



## **Regional Sewerage Program Technical Committee Meeting**

### **AGENDA**

**Thursday, October 27, 2022**

**2:00 p.m.**

***(Optional Tour of RP-5 Immediately  
Following the Committee Meeting)***

**Teams Conference Link:** [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_NmRmY2FmMDYtNTBmMS00MjA5LTk3ODgtZDkyY2U3MTRmZGYz%40thread.v2/0?context=%7b%22Tid%22%3a%224c0c1e57-30f3-4048-9bd2-cd58917dcf07%22%2c%22Oid%22%3a%22329ec40e-eb94-4218-9621-6bfa0baa9697%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_NmRmY2FmMDYtNTBmMS00MjA5LTk3ODgtZDkyY2U3MTRmZGYz%40thread.v2/0?context=%7b%22Tid%22%3a%224c0c1e57-30f3-4048-9bd2-cd58917dcf07%22%2c%22Oid%22%3a%22329ec40e-eb94-4218-9621-6bfa0baa9697%22%7d)

**Teleconference: (415) 856-9169/Conference ID: 715 477 121#**

This meeting will be held at IEUA and also remotely via Teams. The public may participate and provide public comment during the meeting by calling the number provided above. Comments may also be submitted by email to the Recording Secretary Laura Mantilla at [lmantilla@ieua.org](mailto:lmantilla@ieua.org) prior to the completion of the Public Comment section of the meeting. Comments will be distributed to the Committee Members.

#### **Location**

Inland Empire Utilities Agency  
Koopman Conference Room  
6075 Kimball Avenue  
Chino, CA 91708

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#### **Call to Order**

#### **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.

*(Continued)*

## Additions to the Agenda

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

### 1. Action Items

- A. Approval of September 29, 2022 Technical Committee Meeting Minutes

### 2. Informational Items

- A. RP-5 Project Update
- B. Operations and Maintenance Department Quarterly Update
- C. Return to Sewer Study (*Oral*)
- D. Operations & Compliance Updates (*Oral*)

### 3. Receive and File

- A. Draft Regional Sewerage Policy Committee Agenda
- B. Building Activity Report
- C. Recycled Water Distribution - Operations Summary
- D. Planning & Resources Department Quarterly Update

### 4. Other Business

- A. Committee Member Requested Agenda Items for Next Meeting
- B. Committee Member Comments
- C. Next Regular Meeting – TBD

## Adjourn

## DECLARATION OF POSTING

I, Laura Mantilla, Executive Assistant of the Inland Empire Utilities Agency\*, a Municipal Water District, hereby certify that, per Government Code Section 54954.2, a copy of this agenda has been posted at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA and on the Agency's website at [www.ieua.org](http://www.ieua.org) at least seventy-two (72) hours prior to the meeting date and time above.

**In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Laura Mantilla at (909) 993-1944 or [lmantilla@ieua.org](mailto:lmantilla@ieua.org) 48 hours prior to the scheduled meeting so that IEUA can make reasonable arrangements to ensure accessibility.**

**ACTION  
ITEM**

**1A**



## **Regional Sewerage Program Technical Committee Meeting MINUTES OF SEPTEMBER 29, 2022**

### **CALL TO ORDER**

A regular meeting of the IEUA/Regional Sewerage Program – Technical Committee was held via teleconference on Thursday, September 29, 2022. Committee Chair Amanda Coker/Cucamonga Valley Water District called the meeting to order at 2:01 p.m. Recording Secretary Laura Mantilla took roll call and established a quorum was present.

### **ATTENDANCE via Teleconference**

### **COMMITTEE MEMBERS PRESENT:**

Dave Crosley	City of Chino
Ron Craig	City of Chino Hills
Amanda Coker	Cucamonga Valley Water District (CVWD)
Brian Wolfe	City of Fontana
Monica Heredia	City of Montclair
Chris Quach	City of Ontario
Nicole deMoet	City of Upland
Christiana Daisy	Inland Empire Utilities Agency (IEUA)

### **OTHERS PRESENT:**

Eduardo Espinoza	CVWD
Randall Reed	CVWD
Jiwon Seung	CVWD
Mark Wiley	City of Chino Hills
Justin Scott-Coe	MVWD
Jerry Burke	IEUA
Andy Campbell	IEUA
Pietro Cambiaso	IEUA
Kristine Day	IEUA
Lucia Diaz	IEUA
Don Hamlett	IEUA
Michael Hurley	IEUA
Elizabeth Hurst	IEUA



**OTHERS PRESENT (continued):**

Javier Chagoyen-Lazaro	IEUA
Randy Lee	IEUA
Eddie Lin	IEUA
Alex Lopez	IEUA
Laura Mantilla	IEUA
Jason Marseilles	IEUA
Liza Muñoz	IEUA
Jeanina Romero	IEUA
Steven Smith	IEUA
Ken Tam	IEUA
Teresa Velarde	IEUA
Ashley Womack	IEUA

**PUBLIC COMMENTS**

There were no public comments.

**ADDITIONS/CHANGES TO THE AGENDA**

There were no additions/changes to the agenda.

**1. ACTION ITEM****A. APPROVAL OF AUGUST 25, 2022 TECHNICAL COMMITTEE MEETING MINUTES**

**Motion:** By Christopher Quach/City of Ontario and seconded by Nicole deMoet/City of Upland to approve the meeting minutes of the August 25, 2022, Regional Technical Committee meeting by the following vote:

Ayes: Crosley, Craig, Wolfe, Daisy, Quach, deMoet, Coker  
 Noes: None  
 Absent: Heredia  
 Abstain: None

The motion passed by a vote of 7 ayes, 0 noes, 0 abstain, and 1 absent.

**2. INFORMATIONAL ITEMS****A. FISCAL YEAR 2021/22 FOURTH QUARTER BUDGET VARIANCE REPORT**

Javier Chagoyen-Lazaro/IEUA gave a presentation on the fiscal year 2021/22 Fourth Quarter Budget Variance Summary for the regional wastewater and recycled water programs. He noted that the financial information is preliminary and is not the final audited data. The final audited statements are expected to be available in December 2022. He reviewed the sources of funds, uses of funds, and the cost of service per acre-feet for each program.

*Committee member Heredia joined the virtual meeting at 2:13 p.m.*

**B. RECYCLED WATER GROUNDWATER RECHARGE UPDATE**

Steven Smith/IEUA gave an update on the annual recharge trends for stormwater and recycled water and reviewed the groundwater recharge and recycled water deliveries for the last 10 years. He discussed the current maintenance projects at RP-3 and upcoming recharge site maintenance projects scheduled for the fall. Mr. Smith highlighted that the Recycled Water/Groundwater team set a record for fiscal year 2021/22 for recycled water deliveries to IEUA's groundwater recharge program.

**C. GRANTS SEMI-ANNUAL UPDATE**

Ashley Womack/IEUA gave an overview of the grant and loan funding portfolio for state grants, federal grants, state loans, and federal loans. Ms. Womack stated that staff is working with a diverse group of funding agencies to explore funding opportunities. She noted that this fiscal year the State Water Board did not fund any new projects due to an administrative backlog which could delay the ability to access State Revolving Funds (SRF) for projects.

In addition, Ms. Womack explained that the bond markets have a higher interest rate compared to SRF and WIFIA loans. She highlighted the total interest saved by taking advantage of the SRF and WIFIA Loans. Ms. Womack also informed the Committee of the United States Bureau of Reclamation WaterSMART funding opportunities that member agencies might be interested in.

Chair Coker asked Ms. Womack to keep the Committee updated on the status of the SRF loans.

**D. RETURN TO SEWER STUDY UPDATES**

Ken Tam/IEUA reported that the Technical Committee Subgroup and Data Collaborative had a productive meeting on September 28. Data Collaborative reviewed the draft report of the study and shared the findings and conclusions related to Exhibit J. In addition, they also identified two additional tasks and discussed the next steps in the process.

**E. OPERATIONS & COMPLIANCE UPDATES**

Mr. Tam reported that there were no operational or compliance issues last month.

**3. RECEIVE AND FILE**

*Items 3A – 3C were received and filed by the Committee.*

**A. DRAFT REGIONAL SEWERAGE POLICY COMMITTEE AGENDA**

**B. BUILDING ACTIVITY REPORT**

**C. RECYCLED WATER DISTRIBUTION – OPERATIONS SUMMARY**

**4. OTHER BUSINESS**

**A. COMMITTEE MEMBER REQUESTED AGENDA ITEMS FOR NEXT MEETING**

Ron Craig/City of Chino Hills requested an update on the RP-5 Expansion Project value engineering and budget. Christiana Daisy/IEUA invited the Committee on a tour of RP-5 and stated that next month's Committee meeting can be held in a hybrid format to allow members to participate in the tour following the meeting.

