



Regional Sewerage Program Technical Committee Meeting

AGENDA

Thursday, May 28, 2020

2:00 p.m.

Teleconference Call

In effort to prevent the spread of COVID-19, the Regional Sewerage Program Technical Committee Meeting will be held remotely by teleconference

Teleconference: 1-415-856-9169/Conference ID: 747 889 453#

Call to Order

Roll Call

Additions/Changes to the Agenda

1. Action Items

- A. Meeting Minutes for April 29, 2020 and April 30, 2020
- B. IEUA Ten Year Forecast
- C. FY 2020/21 Budget Review of Budget Amendments and Rates on Regional Wastewater and Recycled Water Funds
- D. Regional Connection Point to the Montclair Interceptor
- E. Regional Force Main Construction Contract Award
- F. RP-1 Flare Improvements Construction Contract Award and Consultant Contract Amendment

2. Informational Items

- A. Engineering Quarterly Project Updates
- B. Return to Sewer Pilot Study Update *(Oral)*
- C. Operations & Compliance Updates *(Oral)*
- D. 2020 Land Use Demand Model Update

3. Receive and File

- A. Draft Regional Sewerage Program Policy Committee Meeting Agenda
- B. Building Activity Report

(Continued)

Regional Sewerage Program Technical Committee Meeting Agenda

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C. Recycled Water Distribution - Operations Summary

D. Legislative Bill Matrix

4. Technical Committee Items Distributed

A. Regulatory Challenges Memorandum

5. Other Business

A. IEUA General Manager's Update

B. Committee Member Requested Agenda Items for Next Meeting

C. Committee Member Comments

D. Next Regular Meeting – June 25, 2020

6. Adjournment

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Recording Secretary (909) 993-1944, 48 hours prior to the scheduled meeting so that the Agency can make reasonable arrangements.

DECLARATION OF POSTING

I, Laura Mantilla, Executive Assistant of the Inland Empire Utilities Agency, A Municipal Water District, hereby certify that a copy of this agenda has been posted to the IEUA Website at www.ieua.org and posted in the foyer at the Agency's main office at 6075 Kimball Avenue, Building A, Chino, CA, on Thursday, May 21, 2020.



Laura Mantilla

**ACTION
ITEM**

1A



Regional Sewerage Program

Special Technical Committee Workshop

MINUTES OF APRIL 29, 2020

CALL TO ORDER

A special workshop of the IEUA/Regional Sewerage Program – Technical Committee was held on Wednesday, April 29, 2020, via teleconference. Chairman Noel Castillo called the meeting to order at 11:04 a.m.

ATTENDANCE via Teleconference

Committee Members:

David Crosley	City of Chino
Eduardo Espinoza (Alternate)	Cucamonga Valley Water District
Ron Craig	City of Chino Hills
Chuck Hays	City of Fontana
Noel Castillo	City of Montclair
Nicole deMoet	City of Upland
Shivaji Deshmukh	Inland Empire Utilities Agency

OTHERS PRESENT via Teleconference

Amanda Coker	City of Chino
May Atencio	City of Fontana
Van Jew	Monte Vista Water District
Steve Nix	City of Upland
Marissa Pereyda	City of Montclair
Mark Wiley	City of Chino Hills
Kathy Besser	Inland Empire Utilities Agency
Randy Lee	Inland Empire Utilities Agency
Joshua Aguilar	Inland Empire Utilities Agency
Jerry Burke	Inland Empire Utilities Agency
Javier Chagoyen-Lazaro	Inland Empire Utilities Agency
Christiana Daisy	Inland Empire Utilities Agency
Elizabeth Hurst	Inland Empire Utilities Agency
Sylvie Lee	Inland Empire Utilities Agency
Liza Muñoz	Inland Empire Utilities Agency
Cathleen Pieroni	Inland Empire Utilities Agency
Laura Mantilla	Inland Empire Utilities Agency
Scott Oakden	Inland Empire Utilities Agency

Jeff Ziegenbein	Inland Empire Utilities Agency
Scott Goldman	Woodard & Curran
Roger Putty	GEI Consultants

ADDITIONS/CHANGES TO THE AGENDA

There were none.

1. INFORMATIONAL ITEMS**A. RECYCLED WATER REGULATORY CHALLENGES**

Christiana Daisy/IEUA and Sylvie Lee/IEUA gave a presentation on the Recycled Water Regulatory Challenges. Ms. Daisy gave a brief history of the recycled water program, including previous reporting of salinity and water compliance challenges, and how regulations are becoming more stringent. Ms. Lee explained that IEUA is meeting its current commitment, in terms of salinity, to limit effluent discharge to 420mg total dissolved solids (TDS). Although IEUA is operating at lower levels, current trends and projections indicate that it will reach or exceed regulatory limits by 2030. Ms. Lee provided examples of environmental and other causes that can impact TDS levels, and stated that exceeding established limits could result in penalties, and limit or prohibit the use of recycled water within the region. Ms. Lee stated that the recommendations are for IEUA to continue pursuing permit modifications; have a plan in place to purchase supplemental, imported water; and/or have an on-line advanced water purification facility. Ms. Daisy added that although there are several short-term options to address the issues, the ultimate objective is to have an operational advanced water treatment facility. The current projected date for this type of facility is 2034; however, in order to protect the Agency and to meet the needs of its constituents, a 2030 completion date is ideal. Ron Craig/City of Chino Hills asked whether an earlier completion date would be on the same scale and capacity as a completion date of 2034, or whether there would be opportunity for incremental progress. Ms. Lee answered that there has been discussion on how the project would be phased; however, there is no definitive answer yet with several factors to consider, including maintaining recycled water operations. Discussion ensued regarding the objectives of the Chino Basin Program and how these projects can be incorporated into the Ten Year Forecast. Ms. Daisy asked committee members to submit their comments by May 18, 2020.

2. ADJOURNMENT – Chairman Castillo adjourned the meeting at 12:00 p.m.

Transcribed
by:

Laura Mantilla, Executive Assistant



Regional Sewerage Program Technical Committee Meeting MINUTES OF APRIL 30, 2020

CALL TO ORDER

A regular meeting of the IEUA/Regional Sewerage Program – Technical Committee was held via teleconference on Thursday, April 30, 2020. Committee Chairman Noel Castillo called the meeting to order at 2:01 p.m.

ATTENDANCE via Teleconference

Committee Members:

David Crosley	City of Chino
Eduardo Espinoza (Alternate)	Cucamonga Valley Water District
Ron Craig	City of Chino Hills
Chuck Hays	City of Fontana
Noel Castillo	City of Montclair
Courtney Jones (Alternate)	City of Ontario
Nicole deMoet	City of Upland
Shivaji Deshmukh	Inland Empire Utilities Agency

OTHERS PRESENT via Teleconference

May Atencio	City of Fontana
Praseetha Krishnan	Cucamonga Valley Water District
Steve Nix	City of Upland
Marissa Pereyda	City of Montclair
Kathy Besser	Inland Empire Utilities Agency
Christiana Daisy	Inland Empire Utilities Agency
Randy Lee	Inland Empire Utilities agency
Christina Valencia	Inland Empire Utilities Agency
Jerry Burke	Inland Empire Utilities Agency
Andy Campbell	Inland Empire Utilities Agency
Javier Chagoyen-Lazaro	Inland Empire Utilities Agency
Elizabeth Hurst	Inland Empire Utilities Agency
Sylvie Lee	Inland Empire Utilities Agency
Laura Mantilla	Inland Empire Utilities Agency

Cathleen Pieroni	Inland Empire Utilities Agency
Craig Proctor	Inland Empire Utilities Agency
Ken Tam	Inland Empire Utilities Agency
Wilson To	Inland Empire Utilities Agency
Jeff Ziegenbein	Inland Empire Utilities Agency

ADDITIONS/CHANGES TO THE AGENDA

There were none.

1. ACTION ITEMS**A. APPROVAL OF THE MEETING MINUTES OF JANUARY 30, 2020**

Motion: By Nicole deMoet/City of Upland and seconded by Ron Craig/City of Chino Hills to approve the meeting minutes of January 30, 2020.

Motion carried: Unanimously.

B. IEUA TEN YEAR FORECAST

Elizabeth Hurst/IEUA gave a presentation on the Fiscal Year 2020/21 – 2029/30 Ten Year Forecast (TYF). She stated that the comments received from member agencies were incorporated and responses will be provided next week. Ms. Hurst stated that the TYF has been prepared in accordance with the Regional Contract, Section 9 requirements. Ms. Hurst indicated that the projects included in the TYF are primarily driven by member agency growth, safety and regulatory requirements, repair and replacement projects, reduction in wastewater flow decreasing, and increase in concentrations. Ms. Hurst then discussed the new equivalent dwelling unit (EDU) projections and wastewater flow actuals and projections. Ms. Hurst reviewed the cost comparison of the prior ten-year forecasts, major projects and repair and rehabilitation costs in the 10-year window, and the adoption schedule.

Eduardo Espinoza/CVWD asked if the TYF process can be delayed by a month to give the Technical Advisory Committee (TAC) more time to have discussions and provide comments. He also stated that based on the responses given that the advanced treatment purification facility discussed yesterday may be needed by 2030 rather than 2034. Sylvie Lee/IEUA responded that the TYF can be delayed; however, IEUA will not have the capital cost investment rate if the advanced treatment purification facility is accelerated.

Motion: By Eduardo Espinoza/CVWD and seconded by Chuck Hays/City of Fontana to bring back the Ten-Year Forecast in May to the Technical Committee for recommendation for IEUA Board to approve in June.

Motion carried: Unanimously.

2. INFORMATIONAL ITEMS**A. FY 2020/21 PROPOSED BUDGET AMENDMENT FOR REGIONAL WASTEWATER AND RECYCLED WATER PROGRAMS AND RATE STUDY UPDATE**

Javier Chagoyen-Lazaro/IEUA presented the FY 2020/21 proposed budget amendment for Regional Wastewater and Recycled Water Programs. Mr. Chagoyen-Lazaro stated that as part of the biennial budget process, a review of the second budget year is done prior to the end of the first year to determine if adjustments are needed. Mr. Chagoyen-Lazaro highlighted that sources of funds decreased by approximately \$13 million due to capital contract reimbursement, recycled water sales reduction and loans/grants. Mr. Chagoyen-Lazaro added that the changes in the overall uses of funds is an increase of \$2.6 million, primarily driven by a reduction of projects in the TYF and an increased cost such as PFAS testing, asset management plan, and maintenance. Mr. Chagoyen-Lazaro further stated that the overall change in sources of funds and uses of funds result in a net position of \$15.4 million. Mr. Chagoyen-Lazaro stated that what is not factored in is the current assessment being completed on the rates to accommodate requests from some of the member agencies due to the impacts of COVID-19.

B. OPERATIONS DIVISION QUARTERLY UPDATE

Jeff Ziegenbein/IEUA presented the Operations Division quarterly update. Mr. Ziegenbein gave an update on the impacts of COVID-19. He stated that the main priority is staff and community safety. IEUA continues to operate at full capacity by minimizing social distancing, as well as, cross contamination. Operations and Maintenance staff is still completing permit compliance, preventative corrective maintenance, recycled water distribution, groundwater recharge and biosolids processing through composting. Mr. Ziegenbein then provided updates on IEUA's incident rates versus other water and sewerage industries and stated that IEUA recordable injuries trend lower compared to others. Mr. Ziegenbein highlighted the work being done by Collections, Facilities, Integrated System Services and Inland Empire Regional Composting Facility.

C. RECYCLED WATER PROGRAMS SEMI-ANNUAL UPDATE

Andy Campbell/IEUA presented the Recycled Water Programs Semi-Annual update. Mr. Campbell provided a summary on the groundwater recharge annual history for imported water, stormwater and recycled water trends. He discussed the historical monthly deliveries for FY 2005/06 to FY 2019/20 and historical recycled water demand. Mr. Campbell informed the Committee of the new recharge basin at the RP-3 site and stated that of the total recycled water recharge, this basin produces approximately 27 percent.

Mr. Espinoza asked if Chino Basin Watermaster (CBWM) has contacted IEUA regarding supplemental storage and the maximum capacity. Ms. Lee stated it has not been brought up to IEUA to stop doing recycled water recharge; however, this would have to be taken into consideration in regards to the Dry Year Program. Mr. Espinoza recommended IEUA discuss this matter with CBWM. Ms. Lee stated she will. Mr. Dave Crosley/City of Chino stated that they have communicated with IEUA that in the current fiscal year, the City of Chino does not intend to recharge any recycled water entitlement that would be available after direct use of recycled water. Ms. Lee confirmed that IEUA received the request. Discussion ensued regarding managing recharge programs, supplemental accounts, Dry Year Program and challenges of the storage.

D. RETURN TO SEWER PILOT STUDY

Ken Tam/IEUA presented the Return to Sewer Pilot Study. Mr. Tam stated the study was approved in January and a kick-off meeting was held last Wednesday with the consultant and representatives from

the contracting agencies. Mr. Tam reminded the Committee that the purpose of the study is to evaluate and determine a return to sewer factor based on the water use within Montclair and Monte Vista Water District service areas. A subgroup consisting of contracting agencies and IEUA was established to meet monthly with Argo to review the data. The first subgroup meeting is scheduled for May 21. IEUA will continue to provide updates on the progress of the study which is scheduled to be completed in approximately six months.

E. TECHNICAL COMMITTEE CHAIR ROTATION

Christiana Daisy/IEUA informed the Committee that host agency of the monthly Regional Committee meetings is due to rotate from the City of Montclair to the City of Upland starting in July 2020.

3. RECEIVE AND FILE

A. DRAFT REGIONAL SEWERAGE PROGRAM POLICY COMMITTEE MEETING AGENDA

The draft Regional Sewerage Program Policy Committee Meeting agenda was received and filed by the Committee.

B. RECYCLED WATER DISTRIBUTION – OPERATIONS SUMMARY

The Recycled Water Distribution – Operations Summary for February and March 2020 was received and filed by the Committee.

C. STATE LEGISLATIVE REPORT

The State Legislative Report and Bill Matrix for March was received and filed by the Committee.

D. MID-YEAR BUILDING ACTIVITY REPORT

The Mid-Year Building Activity Report for July – December 2019 was received and filed by the Committee.

E. PRETREATMENT COMMITTEE REPORT

The Pretreatment Committee Report for March 3, 2020 was received and filed by the Committee.

4. PREVIOUS TECHNICAL COMMITTEE ITEMS REQUESTED

A. IEUA LETTER TO STATE WATER RESOURCES CONTROL BOARD

5. OTHER BUSINESS

A. IEUA GENERAL MANAGER'S UPDATE

IEUA General Manager Shivaji Deshmukh provided the following updates:

- Deferral of Rates – Given the unprecedented crises and the anticipated economic impact to the region, staff will be presenting to the IEUA Board at the May 6, 2020 meeting, two options recommending the deferral of the EDU rates that were adopted in November 2019. Option 1 is a six-month deferral. Water and recycled water rates are under consideration and may also be deferred by the Board. Staff will present an update on the fiscal year 2020/21 amended budget at the June Regional Committee meetings.
- RP-5 WIFIA Loan Agreement – General Manager Deshmukh stated that the WIFIA loan approval process requires the Agency to acquire two credit ratings on the RP-5 Project. General Manger Deshmukh thanked the city of Fontana, Ontario and CVWD for their timely

response to the rating agency Standard & Poor's. Staff anticipates obtaining the official notice today. The Environmental Protection Agency (EPA) is scheduled to approve the RP-5 Expansion at the end of May and scheduled to be taken to the IEUA Board of Directors for approval on May 20.

- Land Use Model Proposal – Staff along with one of its member agencies received, reviewed and evaluated proposals. Based on what was received, the team is recommending rejecting all proposals and looking at an alternative approach to accomplishing the land use model scope of work.
- RP-1 Electrical Switchgear and Generator Project – The project is approximately \$6 million, and it began in 2018. General Manager Deshmukh stated that the critical part of the project is replacing the switchgear which requires disconnecting RP-1 from its energy provider Southern California Edison (SCE). RP-1 was to be powered by generators for 30 days starting in March and completed in April; however, due to COVID-19 there are no back-up generators available. Staff will continue to update the Committee on this matter.

B. COMMITTEE MEMBER REQUESTED AGENDA ITEMS FOR NEXT MEETING

None.

C. COMMITTEE MEMBER COMMENTS

None.

D. NEXT MEETING – MAY 28, 2020

6. ADJOURNMENT – Chairman Castillo adjourned the meeting at 3:10 p.m.

Transcribed
by:

Laura Mantilla, Executive Assistant

**ACTION
ITEM**

1B



Date: May 28, 2020/June 4, 2020

To: Regional Committees

From: Inland Empire Utilities Agency

Subject: IEUA Ten-Year Forecast

RECOMMENDATION

It is requested that the Regional Committees recommend the IEUA Board of Directors adopt the Fiscal Year 2020/21-2029/30 Ten-Year Forecast.

BACKGROUND

Each year, pursuant to the terms of the Regional Sewage Service Contract, the Inland Empire Utilities Agency submits a Ten-Year Forecast (TYF) of capacity demands and capital projects to the Regional Technical and Policy Committees. The current TYF identifies projects for the fiscal years of 2020/21 through 2029/30 and includes updated forecasts for new wastewater connection equivalent dwellings units, wastewater strengths and flows.

Although the TYF is a planning level document, it is instrumental for budget discussions; total project budgets for the ten-year period are consistent with the adopted Fiscal Year 2019/20 Biennial Budget. Major projects in the TYF include: the expansion of the liquids treatment and the construction of a wastewater solids handling facility at Regional Water Recycling Plant No. 5, which will replace Regional Water Recycling Plant No. 2 infrastructure located in a flood zone; rehabilitation and upgrades to Regional Water Recycling Plant No.4; the completion of the groundwater basin improvements per the 213 Recharge Master Plan Update; and the liquids capacity recovery and solids treatment expansion of the Water Recycling Plant No. 1. A summary of the ten-year forecast project costs by fund is summarized below.

Fund	FY 2020/21
Administrative Services Fund (GG)	\$ 10.3 M
Non-Reclaimable Wastewater Fund (NC)	\$ 32.2 M
Regional Capital Improvement Fund (RC)	\$ 678.0 M
Regional Operations and Maintenance (RO)	\$ 105.7 M
Recharge Water Fund (RW)	\$ 21.2 M
Recycled Water Fund (WC)	\$ 60.9 M
Water Resources Fund (WW)	\$12.4
TOTAL	\$ 920.7 M

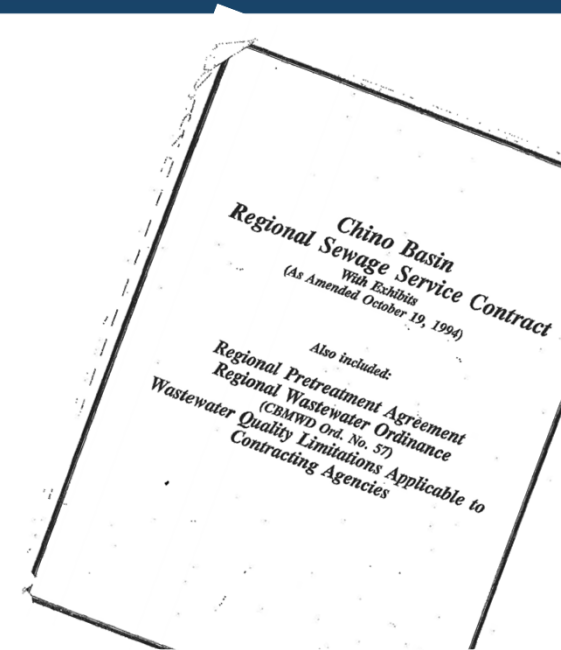
The TYF covers many programs and projects that directly align with several Agency Business Goals, including *Water Reliability*, *Wastewater Management*, *Environmental Stewardship*, and *Fiscal Responsibility*.

IEUA Ten-Year Forecast



IEUA's Contractual Requirements & Key Drivers

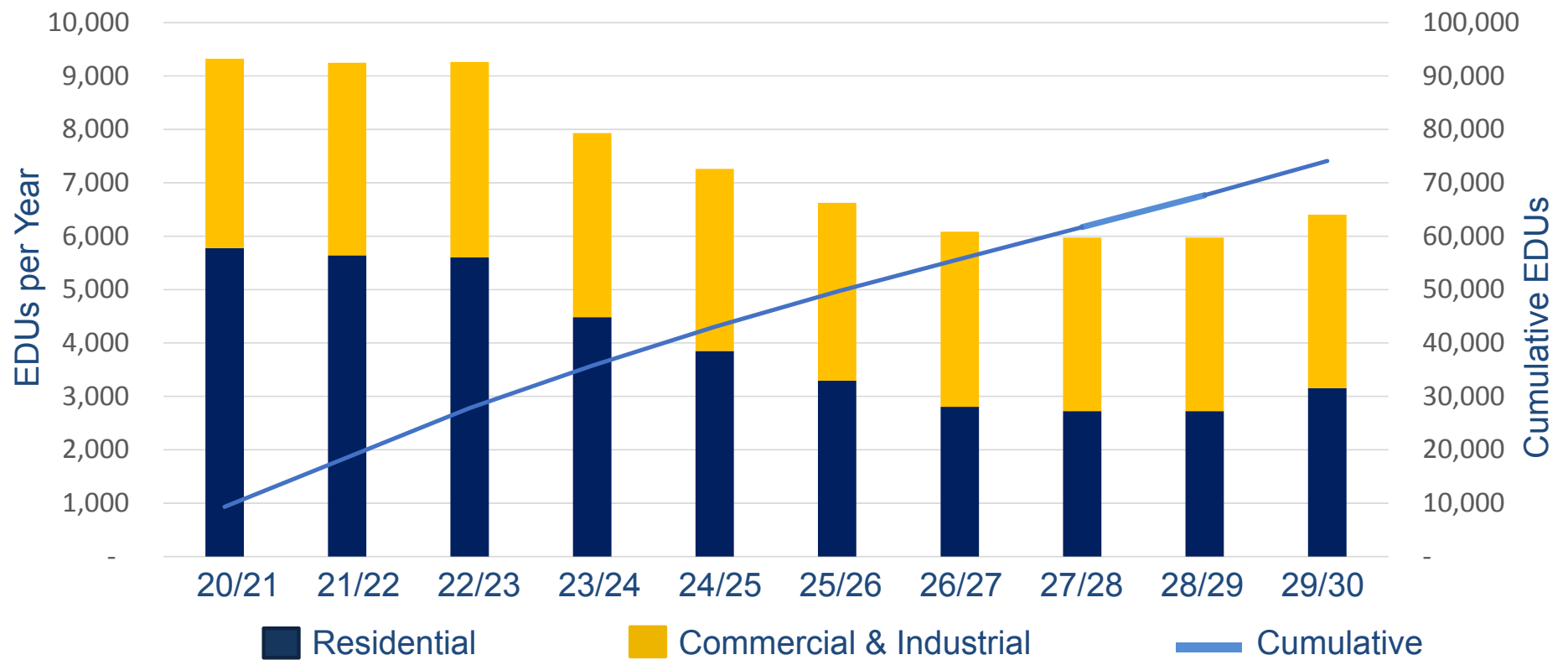
- Member Agency growth projections
 - 78% growth in cities of Fontana and Ontario
- Wastewater flow decreasing
- Wastewater concentrations increasing
- Project Drivers:
 - Safety and regulatory requirements
 - Repair and replacement projects
 - Growth and concentrations



Regional Contract Section 9

"CBMWD shall prepare and deliver...a ten-year forecast of the Capacity Demands of all Contracting Agencies and a forecast of the dates of commencement and completion of the design and construction of capital improvement projects which will be necessary to enable the Regional Sewerage System to meet the forecasted Capacity Demands...."

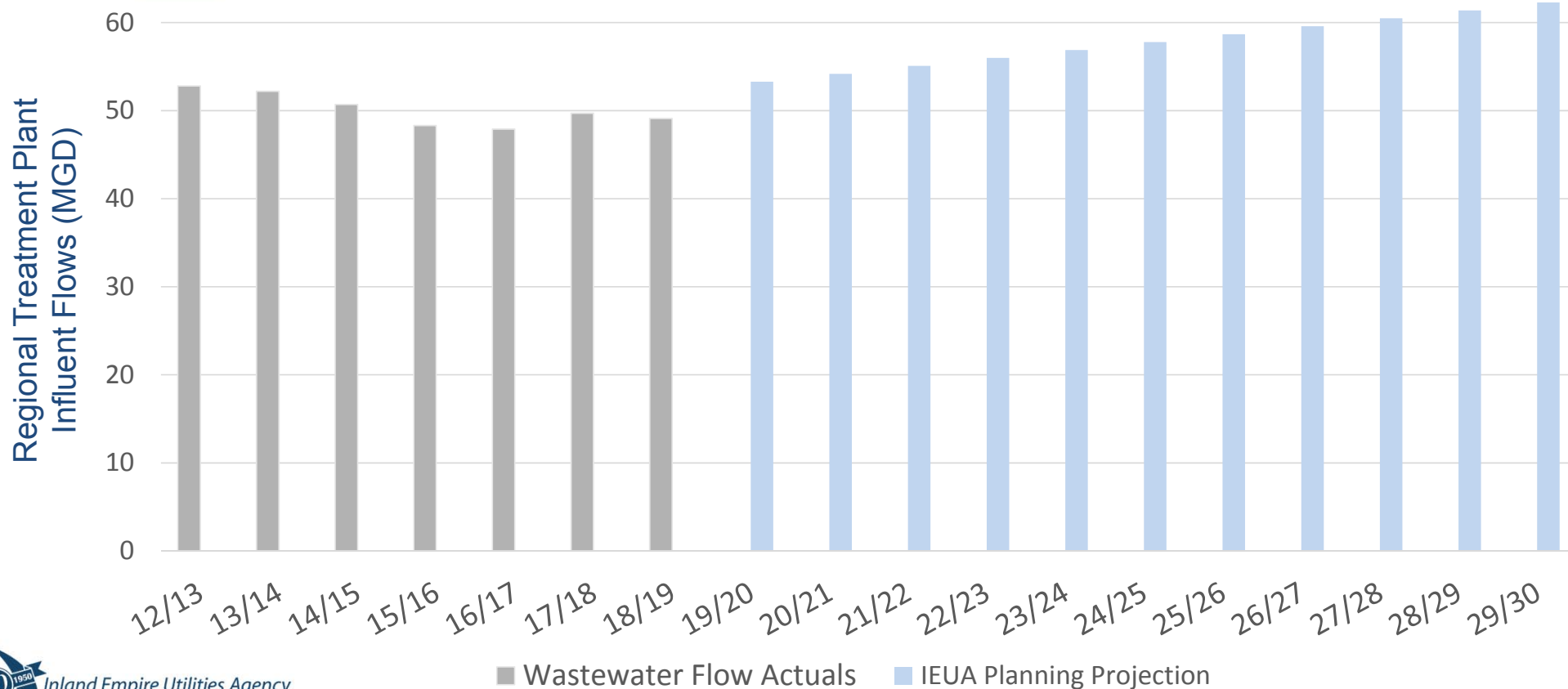
New Equivalent Dwelling Unit (EDU) Forecast (2019 Regional Contracting Agency Data)



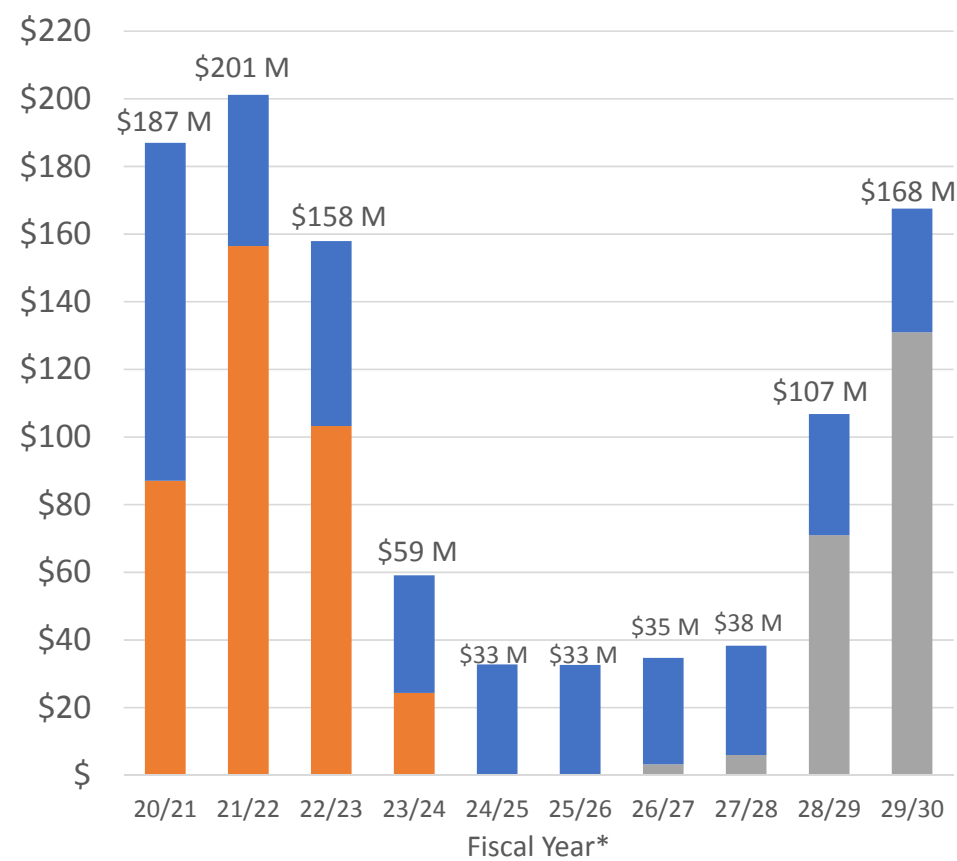
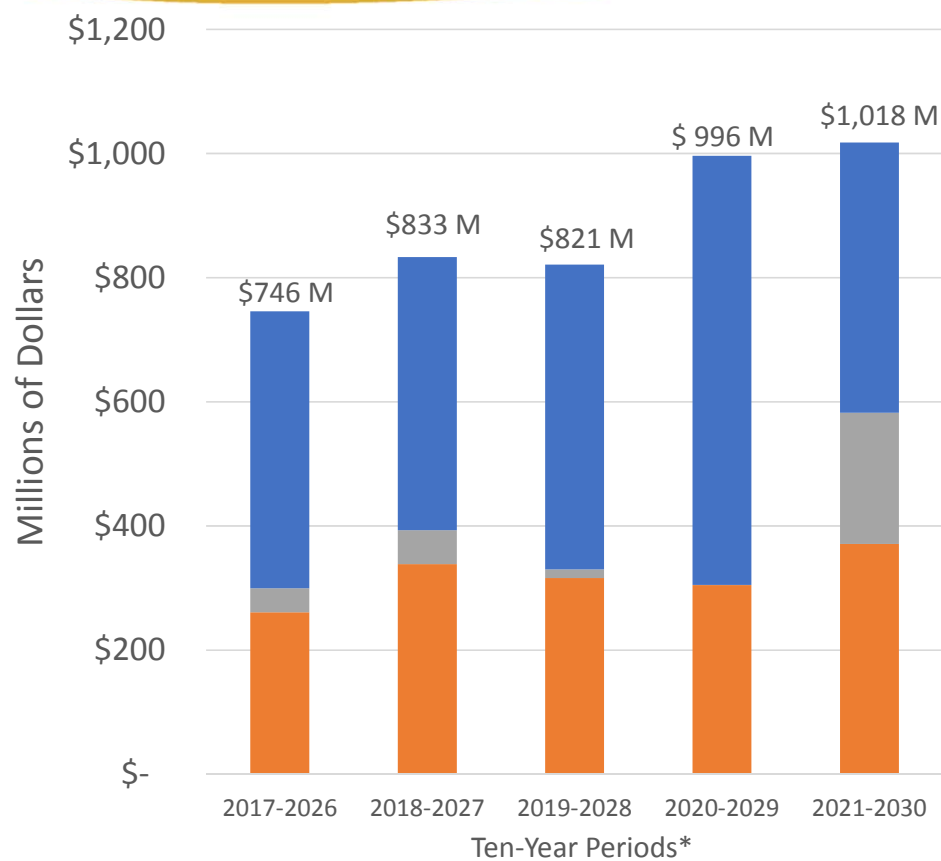
**EDUs based on updated projections received by Regional Contract Agencies Nov. 2019*

2020-2030 Wastewater Flow Projections

Projections based on 2015 wastewater master plan,
adjusted per actual flows.



Comparison of Prior Ten-Year Forecasts



■ Other ■ RP-5 Expansion ■ RP-1 Capacity Improvement

*Includes OM and Capital Spending

Fiscal Year 20/21 Ten Year Forecast Adoption Schedule

- ✓ 3/18/20: Info item to IEUA Board
- ✓ 4/09/20: Received Comments on TYF
- 4/30/20: Action item to Tech Committees
 - Action deferred until 5/28/20
- ✓ 5/07/20: Info item to Policy Committees
- 5/28/20: Action item to Tech Committees
- 6/04/20: Action item to Tech Committees
- 6/10/20: Action item to IEUA Committees
- 6/17/20: Action item to IEUA Board



**ACTION
ITEM**

1C

Date: May 28, 2020/June 4, 2020

To: Regional Committees

From: Inland Empire Utilities Agency

Subject: FY 2020/21 Proposed Budget Amendment for Regional Wastewater and Recycled Water Programs

RECOMMENDATION

It is requested that the Regional Committees recommend that the IEUA Board of Directors adopt the Fiscal Year 2020/21 Proposed Budget Amendment for the Regional Wastewater and Recycled Water Programs.

BACKGROUND

On June 19, 2019 the Board of Directors approved the Agency's Biennial Budget for fiscal years (FY's) 2019/20 and 2020/21 and Ten-Year Forecast (formerly called Ten Year Capital Improvement Plan) for FY's 2020-2029. As part of the biennial budget cycle, a review of the second budget year is done prior to the end of the first year to determine whether any adjustments are needed to meet changes in certain assumptions or conditions.

