinking Water Regulations:

- ▶ DDW has requested that OEHHA develop Public Health Goals (PHGs) for PFOA/PFOS – next steps towards MCL.
- ▶ DDW has requested the OEHHA's recommendation in developing NL for 7 additional PFAS compounds:
 - perfluorohexane sulfonic acid (PFHxS)
 - perfluorobutane sulfonic acid (PFBS)
 - perfluorohexanoic acid (PFHxA)
 - perfluoroheptanoic acid (PFHpA)
 - perfluorononanoic acid (PFNA)
 - perfluorodecanoic acid (PFDA)
 - 4,8-dioxia-3H-perflouorononanoic acid (ADONA)

IEUA Update on PFAS

Next Steps

- ▶ Continue recycled water monitoring
- ▶ Voluntary monitoring
- ▶ Purchase laboratory instrumentation
- ▶ Engagement with regulators
- ▶ Collaboration with other Agencies and Associations
- ▶ Tracking potential impact to
 - Recycled water
 - Groundwater recharge
 - Biosolids

Optimum Basin Management Program

20 YEARS OF INVESTING IN SUCCESS

JUNE 2020





Why was the OBMP created?

Paragraph 41 of the Judgment provides that “Watermaster, with advice of the Advisory and Pool Committees, is granted discretionary powers in order to develop an optimum basin management program for Chino Basin, including both water quantity and quality considerations.”

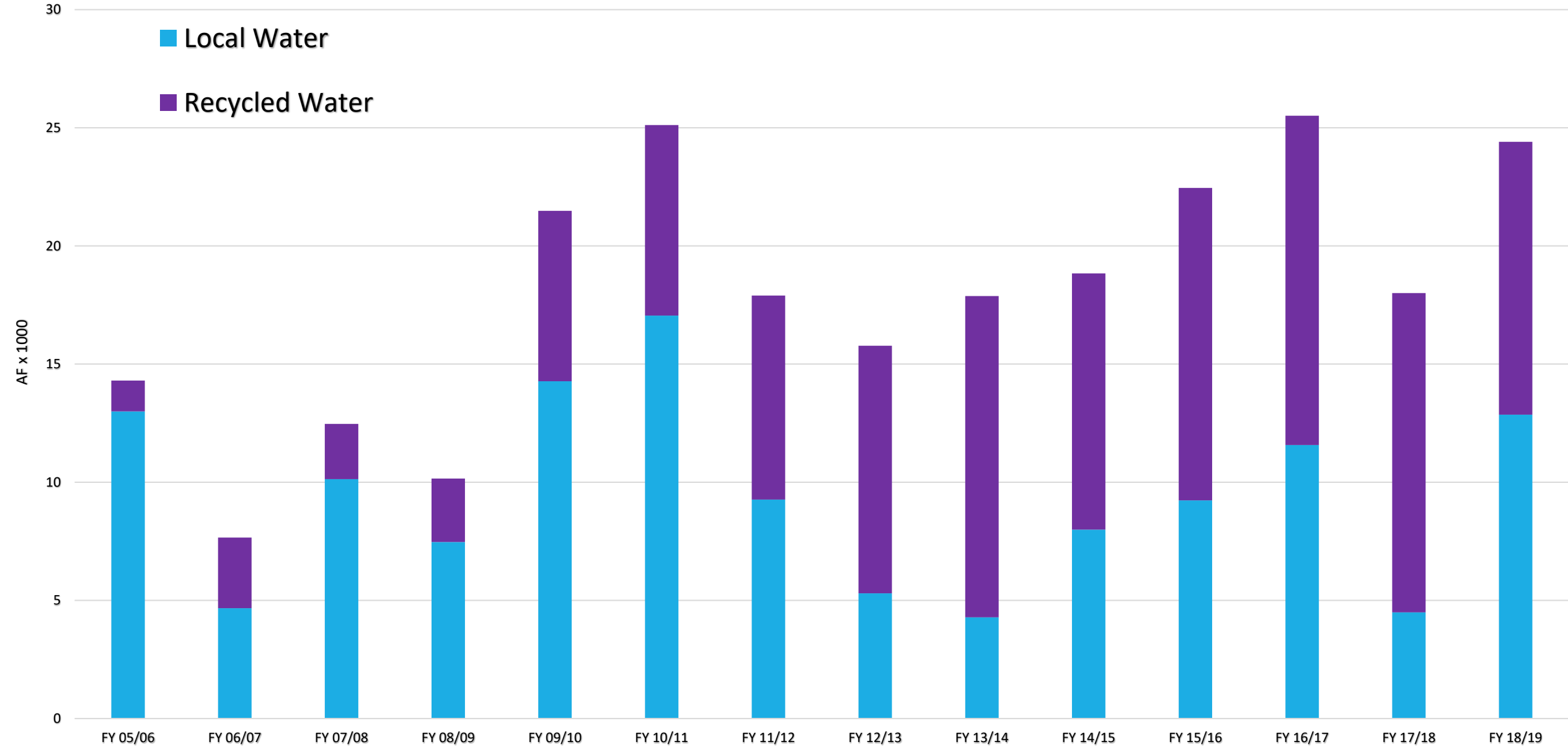
Confronted with the then-existing challenges and opportunities facing the Basin, Judge Gunn ordered Watermaster to complete an OBMP by June 30, 2000.



OBMP Implementation

- OBMP Implementation Status:
 - Recharge
 - Land Subsidence Management
 - Maximum Benefit
 - Desalters
- Investment and Benefits

Non- Replenishment Water Recharge



2013 Recharge Master Plan Update (RMPU) – Projects/Goal



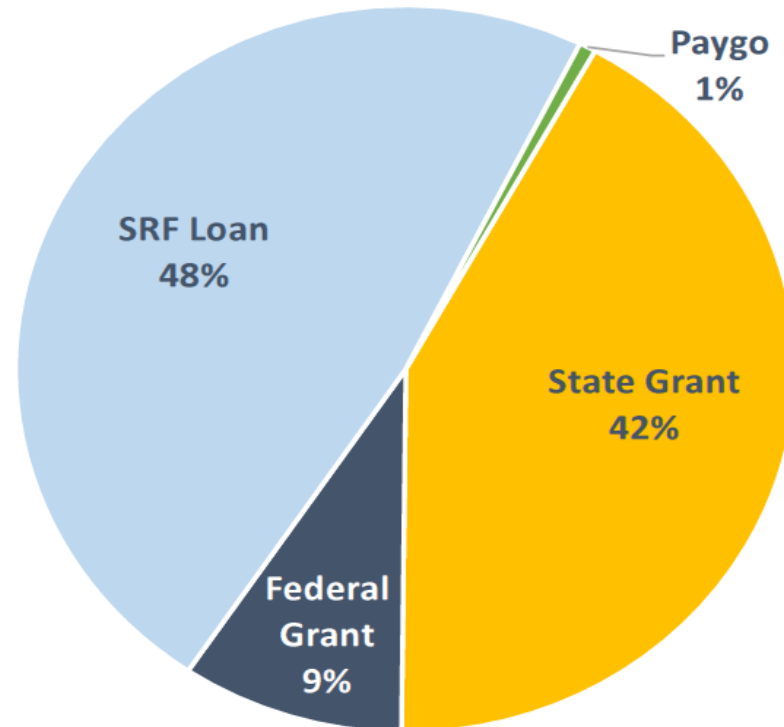
Source: IEUA (2019)