**B. COMMITTEE MEMBER COMMENTS**

There were no committee member comments.

**C. NEXT MEETING – OCTOBER 27, 2022**

**ADJOURNMENT** – Chair Coker adjourned the meeting at 2:37 p.m.

Prepared by:

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Laura Mantilla, Recording Secretary

**INFORMATION  
ITEM**

**2A**

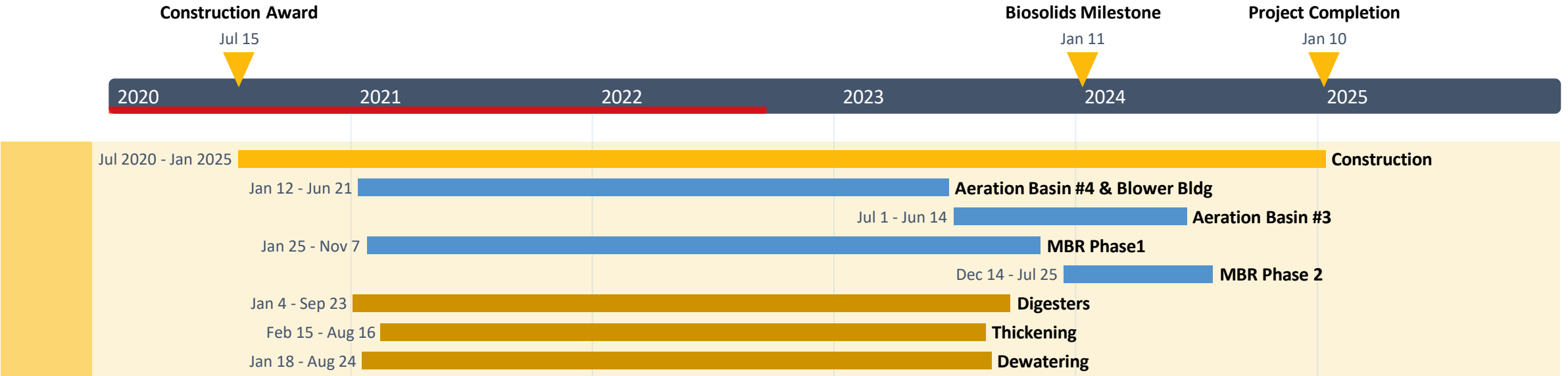
# RP-5 Expansion Project Tech & Policy Update

Project Nos. EN19001 and EN19006

Jason Marseilles, Manager of Engineering  
Brian Wilson, Principal Engineer  
October 2022

# RP-5: Project Status

Day 807 of 1640 = 49%



Role	Firm	Contract	This Month's Payment	Total Paid	% Complete
Contractor	WM Lyles	\$334,734,712	\$7,384,164	\$172,655,412	52%
Designer	Parsons	\$33,670,711	\$289,615	\$31,784,190	94%
Construction Management	Arcadis	\$21,125,523	\$389,557	\$9,550,257	45%

Data date: 9/30/22

# RP-5: Construction Spending

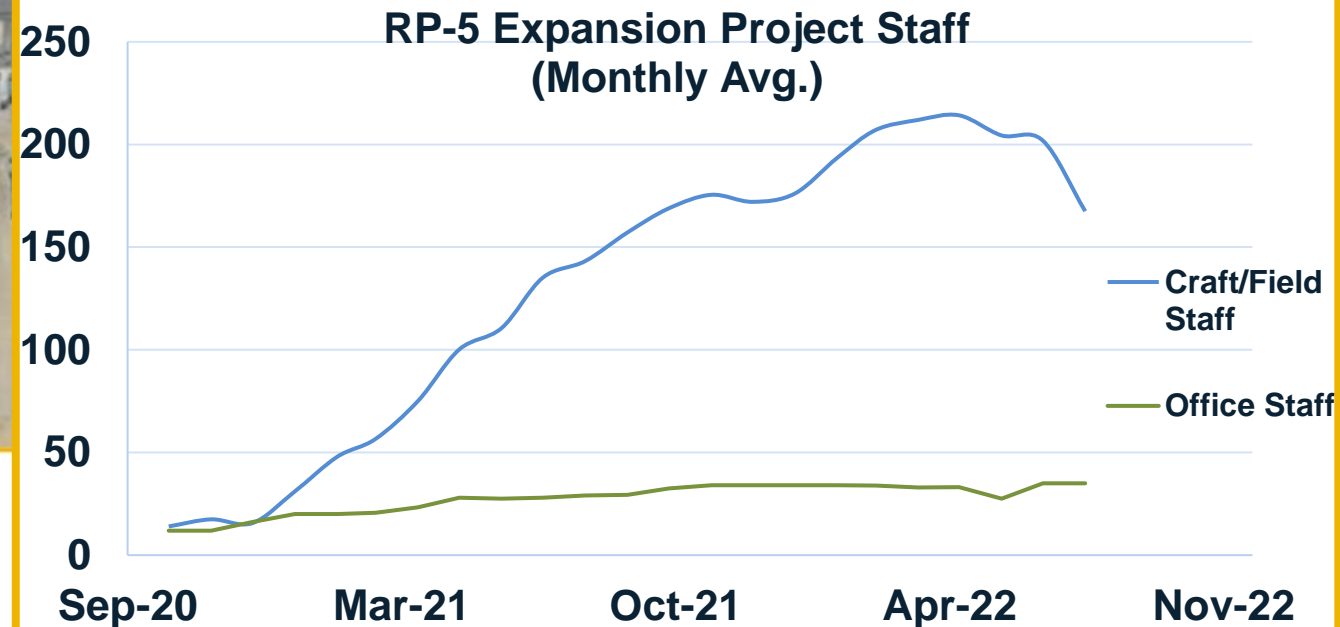
- Bid period delays
  - Original bid: 2/20/2020 → Addendums: 3/26/2020 → Covid → Actual bid: 5/21/2020
  - Delayed start of construction 3 months from original projection
- Initial estimate based on project duration of 4 years
  - Addendum extended project duration to 4.5 years
  - Spreads costs over additional 6 months from original projection
- Large cost item delivery delayed due to supply chain issues
  - Centrifuge, Generators, Boilers, Cake Silo System, SCADA Controllers...
  - Costs incurred later than expected
- Initial projections based on Construction Baseline Schedule
  - Earliest possible completion – to aggressive of a projection
  - Projections now based on monthly schedule updates & past execution rates
- Earned value 52% = Days complete 49%