For the Regional Wastewater and Recycled Water programs, the Agency is projecting to spend an additional \$2.6 million over the FY 2020/21 adopted budget. The increase is primarily due to changes in the Ten-Year Forecast for fiscal years 2020/21 – 2029/2030 and new PFAS testing requirements.

Conversely, a decrease in total sources of funds of \$17.2 million is primarily due a reduction on state loan and grant proceeds due to changes in related capital projects consistent with the proposed Ten-Year Forecast, as well as the IEUA Board of Directors approval on May 6, 2020, in response to the COVID-19 pandemic, to rescind the increase to the monthly EDU sewer rate for FY 2020/21 adopted in November 2019 and maintain the \$20.00 per EDU rate unchanged for FY 2020/21. The estimated reduction of \$17.2 million also assumes, subject to Board approval, a similar 12-month deferral of the proposed rate adjustments to the Regional Wastewater connection fee, One Water connection fee, and recycled water rates for FY 2020/21 presented to the Regional Technical Committee on April 30, 2020 and the Regional Policy Committee on May 7, 2020. These rates and fees will be presented to the Board for approval on June 17, 2020.

To mitigate the impact of the estimated revenue shortfall in FY 2020/21, management is already evaluating budgeted line items to identify non-critical projects and expenses that can be deferred without negatively impacting employee safety and the essential services to our customers.

Operating Contingency reserves may also be used to support essential operating and capital costs not recovered by rates.

The proposed amendment to the FY 2020/21 Adopted Budget for the Agency's programs is consistent with the IEUA Business Goals of Fiscal Responsibility, Water Reliability, Wastewater Management, Environmental Stewardship, and Business Practices to optimize investment earnings.

Background

Subject: Fiscal Year 2020/21 Proposed Budget Amendment for the Regional Wastewater and Recycled Water Programs

Fiscal Year 2020/2021 Proposed Budget Amendments

On June 19, 2019, the Board of Directors approved the Agency's Biennial Budget for fiscal years (FYs) 2019/20 and 2020/21, and the Ten-Year Forecast (TYF) for FYs 2020-2029. As part of the biennial budget cycle, a review of the second budget year is done at the end of the first year to determine whether any adjustments are needed to meet changes in certain assumptions or conditions.

Summarized below are the recommended amendments to the adopted budget for the Regional Wastewater and Recycled Water Programs that were presented to the Regional Technical Committee on April 30 and the Regional Policy Committee on May 7.

Table 1: FY 2020/21 Proposed Budget Amendments (\$Millions)
Regional Wastewater and Recycled Water Programs
Presented on April 30 and May 7

Consolidated FY 2020/21	Adopted	Proposed	Amendment Amount
Total Sources of Funds	\$271.9	\$ 254.1	(\$12.8)
Total Uses of Funds	(\$269.3)	(\$271.9)	\$2.6
Increase (Decrease) in Net Position	\$2.6	(\$12.8)	(\$15.4)

Not included in the proposed \$12.8 million reduction to total Sources of Funds, was the approval by the IEUA Board of Directors on May 6, 2020, to defer the increase to the monthly EDU sewer rate adopted in November 2019 for FY 2020/21. The 12-month deferral unanimously approved by the Board is in response to the ongoing COVID-19 pandemic and the potential economic impact to the Agency's member agencies and our ratepayers. The revenue shortfall to maintain the \$20.00 per EDU rate unchanged for FY 2020/21 is estimated at \$2.1 million.

On May 6, staff also presented options to defer the proposed increases for FY 2020/21 to the rates and fees scheduled for Board approval in June. Based on the Board's review and discussion, the amendment to total Sources of Funds has been updated to include a 12-month deferral of the rate increases to the Regional Wastewater connection fee, the One Water connection fee and recycled water rates being proposed for FY 2020/21, as summarized in Table 2.

Table 2: Adopted and Proposed Fees and Rates
(Proposed Rates and Fees are Subject to Board Approval)

Fund	Wastewater Operation	Wastewater Capital	Recycled Water		
	Monthly Sewer (EDU)	Wastewater Connection Fee (EDU)	Recycled Water Direct Use (AF)	Recycled Water Recharge (AF)	One Water Connection Fee (MEU)
FY 2019/20	\$20.00	\$6,955	\$490	\$550	\$1,684
	ADOPTED	PROPOSED			
FY 2020/21*	\$20.00	\$6,955	\$490	\$550	\$1,684
FY 2021/22	\$21.22	\$7,379	\$520	\$580	\$1,787
FY 2022/23	To be reviewed based on the sewer use evaluation results		To be determined after additional evaluation to ensure long-term program sustainability		\$1,841
FY 2023/24					\$1,896
FY 2024/25					\$1,953

**In November 2019, the monthly EDU rate of \$20.60 and \$21.22 were approved by the Board for FYs 2020/21 and 2021/22, respectively. On May 6, 2020, the Board approved to defer the rate increase for FY 2020/21 and maintain the rate unchanged at \$20.00 per EDU.*

The revenue shortfall to maintain the rates and fees unchanged for FY 2020/21, including the monthly EDU rate, is estimated to be \$4.4 million. The proposed rates and fees are subject to Board approval on June 17, 2020. Summarized in Table 3 is the updated proposed amendment to the Regional Wastewater and Recycled Water programs total Sources and Uses of funds for FY 2020/21.

Table 3: Updated FY 2020/21 Proposed Budget Amendment (\$Millions)
Regional Wastewater and Recycled Water Programs

Consolidated FY 2020/21	Adopted	Proposed	Amendment Amount
Total Sources of Funds	\$271.9	\$ 254.7	(\$17.2)
Total Uses of Funds	(\$269.3)	(\$271.9)	\$2.6
Increase (Decrease) in Net Position	\$2.6	(\$17.2)	(\$19.8)

TOTAL SOURCES OF FUNDS

The revised assumptions result in a decrease of \$17.2 million to total Sources of Funds. The reduction is primarily due to a decrease in federal and state loan proceeds and the estimated impact of the 12-month deferral of the adopted and proposed rate increases for FY 2020/21. The distribution by major category of the proposed Sources of Funds is shown below in Table 4.

**Table 4: FY 2020/21 Proposed Amendment to Sources of Funds (\$Millions)
Regional Wastewater and Recycled Water Programs**

Sources of Funds	Adopted	Proposed	Amendment Amount
User Charges	\$70.4	\$68.3	(\$2.1)
Federal and State Loans	85.4	70.8	(14.6)
Property Tax	46.8	46.8	0.0
Connection Fees	36.7	35.7	(1.0)
Recycled Water Sales	18.8	16.2	(2.6)
Grants	4.9	6.9	2.0
Capital Reimbursement	5.0	6.2	1.2
*Other Sources	3.9	3.8	(0.1)
Total	\$271.9	\$254.7	(\$17.2)

**Other Sources includes contract cost reimbursements, interest income, and miscellaneous revenue.*

User Charges: The \$2.1 million reduction is the estimated revenue shortfall resulting from the May 6, 2020, Board approval to defer the increase to the Monthly EDU rate for FY 2020/21 adopted in November 2019. The current monthly EDU rate of \$20.00 will be maintained in FY 2020/21. The adopted rate of \$21.22 per EDU will take effect on July 1, 2021.

Federal and State Loans/Grants: The \$14.6 million net reduction to loan and grants proceeds is a combination of lower State Revolving Fund (SRF) loans and higher grants. Regarding SRF loans, the adjustment reflects the uncertainty of when the SRF loan funding will be available for the RP-5 Expansion project. Regarding grants, there is a \$2.0 million increase related to a Proposition 1 Groundwater Quality grant associated with the South Archibald Plume cleanup project.

Connection Fees: The reduction of \$1.0 million is related the proposed 12-month deferral of the increases proposed for FY2020/21, subject to Board approval in June. There is no change in the number of new wastewater connections (4,000 EDUs) and new water connections (4,700 meter equivalent units) projected in the adopted budget.

Recycled Water: The \$2.6 million reduction in recycled water sales includes a decrease in recycled water deliveries from the adopted 36,000 acre-feet (AF) to 31,900 AF for FY 2020/21, consistent with the current trend, as well as the proposed 12-month deferral of the increases proposed for FY2020/21, subject to Board approval in June.

TOTAL USES OF FUNDS

To mitigate the estimated impact of the 12-month deferral of the adopted and proposed rate increases for FY 2020/21, management is already evaluating budgeted line items to identify non-critical projects and expenses that can be deferred without negatively impacting employee safety and the essential services to our customers. Operating Contingency reserves will be used as needed to support essential operating and capital costs not recovered by rates. Consistent with the Board

adopted Reserve Policy, Operating Contingency reserves can only be drawn upon if the Agency's operating revenues are not sufficient to pay operating expenses. Draws from these reserves will need to be replenished within twelve months after use.

At this time, there is no change to the previous proposed amendment to total Uses of Funds of \$2.6 million. The proposed increase is primarily due to an increase in non-capital projects related to the Regional System Asset Management program, offset by a decrease in capital project spending consistent with the proposed TYF for FYs 2020/21 – 2029/30. Table 5 below provides a summary by category.

**Table 5: FY 2020/21 Proposed Amendments to Uses of Funds (\$Millions)
Regional Wastewater and Recycled Water Programs**

Uses of Funds	Adopted	Proposed	Amendment Amount
Capital Projects	\$147.6	\$142.6	(\$5.0)
Operations & Administration	87.6	93.5	5.9
Debt Service	26.0	26.2	0.2
Inter-Fund Transfers	8.1	9.7	1.5
Total	\$269.3	\$271.9	\$2.6

Capital Projects: The \$5.0 million decrease is primarily due to changes in project scope and project execution timelines. Amendments to capital project costs are consistent with the proposed TYF for FYs 2020/21 – 2029/30.

Operations & Administration: Overall, the same level of expenditures for operations & administration costs was maintained; the \$5.9 million increase is mainly due changes to projects related to the Regional System Asset Management program and the TCE Plume Cleanup. Amendments to non-capital projects is consistent with the proposed TYF for FYs 2020/21 – 2029/30.

Inter-Fund Transfers: The \$1.5 million increase is mainly due to projects budgeted in the Administrative Services fund and supported by other funds. Projects include roof replacement at various Agency facilities, safety improvements to the Headquarters' driveways, and added testing requirements for PFAS and from the California Energy Commission (CEC).

Conclusion

If revenues and expenses occur as planned and the Board approves the proposed 12-month deferral of rate increases for FY 2020/21, the proposed amendments to total Sources and Uses of Funds will reduce the net position of the Regional Wastewater and Recycled Water programs by \$17.2 million compared to the increase in net position of \$2.6 million projected in the FY 2020/21 Adopted Budget, as summarized in Table 3 above.

The outbreak of the COVID-19 pandemic and the drastic measures undertaken at the federal, state, and local levels to contain the spread of the virus have significantly altered our lives, our communities, and our economy. While it is still too early to quantify the economic impact this crisis will have on our member agencies and the communities we serve, a 12-month deferral to the adopted and proposed rates for FY 2020/21 will help to lessen the fiscal impact to our ratepayers.

The Agency will continue to evaluate the deferral of non-critical projects and expenses to offset the projected shortfall in revenue and to minimize the use of Operating Contingency reserves to support essential operating and capital costs not recovered by rates.

The proposed amendment to the FY 2020/21 Adopted Budget for the Agency's programs is consistent with the IEUA Business Goals of *Fiscal Responsibility, Water Reliability, Wastewater Management, Environmental Stewardship, and Business Practices*.

INLAND EMPIRE UTILITIES AGENCY
FISCAL YEAR 2020/21 MID-YEAR BUDGET
REGIONAL WASTEWATER CAPITAL IMPROVEMENT FUND - SOURCES AND USES OF FUNDS (In Thousands)

	2018/2019	2019/2020	2019/2020	2020/2021	2020/2021
	ACTUAL	ADOPTED BUDGET	AMENDED BUDGET	ADOPTED BUDGET	AMENDED BUDGET
REVENUES					
Interest Revenue	\$838	\$790	\$790	\$826	\$826
TOTAL REVENUES	\$838	\$790	\$790	\$826	\$826
OTHER FINANCING SOURCES					
Property Tax - Debt and Capital	\$34,476	\$34,037	\$34,037	\$35,058	\$35,058
Regional System Connection Fees	22,435	27,820	27,820	28,655	27,820
State Loans	-	9,800	9,800	80,250	65,293
Other Revenues	23	1	1	1	1
TOTAL OTHER FINANCING SOURCES	\$56,938	\$71,658	\$71,658	\$143,963	\$128,172
EXPENSES					
Employment Expenses	\$3,899	\$3,613	\$3,613	\$3,743	\$3,743
Contract Work/Special Projects	134	125	246	-	-
Operating Fees	263	267	267	275	275
Professional Fees and Services	295	407	705	420	420
Other Expenses	969	1,548	1,548	1,535	1,535
TOTAL EXPENSES	\$5,560	\$5,960	\$6,378	\$5,973	\$5,973
CAPITAL PROGRAM					
Work In Progress	\$24,845	\$24,824	\$24,824	\$102,243	\$98,645
IERCA investment	-	500	500	500	500
TOTAL CAPITAL PROGRAM	\$24,845	\$25,324	\$25,324	\$102,743	\$99,145
DEBT SERVICE					
Financial Expenses	\$211	\$139	\$139	\$256	\$256
Interest	2,786	3,017	3,017	2,656	2,656
Principal	8,922	9,370	9,370	9,630	9,630
TOTAL DEBT SERVICE	\$11,919	\$12,526	\$12,526	\$12,543	\$12,543
TRANSFERS IN (OUT)					
Capital Contribution	\$4,426	\$3,399	\$3,399	\$10,426	(\$2,005)
Debt Service	(3,174)	(3,299)	(3,299)	(3,327)	(3,192)
Capital - Connection Fees Allocation	(5,008)	(8,984)	(8,984)	(8,656)	(12,595)
TOTAL INTERFUND TRANSFERS IN (OUT)	(\$3,755)	(\$8,883)	(\$8,883)	(\$1,556)	(\$17,792)
FUND BALANCE					
Net Income (Loss)	\$11,697	\$19,755	\$19,336	\$21,974	(\$6,455)
Beginning Fund Balance July 01	84,996	88,794	88,794	108,548	108,130
ENDING FUND BALANCE AT JUNE 30*	\$96,693	\$108,548	\$108,130	\$130,523	\$101,675
RESERVE BALANCE SUMMARY					
Capital Construction	\$14,645	\$20,434	\$17,485	\$83,645	\$12,987
CCRA Capital Construction	66,474	72,262	75,294	30,916	73,114
Debt Service & Redemption	15,574	15,853	15,351	15,962	15,574
ENDING BALANCE AT JUNE 30	\$96,693	\$108,548	\$108,130	\$130,523	\$101,675

*Numbers may not tie due to rounding

INLAND EMPIRE UTILITIES AGENCY
FISCAL YEAR 2020/21 MID-YEAR BUDGET
REGIONAL WASTEWATER OPERATIONS & MAINTENANCE FUND - SOURCES AND USES OF FUNDS (In Thousands)

	2018/2019	2019/2020	2019/2020	2020/2021	2020/2021
	ACTUAL	ADOPTED BUDGET	AMENDED BUDGET	ADOPTED BUDGET	AMENDED MID YEAR
REVENUES					
User Charges	\$66,499	\$68,158	\$68,158	\$70,366	\$68,327
Cost Reimbursement JPA	4,024	4,065	4,065	4,227	4,227
Contract Cost Reimbursement	111	66	66	66	66
Interest Revenue	1,667	1,700	1,700	1,300	1,300
TOTAL REVENUES	\$72,301	\$73,988	\$73,988	\$75,959	\$73,920
OTHER FINANCING SOURCES					
Property Tax Revenues - Debt/Capital	\$9,549	\$9,549	\$9,549	\$9,549	\$9,549
State Loans	2,519	0	0	0	0
Grants	712	1,261	7,570	1,135	3,794
Other Revenues	385	909	909	909	909
TOTAL OTHER FINANCING SOURCES	\$13,164	\$11,718	\$18,027	\$11,593	\$14,252
EXPENSES					
Employment Expenses	\$28,726	\$33,985	\$33,985	\$35,261	\$35,261
Contract Work/Special Projects	4,744	5,800	13,409	6,425	11,744
Utilities	5,318	6,022	6,272	6,266	6,266
Operating Fees	1,613	1,953	1,953	2,015	2,015
Chemicals	4,572	4,867	5,235	5,013	5,013
Professional Fees and Services	2,971	4,723	5,171	4,226	4,226
Biosolids Recycling	4,305	4,384	4,389	4,515	4,515
Materials & Supplies	2,074	2,019	2,230	2,064	2,064
Other Expenses	2,728	4,277	4,277	4,231	4,231
TOTAL EXPENSES	\$57,052	\$68,034	\$76,925	\$70,020	\$75,339
CAPITAL PROGRAM					
Capital Construction & Expansion (WIF)	\$20,629	\$25,988	\$26,547	\$21,047	\$39,887
TOTAL CAPITAL PROGRAM	\$20,629	\$25,988	\$26,547	\$21,047	\$39,887
DEBT SERVICE					
Financial Expenses	\$0	\$0	\$0	\$0	\$0
Interest	819	655	655	641	627
Principal	728	756	756	771	754
TOTAL DEBT SERVICE	\$1,548	\$1,412	\$1,412	\$1,412	\$1,381
TRANSFERS IN (OUT)					
Capital Contribution	(\$3,559)	(\$4,598)	(\$4,598)	(\$11,010)	(\$1,368)
Debt Service		265		123	
Operation support to GG for Non-Cap	(320)	(2,176)	(2,176)	(1,307)	(787)
Capital - Connection Fees Allocation	4,481	5,717	5,717	4,785	10,378
TOTAL INTERFUND TRANSFERS IN (OUT)	\$909	(\$792)	(\$792)	(\$7,409)	\$8,333
FUND BALANCE					
Net Income (Loss)	\$7,163	(\$10,519)	(\$13,269)	(\$12,335)	(\$20,102)
Beginning Fund Balance July 01	76,837	76,428	84,000	65,909	70,731
ENDING FUND BALANCE JUNE 30*	\$84,000	\$65,909	\$70,731	\$53,574	\$50,629
RESERVE BALANCE SUMMARY					
Operating Contingies	\$17,701	\$21,323	\$24,156	\$21,931	\$23,704
Rehabilitation/Replacement	27,331	10,783	10,500	10,783	7,311
Debt Service	1,412	1,412	1,412	1,412	1,381
Sinking Fund	37,557	32,390	34,663	19,448	18,233
ENDING BALANCE AT JUNE 30	\$84,000	\$65,909	\$70,731	\$53,574	\$50,629

* Numbers may not tie due to rounding

INLAND EMPIRE UTILITIES AGENCY
FISCAL YEAR 2020/21 MID-YEAR BUDGET
RECYCLED WATER FUND - SOURCES AND USES OF FUNDS (In Thousands)

	2018/19	2019/20	2019/20	2020/21	2020/21
	ACTUAL	ADOPTED BUDGET	AMENDED BUDGET	ADOPTED BUDGET	AMENDED MID-YEAR
REVENUES					
Interest Revenue	\$769	\$983	\$983	\$949	\$708
Water Sales	13,902	18,120	18,120	18,752	16,155
TOTAL REVENUES	\$14,670	\$19,103	\$19,103	\$19,701	\$16,863
OTHER FINANCING SOURCES					
Property Tax - Debt /Capital	\$2,170	\$2,170	\$2,170	\$2,170	\$2,170
Connection Fees	5,916	7,915	7,915	8,032	7,915
State Loans	2,373	8,153	8,153	5,220	5,554
Grants	753	7,032	7,032	3,750	3,120
Capital Contract Reimbursement	88	2,075	2,075	702	1,875
Other Revenues	24	0	0	0	0
TOTAL OTHER FINANCING SOURCES	\$ 11,324	\$ 27,345	\$ 27,345	\$ 19,875	\$ 20,633
EXPENSES					
Employment Expenses	\$4,451	\$5,184	\$5,184	\$5,370	\$5,370
Contract Work/Special Projects	1,333	1,780	2,049	1,365	1,990
Utilities	2,240	2,801	2,721	2,885	2,885
Operating Fees	3	10	10	10	10
Chemicals	0	0	0	0	0
Professional Fees and Services	641	666	1,008	632	632
Office and Administrative expenses	4	3	3	3	3
Materials & Supplies	141	169	184	174	174
Other Expenses	805	1,132	1,185	1,122	1,122
TOTAL EXPENSES	\$9,619	\$11,743	\$12,342	\$11,562	\$12,187
CAPITAL PROGRAM					
Work In Progress	\$6,636	\$18,727	\$23,849	\$23,800	\$3,570
TOTAL CAPITAL PROGRAM	\$6,636	\$18,727	\$23,849	\$23,800	\$3,570
DEBT SERVICE					
Financial Expenses	\$2	\$3	\$3	\$3	\$3
Interest	2,870	2,657	2,657	2,881	2,933
Principal	5,256	5,367	5,367	6,232	6,309
Short Term Inter-Fund Loan	3,000	3,000	3,000	3,000	3,000
TOTAL DEBT SERVICE	\$11,129	\$11,027	\$11,027	\$12,116	\$12,245
TRANSFERS IN (OUT)					
Capital Contribution	(\$1,873)	(\$88)	(\$88)	(\$21)	(\$547)
Debt Service	2,394	2,400	2,400	2,542	2,547
Operation support	(526)	(836)	(836)	(755)	(562)
Water Connection Allocation	(454)	(2,021)	(2,021)	(950)	(1,614)
TOTAL INTERFUND TRANSFERS IN (OUT)	(\$459)	(\$545)	(\$545)	\$816	(\$176)
FUND BALANCE					
Net Income (Loss)	(\$1,848)	\$4,405	(\$1,315)	(\$7,086)	\$9,319
Beginning Fund Balance July 01	26,401	30,414	24,553	41,056	23,238
ENDING BALANCE AT JUNE 30	\$24,553	\$34,819	\$23,238	\$33,970	\$32,557
RESERVE BALANCE SUMMARY					
Operating Contingency	\$3,206	\$3,914	\$4,114	\$3,854	\$4,062
Capital Construction	(1,295)	9,274	(5,510)	4,664	945
Water Connection	14,615	12,516	15,518	14,478	16,407
Rehabilitation/Replacement (R&R)	0	0	0	1,500	1,500
Debt Service	8,027	9,116	9,116	9,475	9,643
ENDING BALANCE AT JUNE 30	\$24,553	\$34,819	\$23,238	\$33,970	\$32,557

*Numbers may not total due to rounding

FY 2020/2021 Proposed Budget Amendments

Regional Wastewater and Recycled Water Programs



FY2020/21 Regional Wastewater and Recycled Water Mid-Cycle Budget Amendment Assumptions

Sources of funds:

- 12-month deferral of adopted and proposed rates for FY 2020/21, subject to Board approval
- Reduction of recycled water deliveries based on current demand trends
- Alignment of loans proceeds consistent with proposed Ten-Year Forecast

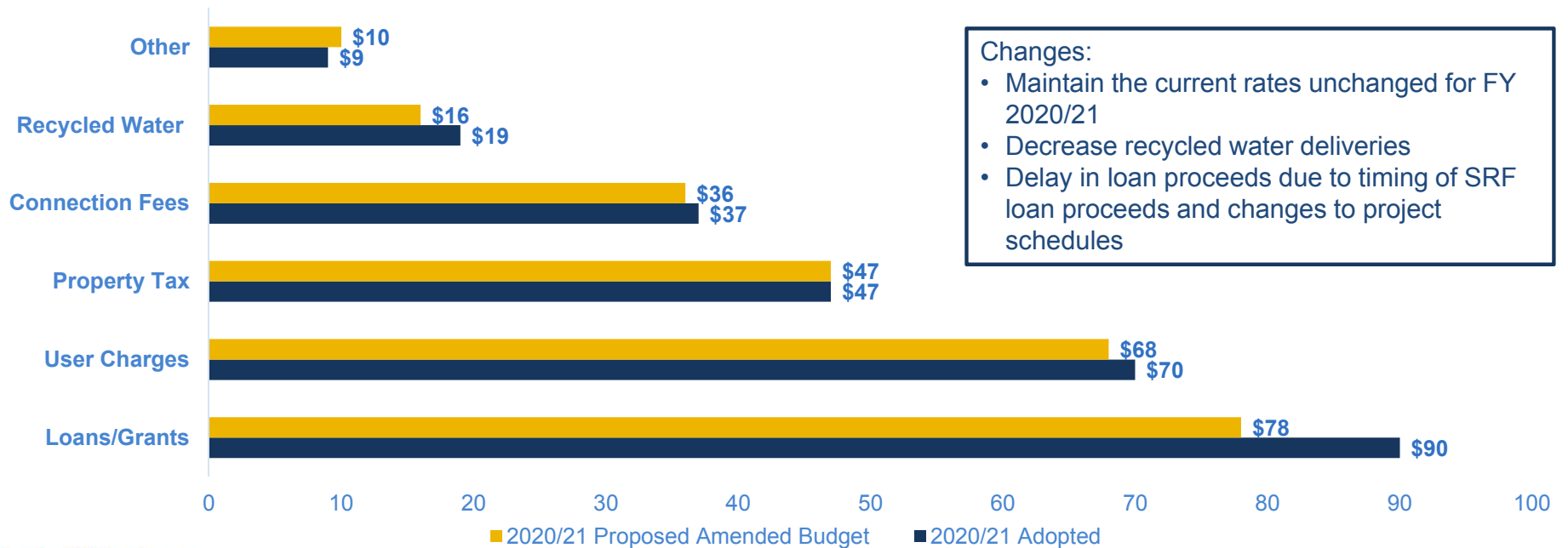
Uses of funds:

- Projects based on proposed Ten Year Forecast (TYF) for FYs 2020/21 – 2029/30
 - Facility expansion based on projected growth
 - Asset Management: Replacement, Repair and Improvement

Regional Wastewater and Recycled Water

SOURCES OF FUNDS

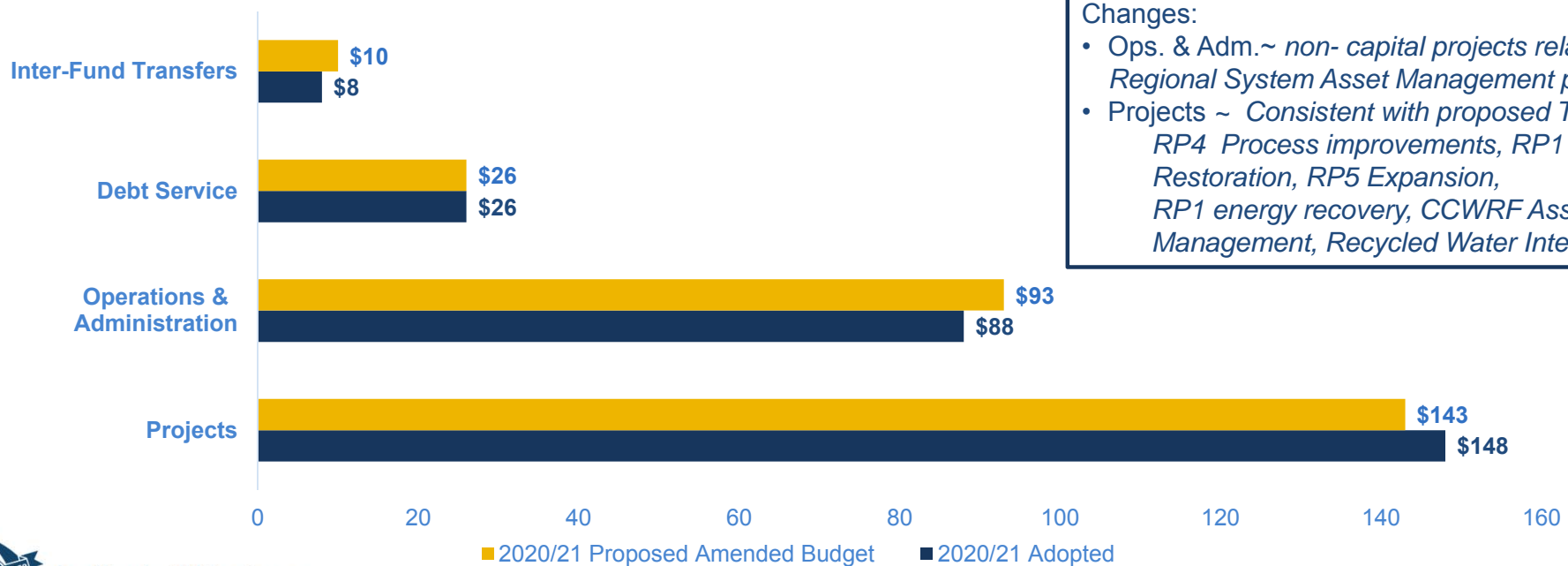
\$ Millions	FY 2020/21 Adopted	FY 2020/21 Proposed	Amendments
Total Sources of Funds	\$271.9	\$254.7	(\$17.2)



REGIONAL PROGRAMS USES OF FUNDS

Regional Wastewater and Recycled Water

\$ Millions	FY 2020/21 Adopted	FY 2020/21 Proposed	Amendments
Total Uses of Funds	\$269.3	\$271.9	\$2.6



Changes:

- Ops. & Adm. ~ non-capital projects related to Regional System Asset Management program
- Projects ~ Consistent with proposed TYF
RP4 Process improvements, RP1 Mechanical Restoration, RP5 Expansion, RP1 energy recovery, CCWRF Asset Management, Recycled Water Interties

Summary Regional Wastewater and Recycled Water Programs

\$ Millions	FY 2020/21 Adopted	FY 2020/21 Proposed	Amendments
Total Sources of Funds*	\$271.9	\$254.7	(\$17.2)
Total Uses of Funds	<u>\$269.3</u>	<u>\$271.9</u>	<u>\$2.6</u>
Increase (decrease) net position	\$2.6	(\$17.2)	(\$19.8)

*12-month deferral of rate increases proposed for FY 2020/21 is subject to Board approval on June 17, 2020.

Questions



The proposed amendments to the FY 2020/21 Adopted Budget are consistent with the IEUA Business Goals of *Fiscal Responsibility, Water Reliability, Wastewater Management, Environmental Stewardship and Business Practices*.

ACTION
ITEM

1D



Date: May 28, 2020

To: Regional Technical Committee

From: Inland Empire Utilities Agency

Subject: Request by the City of Chino for a Regional Connection Point to the Montclair Interceptor (Chino Regional Sewer Connection #C-41)

RECOMMENDATION

It is recommended that the Regional Technical Committee approve the request by the City of Chino for one new connection point to the Regional System (Chino Regional Sewer Connection #C-41).

BACKGROUND

On March 26, 2020, Inland Empire Utilities Agency (IEUA) received a request from the City of Chino (Attachment “A”) for the approval of a sewer connection located in Philadelphia Avenue at Benson Avenue in the city of Ontario. The City will abandon a gravity main and construct a force main due to the Caltrans State Route 60 Benson Avenue bridge reconstruction which will not allow for a gravity system. Regional Connection #C-41 will be made by connecting to an existing manhole on the 30-inch Montclair Interceptor located in the eastbound lane of Philadelphia Avenue at Benson Avenue (Attachment “B”).

SUMMARY OF FLOW RATE

Chino Regional Connection #C-41: Peak Flow Rate = 0.12 MGD

The 30-inch Montclair Interceptor is designed to deliver a maximum flow rate of 5.93 MGD to the Regional Water Recycling Plant No. 1. The proposed additional flow rate of 0.12 MGD is within the remaining pipeline capacity.

EUNICE M. ULLOA
Mayor



MARK HARGROVE
MARC LUCIO
PAUL A. RODRIGUEZ, Ed.D.
Council Members

TOM HAUGHEY
Mayor Pro Tem

MATTHEW C. BALLANTYNE
City Manager

CITY of CHINO

March 26, 2020

Ms. Liza Munoz
Senior Engineer
Inland Empire Utility Agency
6075 Kimball Avenue
Chino, CA 91708

Reference: Benson Avenue Temporary Pump Station and Force Main - Sewer Connection to Existing IEUA Sewer Manhole Montclair Interceptor, Philadelphia Street, Chino, CA.

Dear Ms. Munoz,

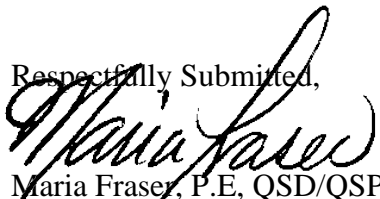
The City of Chino is requesting a lateral connection along the Montclair interceptor line located on Philadelphia Street. The connection is a 3" and 4" new sewer force main to the existing IEUA sewer manhole located approximately at Station 244+80 as per As-built sewer plans D4344 (sheet P-12 of 45).

The new sewer force main and sewer lift station was prompted by the Caltrans Bridge Replacement project along SR60 at Benson Avenue. The Benson bridge will be replaced with a new bridge which will be raised and it will not allow the sewer line to remain in its current vertical alignment and continue to function as a gravity flow system thru the new bridge. The existing sewer system conveys sewer flows generated by the Chino Town square complex and the flows generated from residential area along the east side of Benson south along the existing bridge. The combined sewer flows will be conveyed in the first Phase by a temporary sewer lift station with an output flow rate of 80 gpm, through the forcemain and into the IEUA sewer manhole at Benson Avenue and Philadelphia Street. The second phase will construct a permanent sewer station along the west side of Benson Avenue which will convey the flows to the IEUA line.

Please see the attached plans for the 100% complete Temporary lift station and the plans for the 65% complete permanent lift station for your information.

If you should need any further information, please contact me at (909) 334-3417.