Recharge Master Plan Update Projects Funding Update

Project	Benefit (AFY)	Supplemental Funding Received (\$millions)				Percent of Project Costs Funded through Grants/Loans
		State Grant	Federal Grant	SRF Loan*	Total Project Costs	
San Sevaïne Basin	2,142	\$3.3	\$0.4	\$2.8	\$6.5	100
Lower Day Basin	789	\$0.8	\$0.4	\$2.9	\$4.1	100
RP-3 Basin	3,042	\$0.7	\$0.3	\$0.4	\$1.4	100
Wineville & Jurupa Basins	2,796	\$7.5	\$0.8	\$6.7	\$15.0	100
Montclair Basin	96	-	\$0.6	\$1.2	\$1.8	100
Victoria Basin	195	-	-	-	\$0.2	0
TOTAL	9,060	\$12.3	\$2.7	\$14.0	\$29.0	

*Approximate interest savings from utilizing SRF loans, as compared to selling bonds, is \$6.0 million over 30 years.



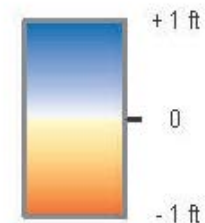
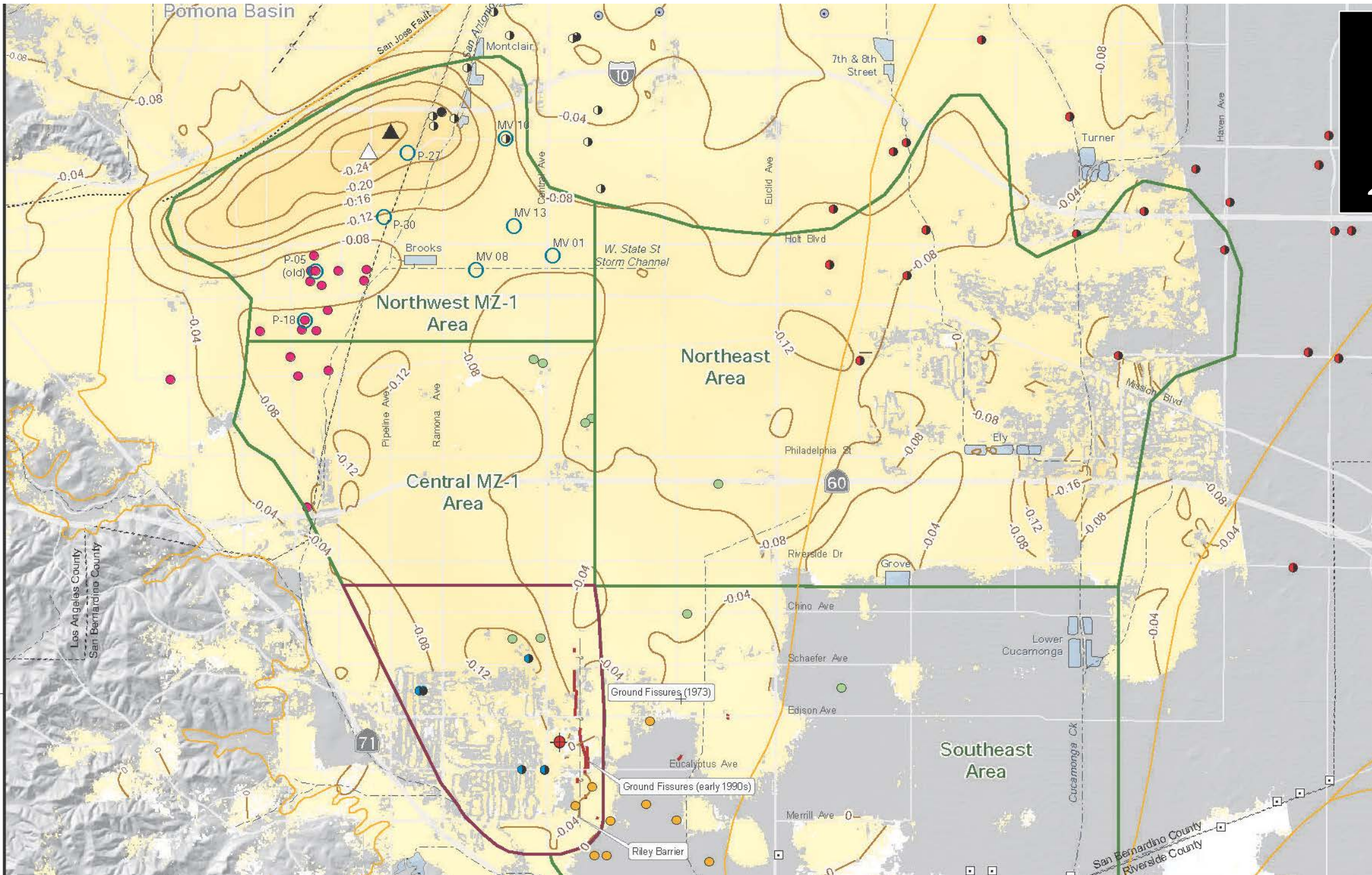


Land subsidence management

Land subsidence and ground fissuring occurred in the City of Chino in the early 1990s

- Subsidence management plans were adopted in 2007; updated in 2015
 - Subsidence rate in the “MZ-1 Managed Area” has been slowed down and practically arrested
 - The monitoring program has revealed other areas of residual land subsidence
 - Northwest MZ-1
 - Northeast Area (central MZ-2)

Vertical Ground Motion 2011-2016





Maximum Benefit

Salt Nutrient Management Plan update

- During the period 1998 through 2002, the Regional Board and watershed stakeholders were completing an update to the salt and nutrient management plan in the Basin Plan
 - Proposed new groundwater management areas designated as “groundwater management zones”
 - Antidegradation TDS and nitrate objectives were established based on 1973 conditions
 - Resulted in a finding of no assimilative capacity for TDS and nitrate in the Chino Basin