# RP-5: Major Activity Areas

## Construction Staff

- WML Craft: 141
- WML Project: 30
- IEUA & CM: 15
- Total: 186





# RP-5: Major Activities



**Influent Pump Station**



# RP-5: Major Activities



**Headworks**



**Grit Chamber**



# RP-5: Major Activities



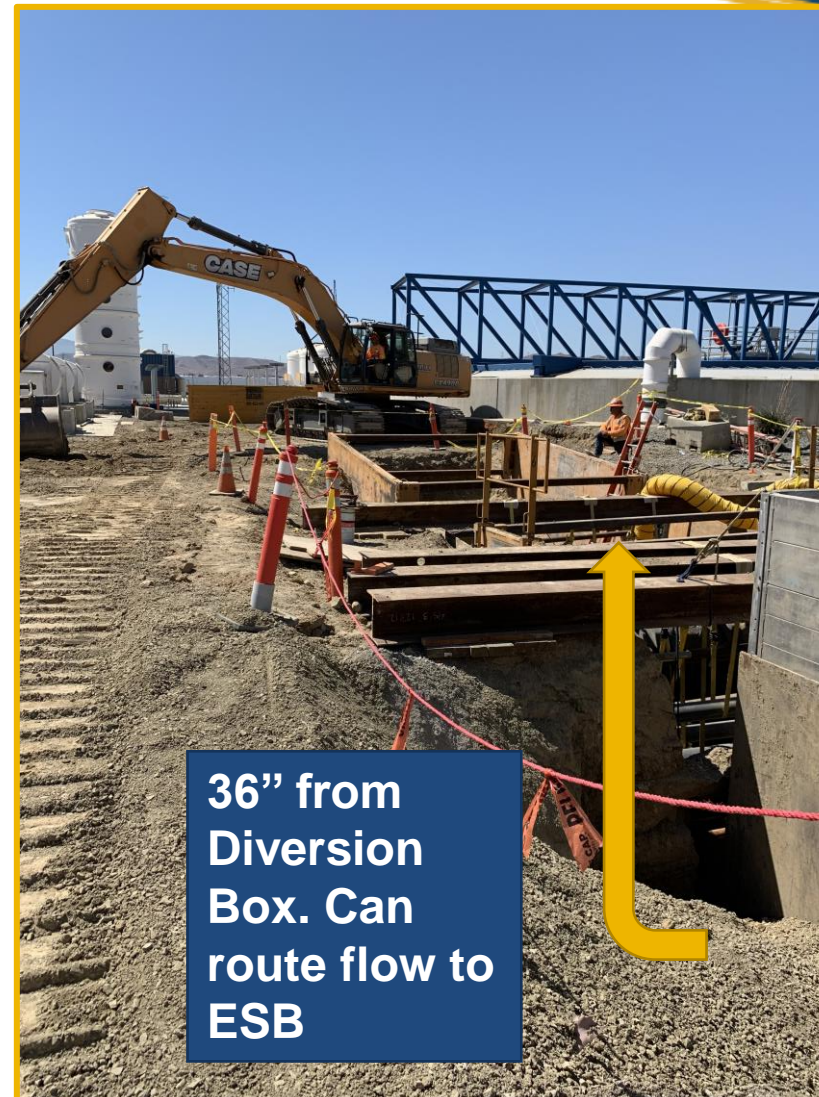
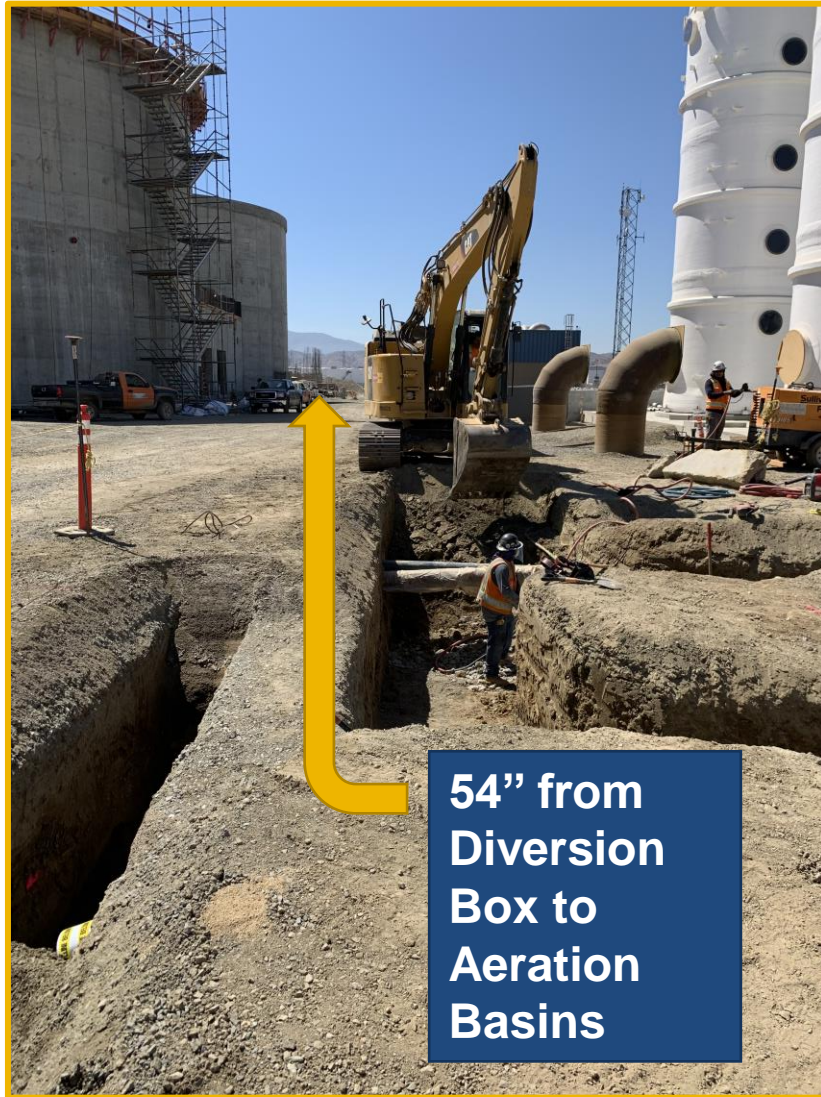
**Fine Screens**