Respectfully Submitted,


Maria Fraser, P.E., QSD/QSP
CIP Civil Engineer Manager
Public Works



cc: Christopher Magdosku P.E.
Ben Orosco Streets and Sewer Supervisor
Russ Bergholz, Dudek

ATTACHMENT "B"

CITY OF CHINO REG CONN #C-41

30" MONTCLAIR INTERCEPTOR →

PHILADELPHIA AVE

HELEN AVE

BENSON AVE

MONTICELLO AVE



ACTION
ITEM

1E

Date: May 2020/June 2020

To: Regional Committees

From: Inland Empire Utilities Agency

Subject: Regional Sewage Force Main Improvements Construction Contract Award

RECOMMENDATION

It is requested that the Regional Committees recommend the Inland Empire Utilities Agency (IEUA) Board of Directors award the construction contract for the Regional Sewage Force Main Improvements, Project No. EN19025, to the lowest, responsive bidder for the not-to-exceed amount of \$3,786,070.

BACKGROUND

The Regional Sewage Force Main Improvements project consists of constructing seventeen clean-out vaults along the force main discharging flow from the San Bernardino Avenue Lift Station to Regional Water Recycling Plant No. 4 (RP-4). The vaults will be utilized as access points to aid in cleaning the pressurized pipeline. Currently, the continuous buildup of material within the pipeline causes the upstream pumps to exert more power to send flow to their respective locations in addition to reduced capacity within the pipelines. During construction, a condition assessment of the force main will also be conducted.

On December 9, 2020, a request for bids was advertised on *PlanetBids* to six prequalified contractors. On May 14, 2020, IEUA received four (4) construction bids. Ferreira Construction Company, Inc, was the lowest responsive, responsible bidder with a bid price of \$3,786,070; Engineer's estimate was \$3,586,000.

The following table presents the anticipated project cost:

Description	Estimated Cost
Design Services	\$373,939
Design Consultant Contract	\$324,317
IEUA Design Services (actuals)	\$49,622
Construction Services	\$250,428
Engineering Services During Construction	\$125,428
IEUA Construction Services (~10%)	\$125,000
Construction	\$4,164,670
Construction (This Action)	\$3,786,070
Contingency (~10%)	\$378,600
Total Project Cost:	\$4,789,037
Total Project Budget:	\$4,173,000
Augmented Project Budget Request:	\$627,000*
Total Revised Budget:	\$4,800,000*

*In June 2020, staff will be requesting the Board of Directors to approve a budget amendment in the amount of \$627,000 in the Regional Capital (RC) Fund.

The following is the project schedule:

Project Milestone	Date
Construction Contract Award	June 2020
Construction Completion	March 2021

The Regional Force Main Improvements Project is consistent with *IEUA's business goal of Wastewater Management*, specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainability managed, and can accommodate changes in regional water use.

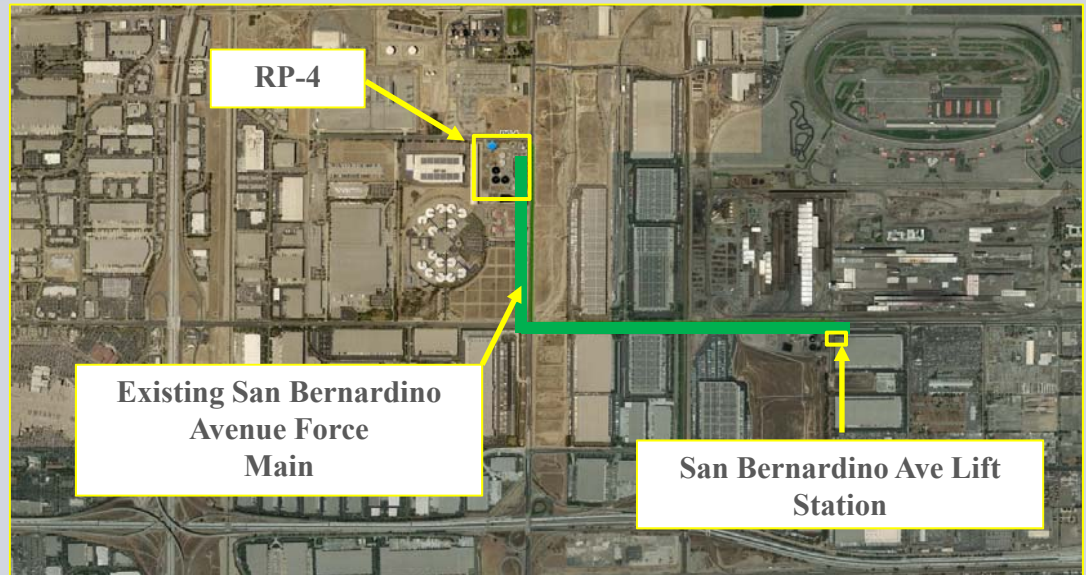
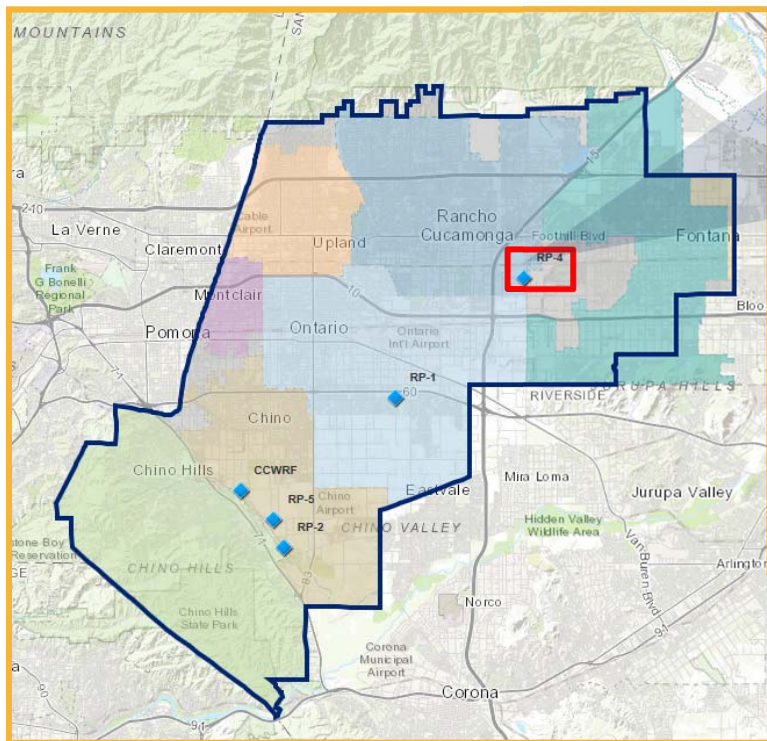
Regional Force Main Improvements Construction Contract Award

Project No. EN19025



Jerry Burke, PE
June 2020

Project Location – Regional Force Main Improvements



**San Bernardino Ave
Lift Station Force Main**

The Project

- Regional Force Main Improvements
 - Condition assessment of force main
 - Installation of 17 access vaults to maintain the force main



San Bernardino Lift Station



Existing Force Main with Dual Lines

Contractor Selection

Four bids were received on May 14, 2020, from six pre-qualified contractors:

Bidder's Name	Final Bid Amount
Ferreira Construction Company, Inc	\$3,786,070
Steve P. Rados, Inc.	\$4,246,000
Norstar Plumbing	\$4,327,000
W.A. Rasic Construction Company, Inc	\$6,285,000
Engineer's Estimate	\$3,586,000

Project Budget and Schedule

Description	Estimated Cost
Design Services	\$373,939
Consultant Design Contract	\$324,317
IEUA Design Services (actuals)	\$49,622
Construction Services	\$250,428
Engineering Services During Construction	\$125,428
IEUA Construction Services (10%)	\$125,000
Construction	\$4,164,670
Construction Contract (This Action)	\$3,786,070
Contingency (10%)	\$378,600
Total Project Cost:	\$4,789,037
Total Project Budget (current):	\$4,173,000
Augmented Project Budget Request:	\$627,000*
Total Revised Budget:	\$4,800,000*

*In June 2020, staff will be requesting the Board of Directors to approve a budget amendment in the amount of \$627,000 in the Regional Capital (RC) Fund.

Project Milestone	Date
Design	
Consultant Design Contract Award	July 2018
Design Completion	December 2019
Construction	
Construction Contract Award	June 2020
Construction Completion	March 2021

Recommendation

- It is requested that the Regional Committees recommend the IEUA Board of Directors award the construction contract for the Regional Force Main Improvements, Project No. EN19025, to the lowest, responsive bidder for the not-to-exceed amount of \$3,786,070.

The Regional Force Main Improvements Project is consistent with **IEUA's business goal of Wastewater Management**, specifically the Asset Management objective that IEUA will ensure the treatment facilities are well maintained, upgraded to meet evolving requirements, sustainability managed, and can accommodate changes in regional water use.

**ACTION
ITEM**

1F

Date: May/June 2020

To: Regional Committees

From: Inland Empire Utilities Agency

Subject: RP-1 Flare System Improvements Construction Contract Award

RECOMMENDATION

It is requested that the Regional Committees recommend the IEUA Board of Directors award the construction contract for the RP-1 Flare System Improvements, Project No. EN18006, to the lowest, responsive bidder for the not-to-exceed amount of \$5,540,000.

BACKGROUND

Regional Water Recycling Plant No.1 (RP-1) uses the method of conventional activated sludge to treat wastewater, liquids, and solids. The solids treatment section begins with thickening the solids removed from the primary and secondary clarification processes. The thickened solids are pumped to the anaerobic digesters (for gas production) and then to the centrifuges for dewatering. Digester gas not used at the facility is flared to the atmosphere through the existing candlestick flare, operating under a South Coast Air Quality Management District (SCAQMD) permit with limited capacity. The goal of the project is to replace the candlestick flare, which is more than 40 years old with a new Aereon Flare System to enhance reliability and SCAQMD compliance.

The scope of work for this project is as follows:

- Replace existing non-compliant candlestick flare
- Design and install pre-selected Aereon three-flare system
- Install low pressure gas-holding tank to enhance digester gas pressure control
- Provide reliable control with integration to RP-1 SCADA system
- Commission and operate new flare system under new SCAQMD Permit

On March 5, 2020, a request for bids was advertised on *PlanetBids* to five prequalified contractors. On May 14, 2020, IEUA received five construction bids. W.M. Lyles Co. was the lowest responsive, responsible bidder with a bid price of \$5,540,000; Engineer's estimate was \$6,000,000.

The following table presents the anticipated project cost:

Description	Estimated Cost
Design Services	\$962,000
Design Contract (actuals)	\$493,684
IEUA Design Services (actuals)	\$443,316
Aereon Engineering Services	\$25,000
Construction Services	\$570,350
Engineering Services During Construction	\$182,550
IEUA Construction Services (~7%)	\$387,800
Construction	\$6,094,000
Construction Contract (This Action)	\$5,540,000
Contingency (~10%)	\$554,000
Total Project Cost:	\$7,626,350
Total Project Budget:	\$5,682,000*
Augmented Project Budget Request:	\$1,968,000**
Total Revised Budget:	\$7,650,000**

*Approved total project budget for Fiscal Year 2020/21

**In June 2020, staff will be requesting the Board of Directors to approve a budget amendment in the amount of \$1,968,000 in the Regional Capital (RC) Fund.

The following is the project schedule:

Project Milestone	Date
Construction Contract Award	June 2020
Construction Completion	October 2021

The RP-1 Flare Improvements Project is consistent with *IEUA's Business Goal of Wastewater Management*, specifically the Asset Management and Water Quality objectives that IEUA will ensure that systems are well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use to protect public health, the environment, and meet anticipated regulatory requirements.

RP-1 Flare Improvements Construction Contract Award

Project No. EN18006



Regional Water Recycling Plant No. 1 Project Location



The Project

- Existing flare is more than 40 years old with limited permitted capacity
- More future stringent SCAQMD regulatory requirements
- Project Purpose: Enhanced safety, reliability and compliance
- Scope includes:
 - Replace existing non-compliant flare
 - Install three new more advanced flare systems
 - Install low pressure gas holding tank
 - Upgrade digester gas system pressure control to prevent venting to atmosphere
 - Commissioning, testing, and startup



Similar Flare System (Riverside)



RP-1 Existing Flare System

Contractor Selection

Five (5) bids were received on May 14, 2020, from pre-qualified contractors:

Bidder's Name	Final Bid Amount
W.M Lyles Co.	\$5,540,000
J.R. Filanc Construction	\$5,760,547
PCL Construction	\$6,081,485
W.A. Rasic Construction Co., Inc.	\$6,418,000
Kiewit Infrastructure	\$6,722,000
Engineer's Estimate	\$6,000,000

Project Budget and Schedule

Description	Estimated Cost	Project Milestone	Date
Design Services	\$962,000	Construction	
Design Consultant Contract (actual)	\$493,684	Construction Contract Award	June 2020
IEUA Design Services (actuals)	\$443,316	Construction Completion	October 2021
Aereon Engineering Services	\$25,000		
Construction Services	\$570,350		
Engineering Services During Construction	\$182,550		
IEUA Construction Services (estimate)	\$387,800		
Construction	\$6,094,000		
Construction Contract (not-to-exceed)	\$5,540,000		
Contingency (~10%)	\$554,000		
Total Project Cost:	\$7,626,350		
Total Project Budget:	\$5,682,000*		
Augmented Project Budget Request:	\$1,968,000**		
Total Revised Budget:	\$7,650,000**		

* Approved total project budget for Fiscal Year 2020/21

** Staff will request the Board of Directors to approve a budget amendment

Recommendation

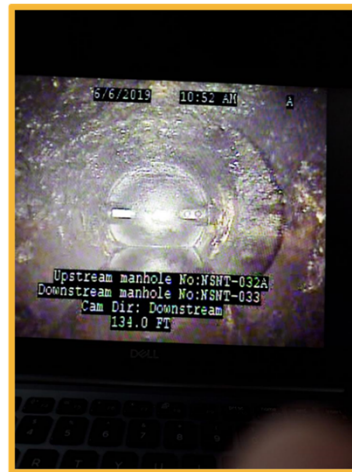
- It is requested that the Regional Committees recommend the IEUA Board of Directors award the construction contract for the RP1 Flare System Improvements Project, Project No. EN18006, to the lowest, responsive bidder W.M. Lyles Co. for the not-to-exceed amount of \$5,540,000.

The RP-1 Flare Improvements Project is consistent with **IEUA's Business Goal of Wastewater Management**, specifically the Asset Management and Water Quality objectives that IEUA will ensure that systems are well maintained, upgraded to meet evolving requirements, sustainably managed, and can accommodate changes in regional water use to protect public health, the environment, and meet anticipated regulatory requirements.

**INFORMATION
ITEM**

2A

Engineering and Construction Management Project Updates



Jerry Burke, P.E.
May 2020/June 2020

San Bernardino Lift Station Facility Improvements

Project Goal: Improve Efficiency



Final Improvement

Total Project Budget: \$500 K
Project Completion: April 2020
Construction Percent Complete: 100%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	WSC	\$45 K	0%
Construction (Current)	AToM Engineering	\$118 K	0%

Non-Reclaimable Wastewater System Manhole Upgrades - 19/20

Project Goal: Extend Asset Life

Total Project Budget: \$200 K

Project Completion: June 2020

Construction Percent Complete: 70%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	In-house	\$0	0%
Construction (Current)	Ferreira Construction	\$87 K	0%



Placing Asphalt

RP-4 Aeration Diffuser Replacement/Wall Reinforcement

Project Goal: Increase operational efficiency



Piping to be coated

Total Project Budget: \$6 M
Project Completion: July 2021
Design Percent Complete: 100%

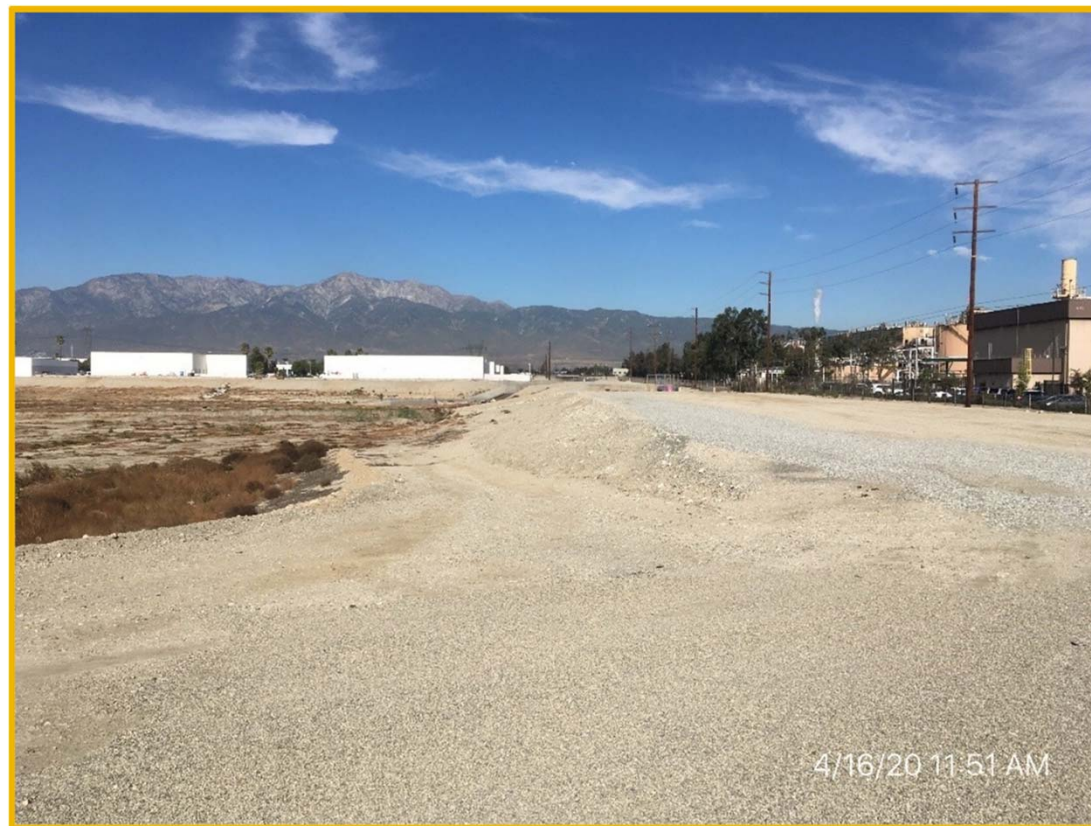
Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design	Carollo Engineering	\$90 K	0%
Construction	TBD	\$0 M	0%

Wineville/Jurupa/Force Main Improvements

Project Goal: Increase Storm Water Recharge

Total Project Budget: \$14.9 M
Project Completion: February 2022
Design Percent Complete: 100%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Design (Current)	Stantec/Carollo	\$885 K	1%
Construction	TBD	\$0	0%



Wineville - Proposed Location of Pump Station 1

Collection System Asset Management

Project Goal: Improve monitoring and increase reliability



Manhole CT-003

Total Project Budget: \$3.0 M
Project Completion: July 2021
Planning Percent Complete: 95%

Phase	Consultant/ Contractor	Current Contract	Amendments/ Change Orders
Planning (Current)	GHD	\$95 K	0%
Assessment	TBD	\$0	0%

**INFORMATION
ITEM**

2D



Date: May 28, 2020

To: Regional Technical Committee

From: Inland Empire Utilities Agency

Subject: 2020 Land Use Demand Model Update

This is an information item regarding the 2020 Land Use Demand Model.

On January 30, 2020, an informational item was presented to the Committee regarding the 2020 Land Use Demand Model (LUDM) scope of work. A Request for Proposal (RFP) was issued in February 2020 for consulting services to update the 2015 Land Use-Based Water Demand Model, based on input and feedback from the Regional Technical Committee. IEUA and Chino Basin Watermaster (Watermaster) have been coordinating on data needs/management for the region, increase efficiency and minimize redundancies. Based on these discussions, it was concluded that efficiencies can be achieved if the update of LUDM was performed by Watermaster's consulting engineer, Wildermuth Environmental Inc. (WEI) since sharing of mutual data is possible and duplicating efforts in forecasting of water demands and wastewater generation within the Chino Basin can be avoided. As a result, the RFP was closed with no further action taken. The item was reported on at the last Regional Technical Committee meeting on April 30, 2020.

Based on the above efficiencies to be achieved, IEUA proposes the completion of the update of the LUDM to be done in coordination with CBWM, through Wildermuth. The scope of work is similar to that was released in February 2020; the scope includes data collection from each retail agency within the IEUA sphere of influence with the addition of the City of Pomona and Jurupa Community Services District. The combined effort will provide water and wastewater demand forecasts for the next 25 years by individual agency and collectively for IEUA and Watermaster. This information will be useful in the preparation of planning documents such as wastewater flow projections to prepare Ten Year Forecasts, the Urban Water Management Plan, the Integrated Resources Plan and other forecasting efforts by Watermaster in its processes.

This effort is proposed to be funded through a cost sharing agreement between IEUA and Watermaster, currently assumed to be a 50/50 cost share. The total project cost is estimated to be between \$200,000 and \$240,000 with IEUA's cost share is anticipated to be about \$100,000 to \$120,000. The costs associated with non-IEUA agencies will be paid 100% by those agencies directly to Watermaster.

Based on input from the Regional Technical Committee, a future action item will be presented at the next Regional Technical Committee meeting on June 25th, 2020, with the final cost estimate and the Task Order agreement.

The project is funded by IEUA Project No. PL20002 within the Water Resources Fund and consistent with the adopted IEUA Fiscal Year 2019/20 Biennial Budget.

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Regional Sewerage Program Policy Committee Meeting

AGENDA

Thursday, June 4, 2020

3:30 p.m.

Teleconference Call

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 COMMITTEE MEMBER MAY CALL INTO THE COMMITTEE MEETING WITHOUT OTHERWISE COMPLYING WITH ALL BROWN ACT'S TELECONFERENCE REQUIREMENTS.

In effort to prevent the spread of COVID-19, the Regional Sewerage Program Policy Committee Meeting will be held remotely by teleconference

Teleconference: 1-415-856-9169/Conference ID: 750 724 224#

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. Alternatively, you may email your public comments to the Recording Secretary Laura Mantilla at lmantilla@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/Flag Salute

Roll Call

Public Comment

Members of the public may address the Committee on any item that is within the jurisdiction of the Committee; 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. Comments will be limited to three minutes per speaker.

Additions/Deletions 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. Technical Committee Report (Oral)**
 - Regional Contract Negotiations Update
- 2. Action Item – Roll Call Vote**
 - A. Meeting Minutes for May 7, 2020
 - B. IEUA Ten Year Forecast
 - C. FY 2020/21 Budget Review of budget Amendments and Rates on Regional Wastewater and Recycled Water Funds
 - D. Regional Force Main Construction Contract Award
 - E. RP-1 Flare Improvements Construction Contract Award and Consultant Contract Amendment
- 3. Informational Items**
 - A. None
- 4. Receive and File**
 - A. Building Activity Report
 - B. Recycled Water Distribution – Operations Summary
 - C. Legislative Bill Matrix
 - D. Engineering Quarterly Project Updates
- 5. Other Business**
 - A. IEUA General Manager's Update
 - B. Committee Member Requested Agenda Items for Next Meeting
 - C. Committee Member Comments
 - D. Next Meeting – July 2, 2020
- 6. Adjournment**

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact the Recording Secretary (909) 993-1944, 48 hours prior to the scheduled meeting so that the Agency can make reasonable arrangements.

DECLARATION OF POSTING

I, Laura Mantilla, Executive Assistant of the Inland Empire Utilities Agency, A Municipal Water District, hereby certify that a copy of this agenda has been posted to the IEUA Website at www.ieua.org and posted in the foyer at the Agency's main office at 6075 Kimball Avenue, Building A, Chino, CA, on Thursday, May 28, 2020.

Laura Mantilla

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Building Activity Report - YTD Fiscal Year 2019/20



Legend

Service Area

Unincorporated

EDU (YTD)

Residential

<=1.0

1.0 - 10.0

>10.0

Commercial

<=1.0

1.0 - 10.0

>10.0

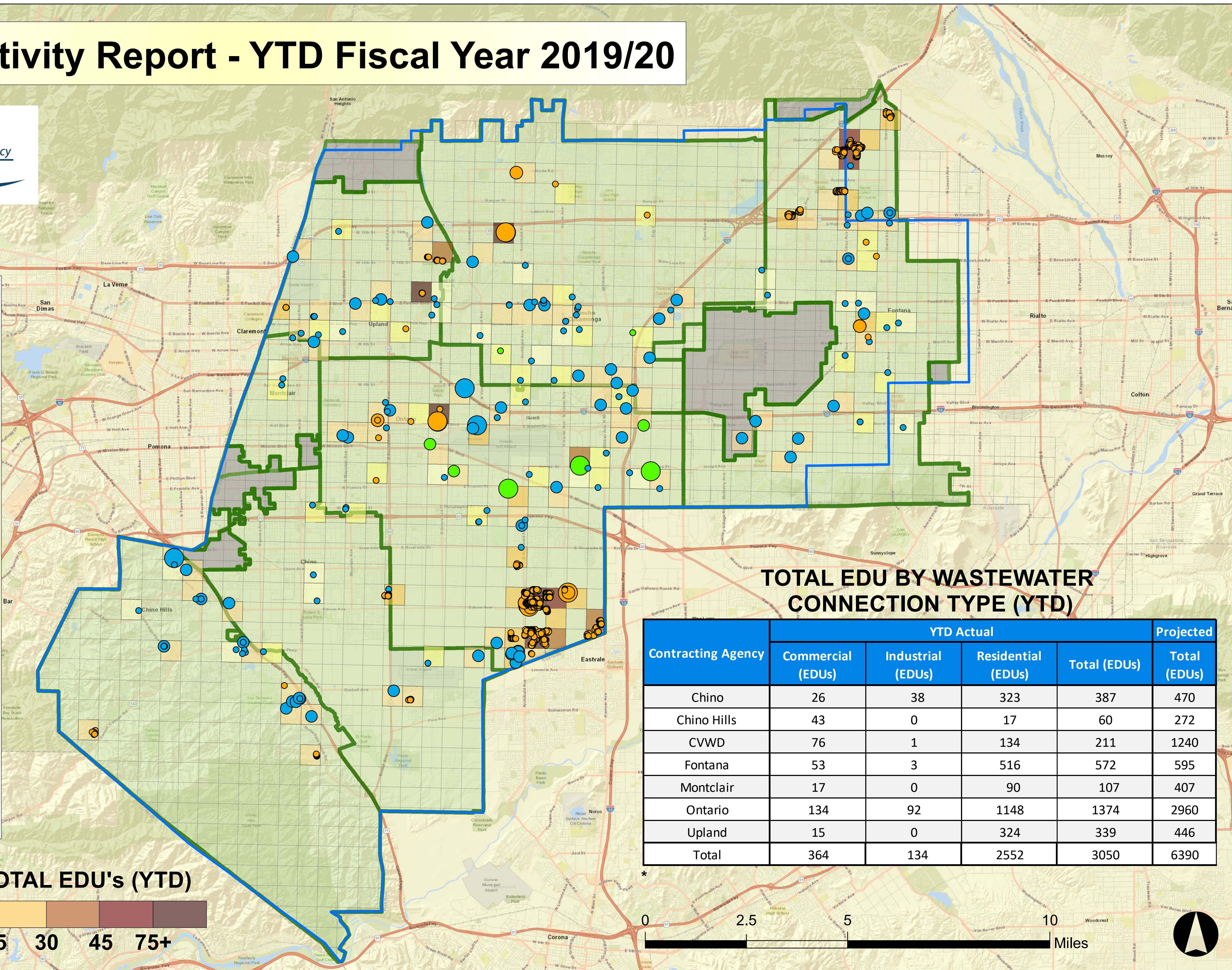
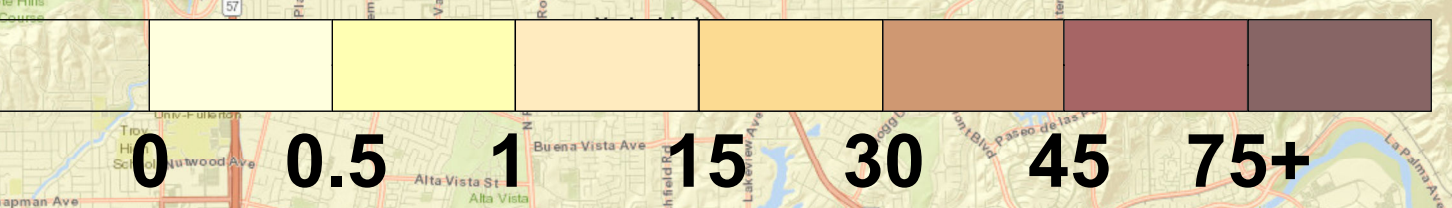
Industrial