Optimum Basin Management Program

Chino Basin Watermaster

Proposed Water Quality Objectives by Management Zone

262 TDS (mg/L)
3.5 Nitrate as Nitrogen (mg/L)



Chino Groundwater Basin
and Management Zones

Other Map Features

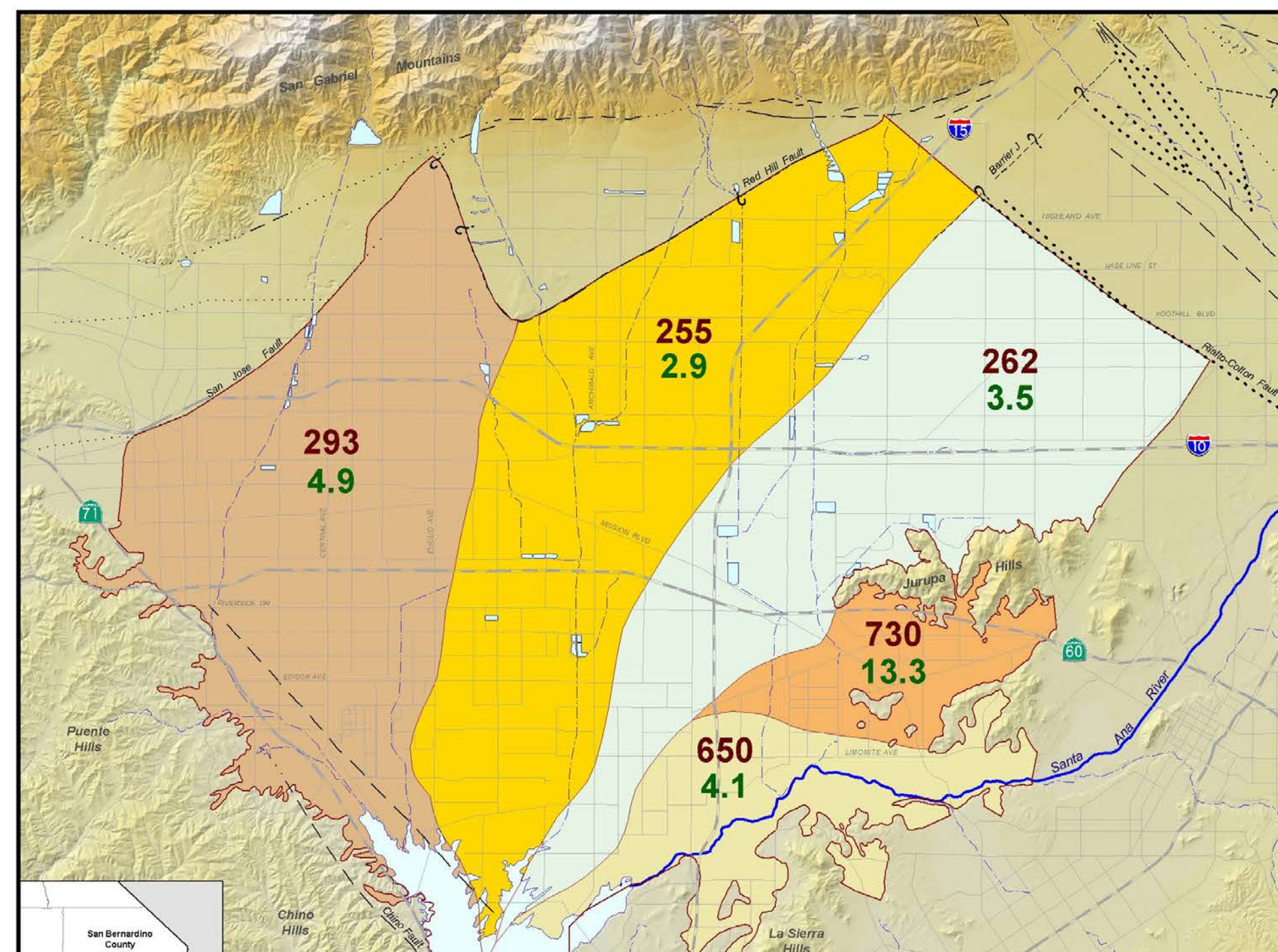
Flood Control and Conservation Basins

Fault

Solid where known; Dashed where approximate;
Dotted where concealed; queried where uncertain;
Large dots where probable and barrier to groundwater flow

Figure 1

Proposed Water Quality Objectives
Based on Historical Ambient Water Quality
for Chino Basin Management Zones





Maximum Benefit Salt Nutrient Management Plan update

- Under the traditional Regional Board approach, the Regional Board:
 - Would require mitigation for imported water recharge if TDS of imported water exceeded the objective
 - Would require mitigation for recycled water reuse
 - Mitigation of these salt loads would be required on one-for-one basis in each groundwater management zone



Maximum Benefit

Salt Nutrient Management Plan update

- Watermaster/IEUA proposed a new water quality paradigm called “maximum benefit” based on SWRCB resolution 68-18 and Water Code 13241
- New paradigm required the Chino Basin parties to commit to the recharge and groundwater desalting plans in the OBMP and attainment of hydraulic control