**Primary Clarifiers**



# RP-5: Major Activities



## Primary Effluent Pipeline



# RP-5: Major Activities



## MBR Phase 1



# RP-5: Major Activities



## Thickening Building



# RP-5: Major Activities



## Gas Phase Digester Building



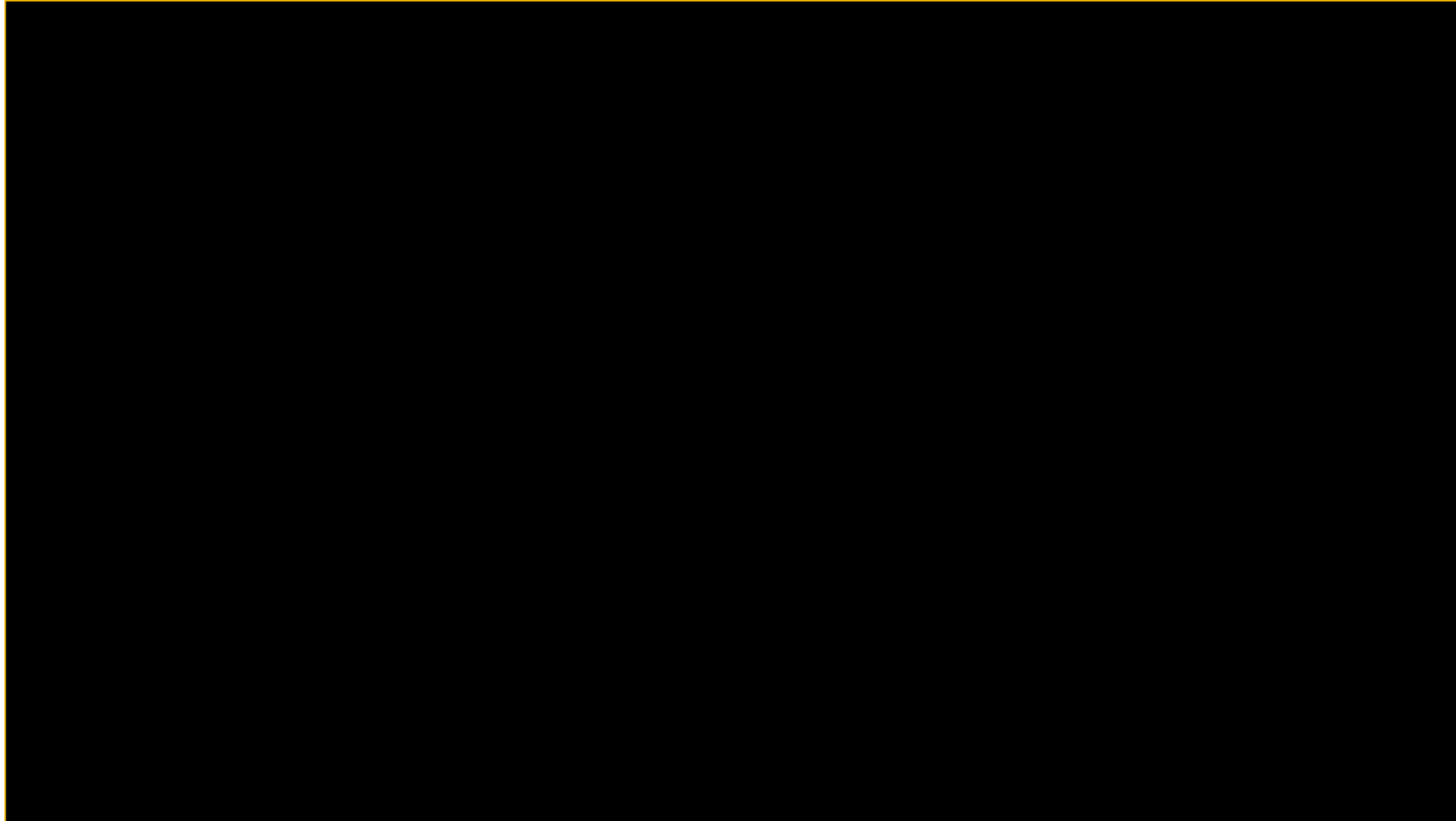
# RP-5: Major Activities



**Dewatering Building**



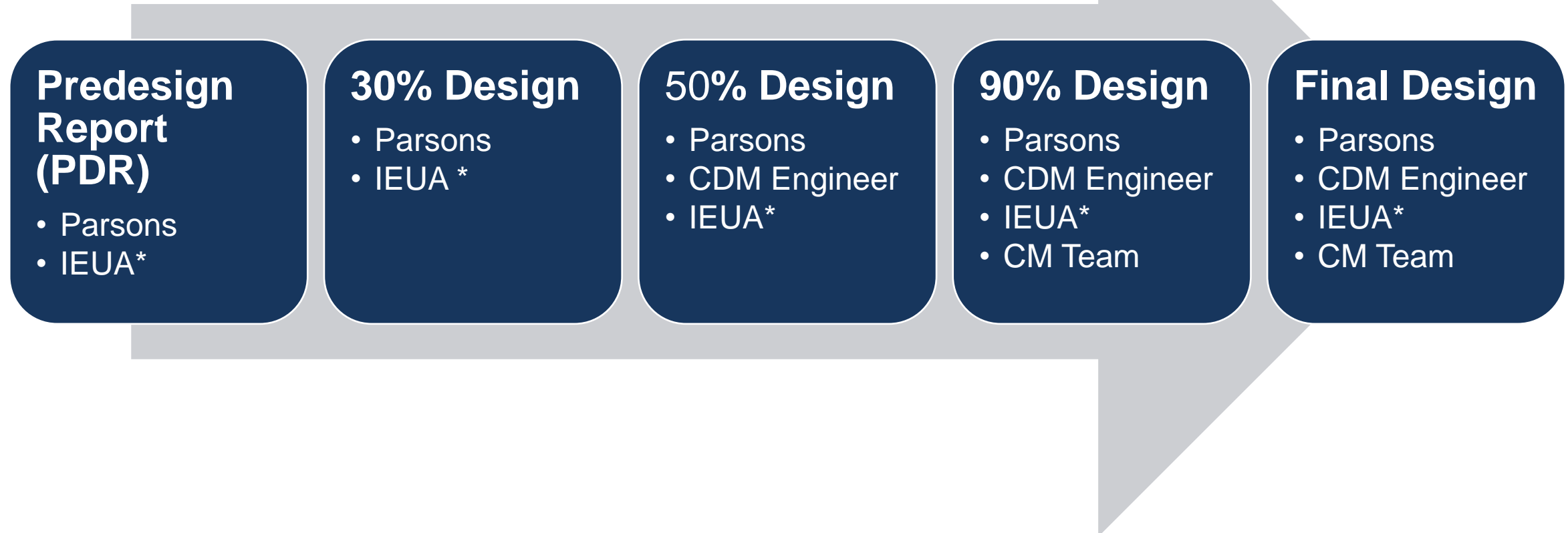
# Flyover Video (August 2022)





# Value Engineering (VE)

# Design Review Process



*\*IEUA design reviews included Engineering Staff, Operations & Maintenance, Planning, and Finance*

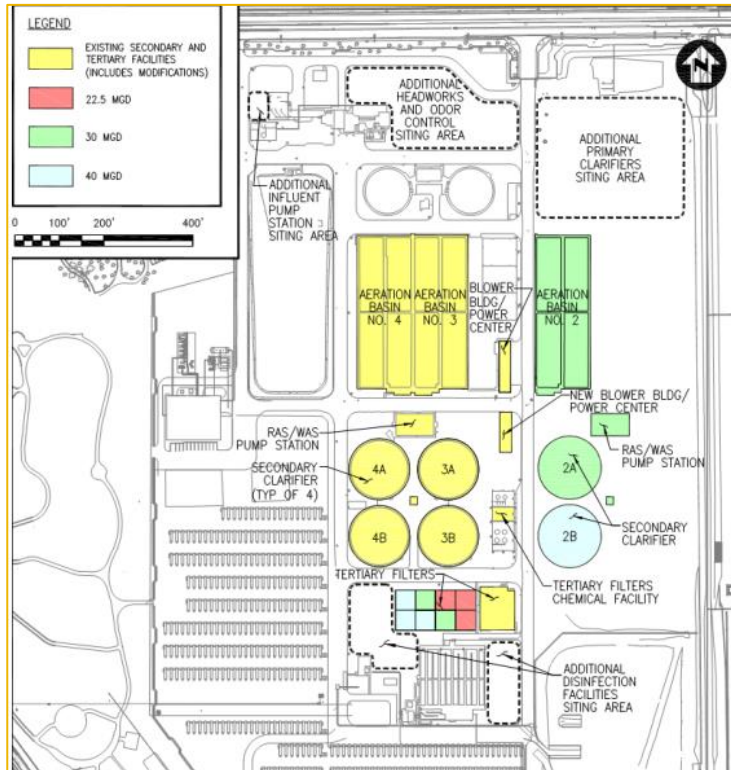
# Design Phase VE items

VE Item	Estimated Value
Secondary System Evaluation	\$84.5 M
O&M Building	\$25 M
UV System Removal	\$18 M
Methanol System Removal	\$3.0 M
Fine Screens Canopy Removal	\$425 K
<b>Total Estimated Value</b>	<b>\$131 M</b>