<=1.0

1.0 - 10.0

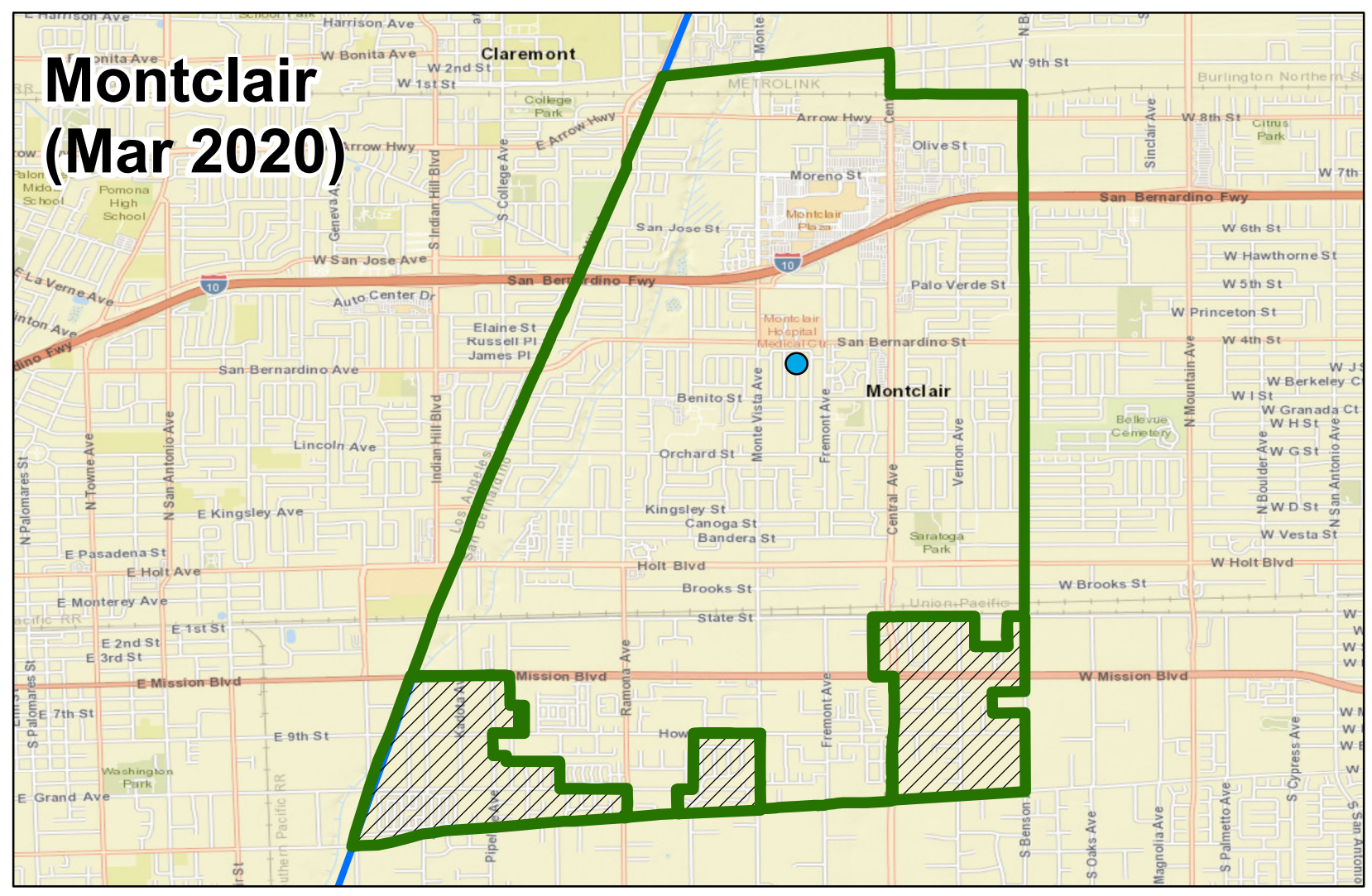
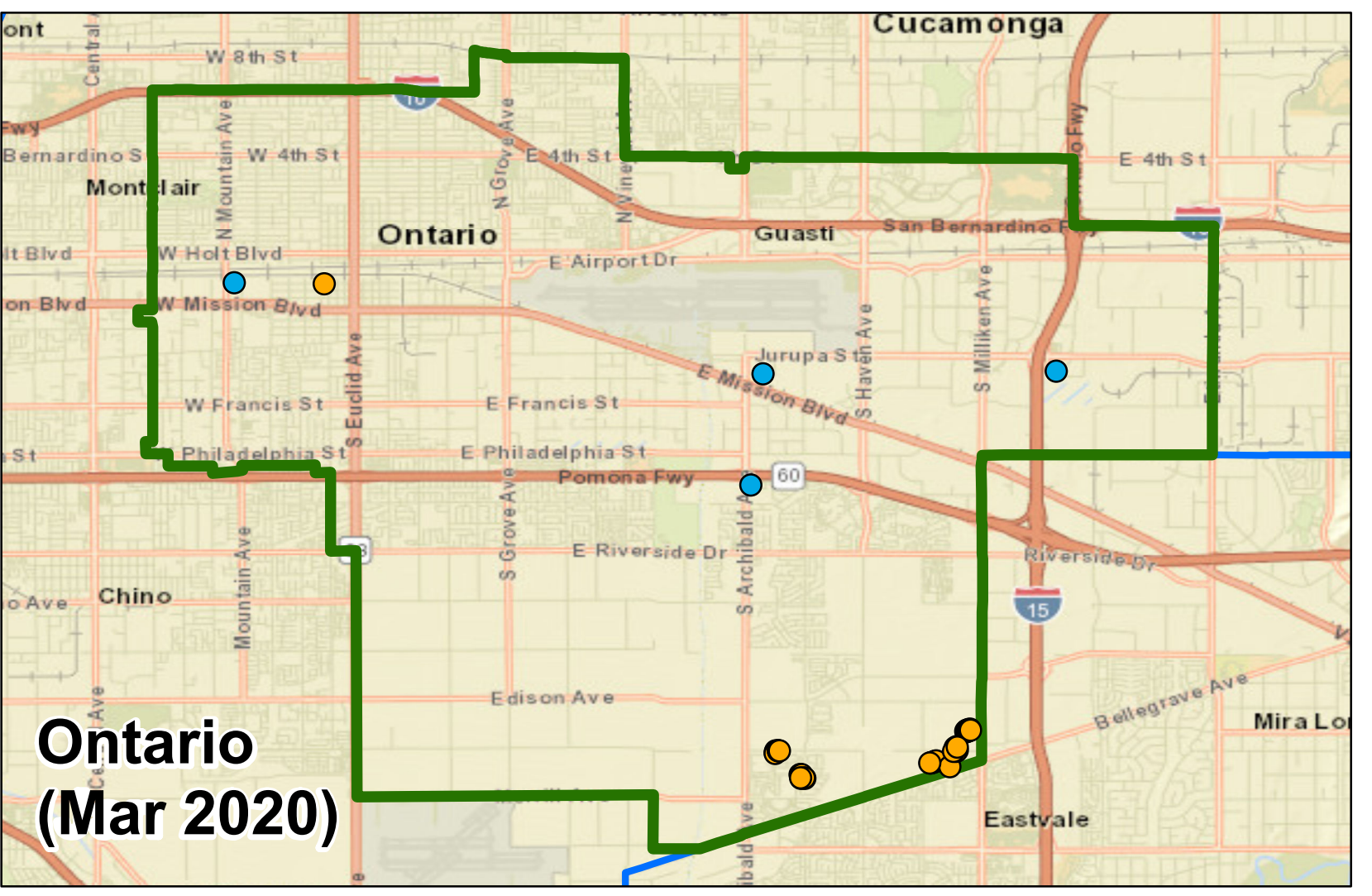
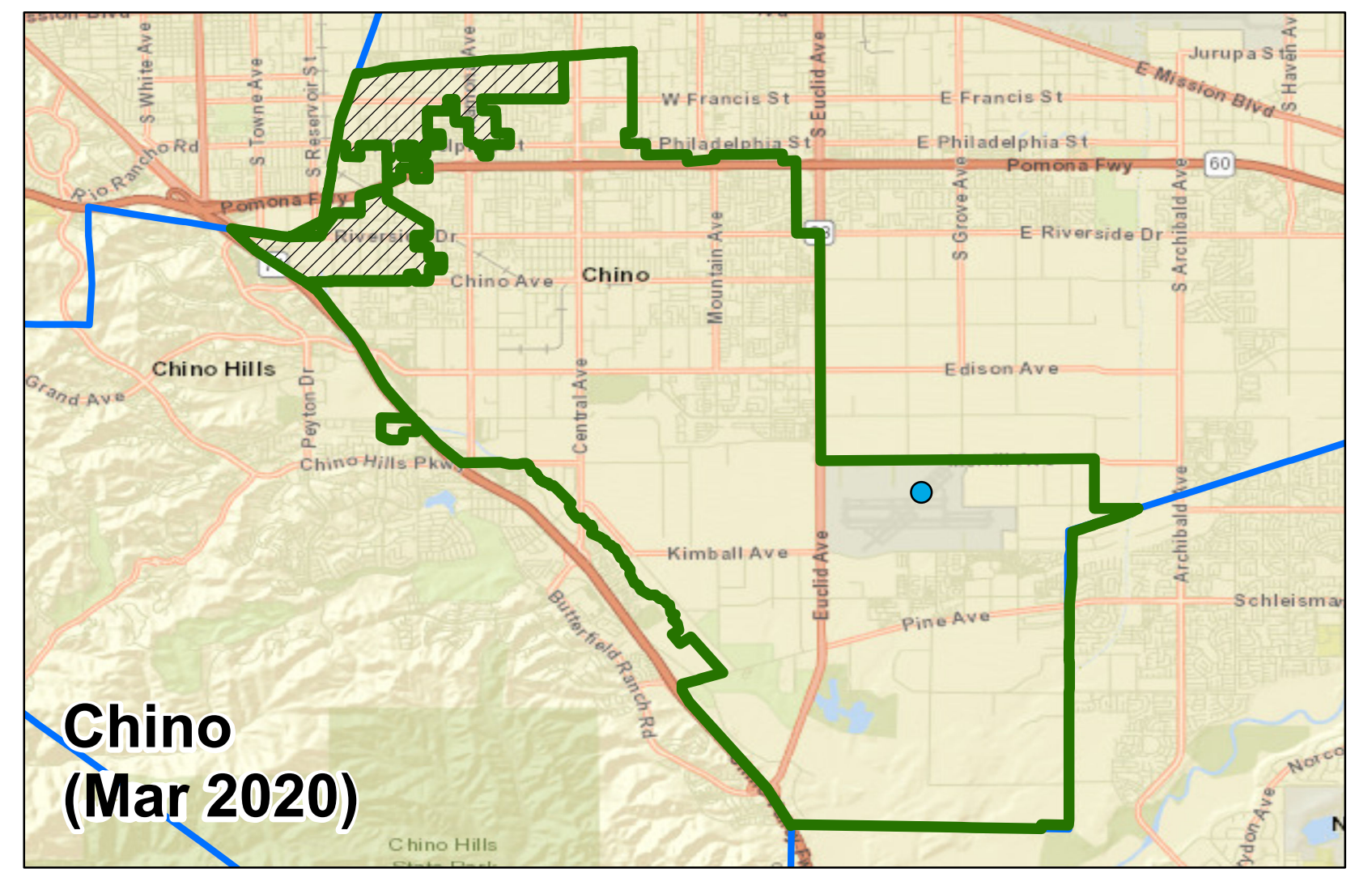
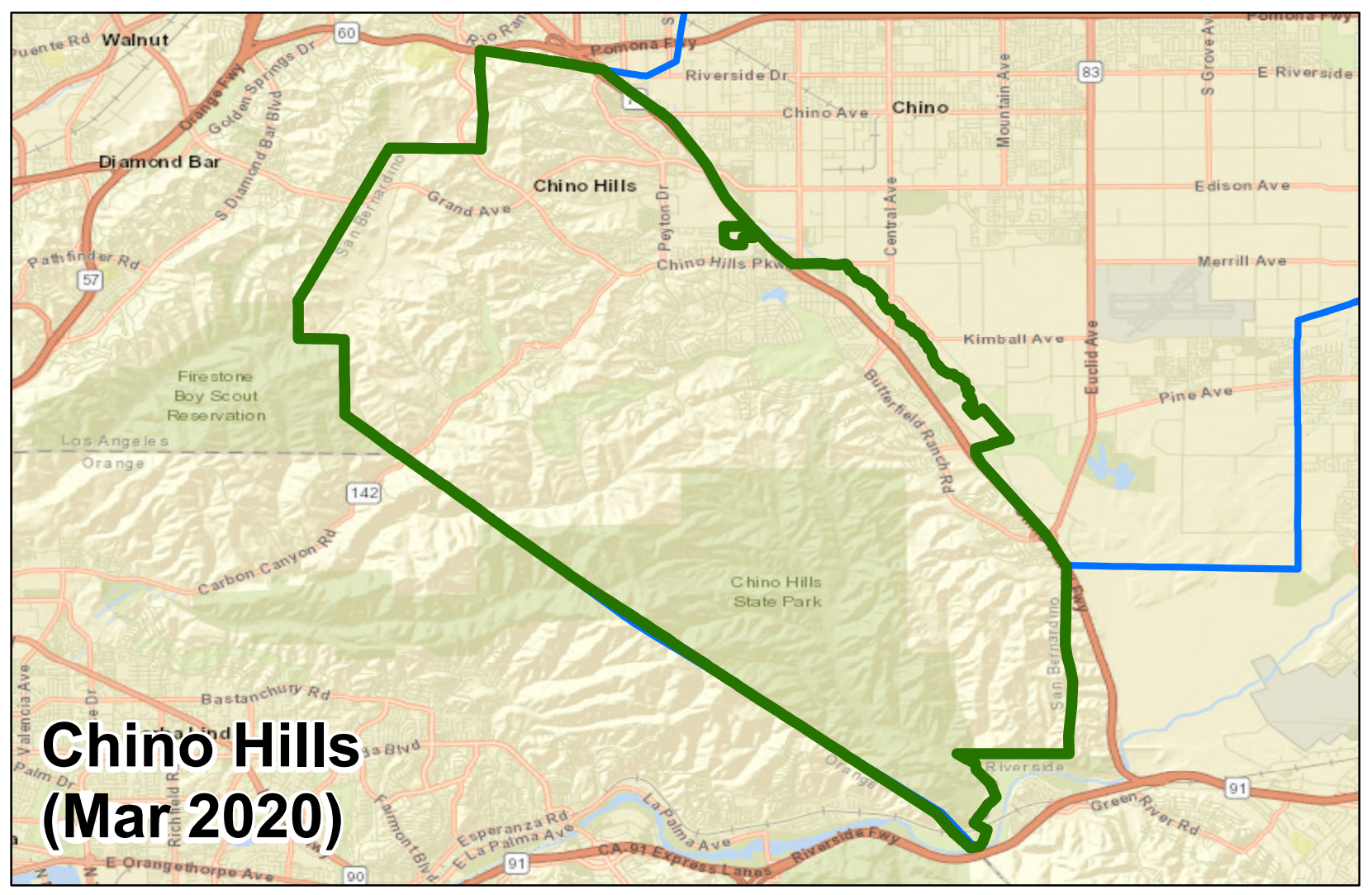
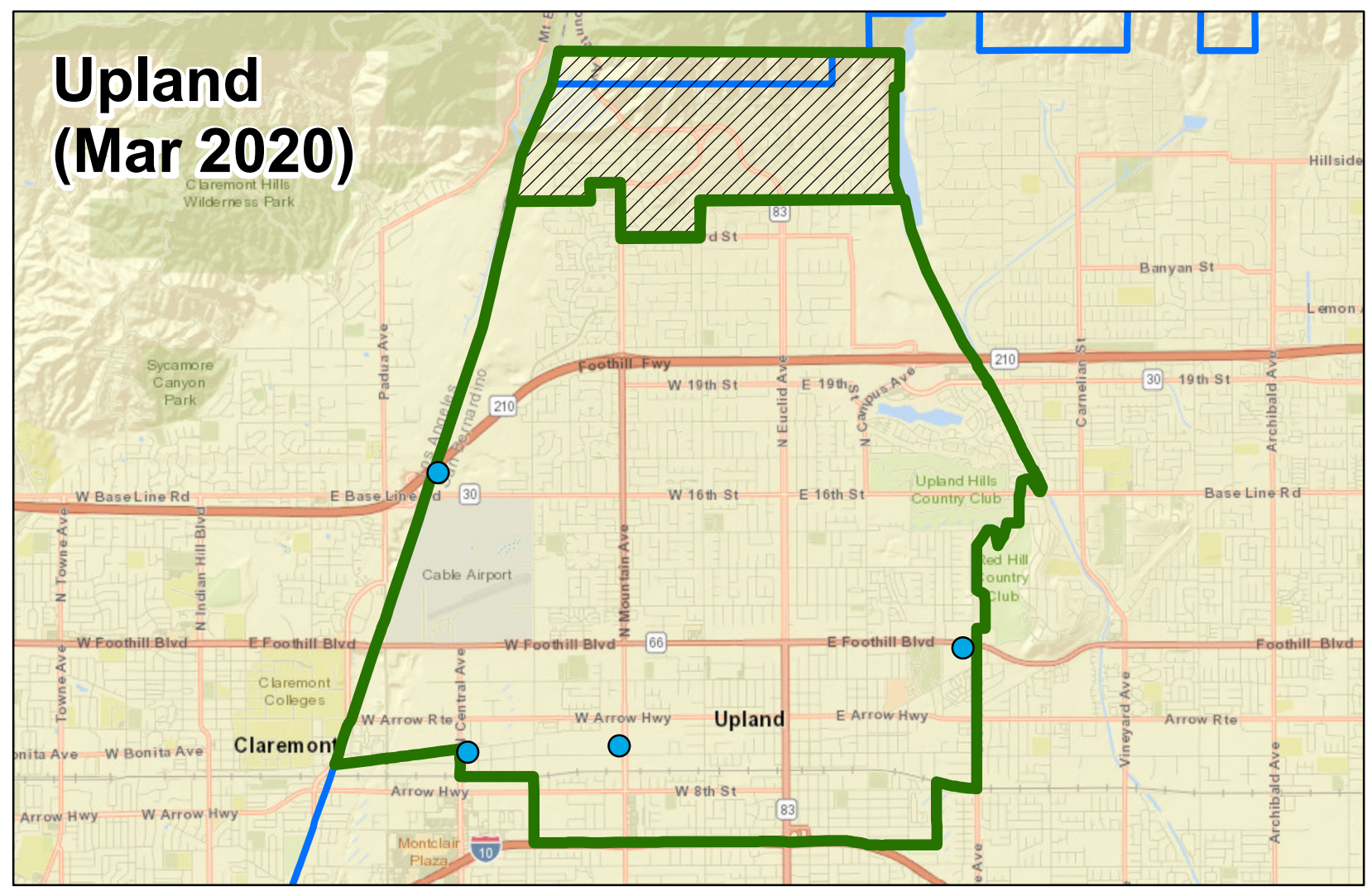
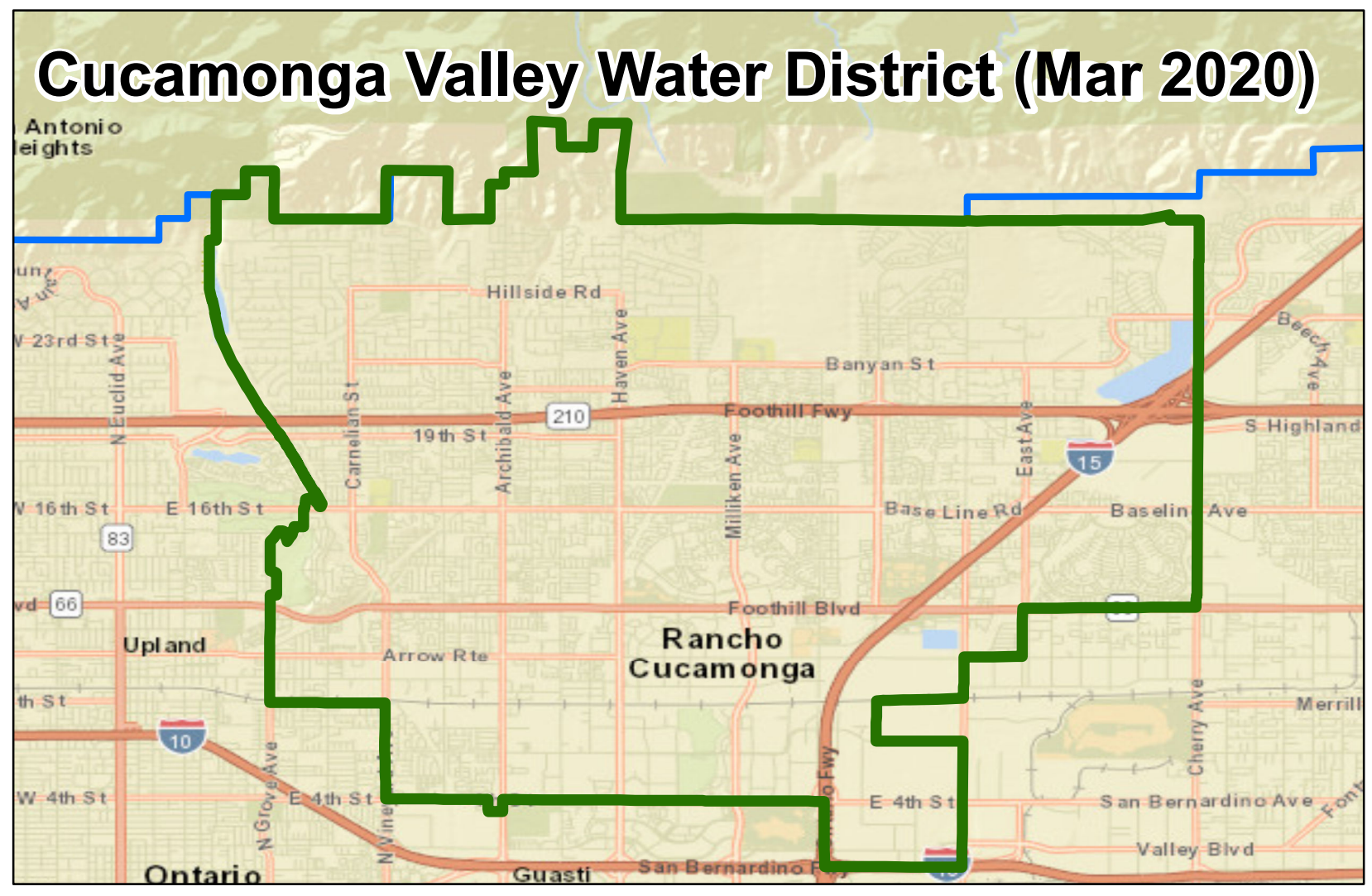
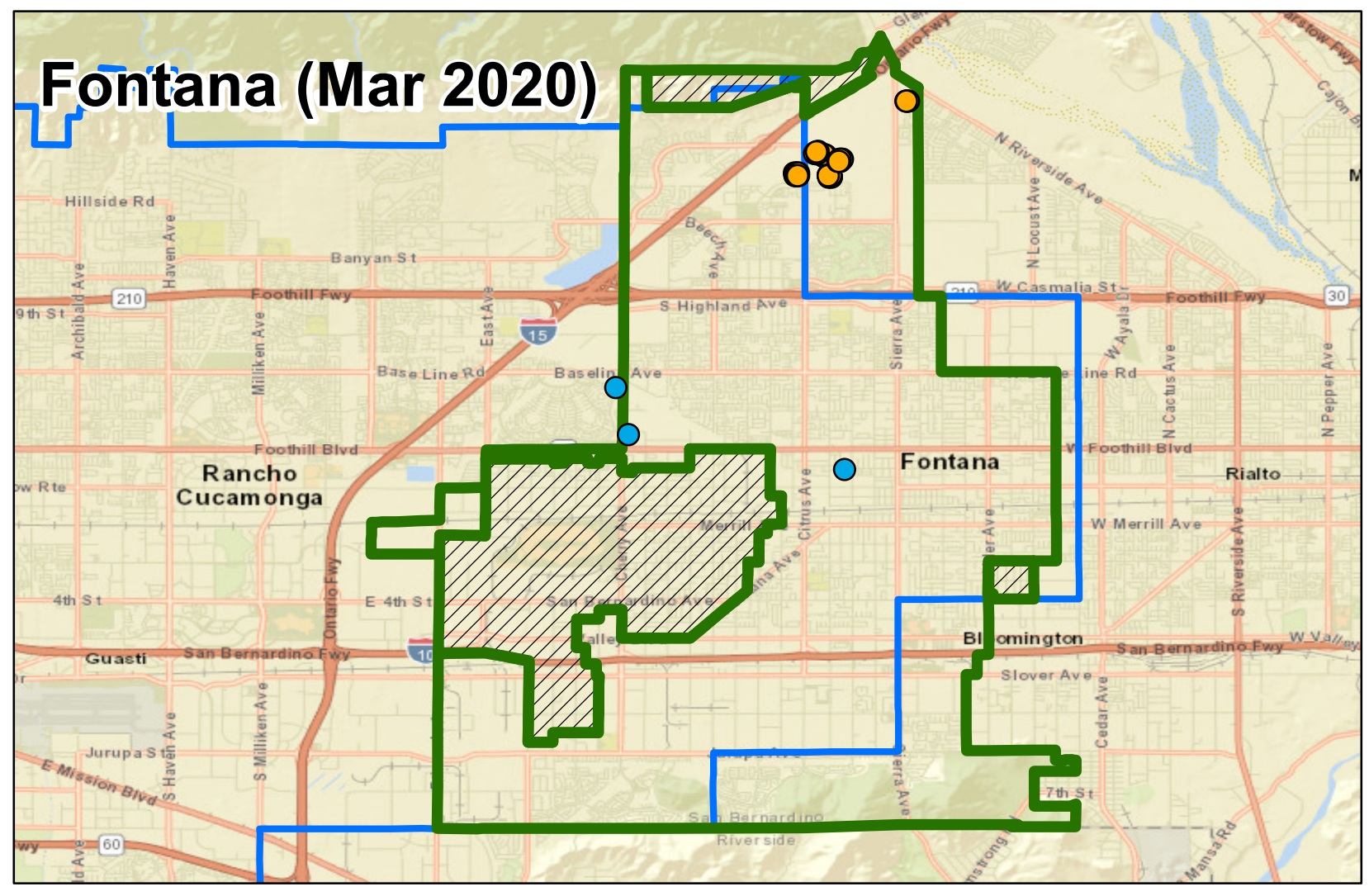
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HALF MILE GRID: TOTAL EDU's (YTD)



TOTAL EDU BY WASTEWATER CONNECTION TYPE (YTD)

Contracting Agency	YTD Actual				Projected
	Commercial (EDUs)	Industrial (EDUs)	Residential (EDUs)	Total (EDUs)	
Chino	26	38	323	387	470
Chino Hills	43	0	17	60	272
CVWD	76	1	134	211	1240
Fontana	53	3	516	572	595
Montclair	17	0	90	107	407
Ontario	134	92	1148	1374	2960
Upland	15	0	324	339	446
Total	364	134	2552	3050	6390



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IEUA RECYCLED WATER DISTRIBUTION – APRIL 2020

TOTAL ALL PLANTS

Influent: 49.2 MGD

Delivered: 17.7 MGD

Percent Delivered: 36%

RP-4

Delivered: 7.1 MGD

RP-1

Delivered: 4.7 MGD

CCWRF

Delivered: 1.1 MGD

RP-5

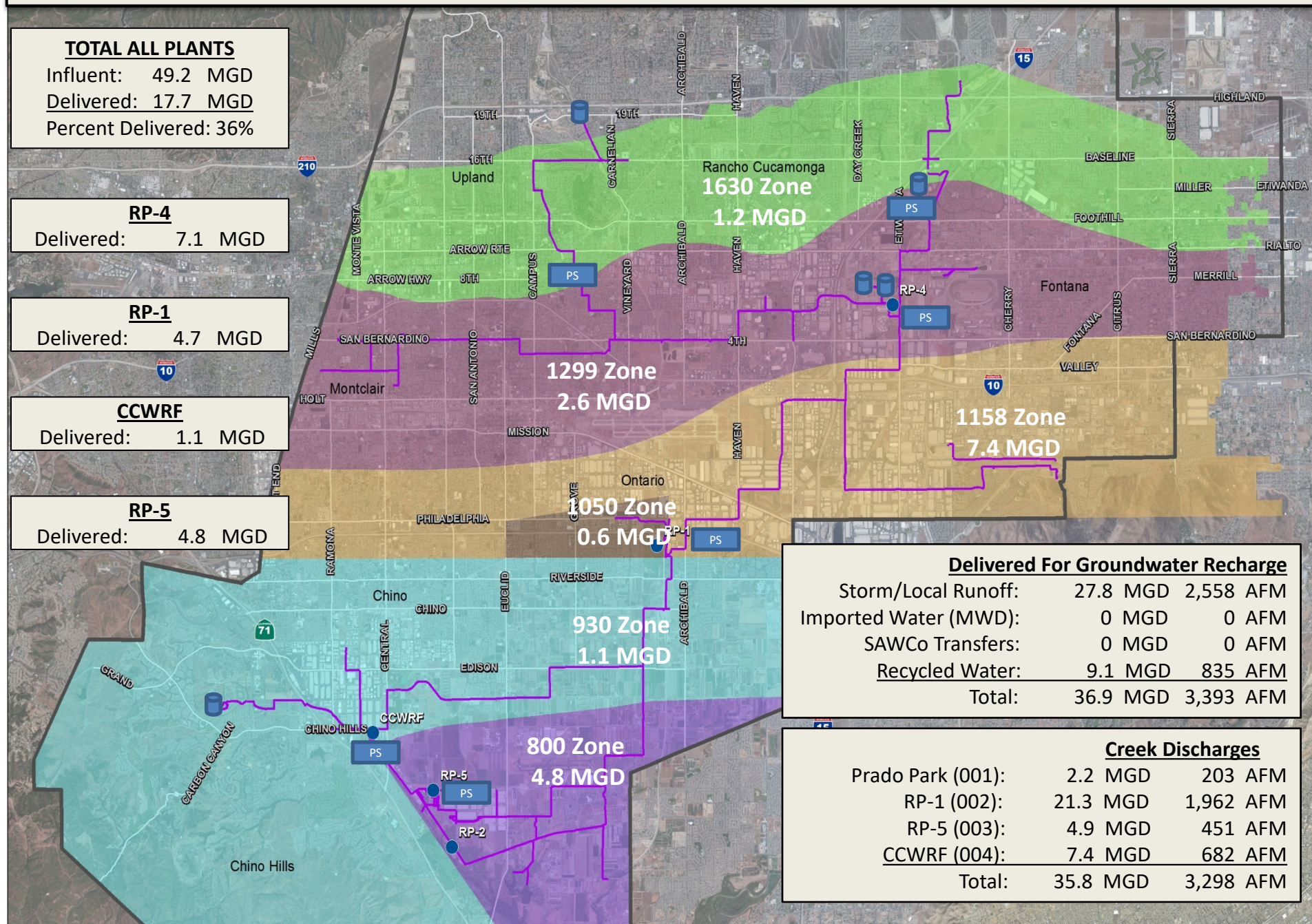
Delivered: 4.8 MGD

Delivered For Groundwater Recharge

Storm/Local Runoff:	27.8 MGD	2,558 AFM
Imported Water (MWD):	0 MGD	0 AFM
SAWCo Transfers:	0 MGD	0 AFM
Recycled Water:	9.1 MGD	835 AFM
Total:	36.9 MGD	3,393 AFM

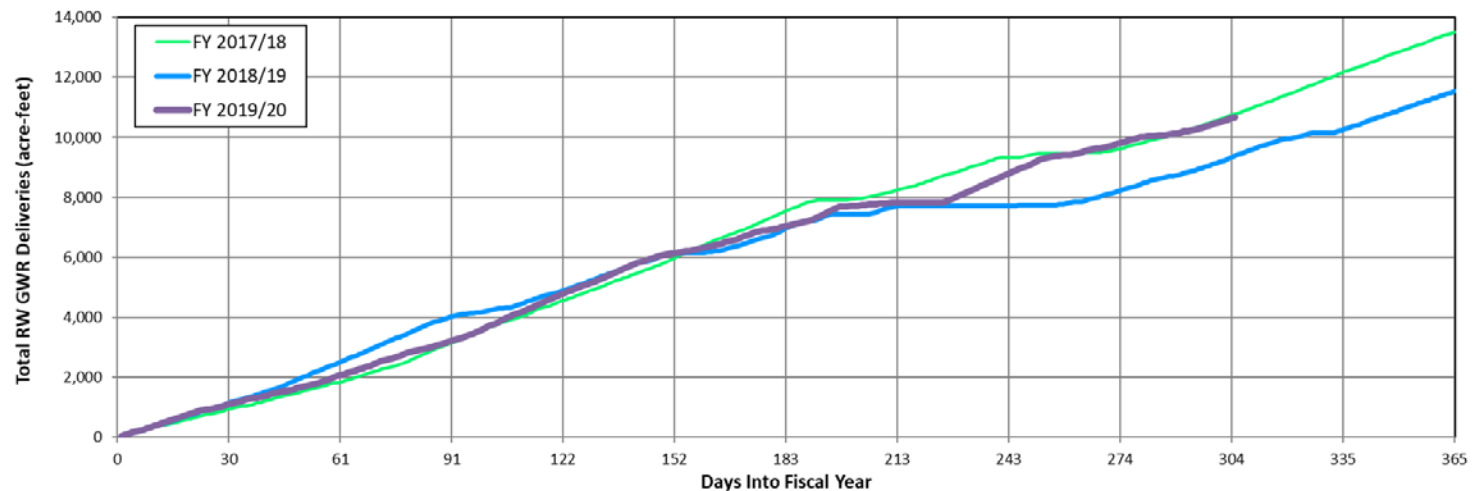
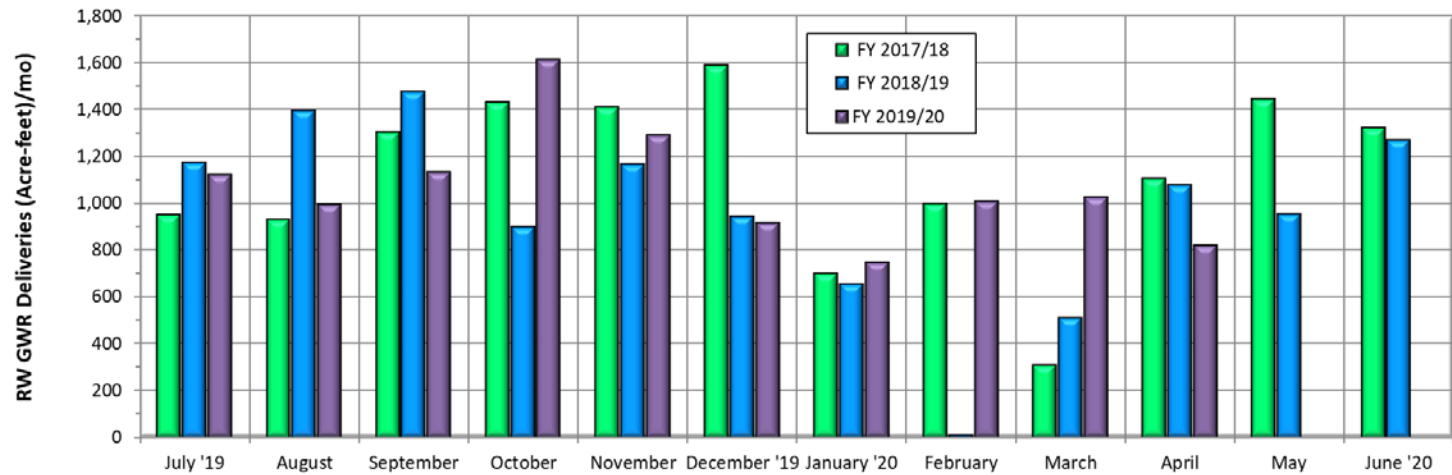
Creek Discharges

Prado Park (001):	2.2 MGD	203 AFM
RP-1 (002):	21.3 MGD	1,962 AFM
RP-5 (003):	4.9 MGD	451 AFM
CCWRF (004):	7.4 MGD	682 AFM
Total:	35.8 MGD	3,298 AFM



Recycled Water Recharge Deliveries / Plan - April 2020 (Acre-Feet)

Basin	4/1-4/6	4/7-4/13	4/14-4/20	4/21-4/27	4/28-4/30	Month Actual	FY To Date Actual	Deliveries are draft until reported as final.	
Ely	0.0	0.0	28.5	78.5	34.0	141.0	1211		
Banana	0.0	0.0	0.0	18.1	0.0	18.1	873		
Hickory	3.1	0.0	0.0	16.5	0.0	19.6	297		
Turner 1 & 2	0.0	0.0	0.0	0.0	0.0	0.0	199		
Turner 3 & 4	0.0	0.0	0.0	0.0	0.0	0.0			
8th Street	0.0	0.0	0.0	7.7	3.7	11.4	759		
Brooks	15.7	0.0	0.0	0.0	0.0	15.7	706		
RP3	131.2	82.6	137.7	122.4	44.2	518.1	5160		
Declez	0.0	0.0	0.0	0.0	0.0	0.0	593		
Victoria	20.7	0.0	15.3	55.4	4.2	95.6	878		
San Sevaïne	0.0	0.0	0.0	0.0	0.0	0.0	0		
Total	170.7	82.6	181.5	298.6	86.1	819.5	0	10,675	9,318 AF previous FY to day actual



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IEUA BILL POSITIONS—April 30, 2020

Bill Number	Author/Sponsor	Title and/or Summary	Summary	IEUA Position
AB 1672	Bloom CASA	Product labeling: flushable products	Current law regulates the labeling requirements on various consumer products. This bill would express the intent of the Legislature to enact legislation to prohibit the sale or advertisement of any nonwoven disposable product labeled as “flushable” or “sewer and septic safe” if that product fails to meet specified performance standards.	SUPPORT Senate Rules Committee
AB 2093	Gloria	Public records: writing transmitted by electronic mail: retention	Would, unless a longer retention period is required by statute or regulation, or established by the Secretary of State pursuant to the State Records Management Act, require a public agency, for purposes of the California Public Records Act, to retain and preserve for at least 2 years every public record, as defined, that is transmitted by electronic mail.	OPPOSE Assembly Appropriations Committee
AB 2182	Rubio ACWA Sponsored	Emergency backup generators: water and wastewater facilities: exemption	Would exempt the operation of an alternative power source, as defined, to provide power to a critical facility, as defined, from any local, regional, or state regulation regarding the operation of that source. The bill would authorize providers of essential public services, in lieu of compliance with applicable legal requirements, to comply with the maintenance and testing procedure set forth in the National Fire Protection Association Standard for Emergency and Standby Power System, NFPA 110, for alternative power sources designated by the providers for the support of critical facilities.	SUPPORT Assembly Utilities and Energy Committee
AB 2560	Quirk OCWD/CMUA Sponsored	Water quality: notification and response levels: procedures	The California Safe Drinking Water Act requires the State Water Resources Control Board to adopt drinking water standards for contaminants in drinking water based upon specified criteria and requires any person who owns a public water system to ensure that the system, among other things, complies with those drinking water standards. The act requires a public water system to provide prescribed notices within 30 days after it is first informed of a confirmed detection of a contaminant found in drinking water delivered by the public water system for human consumption that is in excess of a maximum contaminant level, a notification level, or a response level established	SUPPORT Assembly Environmental Safety and Toxic Materials Com. May 14

			by the state board. This bill would require the state board to comply with specified public notice and comment and peer review procedures, as prescribed, when establishing or revising notification or response levels.	
ACA 1	Aguiar-Curry	Local government financing: affordable housing and public infrastructure: voter approval	The California Constitution prohibits the ad valorem tax rate on real property from exceeding 1% of the full cash value of the property, subject to certain exceptions. This measure would create an additional exception to the 1% limit that would authorize a city, county, city and county, or special district to levy an ad valorem tax to service bonded indebtedness incurred to fund the construction, reconstruction, rehabilitation, or replacement of public infrastructure, affordable housing, or permanent supportive housing, or the acquisition or lease of real property for those purposes, if the proposition proposing that tax is approved by 55% of the voters.	SUPPORT Assembly Floor- first vote failed, can be acted upon Jan 2020
SB 414	Caballero Eastern MWD/ CMUA	Small System Water Authority Act of 2019	Would create the Small System Water Authority Act of 2019 and state legislative findings and declarations relating to authorizing the creation of small system water authorities that will have powers to absorb, improve, and competently operate noncompliant public water systems. The bill, no later than March 1, 2020, would require the state board to provide written notice to cure to all public agencies, private water companies, or mutual water companies that operate a public water system that has either less than 3,000 service connections or that serves less than 10,000 people, and are not in compliance, for the period from July 1, 2018, through December 31, 2019, with one or more state or federal primary drinking water standard maximum contaminant levels, as specified.	SUPPORT 2- year bill Assembly Approps
SB 667	Hueso	Greenhouse Gasses: Recycling Infrastructure and Facilities	Would require the Department of Resources Recycling and Recovery to develop, on or before January 1, 2021, and would authorize the department to amend, a 5-year needs assessment to support innovation and technological and infrastructure development, in order to meet specified organic waste reduction and recycling targets, as provided.	SUPPORT IF AMENDED

SB 1099	Dodd CMUA/Las Virgenes Sponsored	Emergency backup generators: critical facilities: exemption	Would, consistent with federal law, require air districts to adopt a rule, or revise its existing rules, to allow critical facilities with a permitted emergency backup generator to use that emergency backup generator during a deenergization event or other loss of power, and to test and maintain that emergency backup generator, as specified, without having that usage, testing, or maintenance count toward that emergency backup generator's time limitation on actual usage and routine testing and maintenance. The bill would prohibit air districts from imposing a fee on the issuance or renewal of a permit issued for those critical facility emergency backup generators	SUPPORT Senate Environmental Quality Committee
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REQUESTED
ITEM

4A

REGULATORY CHALLENGES



Draft

Prepared by:
Inland Empire Utilities Agency
GEI Consultants

APRIL 23, 2020

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1 Executive Summary

As one of the stewards responsible for managing water and wastewater in the region, the Inland Empire Utilities Agency (IEUA) continuously evaluates challenges and develops solutions to address them, all with the goal of securing a reliable, high-quality water supply in a cost-effective manner. This goal involves the use of various water sources, including imported water, stormwater, groundwater, and recycled water.