Optimum Basin Management Program

Chino Basin Watermaster

Proposed Water Quality Objectives by Management Zone

262 TDS (mg/L)
3.5 Nitrate as Nitrogen (mg/L)



Chino Groundwater Basin
and Management Zones

Other Map Features

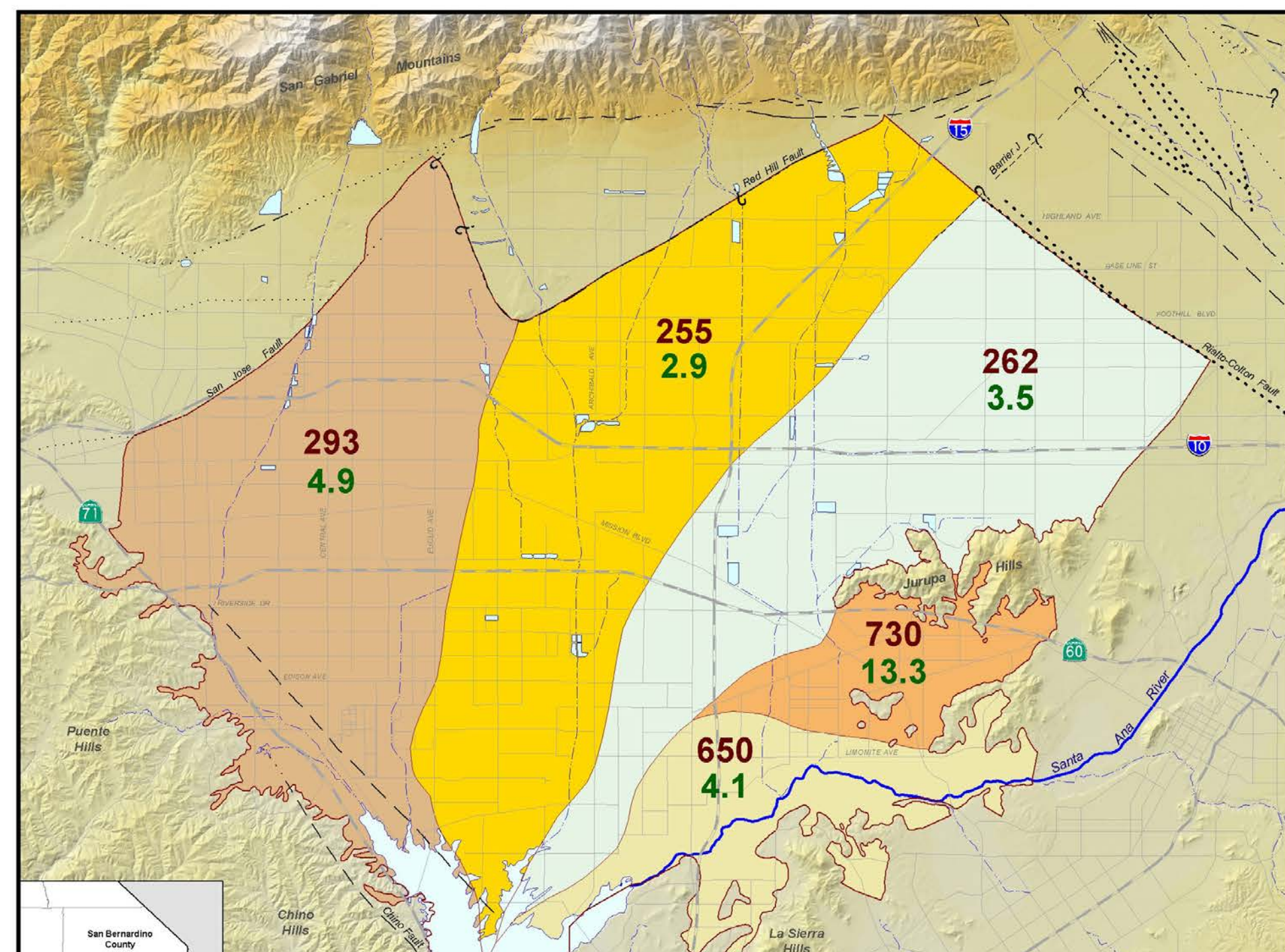
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Figure 1

Proposed Water Quality Objectives
Based on Historical Ambient Water Quality
for Chino Basin Management Zones



Proposed Water Quality Objectives
by Management Zone

680 TDS (mg/L)

4.2 Nitrate as N (mg/L)

Chino Basin and
Management Zones



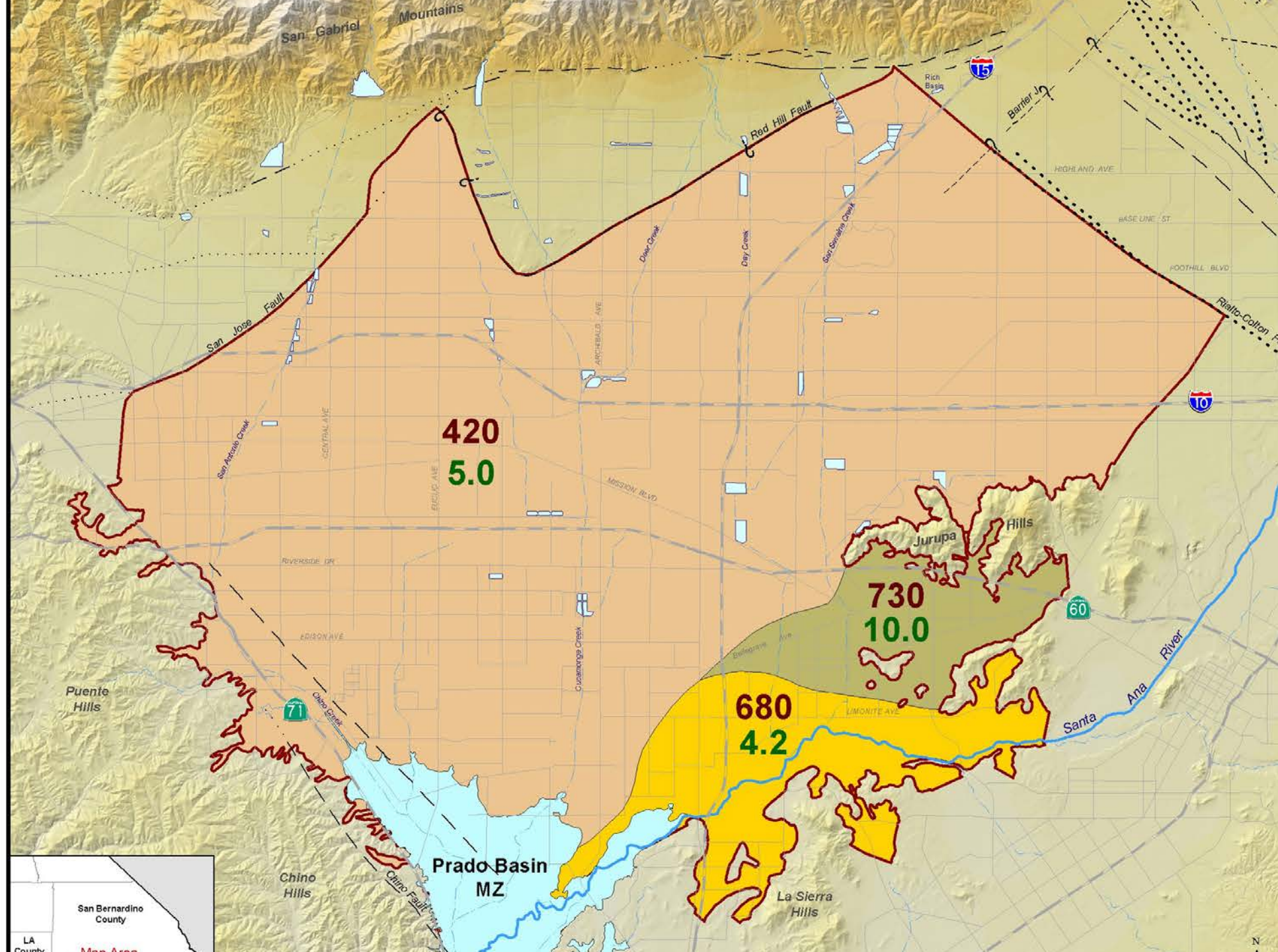
Other Map Features

Flood Control and Conservation Basins

Fault
Solid where known; Dashed where approximate;
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Large dots where probable and barrier to groundwater flow