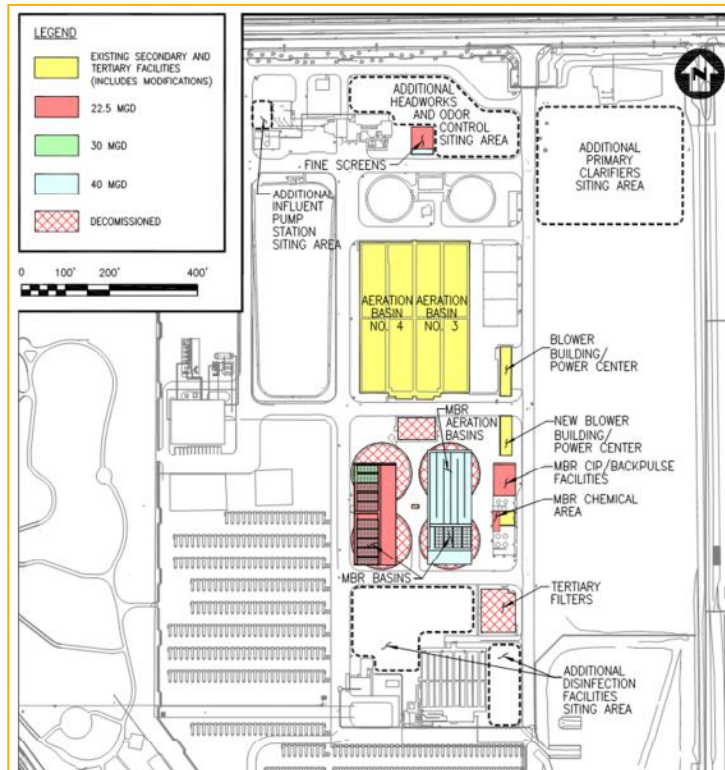
# Secondary System Evaluation

## Alt. 1: Expand Existing CAS



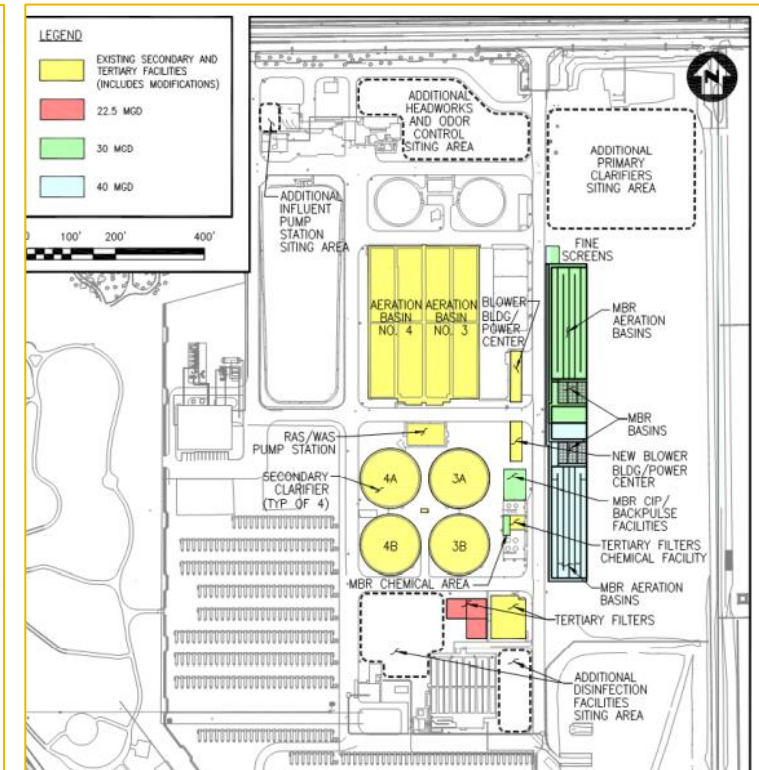
Estimated Value : \$160 M

## Alt. 2: Retrofit Existing CAS with MBR



Bid Value: \$74.7 M

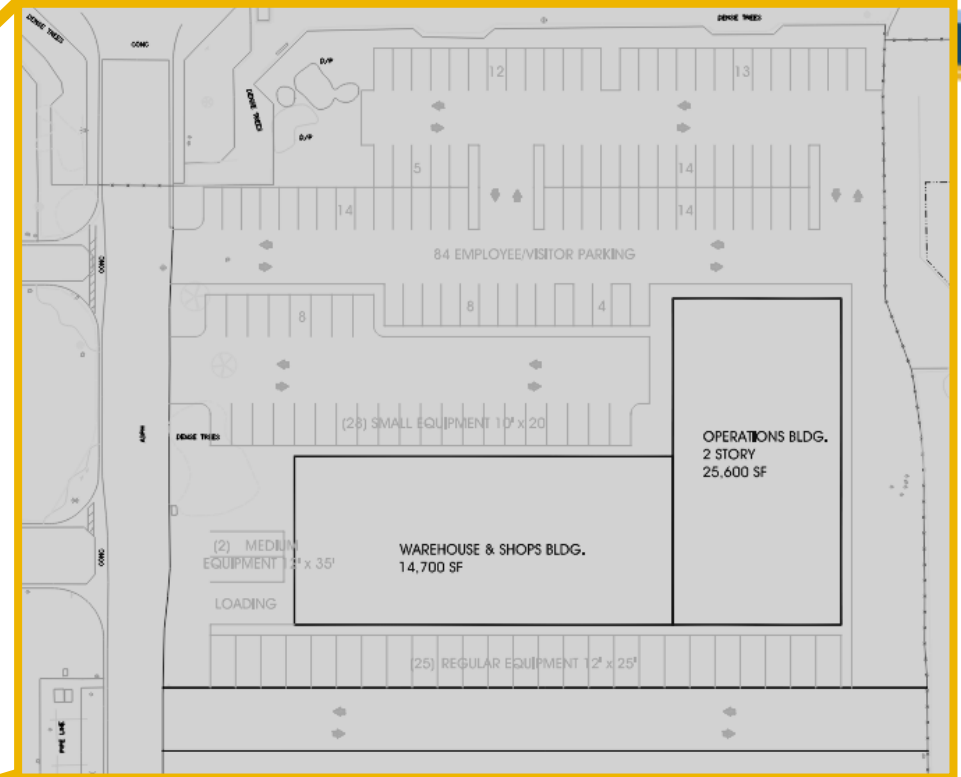
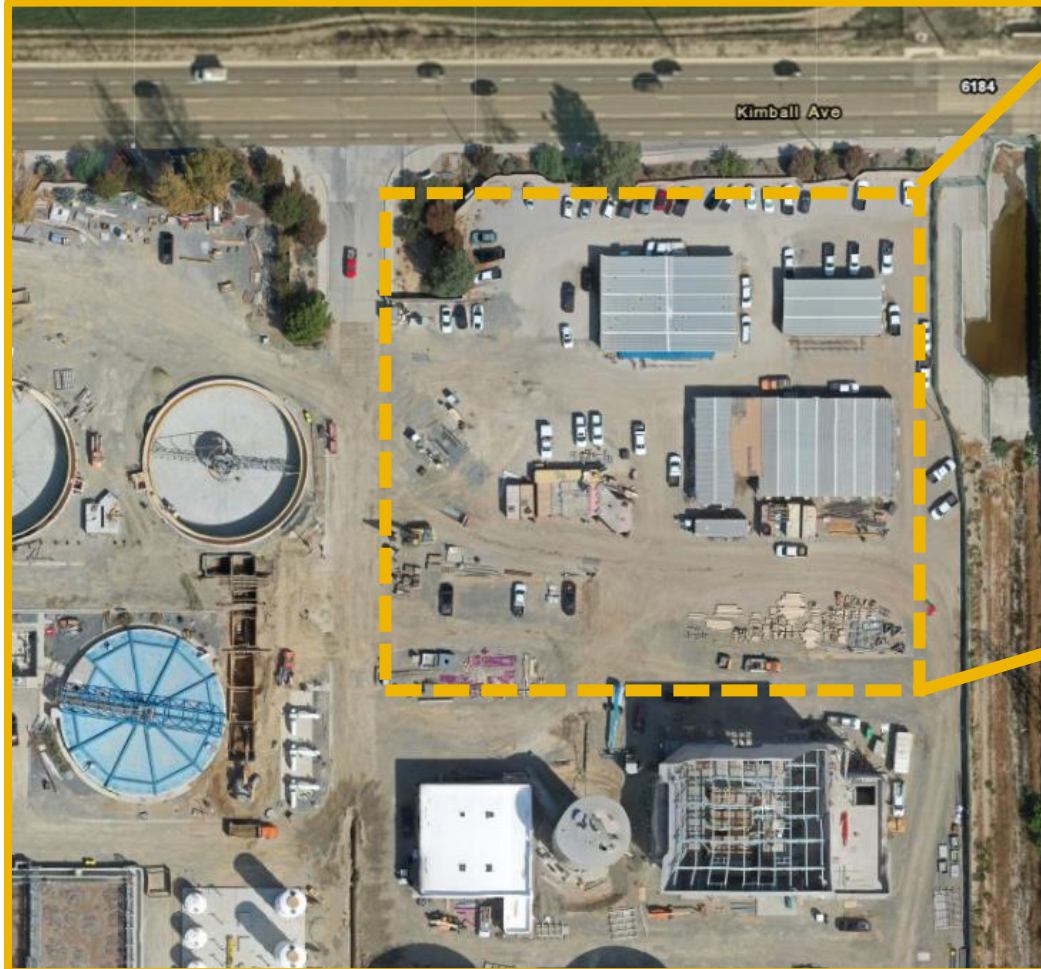
## Alt. 3: New MBR System



Estimated Value: \$160 M

# O&M Building

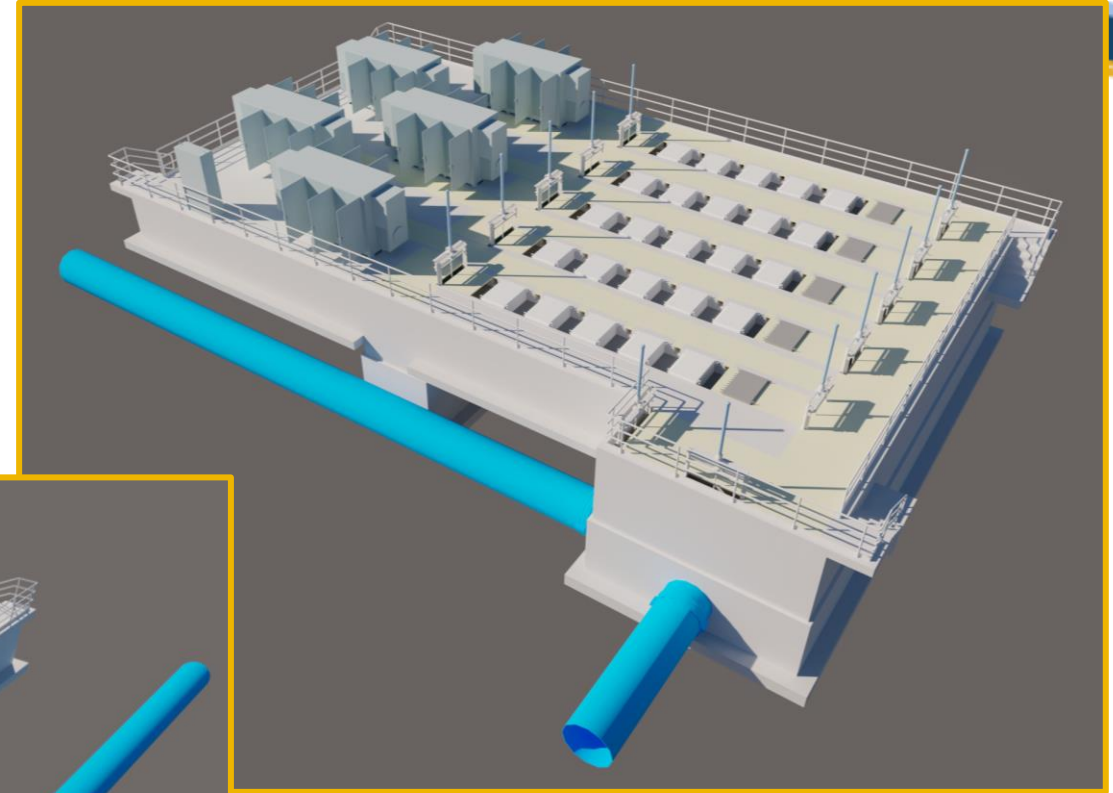
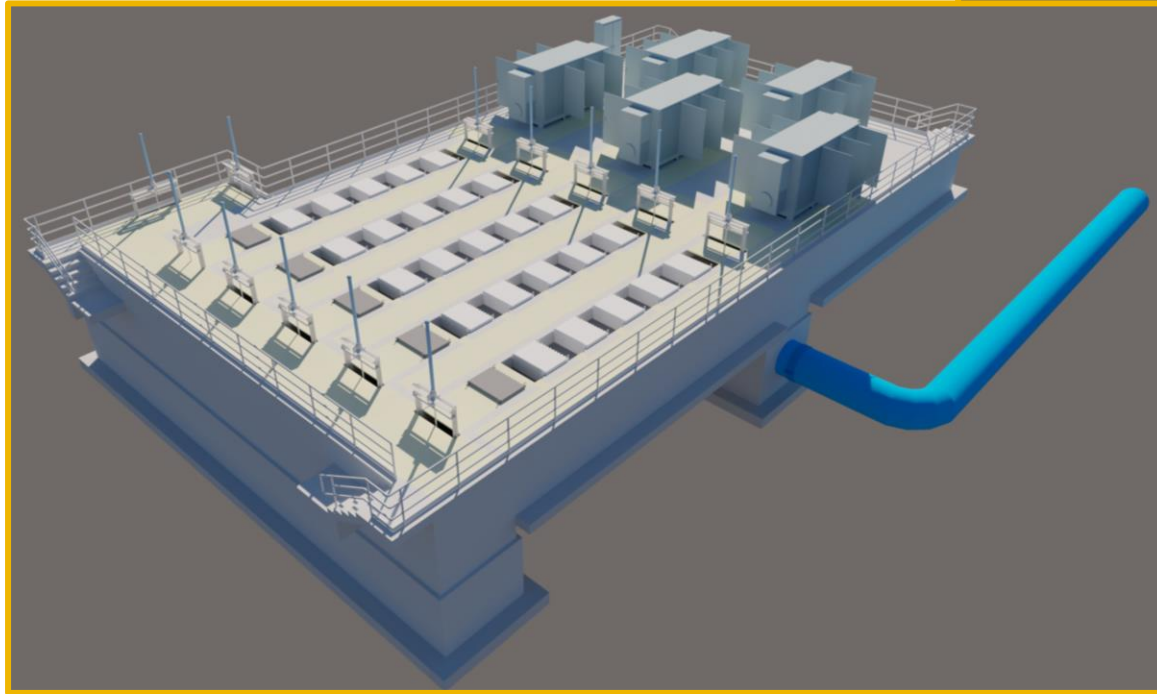
- Phase: Design
- Estimated Value: \$25M (2017)