Recycled water is an increasingly essential asset to the region particularly with the uncertain future of imported water supplies due to climate change and environmental factors. Recycled water is the region's most climate resilient water supply because the amount of water available is not affected by dry years. Today, recycled water makes up approximately 15% of IEUA's water supply portfolio and hundreds of millions of dollars have been invested into the regional recycled water program. It is critical for IEUA to maintain this resource within the region.

The continued use of recycled water is compliance driven, with regulatory limitations for total dissolved solids (TDS) in IEUA's recycled water and groundwater recharge. In the event of non-compliance, assets would become stranded, and IEUA would need to supplement the water supply portfolio with more expensive and/or less reliable sources.

Levels of TDS in recycled water have been increasing, exacerbated by climate change, conservation and episodic periods of drought over the last twenty years. In 2015, IEUA's recycled water neared the permit limit for TDS. Today, IEUA estimates that, without taking additional action, TDS limits for recycled water direct use and groundwater recharge may be exceeded within the next ten years. Time is not in the region's corner. Long-term solutions take years and can be as long as a decade to develop, finance and implement. Left unchecked, the possibility of noncompliance with regulatory requirements grows and risks the possibility of reduced recycled water use, challenges responding to changing water quality regulations, and greater reliance on imported supplies.

This underscores IEUA's need for a long-term solution to secure recycled water as a resource within the region. Based on findings supported by this memorandum and other planning efforts, IEUA is pursuing a suite of solutions, which are targeted at mitigating these TDS risks and that are fully aligned with IEUA's mission and vision.

These solutions integrate structural elements, alternative and new water supplies, operational enhancements, potential permit modifications, and other management strategies, which when bundled together could improve water reliability, achieve multiple benefits, protect Chino Basin water quality, and maintain compliance for the long-term. Advanced treatment is an integral component of this suite of solutions.

In addition to the challenges associated with TDS, IEUA is also facing regulatory challenges with 1,2,3-Trichloropropane (1,2,3-TCP), perfluorooctanoic acid (PFOA), microplastics and other contaminants of emerging concern. These contaminants are making their way into IEUA's recycling plants, which are not designed for their removal. In 2019, recycled water used for groundwater recharge exceeded the 1,2,3-TCP maximum contaminant level (MCL) and PFOA Notification Level (NL). It becomes evident, then, that even if advanced treatment is not needed for TDS compliance, it may be needed to address other regulatory challenges within the region. IEUA

Over the last twenty years, IEUA has implemented a number of actions to manage salinity including the construction and operation of desalters, implementing a water softener removal program, maximizing usage of the high-TDS Brine Line, and others. Though IEUA is familiar with the historical challenges associated with TDS, and the management actions needed to address these challenges, this is an unprecedented time for the region – without implementing new solutions, IEUA will lose access to the highly beneficial resource that is recycled water it has come to depend on. IEUA and local partners have long-term plans to implement a variety of new infrastructure to meet future needs for wastewater treatment and potable water supplies, while increasing resiliency and sustainability of regional water resources management. These plans are ongoing and will continue into the future to ensure that the region is able to reap the multiple benefits provided by this valuable resource.

2 Introduction

The Inland Empire Utilities Agency (IEUA) is a wholesale distributor of imported water supplies from the Metropolitan Water District of Southern California (MWD). IEUA is also a regional wastewater agency that owns and operates five water recycling plants: Regional Water Recycling Plant No. 1 (RP-1), Regional Water Recycling Plant No. 2 (RP-2), Regional Water Recycling Plant No. 4 (RP-4), Regional Water Recycling Plant No. 5 (RP-5), and the Carbon Canyon Water Recycling Facility (CCWRF). These facilities provide tertiary-treated wastewater, also known as recycled water. Recycled water supplies can be used for direct non-potable uses, groundwater recharge for the Chino Basin, and for other regional discharge obligations.

The Chino Basin Optimum Basin Management Program (OBMP), as overseen by the Chino Basin Watermaster (CBWM) was adopted in 2000 to provide a framework to maximize recycled water use within the region. Within the region, direct use and recharge of recycled water is allowed by the Regional Water Quality Control Board (RWQCB) through the Santa Ana River Basin Water Quality Control Plan, also known as the Basin Plan, as well as a number of permits. These permits define requirements for the use of recycled water (both direct use and recharge), including but not limited to uses, water quality limits, and monitoring requirements.

3 Background

The Chino Basin retail water agencies' water supply portfolio includes imported and recycled water provided by IEUA, in addition to groundwater from both the Chino and surrounding basins, and local surface water from various creeks which flow through the service area that originate in the San Gabriel Mountains. IEUA has served wholesale imported water since 1950 and recycled water since 1972. **Figure 1** below shows IEUA's historical imported water deliveries which are exclusively State Water Project (SWP) water through the Metropolitan Water District. IEUA is uniquely positioned as one of the few MWD member agencies that can only currently receive SWP water. Being an exclusive SWP water receiver can create an additional vulnerability to the region. The availability of this imported water supplies is heavily dependent on hydrology and environmental regulations and results in highly variable annual imported water supplies to the IEUA service area. Because imported water rates are increasing and imported supplies are not as reliable as they were historically, IEUA and the region are committed to develop local reliable water supplies to provide greater reliability and resiliency for the region.

In the mid-1990s, IEUA identified recycled water as one of the critical components to provide a resilient water supply for the region, a hydrology-independent and reliable local supply source. This set the path for the development of a regional recycled water program. To date approximately \$300 million has been invested into the regional recycled water program, including approximately \$180 million received in grant funds and low interest loans.

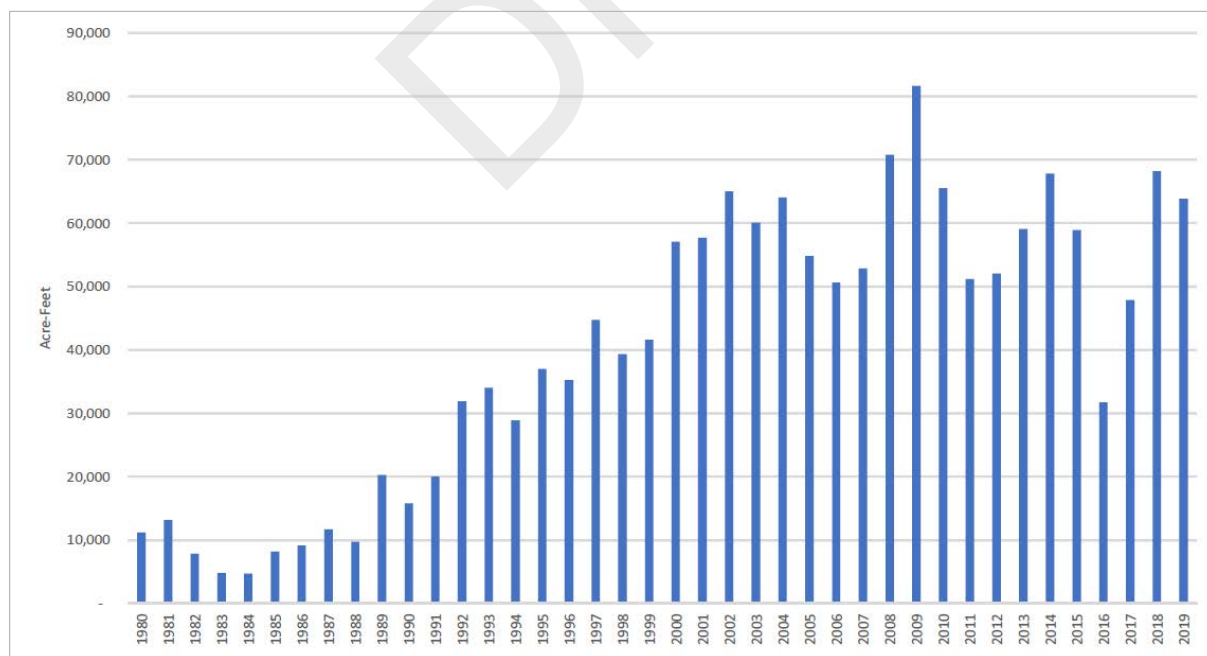


Figure 1: IEUA Imported Water Deliveries Historical Data (1980– 2019)

Recycled water has become a notable portion of IEUA’s water supply and groundwater recharge portfolio. Recycled water from the IEUA facilities through a regional recycled water distribution system is used directly for agricultural irrigation, industrial processes, irrigation of parks, parkways, schools, golf courses, commercial landscape sites, construction sites, and groundwater recharge. As seen in **Figure 2** below, direct use of recycled water was approximately 3,000 acre-feet (AF) in the year 2000, prior to the construction of IEUA’s regional recycling plants. This usage nearly quadrupled once IEUA’s recycling plants were online in 2010. Since then, recycled water use has increased by as much as seven times in relation to usage in 2000, with usage in recent years hovering around 20,000 AF per year. Similarly, groundwater recharge of recycled water has also increased in the last ten years, with recent volumes hovering around three times higher than what was recharged in 2010.

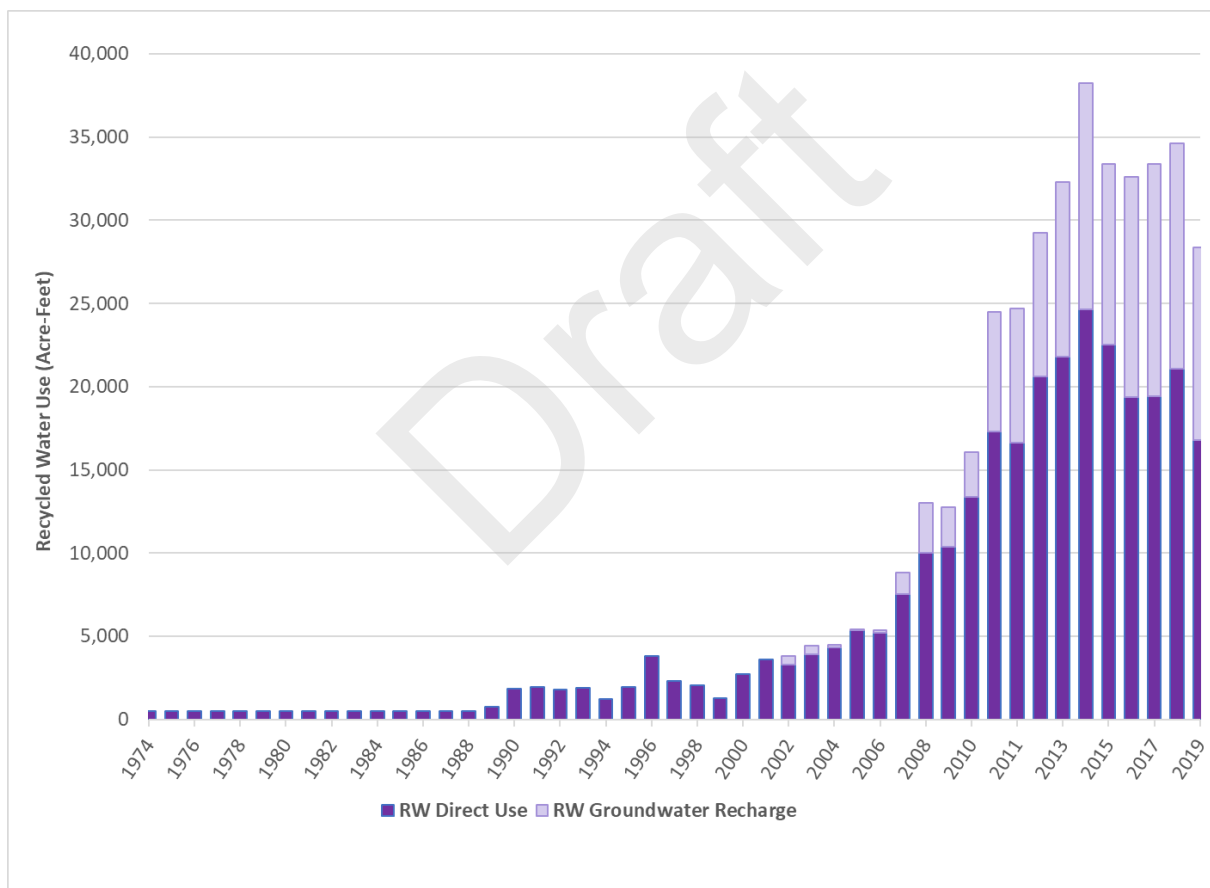


Figure 2: Recycled Water Historical Annual Reuse (1974 – 2019)

4 Regulatory Requirements

Water and wastewater quality management in the Chino Basin is generally governed by:

1. RWQCB Water Quality Control Plan (Basin Plan) for the Santa Ana River Basin;

- a. Regional Water Quality Control Board (RWQCB) National Pollutant Discharge Elimination System (NPDES) *Waste Discharge Requirements and Master Reclamation Permit for IEUA's Regional Water Recycling Facilities, Surface Water Discharges and Recycled Water Use*, Order No. R8-2015-0036, NPDES No. CA8000409 (IEUA wastewater discharge NPDES permit);
- b. RWQCB *Water Recycling Requirements for IEUA and CBWM, Chino Basin Recycled Water Groundwater Recharge (GWR) Program Phase I and Phase II Projects*, Order No. R8-2007-0039, and subsequent amendments (IEUA recycled water GWR permit); and,
- c. State Water Resources Control Board – Division of Drinking Water (DDW) *Title 22 California Code of Regulations, Division 4, Chapter 3. Article 5.1 "Indirect Potable Reuse: Groundwater Replenishment - Surface Application"* sections §60320.100 through 60320.130 for Groundwater Replenishment Reuse Projects (GRRPs).

Among other requirements, these permits define limits for TDS present in recycled water used for groundwater recharge, irrigation, and discharge, and define actions required when ambient groundwater quality exceeds Basin Plan objectives for TDS or nitrogen. To continue using recycled water within the region, IEUA must comply with these limits or face the loss of this valuable resource. Regulatory challenges facing IEUA in 2020 are as follows:

- Ambient water quality
- IEUA's wastewater discharge NPDES permit limit for TDS
- IEUA's recycled water GWR permit limit for TDS
- Compliance with blended groundwater recharge permit limit and Basin Plan objective for TDS
- Compliance with recycled water quality for groundwater recharge as provided by the 2014 GRRP Title 17 and Title 22 Regulations

Figure 4 is a simplified conceptual Regulatory Overview Diagram for the purpose of highlighting and discussing these TDS water quality challenges.

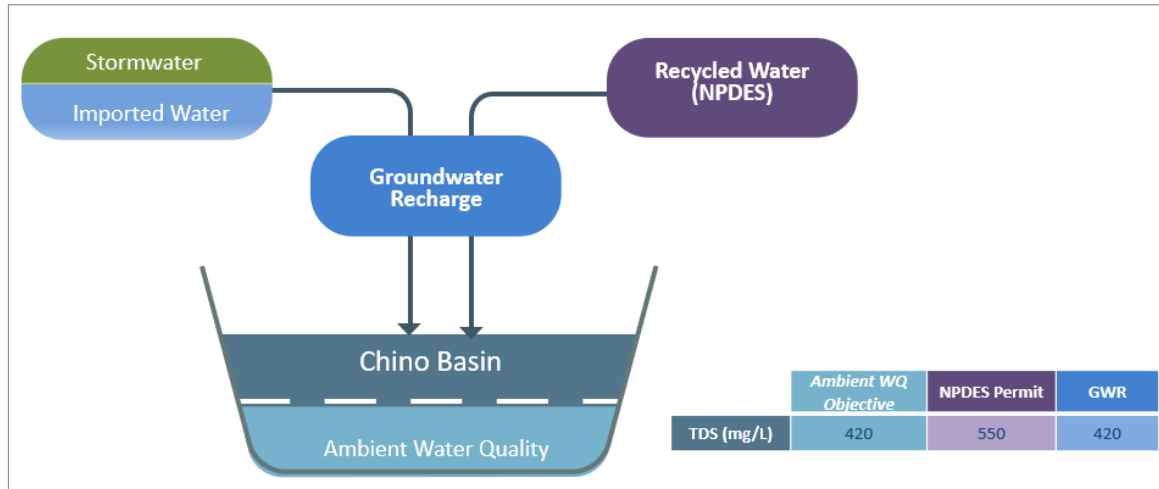


Figure 3: Regulatory Overview Diagram

The analysis will focus first on the challenges arising from salinity, and then focus on the 2014 GRRP Title 17 and Title 22 Regulations.

4.1 Basin Plan

The regulatory framework that establishes the salinity management requirements and permit limitations are derived primarily from the Basin Plan. Based on the objectives that are established in the Basin Plan, IEUA's NPDES permit conditions and recycled water GWR requirements are established by the RWQCB.

Basin planning was a new requirement nationwide, including the implementation of the National Pollution Discharge Elimination System, after the passing of the federal Clean Water Act and the state's Porter-Cologne Act. This led to state water boards enacting their own water quality objectives and standards for basin management in 1967 leading to the original "Basin Plans" which would become a guide for basin related supplies and anti-degradation objectives (becoming State Board Resolution No. 68-16).

The Santa Ana River Watershed Regional Water Quality Control Board developed the first Basin Plan in 1975 and has updated it several times since then. The plan defined TDS objectives ranging from 220 to 330 mg/L over a substantial portion of the Basin. The ambient TDS concentrations in these areas exceeded the objectives, and therefore, restricted the use of IEUA's recycled water for irrigation and groundwater recharge. The use of recycled water in the basin would require mitigation.

To address this and similar regulatory compliance challenges across the groundwater basins in the Santa Ana Watershed, in the mid-1990's a Task Force consisting of 22 water resources agencies in the Santa Ana River Watershed was formed, and along with the RWQCB studied the impacts of Total Inorganic Nitrogen (TIN) and TDS on water resources in the watershed. This

culminated in the RWQCB's adoption of the 2004 Basin Plan amendment. This amendment included revised groundwater subbasin boundaries, termed "groundwater management zones" (GMZs or MZs), revised TDS and nitrate-nitrogen objectives for groundwater, revised TDS and nitrogen wasteload allocations, revised surface water reach designations, and revised TDS and nitrogen objectives and beneficial uses for specific surface waters. The technical work supporting the 2004 Basin Plan amendment was directed by the TIN/TDS Task Force and is summarized in TIN/TDS Phase 2A: Tasks 1 through 5, TIN/TDS Study of the Santa Ana Watershed (WEI, 2000).

To promote the use of recycled water and manage artificial recharge of storm, imported, and recycled water, IEUA and CBWM proposed less stringent TDS limits and alternative GMZ delineations. IEUA and CBWM also proposed a set of nine commitments that when combined with proposed TDS limits and new GMZs, provided the "maximum benefits" to the state. The RWQCB approved IEUA and CBWM's proposal and less stringent objective for the new Chino-North GMZ (**Figure 3**). These less stringent limits, known as the "maximum benefit" objectives, were adopted by the RWQCB in 2004 and effectively allowed for recycled water reuse and recharge by defining assimilative capacity within the Basin. The maximum benefit objectives are contingent upon IEUA and CBWM meeting the nine maximum benefit commitments as outlined in the Basin Plan and IEUA's NPDES permit. Specifically, numeric limitations for TDS are imposed upon recycled water (550 mg/L) and groundwater recharge (420 mg/L). Actions that must be performed when the ambient water quality of the Chino Basin exceeds the maximum benefit objective (420 mg/L) are also defined. Refer to **Table 1** for a summary of these limits.

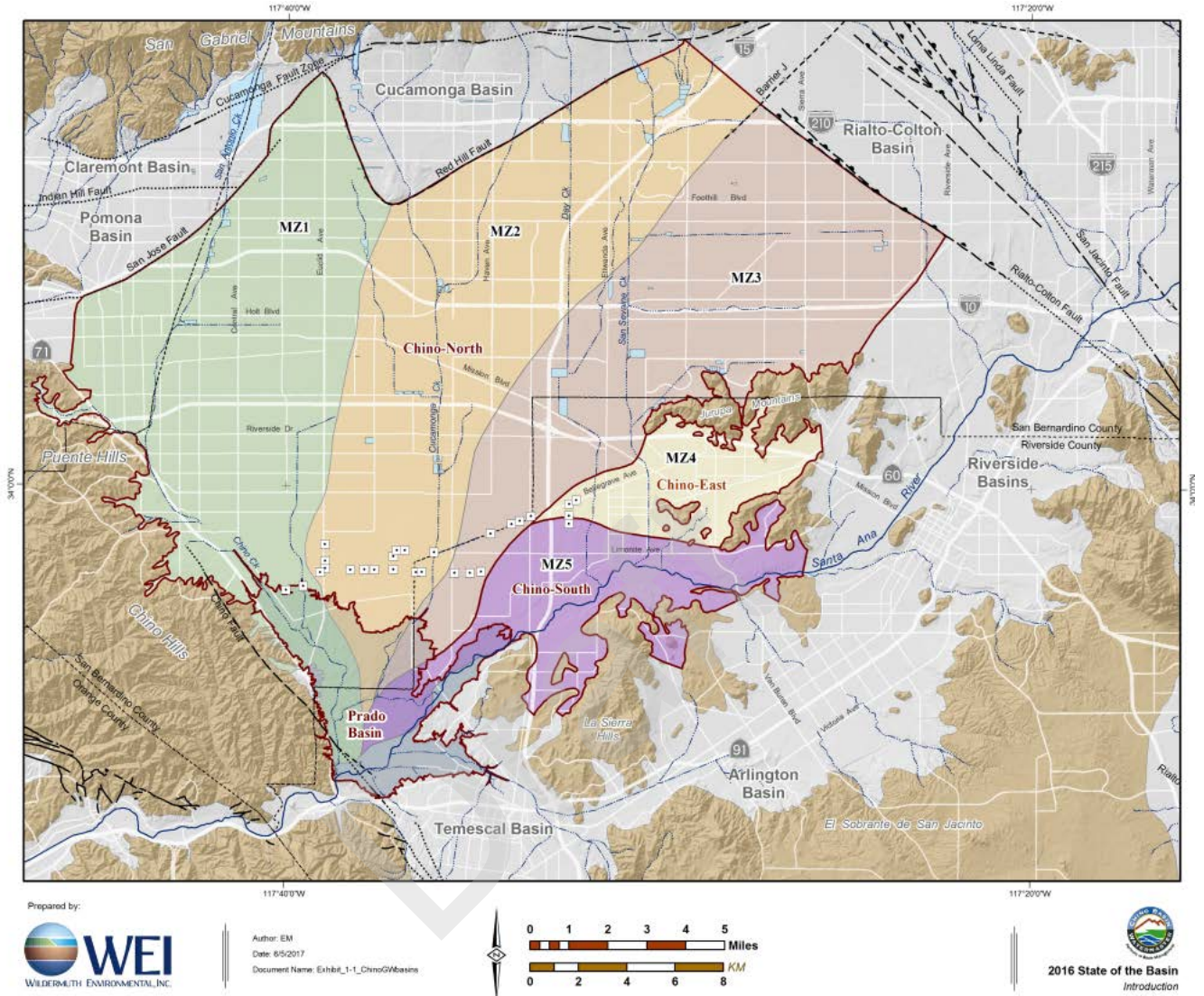


Figure 4: Chino Groundwater Basin Maximum Benefit Management Zones

Table 1: TDS Regulations for Chino-North GMZ

Chino-North GMZ	Anti-Degradation Objective TDS (mg/L)	Maximum Benefit TDS Objectives and Limits (mg/L)		
		Ambient Water Quality Objective	IEUA Wastewater Discharge Permit Limit (Effluent and RW)	Groundwater Recharge Objective
Chino 1	280	420	550	420
Chino 2	250			
Chino 3	260			

Unmitigated use and recharge of recycled water in the Chino Basin is contingent upon compliance with the maximum benefit objectives. If compliance is not demonstrated, lower, more stringent limits consistent with the State and Federal anti-degradation objectives would apply. These lower limits effectively prohibit use of recycled water at worst or require a combination of purchase of dedicated SWP supplies with low TDS from MWD and treatment to reduce TDS concentrations at best. TDS management within Chino Basin is thus critical to ensure continued use of recycled water within IEUA's service area.

IEUA and CBWM have demonstrated commitment to TDS management within the Chino Basin, dating back decades. In 2000, the OBMP included foundational efforts to monitor and manage salinity in the region. The Chino I Desalter, located in the City of Chino began operation in 2000. In 2001, the Chino Basin Desalter Authority (CDA) was formed as a Joint Powers Authority by a group of seven local water agencies, including IEUA. In coordination with the CDA, IEUA supports the operation of desalters to treat saline groundwater extracted from the southern portion of the Chino Basin. The desalters are a critical component of the maximum benefit commitments under the Basin Plan and a long-term salinity management strategy that enables the region to use recycled water in the Chino Basin.

Salinity Management Commitment Progress

Region has been working for the past 20+ years to meet Maximum Benefit Commitments

- ➔ Surface and groundwater quality monitoring
- ➔ Chino Basin Desalters
- ➔ Recharge facilities and master planning
- ➔ Hydraulic control
- ➔ Ambient groundwater quality determinations
- ➔ Self-generating water softener use ordinance
- ➔ Brine line discharge for high-TDS industrial users
- ➔ Securing high quality supplemental water
- ➔ Chemical use optimization in the WWTP

4.1.1 Ambient Water Quality - TDS

Ambient water quality, a statistical construct that represents an estimate of the volume-weighted TDS concentration of groundwater within a GMZ based on 20 years of data, is a metric used by the RWQCB to determine if assimilative capacity for degradation exists in the GMZ. When the current ambient TDS concentration of the Chino-North GMZ exceeds the maximum benefit objective, it triggers salt management actions within the GMZ. Every three years, the Basin Monitoring Program Task Force (Task Force) assembled through the Santa Ana Watershed Project Authority (SAWPA) is required to recompute the ambient TDS concentrations in all of the GMZs in the Santa Ana River Watershed, including the Chino-North GMZ. The 2004 Basin Plan amendment set the maximum benefit objective for Chino-North GMZ at 420 mg/L. Degradation of ambient TDS concentration in the Chino-North GMZ causes the TDS concentration in recycled water to increase and it will, at some point in the future, cause an exceedance of IEUA and CBWM's permit TDS limit and mitigation of recycled water TDS in excess of permit limits.

The Task Force is completing its 2018 recomputation. Over the last several years, the ambient TDS concentration in the Chino-North GMZ has seen a slow rise, however the maximum benefit objective of 420 mg/L has not yet been reached (**Figure 5**). The long-term increasing trend demonstrates a decrease in the available assimilative capacity, and thus, IEUA and CBWM's need for future increases in recycled water TDS concentration is inevitable.

"The effluent limits for IEUA ... are a cornerstone of the maximum benefit demonstration ... The TDS in IEUA's effluent is expected to reach 550 mg/L before the groundwater in Chino North ... reaches the 'maximum benefit' objective of 420 mg/L..." (Basin Plan, 2004).

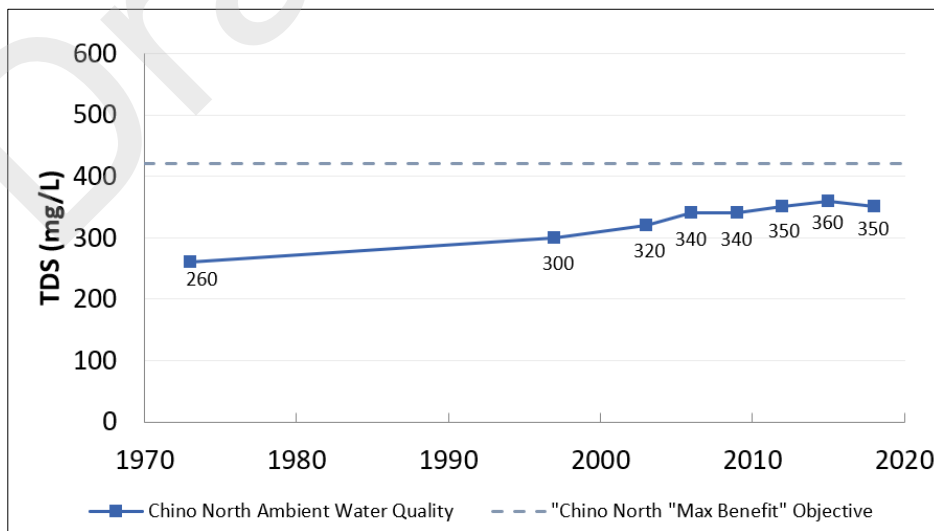


Figure 5: Chino-North GMZ Ambient Water Quality TDS

Source: Triennial Ambient Water Quality Recomputation, 2018

4.1.2 NPDES Permit - TDS

IEUA's wastewater discharge NPDES permit defines the discharge limitations for IEUA's wastewater that is treated by regional water recycling plants. Of relevance, the permit requires "the 12-month flow weighted running average TDS constituent concentration and mass emission

rates shall not exceed 550 mg/L and 366,960 lbs/day, respectively. This limitation may be met on an agency-wide basis using flow-weighted averages of the discharges from the Discharger's RP-1, RP-4, RP-5 and CCWRF." NPDES¹ permit-driven TDS limits are closely tracked by IEUA. In addition to the NPDES permit limit, the Basin Plan establishes an "Action Limit" of 545 mg/L, which requires IEUA to submit a plan and schedule to the RWQCB when the 12-month running average (MRA) agency-wide recycled water flow-weighted TDS concentration exceeds 545 mg/L for three consecutive months. The plan and schedule must detail measures to ensure that the TDS concentration remains below the permit limit of 550 mg/L. In addition to these permit limits, IEUA internally tracks a "Trigger Limit" of 530 mg/L used for initiating an evaluation. The Trigger Limit allows IEUA sufficient time to analyze, plan, design, construct and implement solutions to ensure TDS concentrations remain compliant with the NPDES and Basin Plan limits.

Maintaining permit compliance is a critical priority for IEUA. There are strict consequences associated with non-compliance with the maximum benefit commitments (e.g., failure to develop the required mitigation plans when the action limits are triggered) that could lead to recycled water and groundwater recharge program interruption and/or retroactive activities. If the NPDES permit limit is exceeded, IEUA will be in violation of its NPDES permit and if a plan to address it is not submitted to the RWQCB in a timely manner, this could result in the halting of all use of recycled water. Consequently, all effluent from IEUA's water recycling facilities will need to be discharged to the Santa Ana River (SAR). Discharge to the SAR above 550 mg/L will also be above the discharge limitation, which is also 550 mg/L. Additionally, according to the Basin Plan, if the maximum benefit commitments (including the 550 mg/L limit) are not met, *"the Regional Board will require that CBWM and IEUA mitigate the effects of discharges of recycled and imported water that took place under the maximum benefit objectives."* This will require advanced water purification facilities to mitigate the effects of the recycled water and groundwater recharge programs that have operated above the more stringent antidegradation objectives since the 2004 Basin Plan amendment was adopted. The Basin Plan also states that *"The Regional Board will also require mitigation of any adverse effects on water quality downstream of the Chino Basin that result from failure to implement the 'maximum benefit' commitments."* Non-compliance could result in permit modification with more stringent recycled water and groundwater recharge limits, severely impacting both the operability of the programs as well as the costs.