Figure 2

Proposed Water Quality Objectives
Based on Maximum Beneficial Use of Water
for Chino Basin Management Zones





Maximum Benefit update

Because of new maximum benefit-based TDS objectives, the following occurred since 2004 without the cost of TDS removal:

- Direct recycled water reuse = 230,000 af
- Recharge of recycled water = 109,000 af
- Recharge of imported water = 168,000 af
- Total 507,000 af



Groundwater desalters

The groundwater desalting program was designed to protect and enhance safe yield, enhance water supplies in impaired areas and to comply with the Salt and Nutrient Management Plan for the Chino Basin:

- By replacing declining agricultural groundwater pumping in the southern part of the basin with new groundwater pumping
- To meet increasing municipal water demands in the same area

The desalter wells were constructed in strategic locations to:

- Minimize groundwater outflow to the Santa Ana River
- Maintain the Santa Ana River recharge into the basin
- Minimize future TDS and nitrogen regulatory liabilities in the Chino Basin and the Santa Ana River

Annual CDA Pumping (af)

Peace 2 Expansion
Objective

Since 2007, Chino desalter
pumping has contributed about
15,000 afy to net recharge

1999 2000 2001 2002 2003 2004 2005 2006 2007 2008 2009 2010 2011 2012 2013 2014 2015 2016 2017 2018

40,000
35,000
30,000
25,000
20,000
15,000
10,000
5,000
0

0

523

9,470

10,173

10,322

10,480

10,595

19,819

28,529

30,116

28,456

28,964

28,941

28,230

27,380

29,626

30,022

28,191

28,284

30,088



Recycled water

Since 2000, the IEUA has constructed and operated a recycled water conveyance system throughout the basin enabling it to provide recycled water to its member agencies

Recycled water deliveries grew from about 3,400 afy in 2000 to about 34,000 afy in 2017. Cumulatively through FY 2018 = 339,000 af

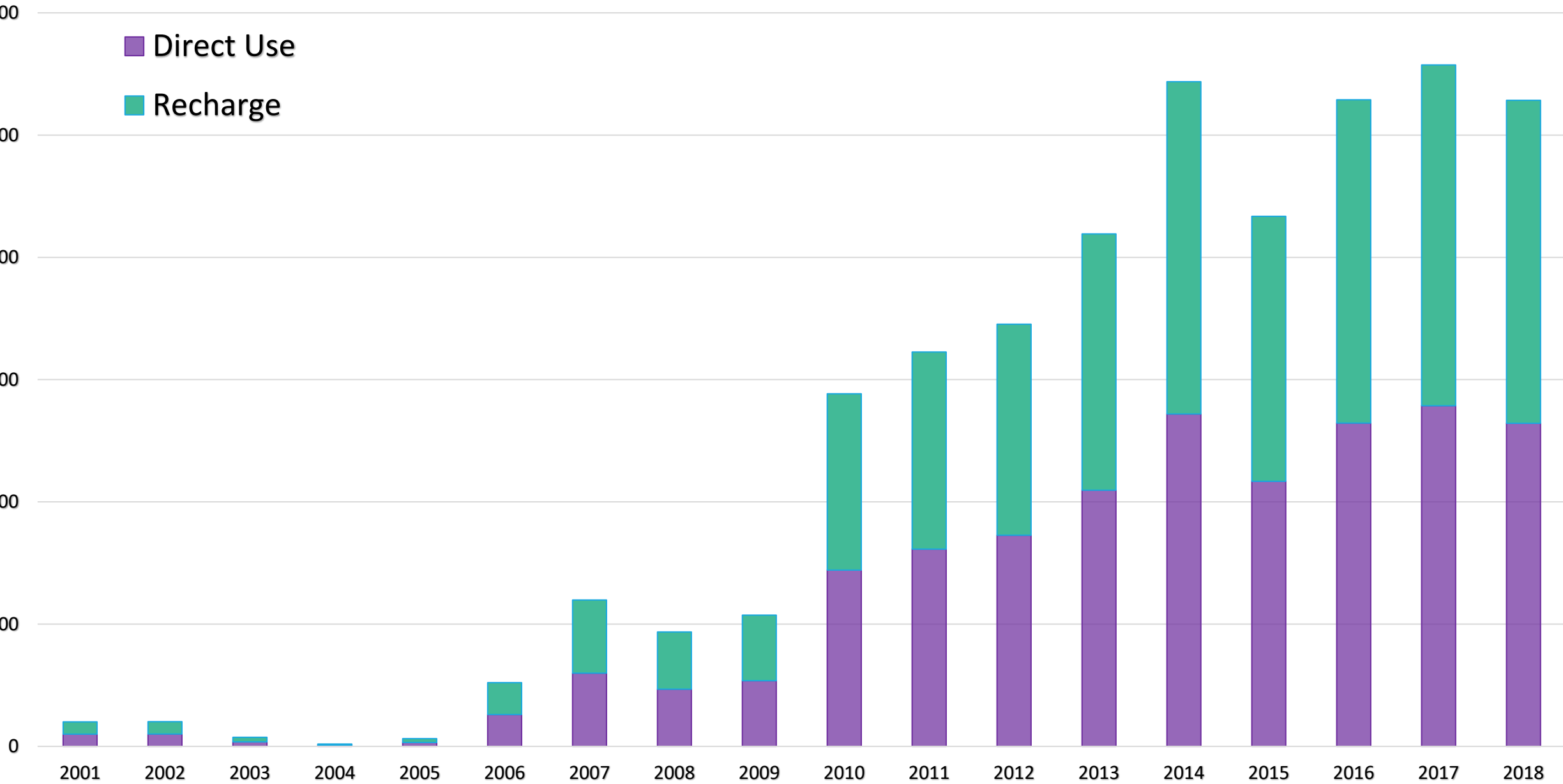
Recycled water provided by the IEUA has replaced a like amount of groundwater and imported water that would have otherwise been used for non-potable purposes

Recycled water is more reliable than imported water, and thus using it in lieu of imported water has improved the sustainability of the Chino Basin and water-supply reliability

Recycled Water Reuse (af)