# Removal of UV System

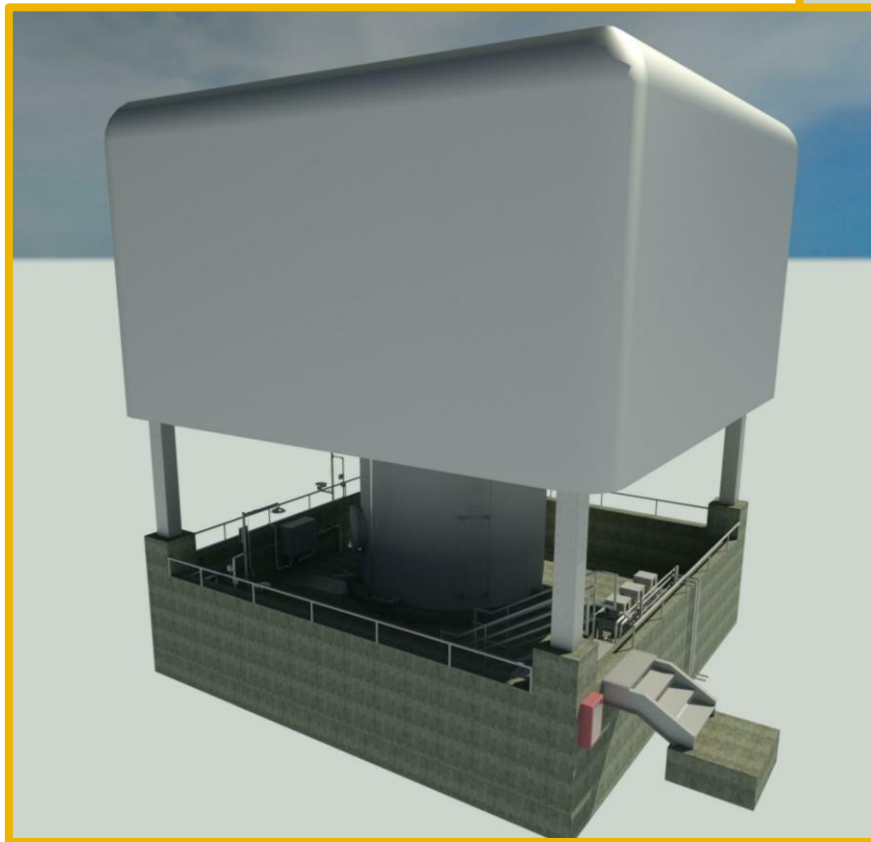
- Phase: Design
- Estimated Value: \$18M