4.1.2.1 Preliminary TDS Evaluation

Increasing TDS levels in recycled water have been exacerbated by climate change, conservation and episodic periods of drought over the last twenty years. In 2015, there was a period where every month was setting a record-high recycled water TDS concentration. As a result, recycled water TDS exceeded the internal Trigger Limit in 2015, prompting an internal evaluation which

¹ For further details, refer to the 2015 NPDES Permit and 2004 Basin Plan Amendment.

was prepared in 2016 (**Figure 6** and **Figure 7**). As demonstrated in **Figure 6**, recycled water TDS concentration over time shows a pattern of peaks and valleys, with a gradual increase over time. This 2016 preliminary evaluation also demonstrated that TDS concentrations in water and wastewater supplies, and therefore recycled water, are steadily increasing, and drought conditions and conservation exacerbate TDS concentrations in both (**Figure 7**). Based on this evaluation, IEUA concluded that implementation of Advanced Water Purification Facilities (AWPF) will be needed at some point to address increasing salinity. Furthermore, postponing treatment poses risks to maintaining the region’s maximum benefit objectives, and consequently IEUA’s compliance for its wastewater treatment. IEUA and CBWM raised these concerns to the RWQCB, who requested modeling and analysis to investigate the salinity challenge and explore alternative TDS compliance metrics that are protective of beneficial uses and that could be incorporated into the Basin Plan and subsequently IEUA and CBWM permits.

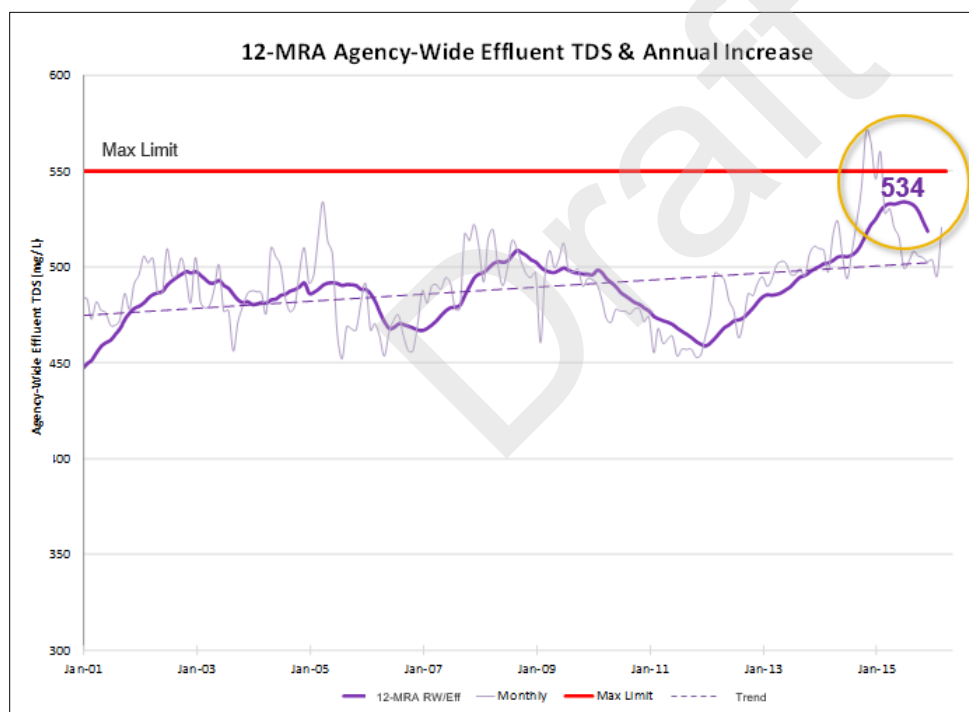


Figure 6: Agency-wide Recycled Water Effluent TDS Concentration (2001 – 2016)

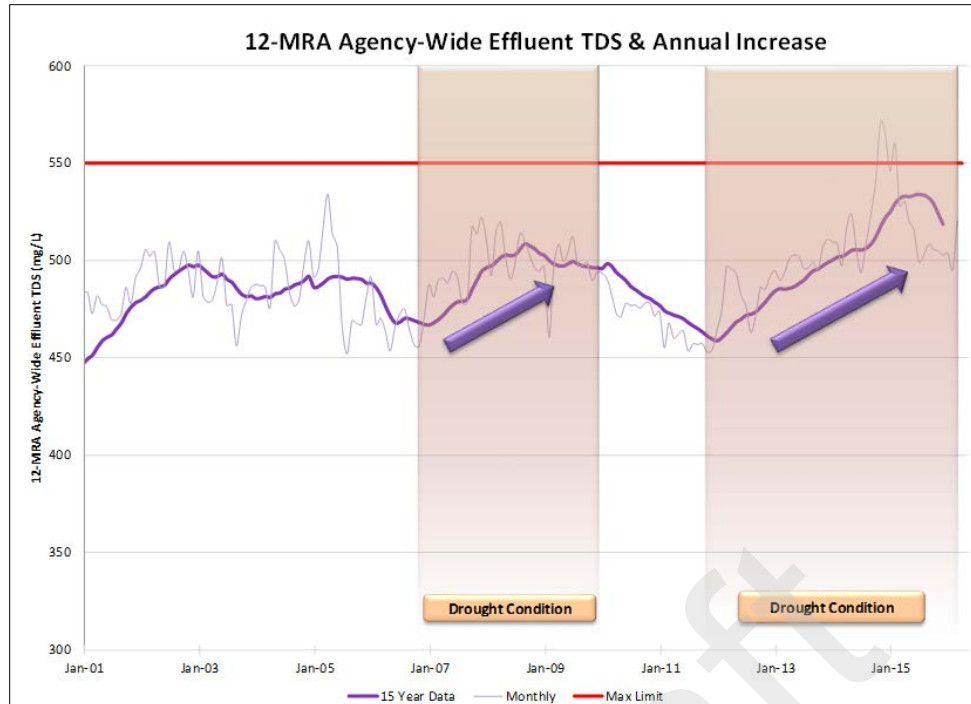


Figure 7: Drought & Recycled Water Effluent TDS Relationship

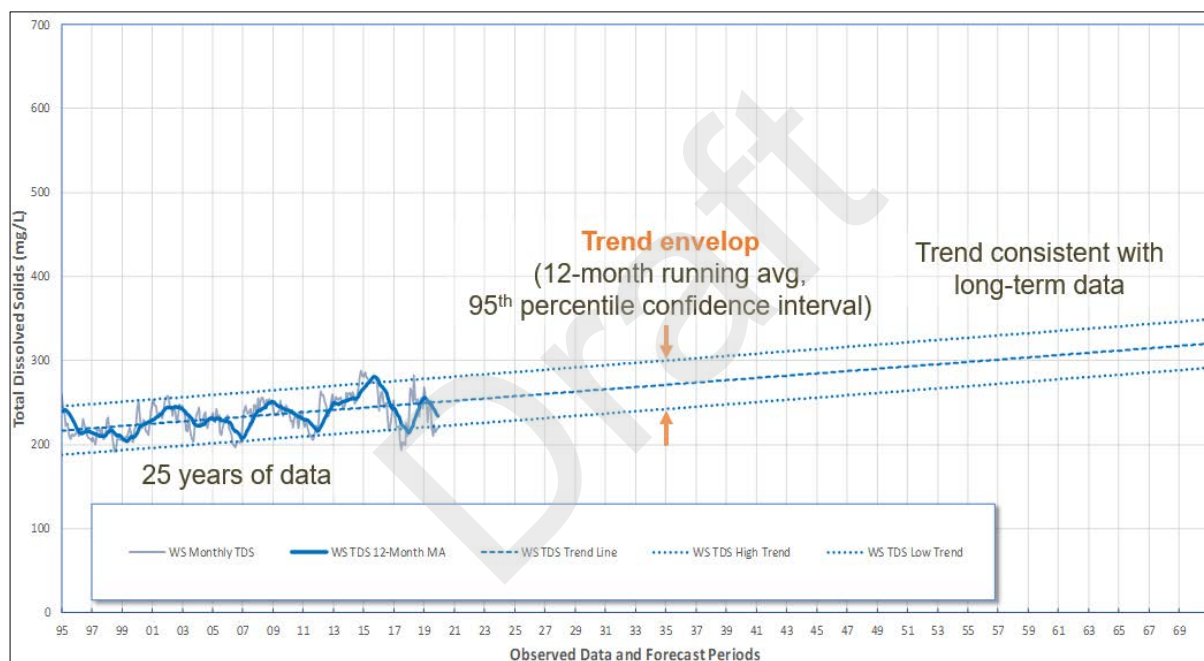
4.1.2.2 Updated TDS Analysis

Subsequent to the 2016 Preliminary Evaluation, further analysis was completed to update TDS data in support of regional planning efforts. Two approaches were used to update the Salinity analysis: 1) statistical model and 2) “Repeat of history” simulation. The primary objective for these analyses was to project when the recycled water TDS concentration will exceed the Action Limit and, if unmitigated, when the recycled water TDS concentration would exceed the permit limit. It is important to note that the analyses did not include the effects of climate change, and it is likely that the time for recycled water to reach the permit limits is shorter than the projections described below.

4.1.2.2.1 Statistical Model: Methods, Data, and Assumptions

The TDS analysis includes a statistical model, which was developed using **water supply** data from 1995 through 2019. Next, the **incremental TDS** (or TDS waste increment), defined as the TDS contributions from households and treatment processes, was similarly included. To arrive at the recycled water trend, incremental TDS was added to the water supply. The **recycled water TDS trend** includes a 95-percentile confidence envelop which is then superimposed on the historical recycled water data; the 95-percentile confidence interval captures 95% of the data. The following trends do not consider factors that can further impact salinity, such as climate change, future droughts, capital project implementation, and other potential impacts.

Water Supply: The drinking water supply for the IEUA agencies in the Chino Basin is a blend of imported water, groundwater, local surface water and desalter product water. As shown in **Figure 8**, the average monthly water supply TDS data from IEUA’s member agencies was plotted and statistical methods were used to show the average linear 12-MRA trendline, as well as the lower and upper bounds of a 95% confidence interval trend envelop. **Figure 9** shows the individual water supply source TDS concentrations for the period for which observed data is available. Groundwater and desalter product water demonstrate a narrow fluctuation (± 25 mg/L) in TDS over time. In contrast, the TDS concentrations in imported water demonstrate wider fluctuations (± 100 mg/L). The desalter TDS target is 350 mg/L.



Notes

WS: water supply

Figure 8: Water Supply Historical Data TDS Trend (1995 – 2019)

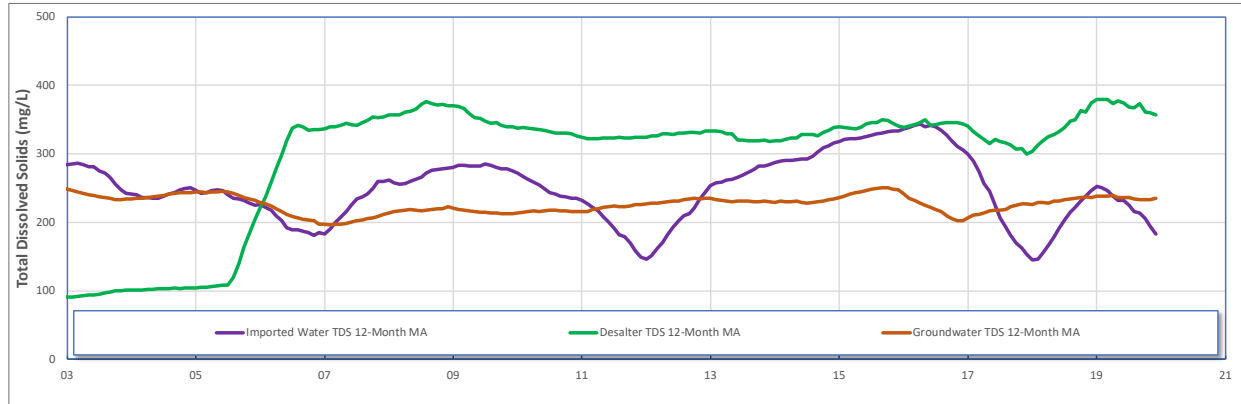
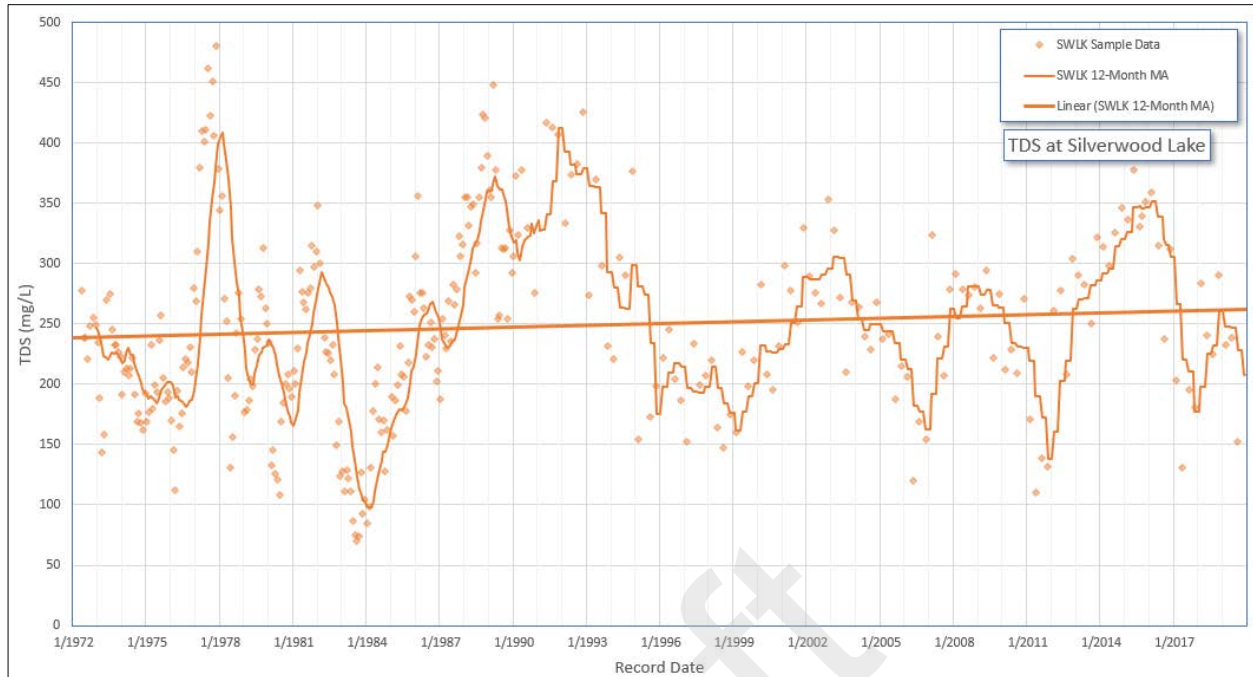


Figure 9: Source Water Supply Historical Data TDS (2003 – 2019)

Imported water TDS concentrations were also reviewed and plotted for the period of 1972 through 2019. IEUA’s water supply portfolio is comprised of 20-30% imported water. Silverwood Lake is the region’s primary imported water storage reservoir for SWP supplies from Metropolitan Water District of Southern California’s (MWD) Rialto Pipeline and IEUA’s service area. IEUA only takes SWP water from MWD because higher TDS levels in Colorado River water would cause permit violations in recycled water. **Figure 10** shows the time history of TDS concentrations at Silverwood Lake. Inspection of **Figure 10** reveals a slight TDS concentration increase over time. The variability in the TDS shown in the figure below is a result of SWP operations that are influenced by hydrology and environmental constraints. A few notable points in the figure below is the spike observed in the mid-1970s, the steady and rapid TDS concentration climb from 1984 through 1992, and the cyclic pattern of the last 20 years.



Notes

SWLK: Silverwood Lake

MA: Monthly average

Figure 10: Silverwood Lake Imported Water Supply Data TDS Trend (1972 – 2019)

Incremental TDS, defined as the TDS contributions from households and treatment processes, was estimated for the period 1972 through 2019 by subtracting the monthly water supply TDS concentration from the TDS concentration of treated wastewater. **Figure 11** shows the time history of incremental TDS concentration and its trendline. Incremental TDS was observed to be relatively constant between 2002 and 2019. Data prior to 2002 were ignored as the data after 2001 is consistent and representative of current and future conditions. The incremental TDS during this period is about 245 mg/L, which is less than the 250 mg/L incremental TDS limit in the Basin Plan and IEUA's NPDES permit limit. The Department of Water Resources has recommended values for the maximum incremental TDS that should be allowed through use, based on a detailed study of water supplies and wastewater quality in the region, and as a result the Basin Plan and NPDES limit is set to 250 mg/L.

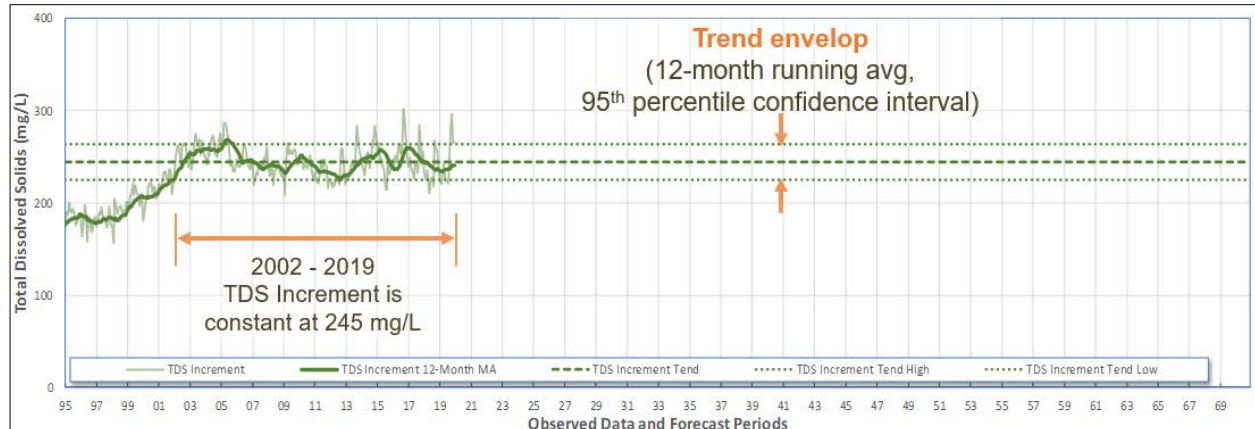


Figure 11: Water Supply Incremental Use Data TDS Trend (1995 – 2019)

To forecast TDS concentration in recycled water, the model utilized the following equation:

$$\text{Recycled Water TDS} = \text{Water Supply TDS} + \text{Incremental TDS}$$

Using a constant value of 245 mg/L, incremental TDS was added to the water supply TDS trend to generate a **recycled water TDS trend (Figure 12)**. As shown in **Figure 12**, the RW TDS data fits within the trend envelop for the 2002-2019 data. Similar to the water supply trend, the recycled water trend does not consider other potential factors that may impact or exacerbate TDS concentrations.

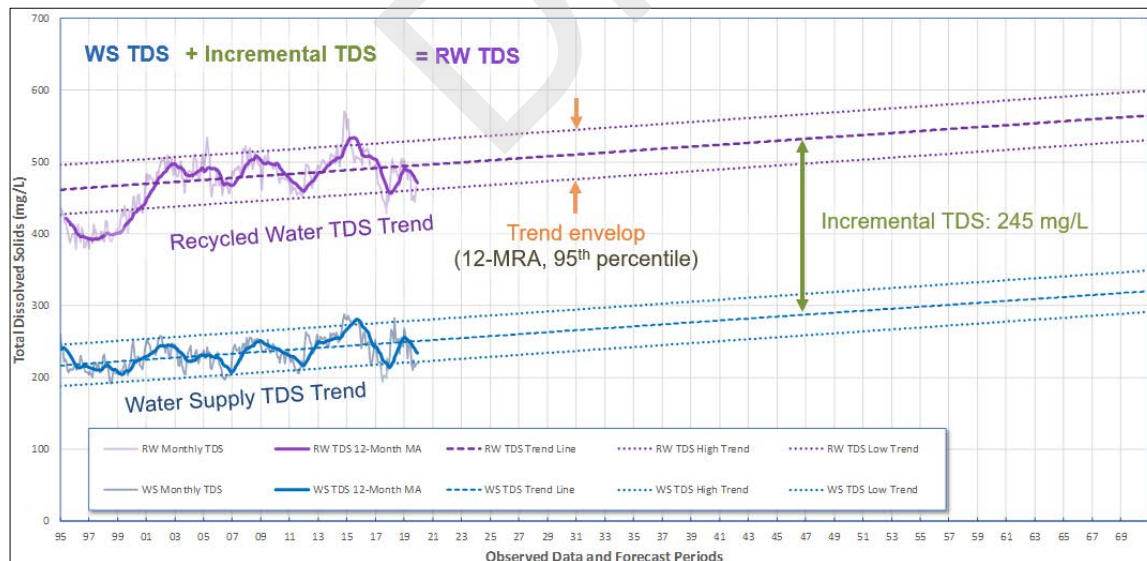


Figure 12: Water Supply and Recycled Water Effluent Data TDS Trends (1995 – 2019)

4.1.2.2.2 Statistical Model: Results and Interpretations

The analyses demonstrate increasing trends in TDS concentrations for the water supply and recycled water. Based on the analysis, the recycled water trend envelop has an average increase of 1.36 mg/L per year. IEUA's internal Trigger Limit (530 mg/L) was reached in 2015 and, based on the trends, the statistical model forecasts exceedance of the RWQCB TDS Action Limit (545 mg/L) and Maximum Limit (550 mg/L) within the next 11 to 14 years, respectively (**Figure 13**).

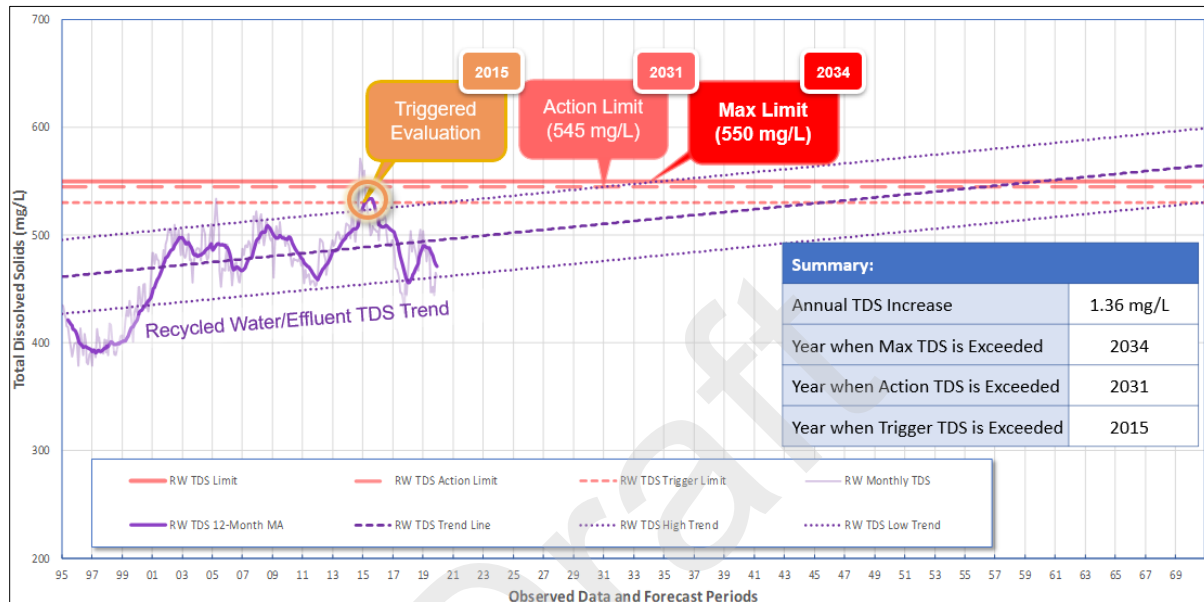


Figure 13: Recycled Water Statistical Model Trend Envelop Results

4.1.2.2.3 Simulation (Repeat of History): Results and Interpretations

IEUA also prepared a model simulation to identify when a potential exceedance could occur if historical TDS concentrations patterns were repeated. For this simulation, data for the past 15 years (2005 – 2019) was repeated as depicted in **Figure 14**. The historical pattern was simulated to begin starting in 2020. With this method, the recycled water TDS concentrations is projected to exceed the NPDES Maximum Limit in 2030, or in the next 10 years.

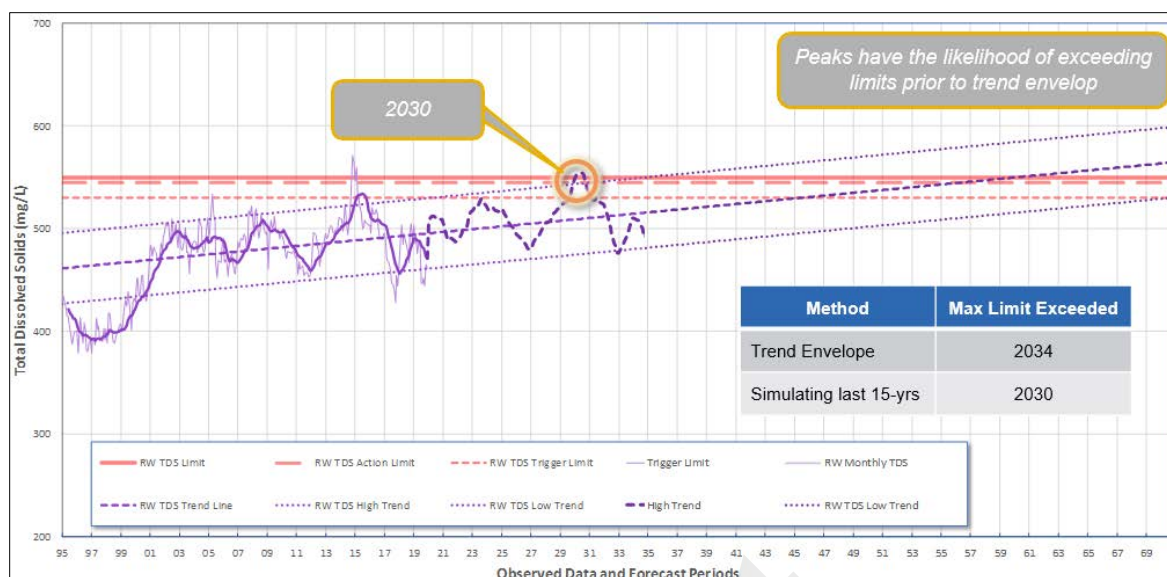


Figure 14: Recycled Water 15-Year Repeat of History Simulation Results

4.1.2.3 NPDES Permit Modification

Although the absolute projections from the two approaches differ, both suggest that IEUA should plan to address TDS concerns in the next 10 years. As one of the potential solutions to manage salinity in the recycled water (recharge and effluent), IEUA is exploring the use of a longer-term averaging period for defining compliance with the TDS limitations in the Basin Plan and NPDES Permit. This approach could provide relief compared to the current permit conditions with the RWQCB. The current NPDES Permit and Basin Plan require TDS concentrations in recycled water and effluent to be monitored and computed on a 12-MRA basis for permit compliance. Computing averages over a longer period (such as a 5-year running average [YRA]) could provide an average that is less susceptible exceedances during droughts. The RWQCB has required that IEUA and CBWM performed detailed groundwater modeling analysis estimate the TDS concentration impacts to groundwater and recycled water supplies in the Chino Basin from allowing a longer-term averaging period (e.g., 3, 5, 10 years). If it can be demonstrated that beneficial uses of the basin and downstream users are protected under a longer-term averaging period, in combination with ongoing compliance with the maximum benefit commitments, the RWQCB would likely approve a longer-term averaging period for the compliance metric. Based on the modeling results, and RWQCB's own analysis, there could be several resulting recommendations, ranging from no change to permit limits to an averaging period less than the requested 5-YRA.

Providing longer-term averaging periods for computing compliance metrics could significantly extend the timeframe until permit exceedances occur, potentially beyond the planning horizon of over 25 years. However, the process to modify the existing NPDES permit could take several years for the regulatory approval process and may not be successful if the modeling results do

not with confidence show that the recommended salinity management plan will ensure protection of beneficial uses. If the modeling results support the extended averaging period for TDS, the NPDES permit modification could address the immediate concern of exceeding the NPDES permit limit; however, this modification would not address other challenges, such as the increasing TDS concentrations in GWR, and ambient water quality in the basin discussed below. There is also potential for new maximum benefit commitments to be added to the Basin Plan to ensure long term protection of the basin and of the downstream users.

Statistical analysis of the long-term data set from 1995 – 2019 with a 5-YRA instead of the 12-MRA was performed to develop a long-term trend analysis. **Figure 15** depicts a scenario that could potentially provide permit coverage past the planning horizon of 25 years, without consideration to other factors such as the groundwater recharge TDS limitations, triggering management actions when the ambient water quality exceeds the maximum benefit objectives, source water salinity change or climate change, as stated earlier. At the request of the RWQCB, IEUA and CBWM are continuing their current effort with Wildermuth Environmental Inc. to include climate change considerations and impacts to source water quality in the groundwater modeling to show long term impacts to the Chino Basin. Since this analysis is still in progress, simulations of historical drought period or future climate change impacts are not included at this time and is part of the larger modeling effort being prepared under the guidance of the RWQCB. The study was initiated in 2017, and conclusion on the feasibility of the longer-term averaging could be reached by end of 2021, with permit modifications to follow.

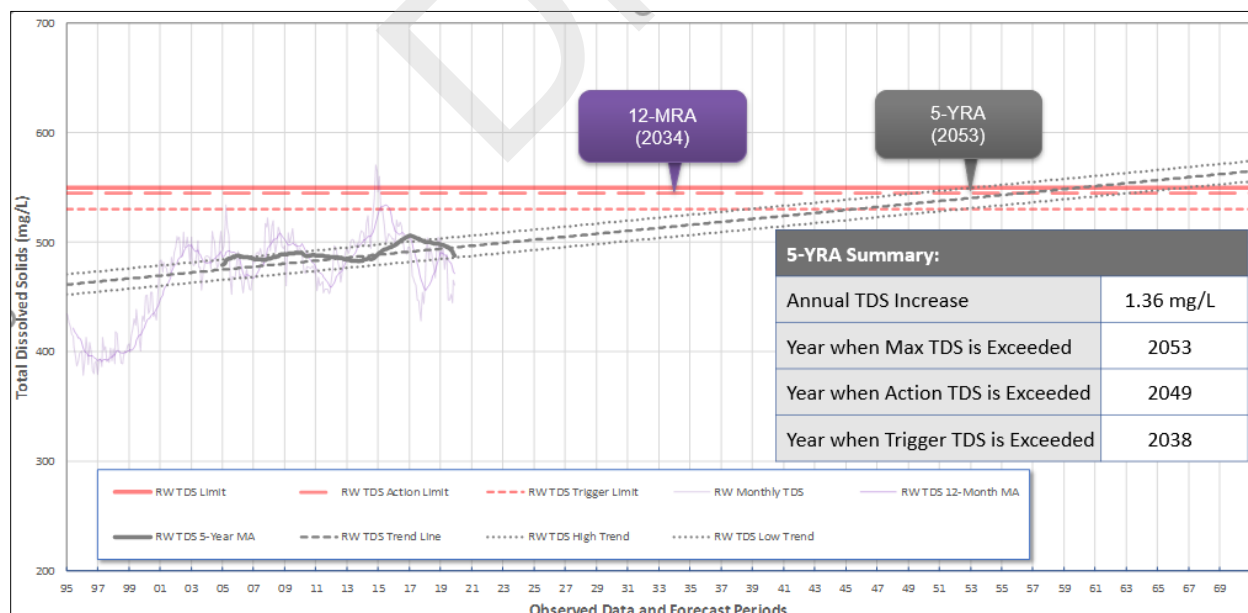


Figure 15: Recycled Water with 12-MRA and 5-YRA Compliance Metrics

4.1.3 Groundwater Recharge - TDS

Recycled water recharge in the Chino-North GMZ must be blended with imported water and stormwater such that the volume-weighted basis TDS concentration is less than the maximum benefit objective of 420 mg/L. TDS concentrations in groundwater recharge are computed on a five-year volume-weighted running average (YRA) basis for comparison against this limit. Per the Groundwater Recharge Program permit, Order No. R8-2007-0039, and in accordance with the Chino Basin Maximum Benefit Commitment No.7:

“Recycled water will be blended with other recharge sources so that the 5-year running average TDS and nitrate-nitrogen concentrations of water recharged are equal to or less than the ‘maximum benefit’ water quality objectives for the Chino North Management Zone, i.e., 420 mg/L and 5 mg/L, respectively.”

As the five YRA TDS concentration approaches permit limits this will require a reduction in recycled water recharge (resulting in additional discharge to SAR, stranded investments), purchase of imported water (if available, and more expensive) and/or additional treatment to reduce TDS in the recycled water.

Although the imminent concerns with IEUA’s NPDES permit is of primary concern due to the anticipated 10-year expected exceedance timeline, TDS restrictions on groundwater recharge may also significantly impact IEUA’s operations. IEUA has partnered with CBWM, Chino Basin Water Conservation District, and the San Bernardino County Flood Control District in the Groundwater Recharge Program since 2005. Recharge of recycled water, imported water and stormwater is integral to the Basin Plan, the OBMP, IEUA’s operational strategy and the region’s water supply resiliency as demonstrated with the significant investment and resulting recharge volumes shown in **Figure 16**.