Direct Use

Recharge



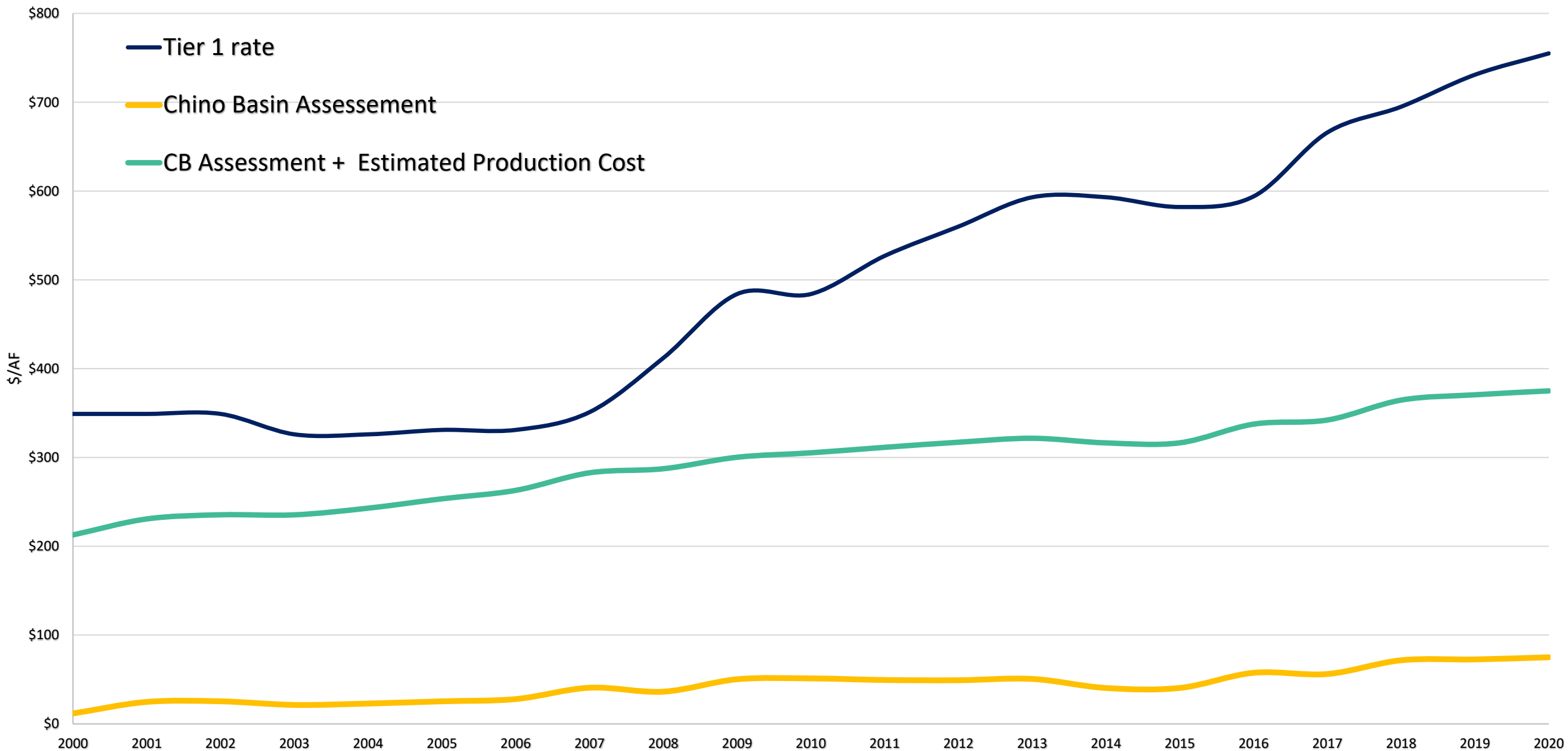


Investment and Benefits

Assumptions:

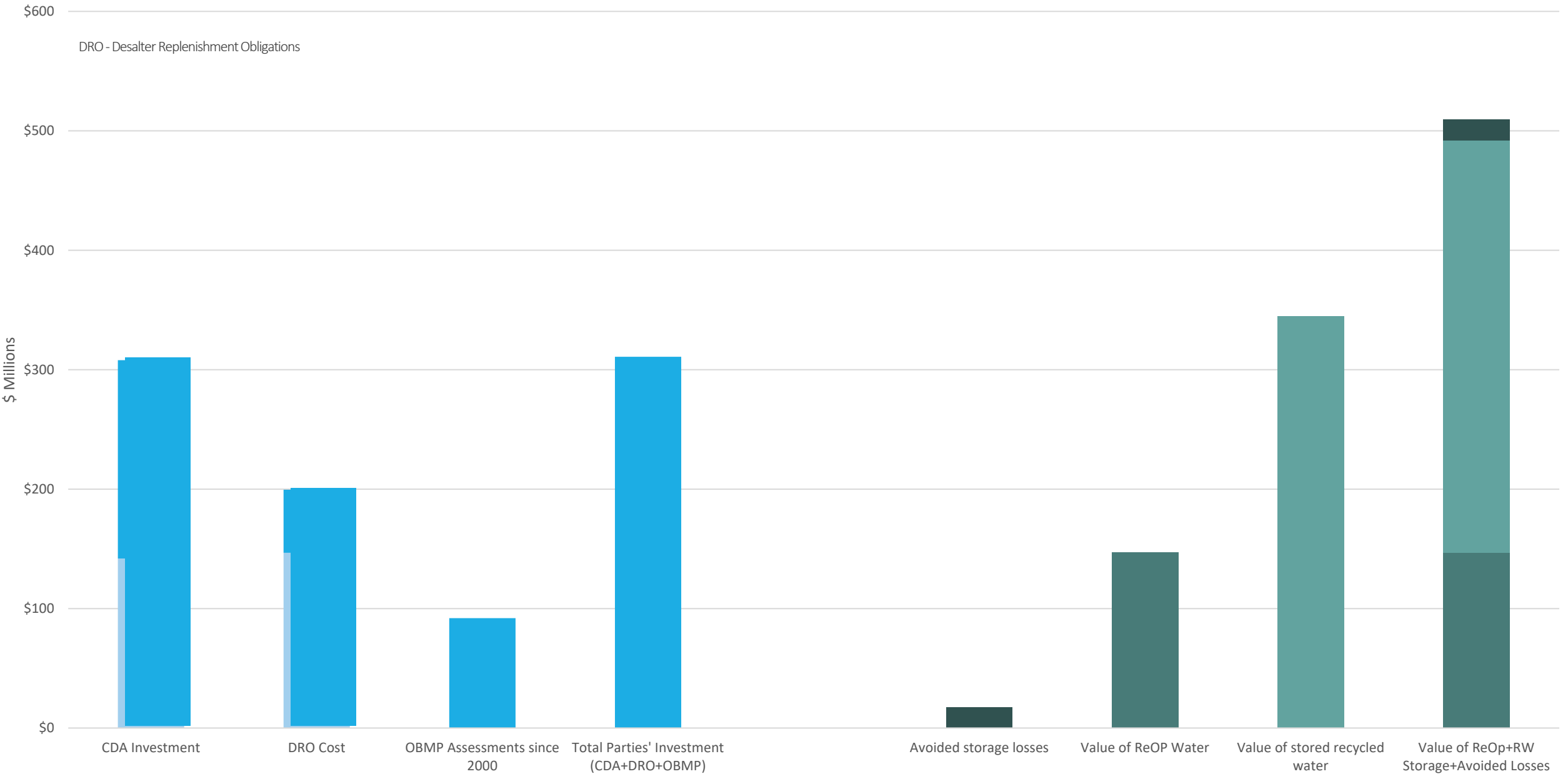
- Value of water was calculated using the MWD's Tier 1 untreated rate for the respective years.
- Investments are calculated as the cost to build the CDA + DRO+OBMP Assessments since 2000.
- WM has assessed ~\$92M for OBMP Implementation since 2000.