Renderings of UV System

# Removal of Methanol System

- Phase: Design
- Estimated Value: \$3.0M

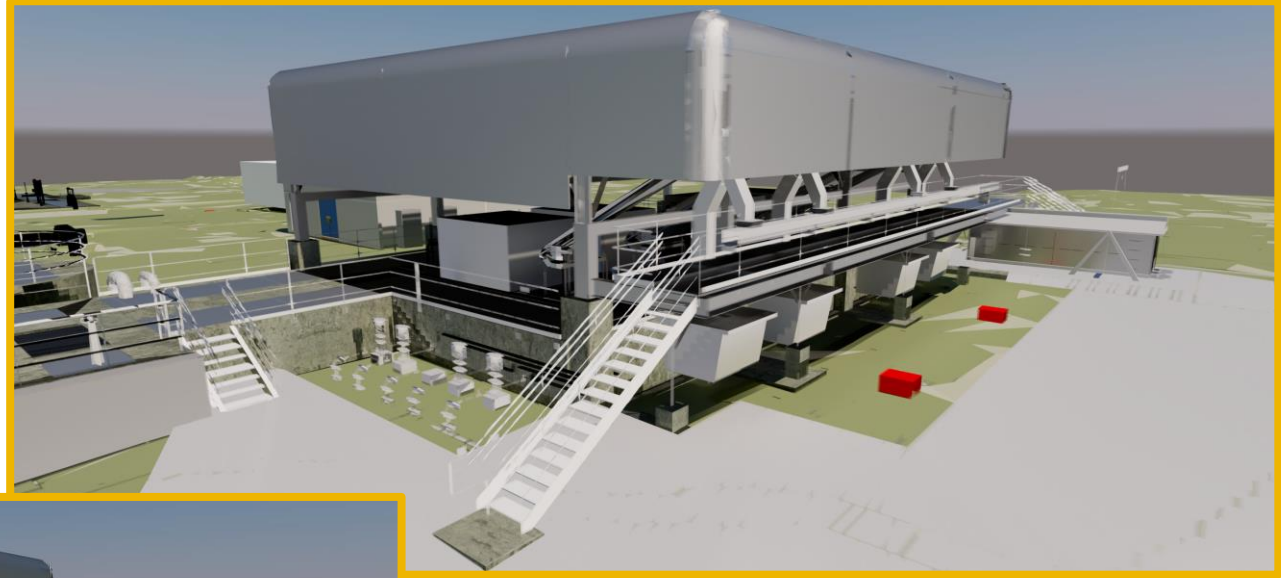


**Renderings of Methanol System  
(with and without canopy)**



# Removal of Fine Screens Canopy

- Phase: Design
- Estimated Value: \$425K



**Renderings of Fine Screens  
(with canopy)**

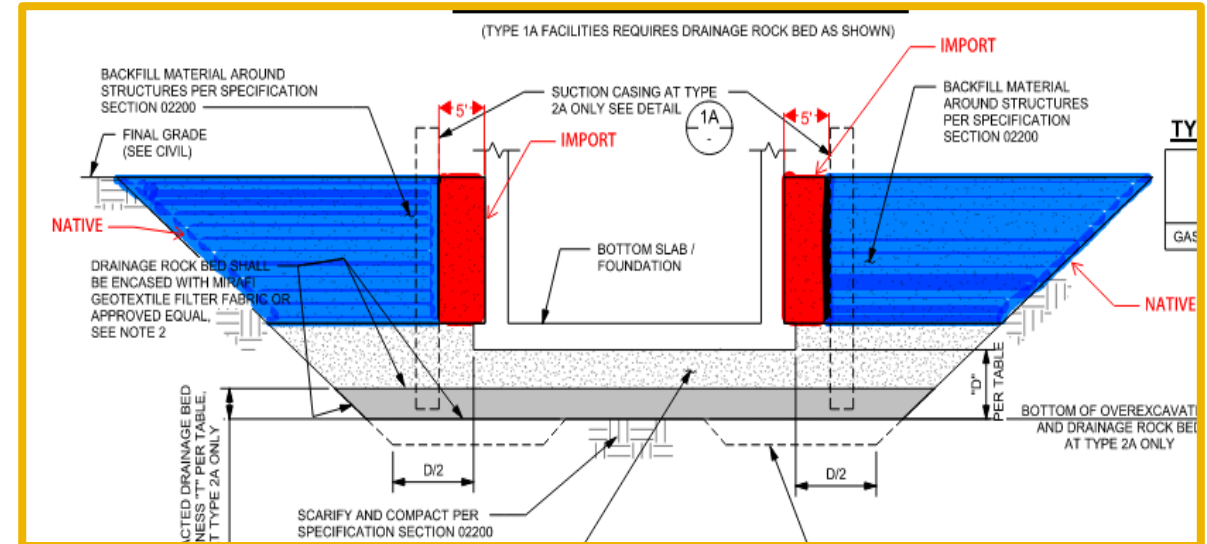
# Construction Phase VE Items

- VE item must provide equal performance and longevity as original design

VE Item	Estimated Value
Digester overflow pipeline lining glass to epoxy	\$185K
Influent pump station RS discharge pipe DIP to steel	\$105K
Ductile iron underground pipe removal of MJ harness LOK restraints	\$99K
Thickening building monorail supplemental steel	\$84K
Reuse of 16" OSR pipeline at south end of plant	\$82K
Foul air piping from SST to FRP at the thickening building	\$72K
HWR/HWS process system ball valves to butterfly valves	\$69K
8" DG pipeline change from SST to HDPE	\$69K
Screw conveyor interior handrail deletion	\$55K
<b>Total Credit Value</b>	<b>\$820K</b>

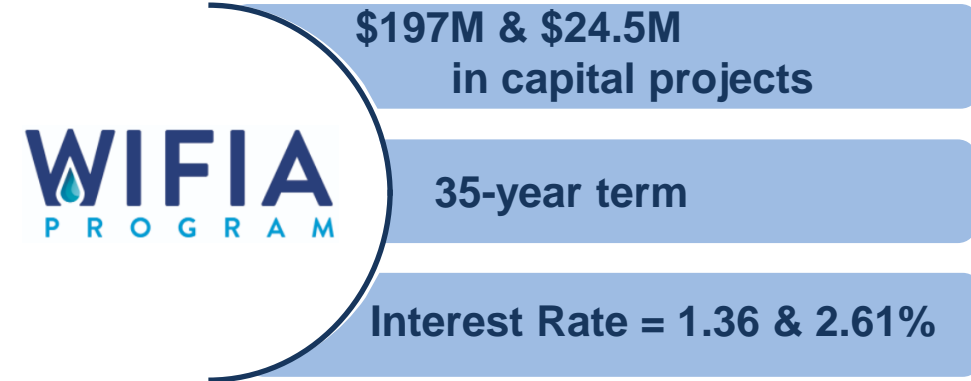
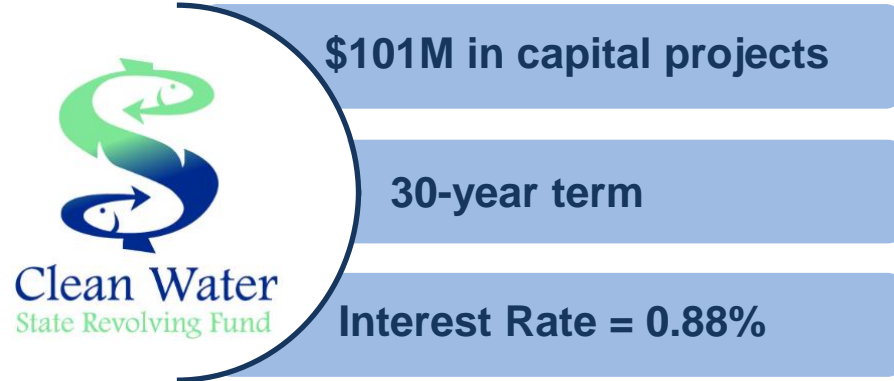
# Construction Phase VE Items: Declined

- Allow native dirt for part of the backfilling
- Dewatering Silo Alternative Design
- Aeration Air Pipeline material change SST to HDPE



# Low-Interest Loan Savings

Total RP-5 Expansion Financing: \$322.5 M



## Savings Compared to Varying Bond Rates

Bond Rate	Savings
3.25%	\$ 117.5 M
3.00%	\$ 101.4 M
2.50%	\$ 70.0 M
2.00%	\$ 30.8 M

# CAEATFA Sales and Use Tax Exclusion

- California Alternative Energy and Advanced Transportation Financing Authority (CAEATFA)
- Approved RP-5 Expansion Project in April 2020 for Sales and Use Tax Exclusion Program (STE)
- IEUA submits semi-annual progress reports to CAEATFA for tax exclusion

Qualified Property Purchase	Approved Cost
Membrane Bioreactor Treatment System	\$23.9M
Liquids & Solids Odor Control	\$7.3M
Solids Thickening Facility	\$9.8M
Digestion	\$30.4M
Dewatering, Cake Storage Silos, Truck Loading Facility	\$5.0M
<b>Total Qualified Property Value</b>	<b>\$76.4M</b>
<b>Total Sales and Use Tax Exclusion</b>	<b>\$5.9M</b>



- STE Included in the \$330M bid price.





Questions?