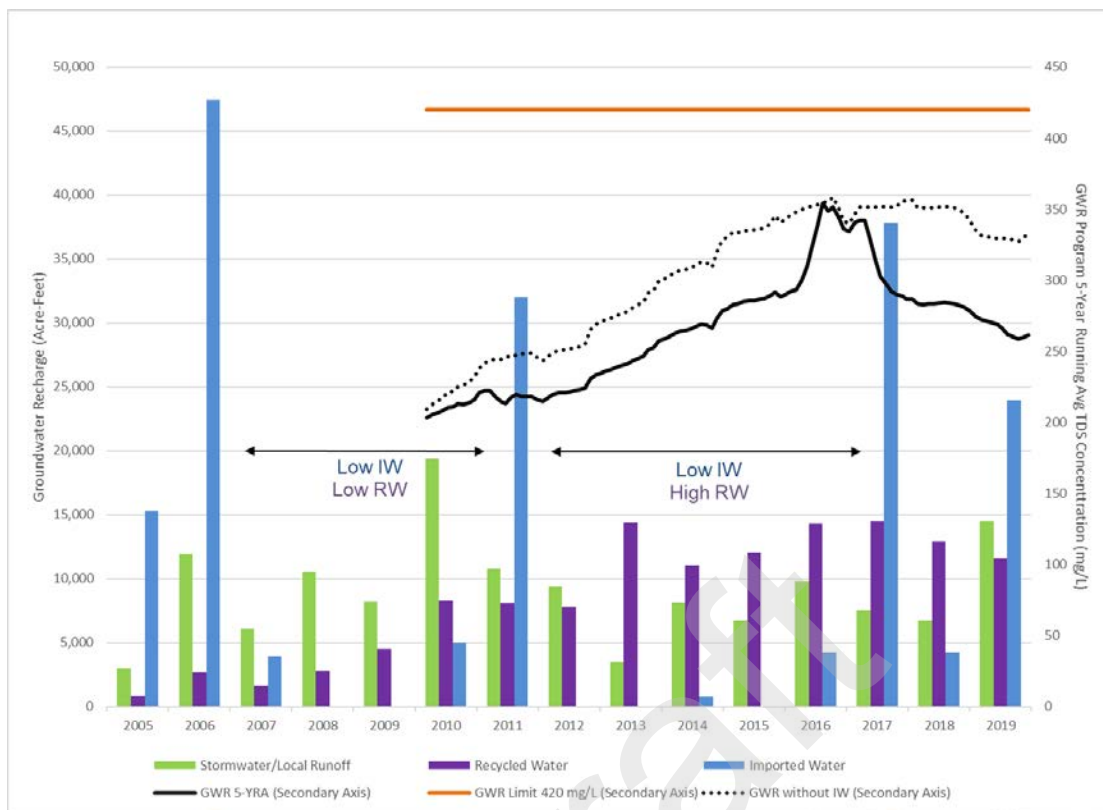


Figure 16: Groundwater Recharge Program Historical Recharge

IEUA, its member agencies, and others have significantly invested to support GWR within the region. These investments have successfully supported the region by providing water supply resiliency. The program also has its associated TDS permit limit that requires that the program maintain a 5-YRA TDS concentration below 420 mg/L, based on the volume weighted blending of stormwater/local runoff, imported water and recycled water that was utilized for groundwater recharge. **Figure 16** also shows the 5-YRA TDS of the volume weighted blended water for the groundwater recharge program and associated 420 mg/L limit, both on the secondary axis. **Figure 16** demonstrates the following:

- a) IEUA implemented the recycled water groundwater recharge program in 2005. Between 2005 and 2013 this program was expanded significantly resulting in a steady increase in the blended TDS concentration, which impacted the 5-YRA until 2018;
- b) Since 2013, the annual recycled water recharge ranges between 10 thousand acre-feet per year (TAFY) and 14 TAFY. The stormwater and local runoff contribution fluctuate between dry and wet years and the imported water contributions are sporadic depending on the availability of surplus imported water (i.e., typically in wet years). **Figure 17** shows the average volumetric blend of the three groundwater sources for the 2013-2019 period; and,

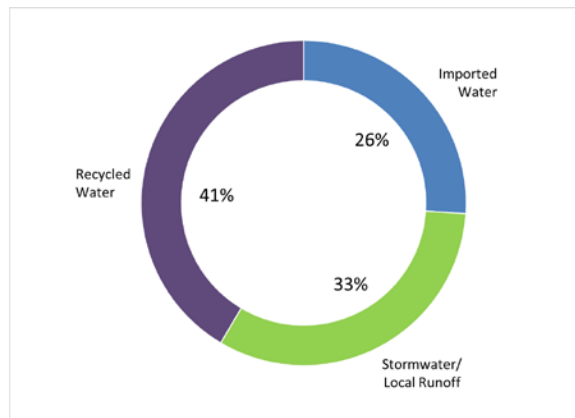


Figure 17: Groundwater Recharge Program Volume Contributions (2013-2019)

- c) The contribution of imported water (at an average monthly TDS concentration of 245 mg/L compared to the recycled water TDS concentration of 460 mg/L) to the recharge program plays a significant role in managing the blended TDS concentration (see 5-YRA TDS with and without the imported water in **Figure 16**). Since 2013, imported water, largely through Metropolitan Water District's Dry Year Yield (MWD DYY) program, has made up over 20% of the overall water recharged. However, imported water contribution is sporadic depending on weather conditions, availability and TDS concentrations, causing spikes in the blended 5-YRA TDS concentration as observed in 2016-2017 – see **Figure 16**.

When looking to the future the following changes in the program and impacts on the TDS can be expected:

- Based on IEUA's 2015 *Integrated Water Resources Plan*, the target is to increase the recycled water recharge program to 18.7 TAFY by 2025. Because of the higher recycled water TDS concentration, it is anticipated that the 5-YRA TDS concentration will increase with an increase in the recycled water recharge contribution.
- It is anticipated that the recycled water TDS concentration will increase with time (see **Figure 12**), which will increase the recycled water's TDS contribution to the 5-YRA TDS concentration.
- According to the current MWD DYY program agreement, the MWD DYY program will end in 2028. If the MWD DYY program agreement is not extended or replaced with some other comparable recharge commitment with similar quantities of low-TDS water, the 5-YRA TDS concentration will increase significantly and likely exceed the permit limit.

- With the implementation of AWPf with an expected effluent concentration of 100 mg/L, the recycled water TDS will be significantly reduced, which could offset the impact of a discontinued MWD DYY program.

4.2 *Regulatory Challenge: Title 22, Division 4, Chapter 3. Article 5.1 “Indirect Potable Reuse: Groundwater Replenishment - Surface Application”*

The Chino Basin Recycled Water GWR Program is an existing permitted Groundwater Replenishment Reuse Project (GRRP) that has been recharging recycled water since. However, the 2014 GRRP regulation requires existing programs permitted on or before June 18, 2014, like the Chino Basin GWR Program, to submit a report to the DDW and the RWQCB assessing its compliance with the new requirements, and overall to ensure compliance with more stringent future regulations.

During 2019, recycled water used for groundwater recharge exceeded the 1,2,3-Trichloropropane (1,2,3-TCP) maximum contaminant level (MCL) and perfluorooctanoic acid (PFOA) Notification Level (NL) and went into an accelerated monitoring schedule for 16 consecutive weeks. Corrective action reports were submitted to the DDW and RWQCB in February 2020 in accordance with §60320.112.(d)(2)(A) for 1,2,3-TCP and §60320.120.(b)(1) for PFOA. Source evaluation for both compounds is ongoing.

1,2,3-TCP is a chlorinated hydrocarbon with high chemical stability that is very persistent in groundwater. The DDW established a MCL of 0.005 µg/L that became effective on December 14, 2017. 1,2,3-TCP is no longer a commonly used substance and contamination in the groundwater in parts of Chino Basin is a known issue. It is entering the regional water recycling facilities that were not designed to remove 1,2,3-TCP and could result in the need for advanced treatment to address impending/future regulations.

PFOA is a manufactured chemical that is part of a larger group of chemicals called per- and polyfluoroalkyl substances (PFAS). PFOA has been used in stain-resistant carpets and fabrics, nonstick cookware, and other products that resist heat, oil, stains, grease, and water. The DDW established a NL of 5.1 ng/L on August 23, 2019. PFOA is no longer a commonly manufactured substance. However, it is still present in consumer products and is entering the regional water recycling facilities that were not designed to remove PFOA. Similar to 1,2,3-TCP, advanced treatment may be required to address impending/future regulations.

There are other contaminants of emerging concern, such as microplastics, which are likely to emerge over the next ten years which could also require advanced treatment to continue recharge of recycled water. The challenges associated with the 2014 GRRP regulations further underscore the need for advanced treatment in the region. Even if these facilities are not required to maintain compliance with the Basin Plan, they may be needed to treat recycled water to continue current and for future groundwater recharge.

5 Compliance Risk and Recommendations

5.1 *Compliance Risk*

The analysis performed to date indicates that IEUA could exceed the NPDES TDS permit limits for recycled water within the next 10 years, and possibly the groundwater recharge permit limit in the near future if no actions are taken. This is of concern since infrastructure that may be needed to curtail TDS levels and compounds such as 1,2,3-TCP and PFOA can take years to plan, design, fund, and implement.

There is little flexibility to respond and manage changes in TDS concentration due to drought conditions, and the timeframe by which drought conditions can impact recycled water TDS concentration is short. Expected recycled water TDS concentration is 500 mg/L, considering contributions from household use and treatment processes and imported water. In periods of drought, recycled water TDS concentration is susceptible to increases, with imported water TDS concentration reaching up to 400 mg/L, and the desalter operating at 350 mg/L. This demonstrates the lack of assimilative capacity to respond to effluent limitations during drought conditions, which is further exacerbated by the steadily increasing ambient water quality of the Chino Basin and a heavier reliance on recycled water. Further, from the onset of the drought in 2014, it took approximately 18 months for IEUA to start approaching its action level. This demonstrates the need to have AWPf in place to provide certain and reliable compliance during varying conditions.

The risks associated with compliance to the 2014 GRRP regulations for recycled water recharge is more difficult to assess. The regulatory landscape for new constituents of emerging concern is fast paced, with regulatory limitations imposed within a couple of years of assessing human health risks in many instances.

Although the statistical model considered long term trends based on data sets of 20+ years and historical drought patterns, significant potential drivers, such as climate change, are not evaluated in these projections. These potential drivers further support the need for salinity management within the next 10 years.

There is also compliance risk in relying on the pursuit of an NPDES permit modification to a longer averaging period. A permit modification requires substantial time, modeling and RWQCB/State Water Resources Control Board approval. There is a high potential that a permit modification could result in a Basin Plan Amendment that includes new commitments for IEUA and CBWM for basin water quality/salinity objectives; the proposed NPDES permit modifications for TDS may not adequately address the compliance risk associated with the groundwater recharge program or the challenges associated with ambient water quality as it relates to TDS.

5.2 Recommendations

Clearly, the nexus between ambient water quality, groundwater recharge, and recycled water requires the existing comprehensive long-term salinity management plan be updated implemented. Considering the timeline for design, construction and implementation of salinity management strategies and projects, it is imperative that efforts continue moving forward to allow sufficient time to determine the most effective means. Unmitigated, these compliance risks will directly impact IEUA's and the region's: ability to respond to changing water quality regulations, ability to use recycled water supplies for direct use and groundwater recharge, and reliance on imported water supplies.

IEUA can pursue a number of options to address the regulatory challenges of TDS and constituents of emerging concern in recycled water to ensure continued use of recycled water:

- Since groundwater recharge is a blend of imported water, recycled water, and stormwater, IEUA could purchase more low-TDS imported SWP water to offset the high TDS concentration in recycled water, bringing the groundwater recharge into compliance. This solution does not help achieve IEUA and the region's goal of reducing dependence on imported water supplies.
- Another option is a reduction in recycled water that is recharged. This is not a prudent option, since recycled water is a secure water supply and imported water supplies are expensive and vulnerable to drought and climate change.
- A third option is to increase the recharge of stormwater, which is also low in TDS in comparison to recycled water; however, this is not a viable option to IEUA at this time as stormwater is a variable water supply.
- A fourth option would be to pursue a permit modification with the RWQCB. Though this option doesn't directly control TDS concentration in groundwater recharge or recycled water, it might provide some temporary relief to IEUA in terms of exceeding the recycled water TDS concentration limit but does not address constituents of emerging concern in groundwater recharge of recycled water.

Though there are a number of solutions that IEUA could implement to address the groundwater recharge challenges associated with TDS and the emerging constituents, none are as optimal as implementation of advanced treatment. This solution would address TDS levels for both direct use of recycled water and groundwater recharge and could also help address the challenges associated with the 2014 GRRP regulations. There are a number of short-term advanced treatment solutions, such as satellite treatment facilities, for recycled water recharge compliance. However, other processes, such as advanced water purification, that are centrally located and have the potential to be integrated in the future as direct potable reuse, are more desirable and efficient than these short-term solutions and are being aggressively pursued by IEUA.

6 Timeline and Next Steps

This is a critical time for the region. IEUA's recycled water program has a number of benefits, including increasing use of the climate resilient water supply, enhancing groundwater quality, and reducing dependence on imported water. The continuation of this program and the realization of these benefits hinges on compliance with regulatory TDS limits and the GRRP regulations; IEUA must continue on its path forward to pursue capital projects and other strategies to address regulatory challenges in recycled water within the region. Going forward, IEUA plans to continue with efforts related to the development of an implementation plan for the various alternatives to address the regulatory risks. These efforts will continue to advance in parallel with its other capital improvement plan forecasts, as needed, to ensure this vital resource is available for future use within the region.

Draft

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Appendix A

Preliminary Evaluation of Agency-Wide TDS Increase, 2016

Subject: Preliminary Evaluation of Agency-Wide TDS Increase

Date: July 13, 2016

Prepared By: Planning & Environmental Resources Department

The purpose of the preliminary evaluation is to:

- Analyze the Agency-wide Total Dissolved Solids (TDS) increase over the past 15 years,
- Forecast TDS trends through 2040 and identify potential TDS compliance challenges, and
- Explore opportunities for salinity management in a regionally planned and cost effective manner

Executive Summary

- Water supply annual average TDS increase: 1.8, 4.4, and 12.5 mg/L for the past 15, 10, and 5 years, respectively
- Wastewater effluent (effluent) TDS trends follow those of the water supply, increasing annually at average rates of 1.9, 3.3, and 15.7 mg/L for the past 15, 10, and 5 years, respectively
- Based on the TDS trends, effluent TDS limit of 550 mg/L will be exceeded between 2017-2027
- Agency-wide ultraviolet (UV) disinfection of tertiary effluent may reduce final effluent TDS by ~50 mg/L, delay the need for reverse osmosis (RO) by at least 4 years, and reduce RO capacity
- Based on the annual average TDS trends, RO is needed between 2-10 years
- When RO is implemented, most recycled water will be utilized for direct use, groundwater recharge, and RO, with no water available for alternative projects, such as vadose zone injection
- Water supply source optimization will provide the greatest buffer for salinity management; for instance, a 5% reduction in State Water Project (imported water) supply may result in an effluent TDS reduction of 5 mg/L (using 350 mg/L TDS for imported water)
- Preliminary recommendations are threefold: 1) Prepare TDS forecasting through the RP-1/RP-5 Preliminary Design Report, 2) Evaluate short- and long-term TDS reduction strategies, and 3) Implement RO within the 5-10 year timeframe

TDS Increase Evaluation

The evaluation first analyzed the annual rate of increase of the Agency-wide water supply (WS) and effluent TDS. The following is a summary of the findings:

- Increase in effluent TDS is correlated to an increase in water supply TDS
- Average incremental TDS: WS to plant influent is 246 mg/L, plant influent to effluent is 6 mg/L
- Most recent 5-year WS annual TDS increase is 12.5 mg/L (7x the 15-year trend)
- Continued 5-year trend of annual WS TDS increase of 12 mg/L may result in reaching the effluent TDS limit in late 2017-2018

Table 1: Agency-Wide Water Supply and Effluent TDS Trends

Sample Period	Water Supply TDS Annual Increase	Effluent TDS Annual Increase	Year Effluent TDS Limit is Reached
15 Years	1.8 mg/L	1.9 mg/L	2026 - 2027
10 Years	4.4 mg/L	3.3 mg/L	2020 - 2022
5 Years	12.5 mg/L	15.7 mg/L	2017 - 2018

* Range for "Year Effluent TDS Limit is Reached" corresponds to the range of Rate of Increase (WS and Eff), and based on an Agency-wide Water Supply of 281 mg/L (12-Month Running Average record high, Year 2015).

Advanced Water Treatment Timeline

To understand the potential TDS reduction through alternative treatment systems, UV disinfection and RO were considered for future implementation. The following is a summary of the findings:

- UV disinfection can reduce TDS by ~50 mg/L and postpone RO implementation
- UV/RO combination reduces RO capacity, allows for phasing, and provides future flexibility
- RO treatment above 12 MGD may utilize all remaining reuse supply through year 2025

Table 2: TDS Annual Increase vs. TDS Limit Timeline

Water Supply Annual TDS Increase	Effluent TDS Limit is Reached	Year Limit is Reached with UV Only ¹	Reverse Osmosis Capacity ²	Remaining Reuse Supply after RO in 2025 ³
1 mg/L	2036	2081	1 MGD	(8,000) – 12,000
5 mg/L	2020	2030	14 MGD	(22,000) – (2,100)
10 mg/L	2018	2023	26 MGD	(36,000) – (15,000)
15 mg/L	2017	2021	34 MGD	(45,000) – (24,000)

1. Agency-wide UV implementation may decrease the effluent TDS by 53 mg/L, replacing sodium hypochlorite and sodium bisulfite currently used.

2. Based on no UV implementation, RO treatment to 100 mg/L TDS, and sized to maintain effluent TDS compliance (550 mg/L) through year 2040.

3. Supply based on RWPS (ultimate: 78k-88k AFY), Obligation discharge at 14,000 AFY, Direct Use based on IRP, External Supply of 5,000 AFY.

Short-Term Opportunities

To combat the increasing TDS levels, short-term opportunities can be explored in terms of imported water (IW) supply, and in-plant process optimization. The following is a summary of the findings:

- 5% reduction in IW decreases Agency-wide WS and effluent TDS by 5 mg/L
- IW reduction to 10% of portfolio still requires further mitigation by 2018 at 15 mg/L increase
- Further operational opportunities may include pursuing: Desalter RO treatment improvements, lower Concentration-Time (CT) disinfection, UV disinfection, ferric dosing into digesters at RP-1, and TIN reduction through carbon denitrification

Table 3: Imported Water Impact on Water Supply Portfolio*

% Imported Water	Current Water Supply TDS	Current Effluent TDS	Year Effluent TDS Limit is Reached			
			1 mg/L	5 mg/L	10 mg/L	15 mg/L
25%	285 mg/L	537 mg/L	2032	2019	2017	2017
20%	280 mg/L	532 mg/L	2038	2020	2018	2017
15%	275 mg/L	527 mg/L	2043	2021	2018	2017
10%	270 mg/L	522 mg/L	2047	2022	2019	2018

* Assumptions: Total water demand of 200,000 AFY, Imported Water TDS of 350 mg/L, starting with a 65% Groundwater supply (250 mg/L) and varying based on the Imported Water Supply percentage, and fixed 10% Desalter water supply (350 mg/L).

Vadose Zone Injection

As an alternative groundwater recharge strategy, the Agency is considering shallow injection into the unsaturated (vadose) zone. The following should be considered prior to moving forward with vadose zone injection (VZI):

- RO may be implemented within 10 years, and can directly inject into the water table
- When RO is implemented:
 - RO-treated water can be directly injected into the water table and will not require VZI
 - Limited or no remaining reuse supply may be available for VZI

Conclusion

With the forecasted TDS expected to exceed the limit in 2017-2027, further analysis is needed to address salinity management, including: 1) Forecast the imported water TDS levels, 2) Better define and quantify the potential treatment opportunities at water recycling facilities, 3) Water supply source optimization, and 4) Other project implementation, such as low impact development or stormwater capture.

APPENDIX

Figure 1: 12-Month Running Average Agency-Wide Water Supply and Effluent TDS

Figure 2: 12-Month Running Average Agency-Wide Water Supply TDS and Annual Increase

Figure 3: 12-Month Running Average Agency-Wide Effluent TDS and Annual Increase

Figure 4: Water Supply TDS Sensitivity – Year TDS Limit is Reached vs. Water Supply TDS

Figure 5: Imported Water Supply Sensitivity – TDS vs % Imported Water Supply

Figure 6: Year TDS Limit is Reached vs. % Imported Water Supply

Figure 7: Imported Water TDS and Agency-Wide Water Supply TDS

Figure 8: San Luis Reservoir Storage and Silverwood Lake TDS

Figure 9: San Luis Reservoir TDS and Silverwood Lake TDS

Figure 10: Reverse Osmosis Implementation vs. TDS Annual Increment

Table A1: Water Supply Portfolio Sensitivity

Table A2: Sensitivity of Imported Water % on Water Supply

Table A3: Recycled Water Supply & Use – High Supply & Low Demand

Table A4: Recycled Water Supply & Use – Low Supply & High Demand

Table A5: Potential Short-Term Opportunities

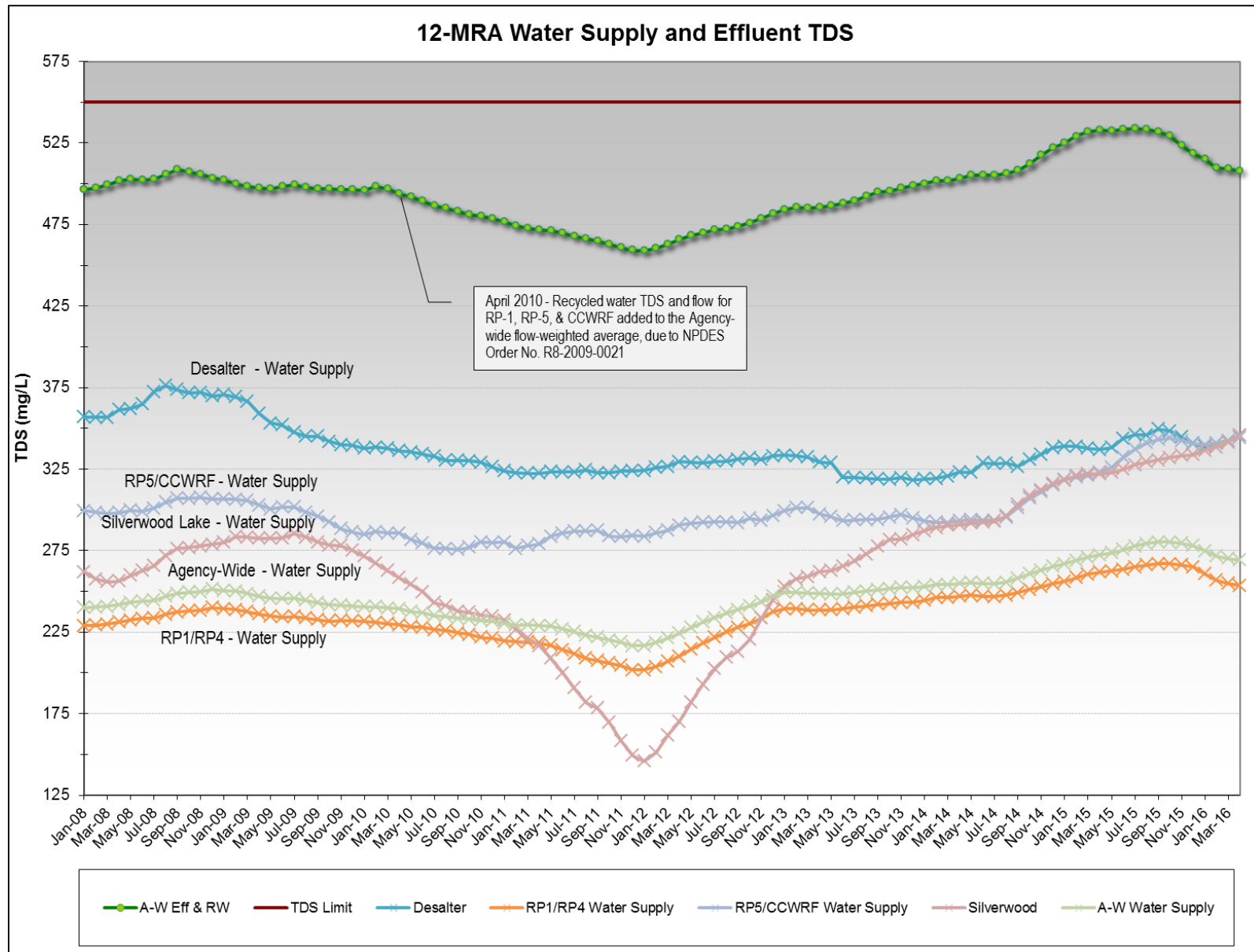


Figure 1: 12-Month Running Average Agency-Wide Water Supply and Effluent TDS

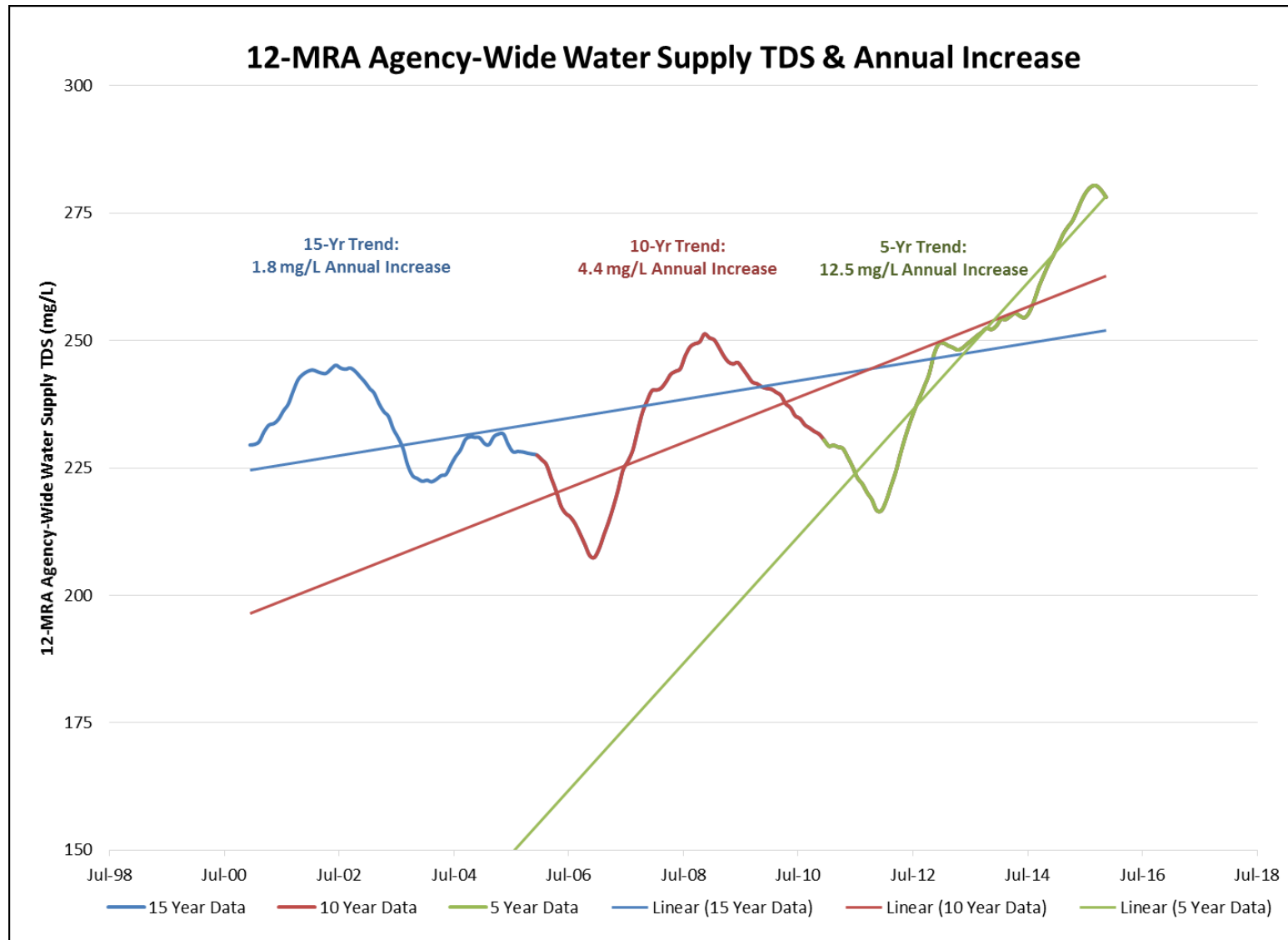


Figure 2: 12-Month Running Average Agency-Wide Water Supply TDS and Annual Increase

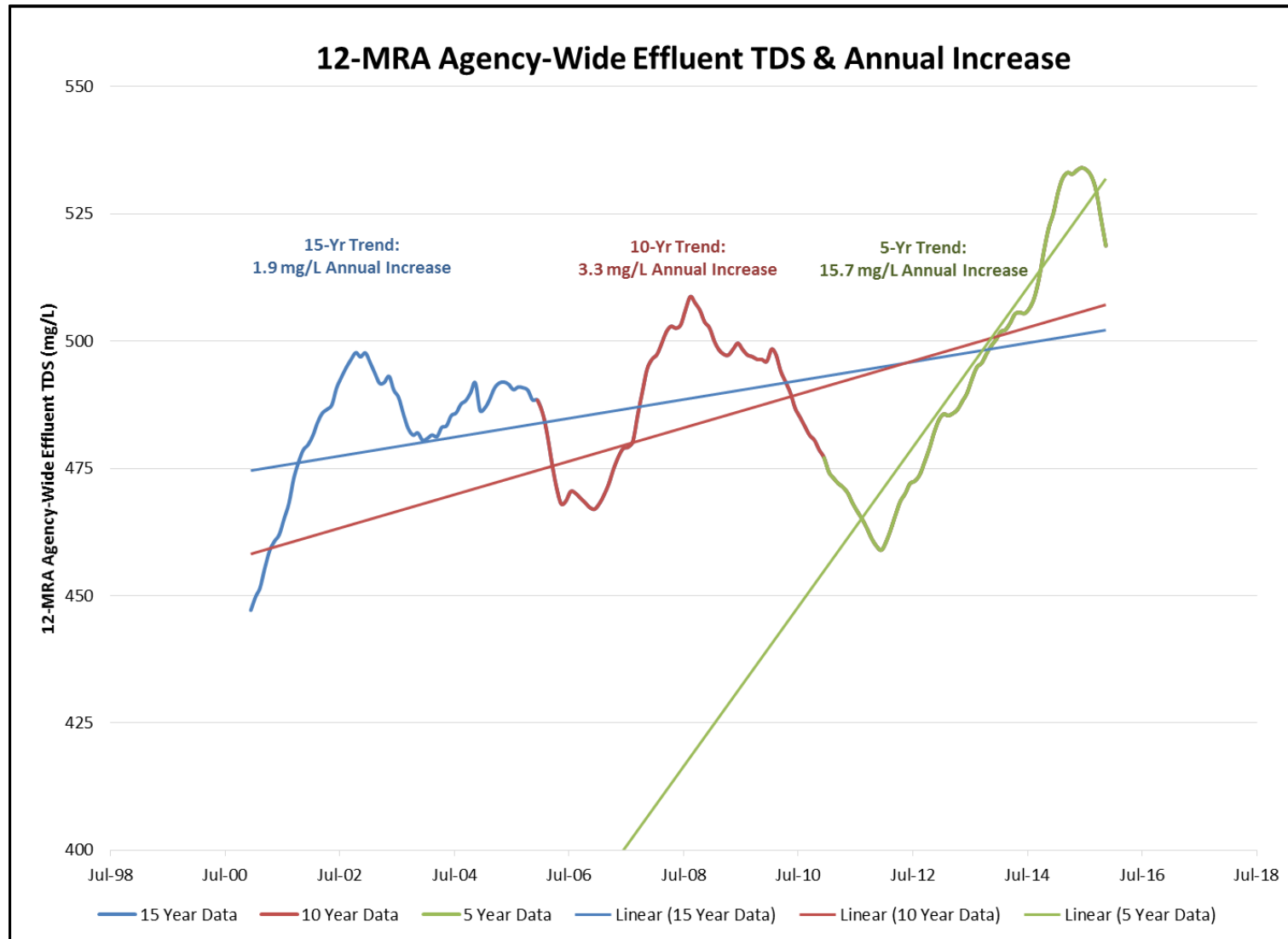


Figure 3: 12-Month Running Average Agency-Wide Effluent TDS and Annual Increase

Table A1: Water Supply Portfolio Sensitivity

Scenario	Imported Water	Ground-water	Desalter Water	Water Supply (mg/L)	Annual TDS Increase (mg/L)	Reach TDS 550 mg/L Limit (Year)	Convert RP-5 to UV (Year)	Convert All to UV (Year)	RO Capacity (MGD)
1A-1	-	-	-	281	1	2036	2053	2081	1
1A-5	-	-	-	281	5	2020	2022	2030	14
1A-10	-	-	-	281	10	2018	2019	2023	26
1A-15	-	-	-	281	15	2017	2017	2021	34
2A-1	350	250	350	285	1	2032	2050	2088	2
2A-5	350	250	350	285	5	2019	2021	2030	15
2A-10	350	250	350	285	10	2017	2018	2023	25
2A-15	350	250	350	285	15	2017	2018	2020	34
2B-1	375	250	350	291	1	2025	2042	2074	3
2B-5	375	250	350	291	5	2017	2020	2028	15
2B-10	375	250	350	291	10	2017	2018	2023	26
2B-15	375	250	350	291	15	2016	2016	2020	34
2C-1	400	250	350	298	1	2017	2033	2072	4
2C-5	400	250	350	298	5	2016	2018	2027	16
2C-10	400	250	350	298	10	2016	2017	2021	27
2C-15	400	250	350	298	15	2016	2016	2019	35
2D-1	425	250	350	304	1	2016	2023	2068	5
2D-5	425	250	350	304	5	2016	2017	2026	17
2D-10	425	250	350	304	10	2016	2016	2021	27
2D-15	425	250	350	304	15	2016	2016	2016	35
3A-1	350	250	300	280	1	2038	2060	2086	1
3A-5	350	250	300	280	5	2020	2022	2031	14
3A-10	350	250	300	280	10	2018	2018	2023	25
3A-15	350	250	300	280	15	2017	2017	2021	34
3B-1	350	250	250	275	1	2044	2066	2092	0
3B-5	350	250	250	275	5	2021	2023	2032	14
3B-10	350	250	250	275	10	2018	2019	2024	25
3B-15	350	250	250	275	15	2017	2018	2021	33