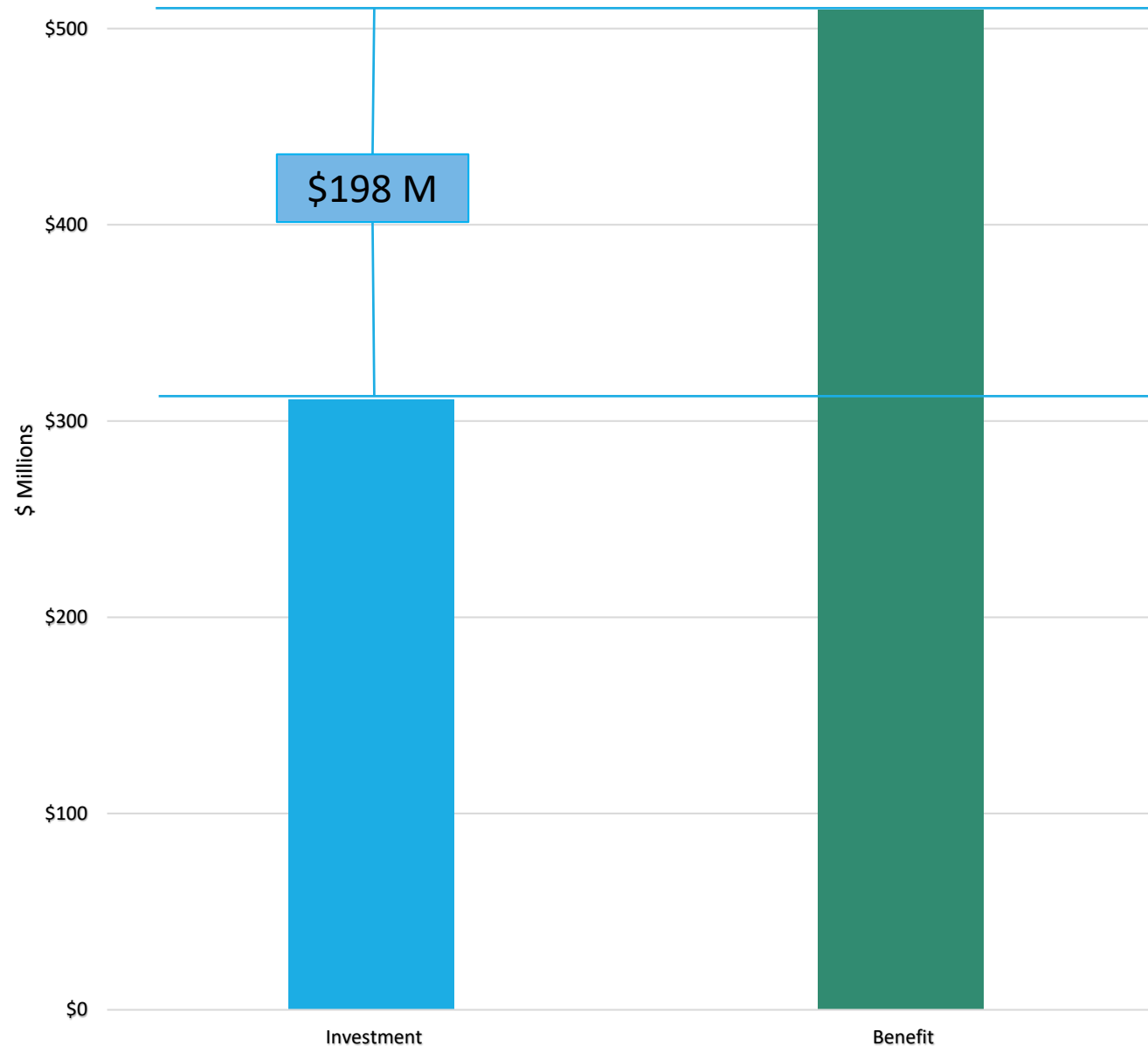
CB water value vs first alternative





OBMP Investment and Benefits

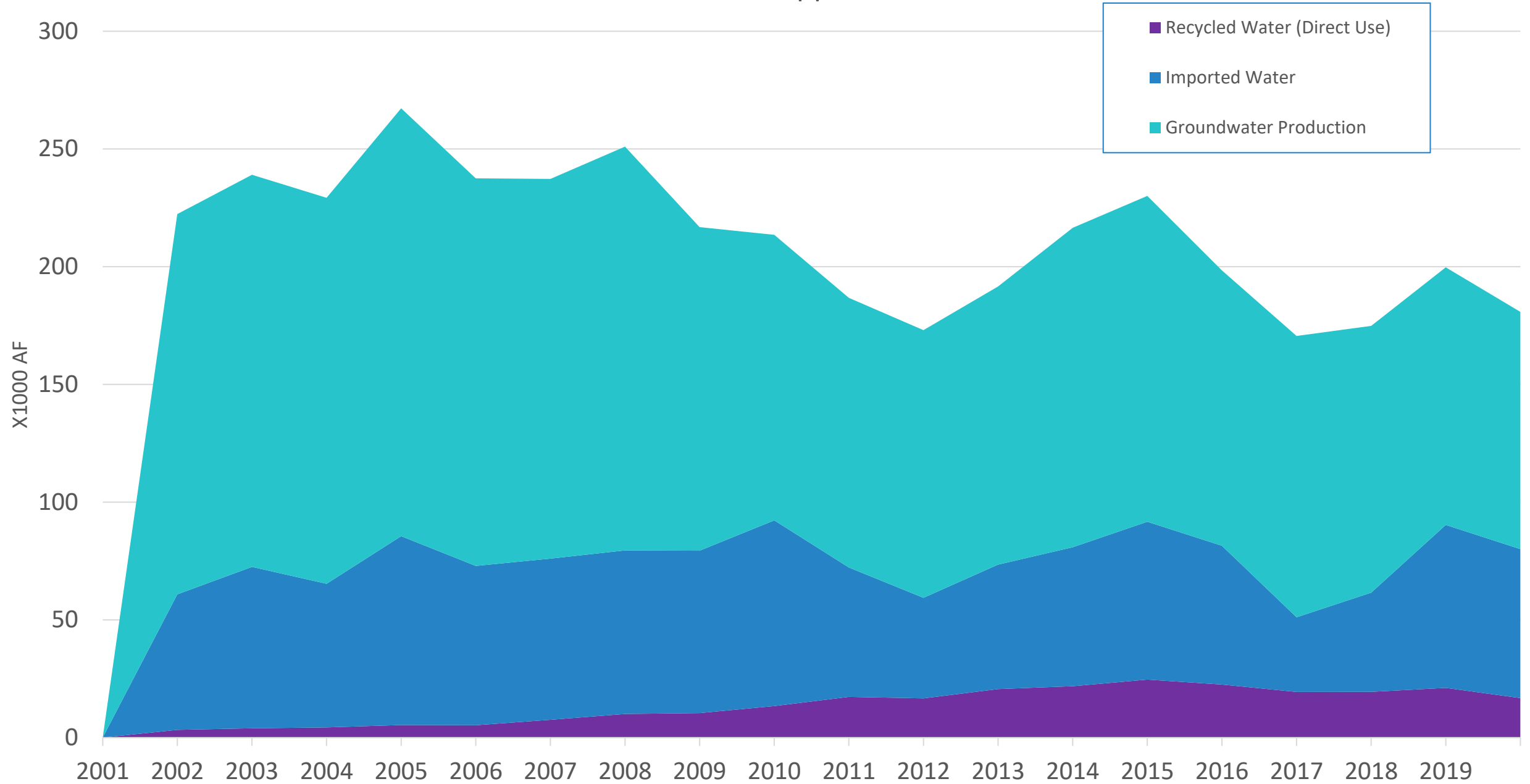




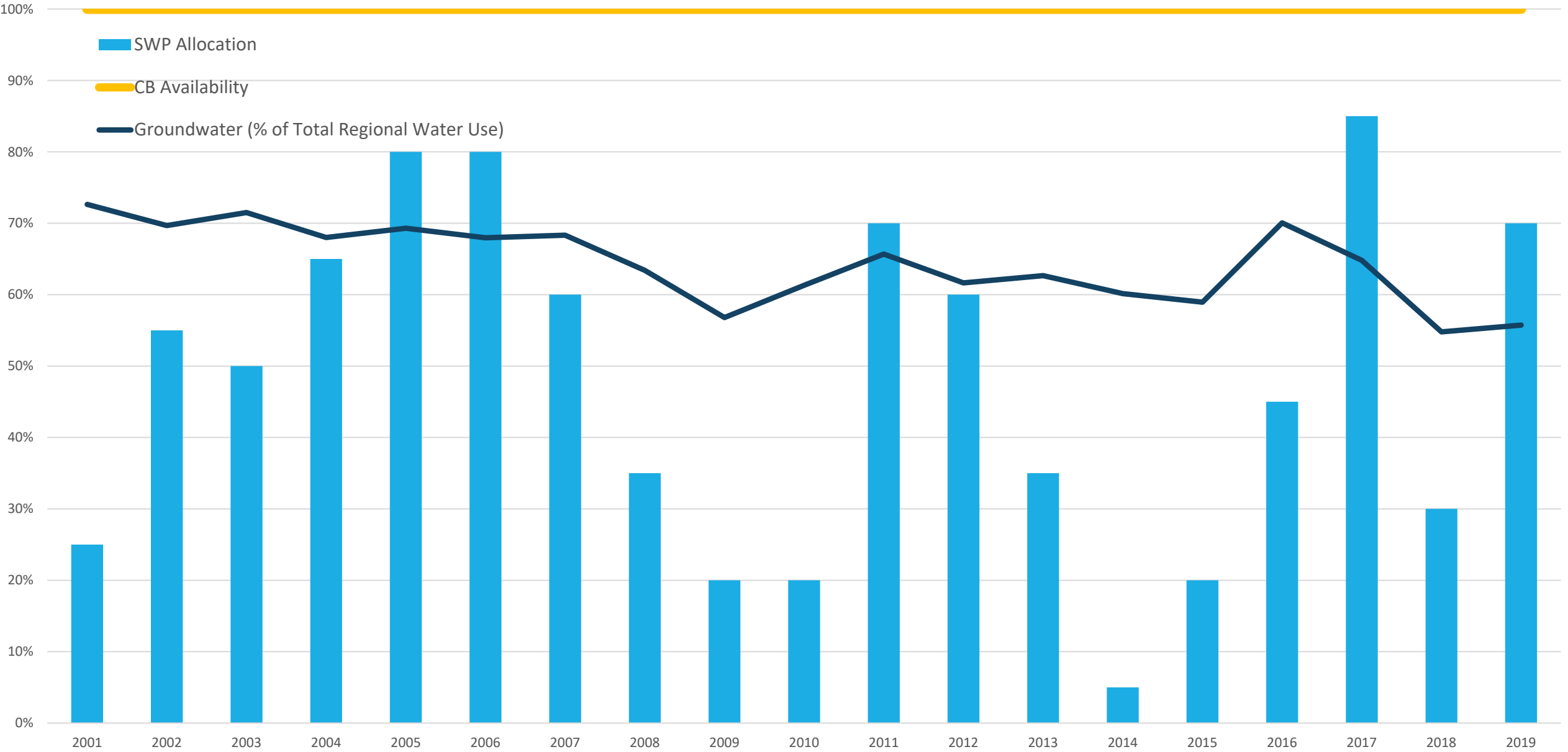
Other OBMP Benefits

- Cumulative transfers of water between parties: ~766k AF
- Cumulative water produced by the CDA: ~449k AF
- Cumulative water recharged through DYY: ~420k AF
- Avoided conflict due to water quality
- Avoided conflict due to land subsidence
- Improved resilience to drought
- Subsidence management and improved water quality in MZ1.

Water Supplies



Reliability



Discussion