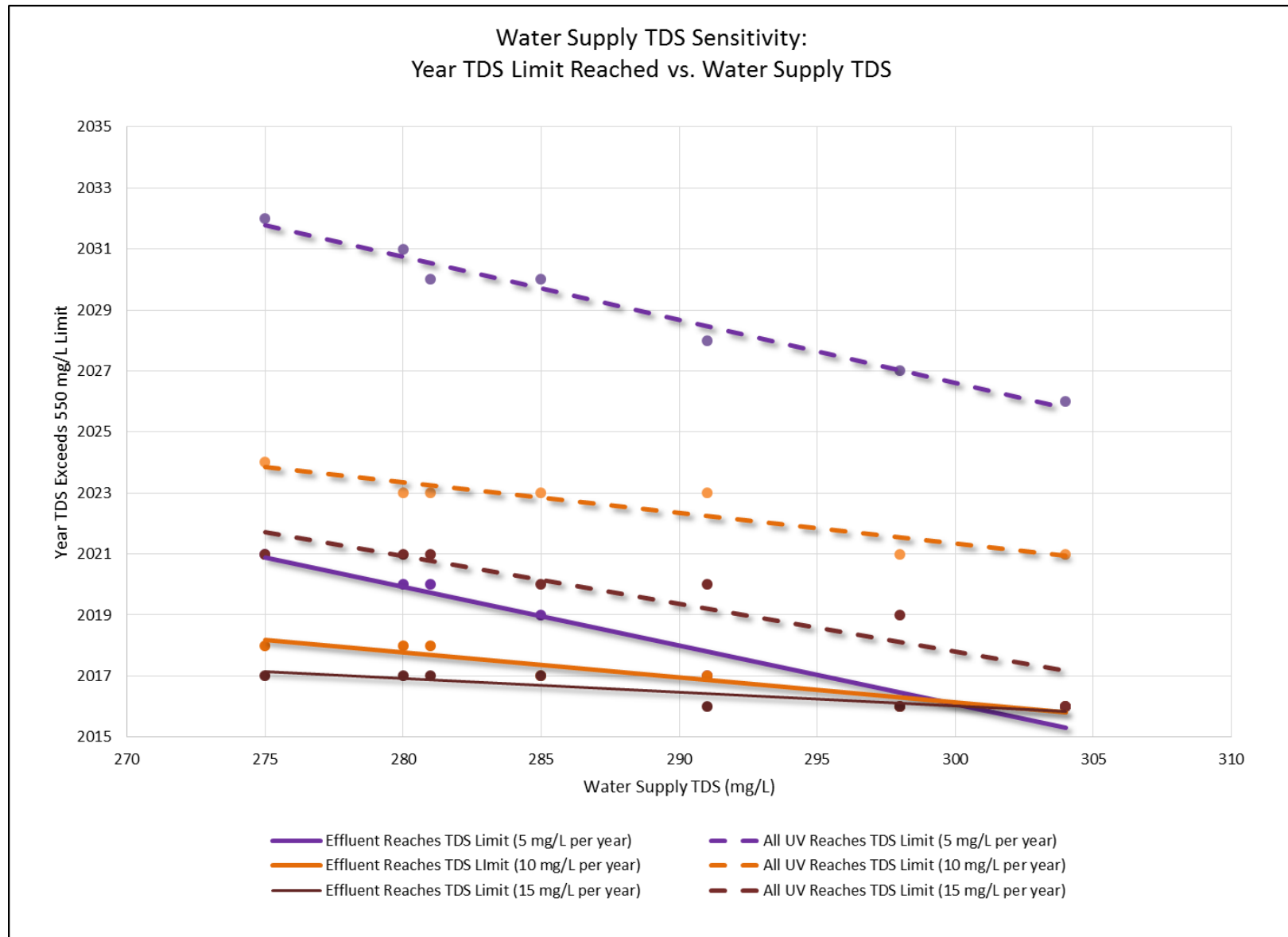


Figure 4: Water Supply TDS Sensitivity – Year TDS Limit is Reached vs. Water Supply TDS

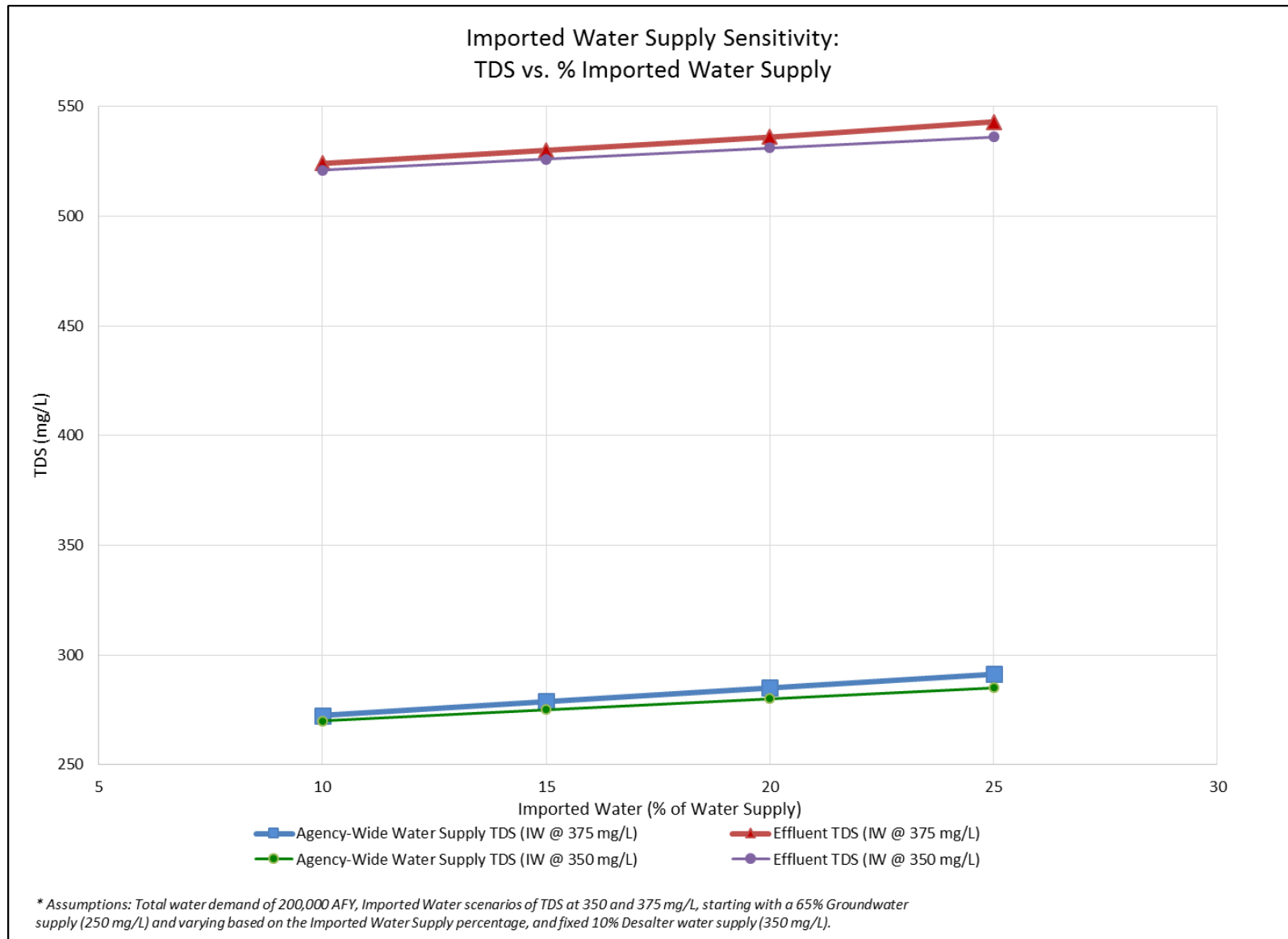


Figure 5: Imported Water Supply Sensitivity – TDS vs % Imported Water Supply

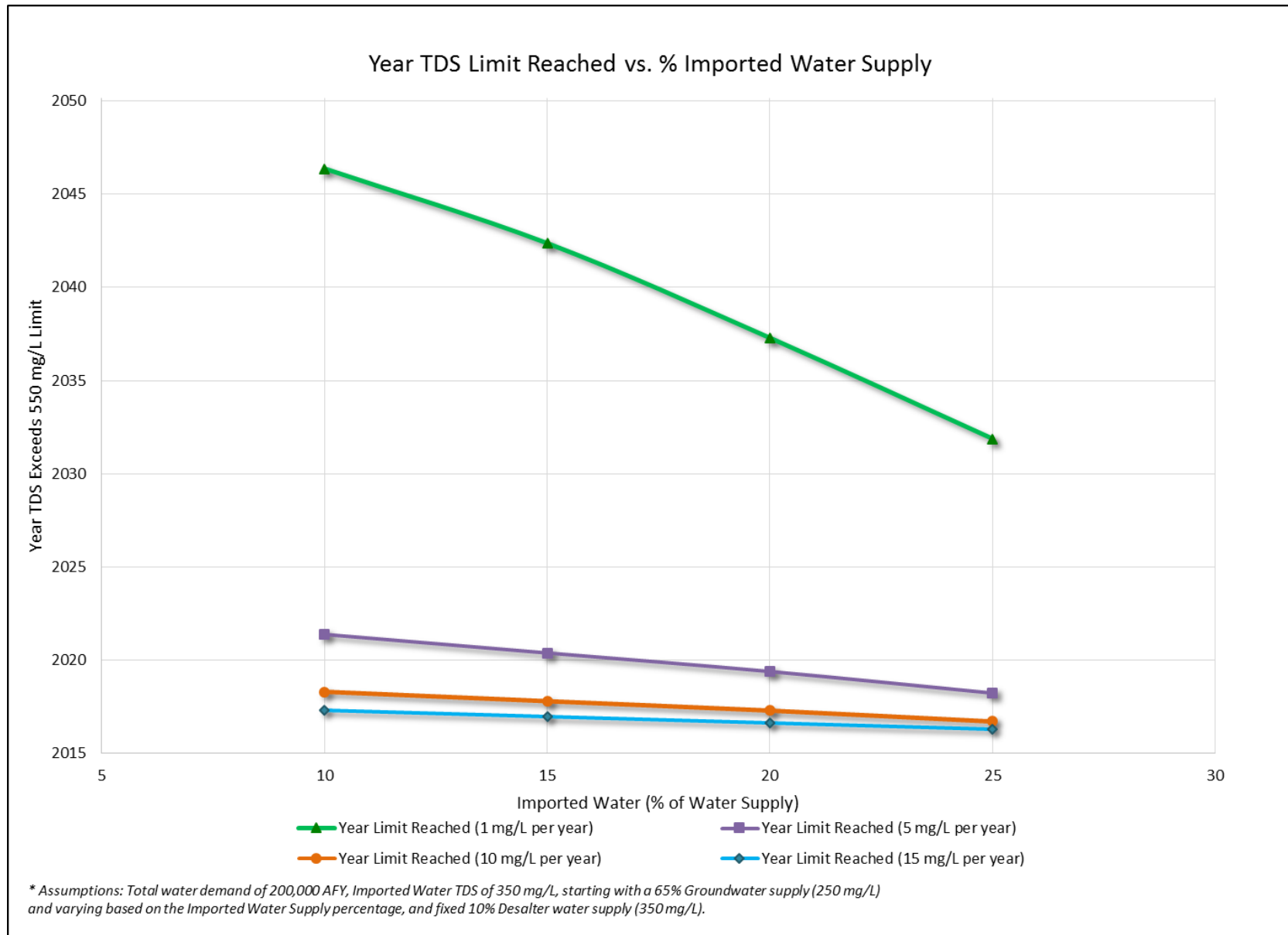


Figure 6: Year TDS Limit is Reached vs. % Imported Water Supply

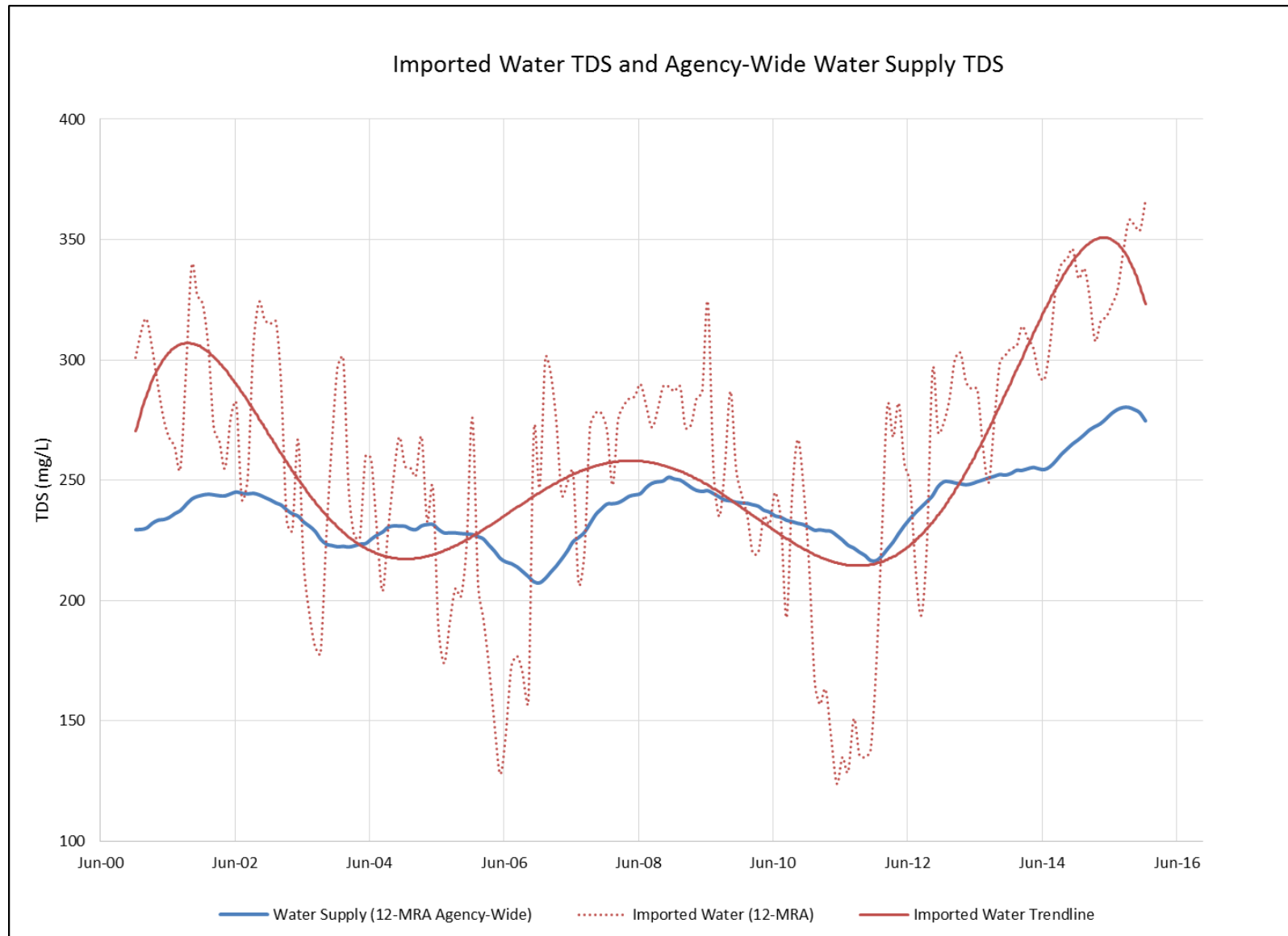


Figure 7: Imported Water TDS and Agency-Wide Water Supply TDS

Table A2: Sensitivity of Imported Water % on Water Supply

Scenarios: Varying % Imported Water of Water Supply		Total Water Demand	Imported Water			Groundwater			Desalter Water			Water Supply	1 mg/L Annual Increase		5 mg/L Annual Increase		10 mg/L Annual Increase		15 mg/L Annual Increase	
													Effluent	TDS Limit Reached (550 mg/L)	Effluent	TDS Limit Reached (550 mg/L)	Effluent	TDS Limit Reached (550 mg/L)	Effluent	TDS Limit Reached (550 mg/L)
		AFY	%	AFY	TDS (mg/L)	%	AFY	TDS (mg/L)	%	AFY	TDS (mg/L)	TDS (mg/L)	Mon/Yr	TDS (mg/L)	Mon/Yr	TDS (mg/L)	Mon/Yr	TDS (mg/L)	Mon/Yr	
Current	IW @ 25%	200,000	25	50,000	375	65	130,000	250	10	20,000	350	291	543	11/2025	543	8/2017	543	1/2017	544	10/2016
1	IW @ 20%	200,000	20	40,000	375	70	140,000	250	10	20,000	350	285	536	11/2032	537	4/2019	537	9/2017	537	4/2017
2	IW @ 15%	200,000	15	30,000	375	75	150,000	250	10	20,000	350	279	530	8/2039	530	8/2020	531	5/2018	531	9/2017
3	IW @ 10%	200,000	10	20,000	375	80	160,000	250	10	20,000	350	273	524	12/2046	524	11/2021	525	1/2019	525	2/2018
Current	IW @ 25%	200,000	25	50,000	350	65	130,000	250	10	20,000	350	285	536	11/2032	537	3/2019	537	9/2017	537	4/2017
1	IW @ 20%	200,000	20	40,000	350	70	140,000	250	10	20,000	350	280	531	4/2038	532	5/2020	532	4/2018	532	8/2017
2	IW @ 15%	200,000	15	30,000	350	75	150,000	250	10	20,000	350	275	526	5/2043	527	5/2021	527	10/2018	527	12/2017
3	IW @ 10%	200,000	10	20,000	350	80	160,000	250	10	20,000	350	270	521	5/2047	522	5/2022	522	4/2019	522	4/2018

Table A3: Recycled Water Supply & Use – High Supply & Low Demand

Description	Recycled Water Supply & Use (AFY) High Supply - Low Demand					
	Year					
	2015	2020	2025	2030	2035	2040
RW Supply	56,384	66,312	71,913	77,514	82,330	88,817
External Supply	-	5,000	5,000	5,000	5,000	5,000
SARBF Obligation Discharge	14,000	14,000	14,000	14,000	14,000	14,000
Direct Use Demand Forecast	22,580	28,800	30,700	30,700	30,700	30,700
Available GWR Supply	19,804	28,512	32,213	37,814	42,630	49,117
GWR Basin Deliveries	13,600	18,700	18,700	18,700	18,700	18,700
Remaining Reuse Supply	6,204	9,812	13,513	19,114	23,930	30,417
Reverse Osmosis @ 12 MGD	-	13,440	13,440	13,440	13,440	13,440
Potential Remaining Supply	-	(3,628)	73	5,674	10,490	16,977

*Reverse osmosis was selected at 12 MGD since this is the capacity that leaves almost no potential remaining supply in 10 years.

Table A4: Recycled Water Supply & Use – Low Supply & High Demand

Description	Recycled Water Supply & Use (AFY) Low Supply - High Demand					
	Year					
	2015	2020	2025	2030	2035	2040
RW Supply	56,384	59,681	64,722	69,763	74,097	78,000
External Supply	-	-	-	-	-	-
SARBF Obligation Discharge	17,000	17,000	17,000	17,000	14,000	17,000
Direct Use Demand Forecast	24,655	30,000	36,000	40,000	43,000	45,000
Available GWR Supply	14,729	12,681	11,722	12,763	17,097	16,000
GWR Basin Deliveries	13,600	16,881	18,700	18,700	18,700	18,700
Remaining Reuse Supply	1,129	(4,200)	(6,978)	(5,937)	(1,603)	(2,700)
Reverse Osmosis @ 12 MGD	-	13,440	13,440	13,440	13,440	13,440
Potential Remaining Supply	-	(17,640)	(20,418)	(19,377)	(15,043)	(16,140)

*Reverse osmosis was selected at 12 MGD since this is the capacity in the High-Supply Low-Demand table that leaves almost no potential remaining supply in 10 years.

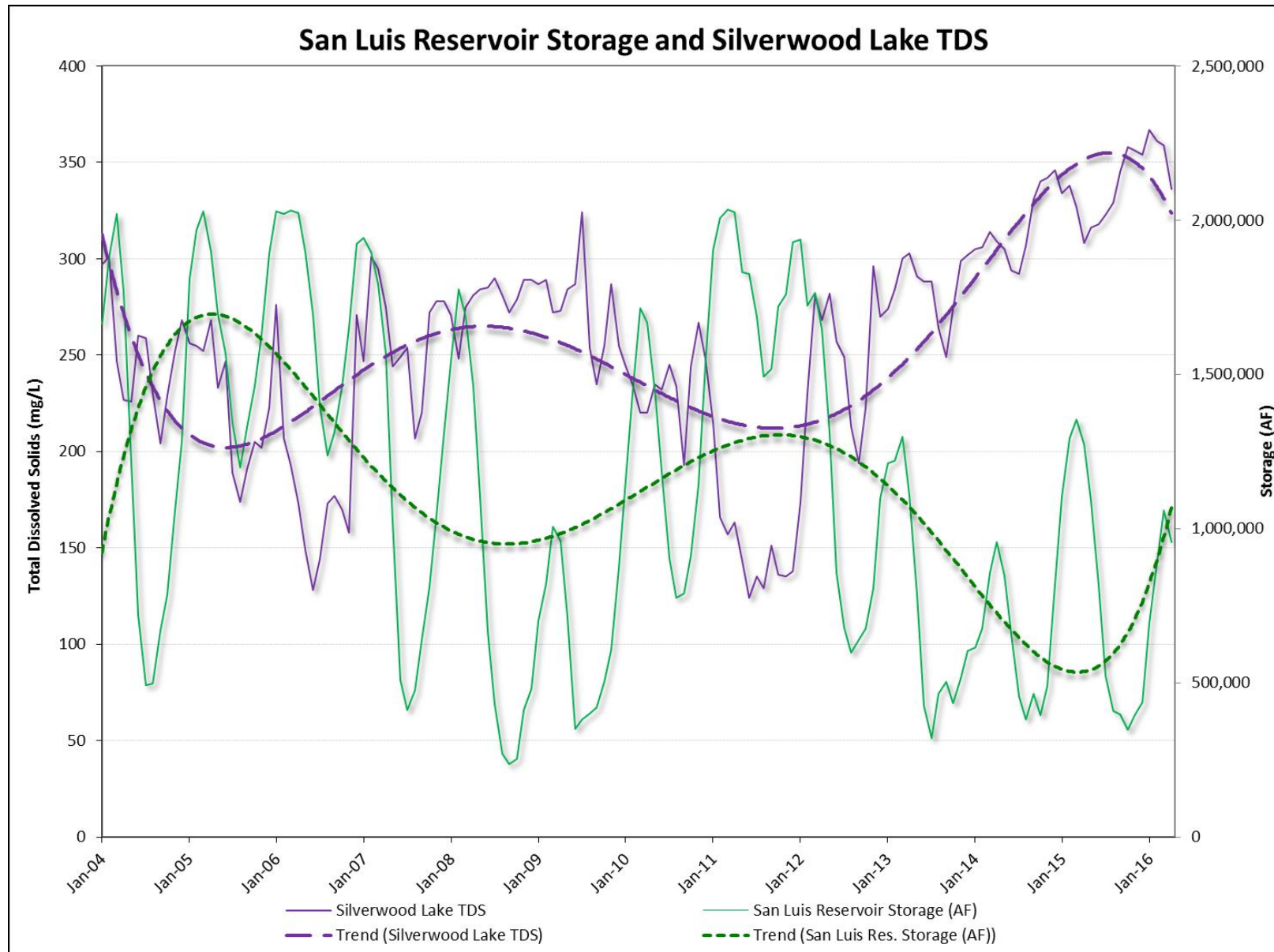


Figure 8: San Luis Reservoir Storage and Silverwood Lake TDS

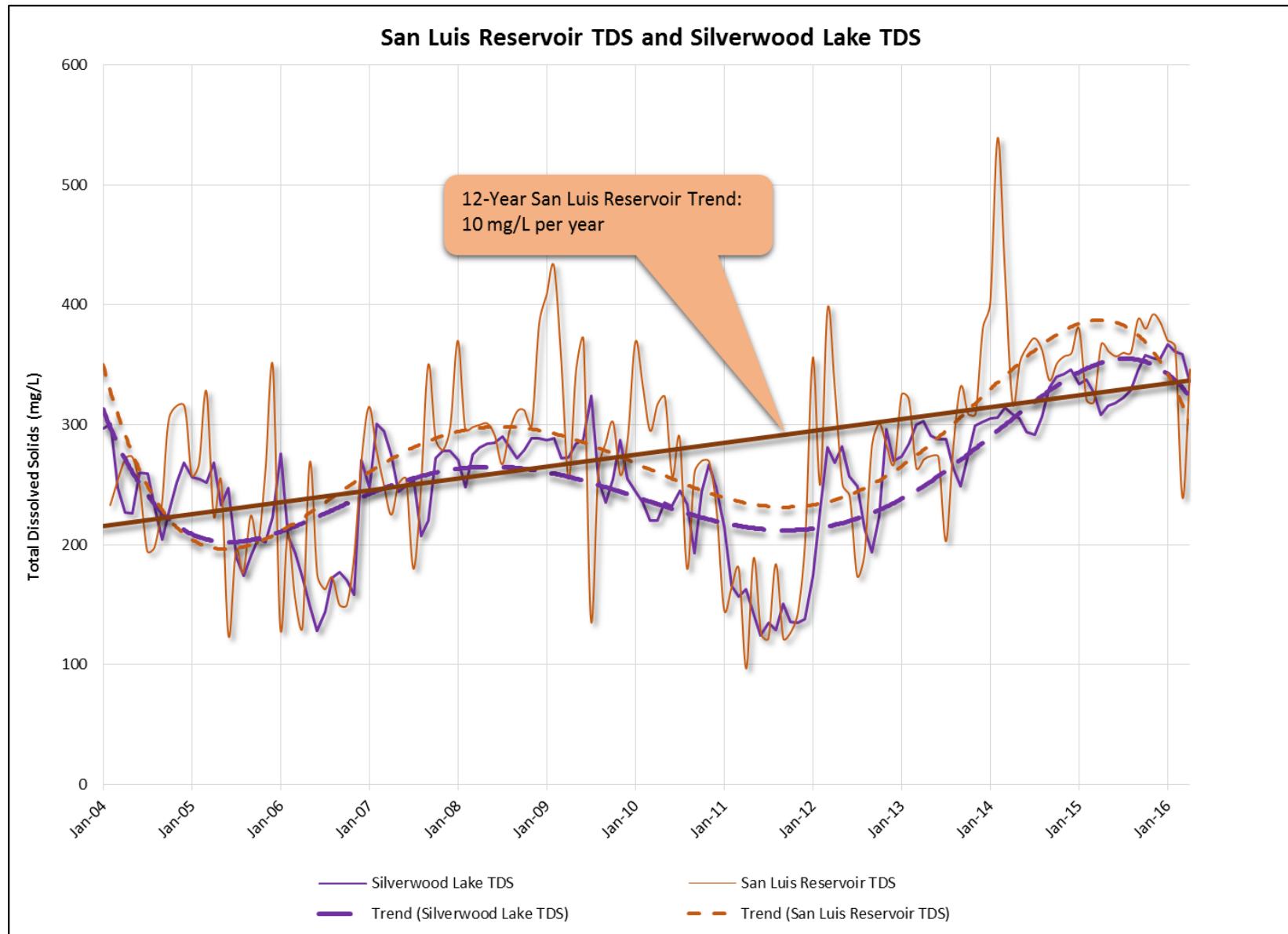


Figure 9: San Luis Reservoir TDS and Silverwood Lake TDS

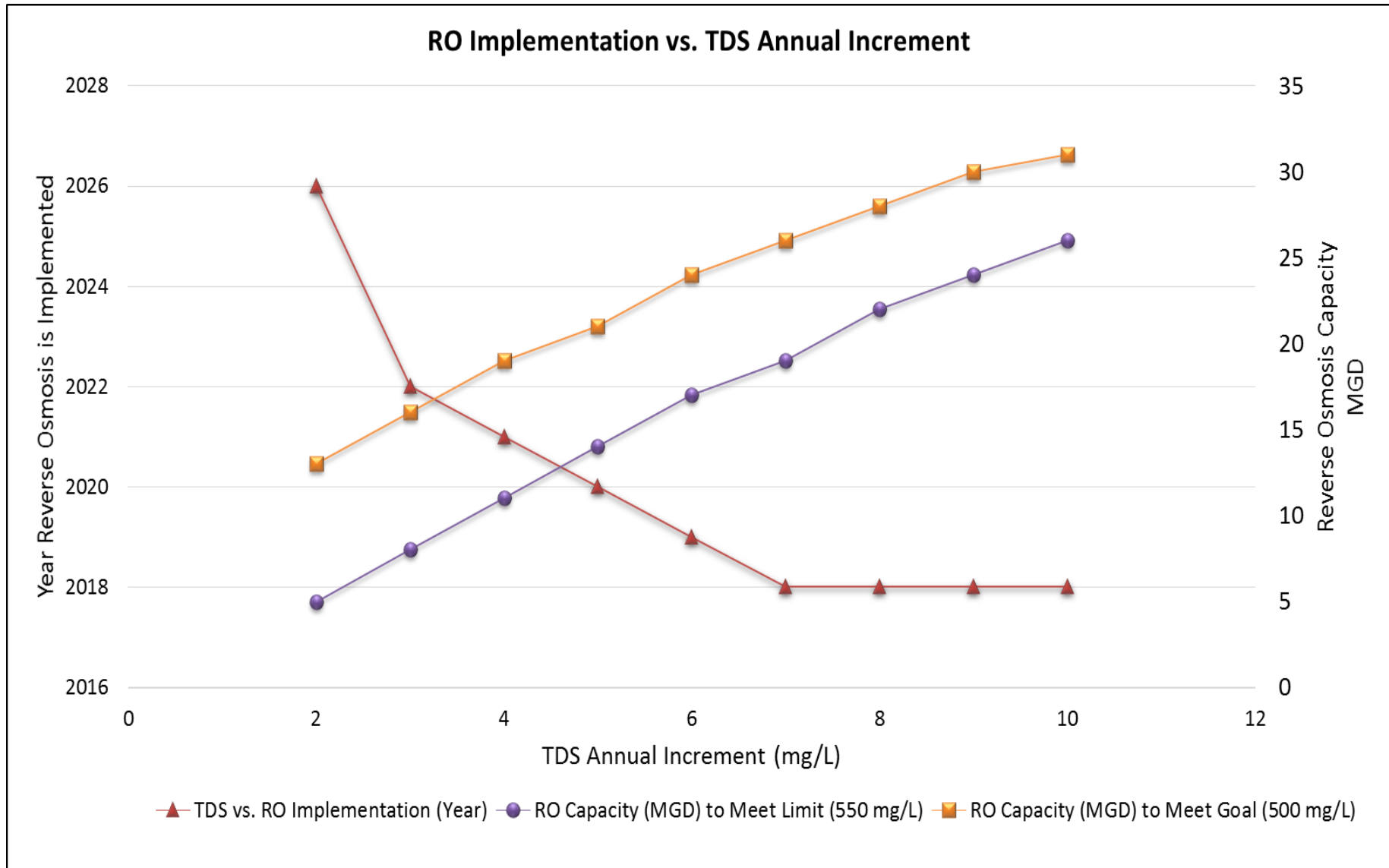


Figure 10: Reverse Osmosis Implementation vs. TDS Annual Increment

Table A5: Potential Short-Term Opportunities

Item	Description	Location
1	Operate the Desalter at a higher RO treatment level to lower the blended product water TDS. The current Desalter blended water TDS goal is 350 mg/L, which may have the potential to be reduced.	Desalter
2	Pursue site specific Concentration-Time (CT) disinfection that is significantly less than 450 mg-min/L. Other agencies, such as LACSD have been successful in demonstrating disinfection with a reduced CT and modal contact time through demonstration tests. If pursued, this pilot demonstration may take anywhere between 1½ - 3 years.	Water Recycling Facilities
3	Install fabric covers at CCWRF and RP-5's chlorine contact basins to reduce bleach burn off. Previous research and quotations have been received with the installation costs at approximately \$125,000 per site. Previous Agency tests conducted in 2011 showed up to 6 mg/L loss of chlorine due to UV exposure. More analysis would be needed to quantify effluent TDS levels based on a reduced hypochlorite dosage.	CCWRF, RP-5
4	Consider UV to meet Title 22 disinfection requirements. The preliminary analysis conducted in this evaluation showed, depending on annual TDS increase, UV disinfection at all facilities could potentially reduce the effluent TDS by approximately 50 mg/L by reducing the TDS currently added through sodium hypochlorite and sodium bisulfite.	Water Recycling Facilities
5	Consider dosing ferric at RP-1 directly into the digesters for hydrogen sulfide control instead of at the headworks and continue discharging the centrate to the NRW. Ferric injection at RP-1 headworks may be contributing to higher TDS levels. More analysis would be needed to quantify the potential reduction in effluent TDS based on dosing ferric in the digesters and removing it from the mainstream effluent by sending it into the NRW.	RP-1
6	Evaluate reducing Total Inorganic Nitrogen (TIN) (mostly nitrate) from approximately 8 to 3 ppm by optimizing denitrification using an external carbon source. A 5 ppm reduction in NO ₃ -N may translate to approximately 20 ppm reduction in TDS. This opportunity may apply to all water recycling facilities. This option would require further in-depth analysis to quantify TDS reduction and process impacts.	Water Recycling Facilities