**INFORMATION  
ITEM**

**2B**

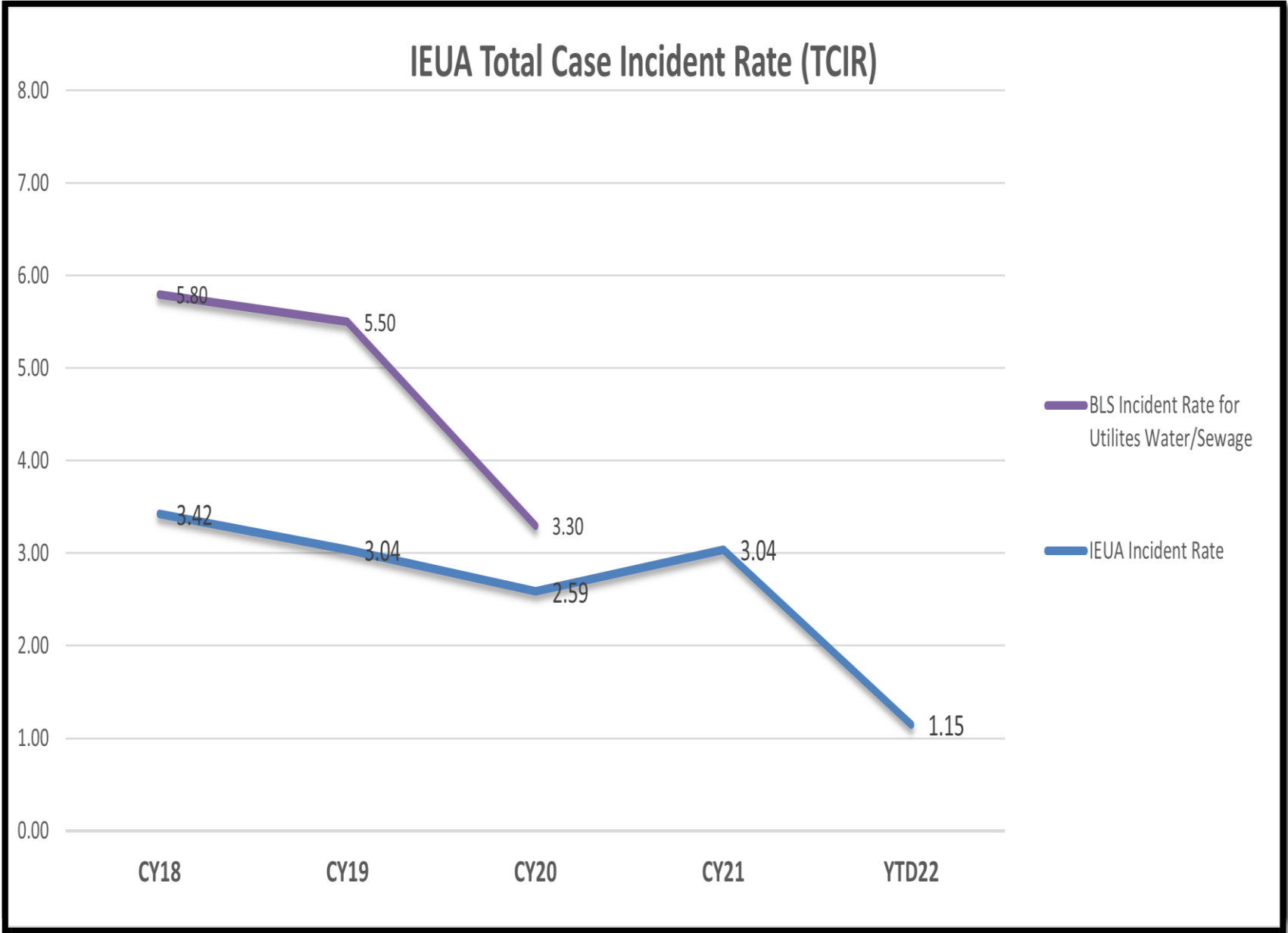


# Operations & Maintenance Department Quarterly Update

Scott Lening  
Manager of Operations  
October 2022



# Safety Statistics



# Safety Milestones

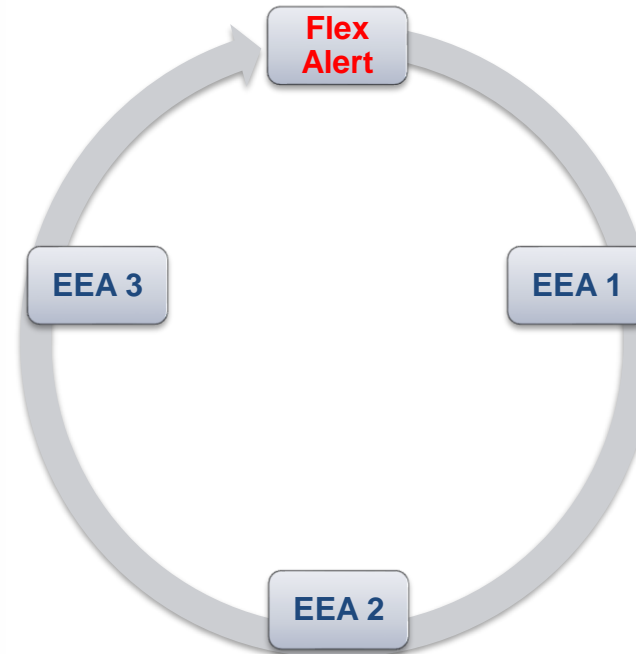
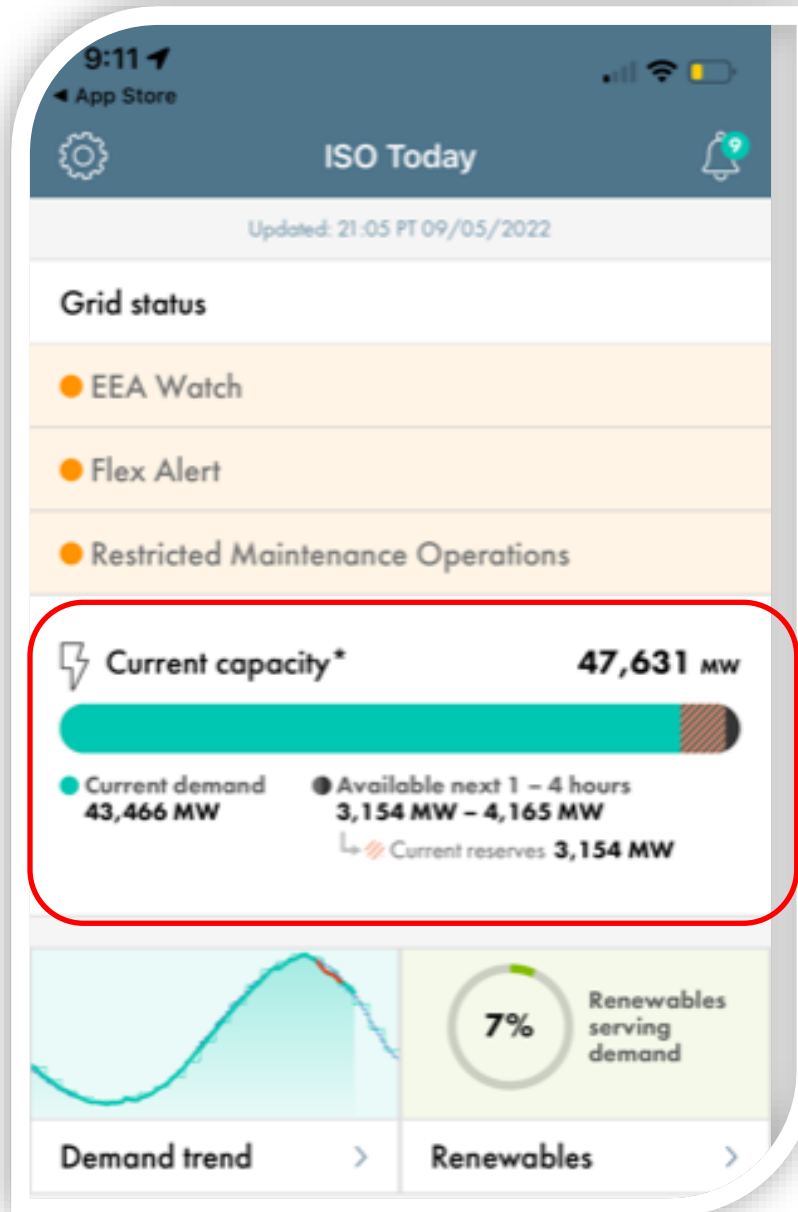


Safety Celebration Lunch



“Friendly” Safety Competition

# Heat Wave

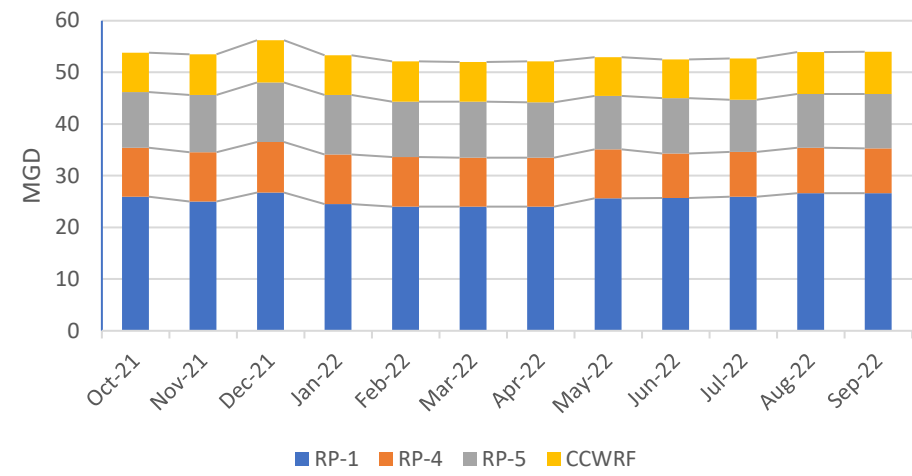


## Grid Reduction Impacts

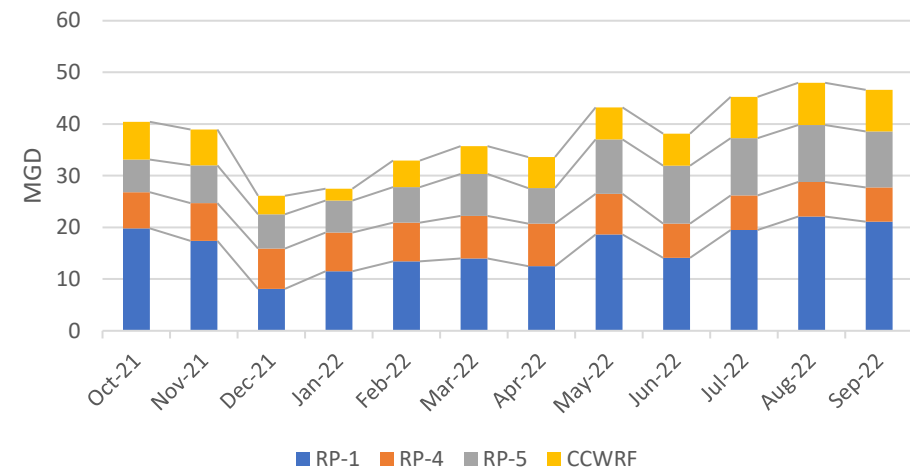
Staff on Standby  
Early Dewatering Schedule  
RW Pump Optimization  
EV Charging Stations  
Building Thermostats  
5 MW of Solar  
4 MW Battery Storage

# Production Flow Rates

Influent Flows

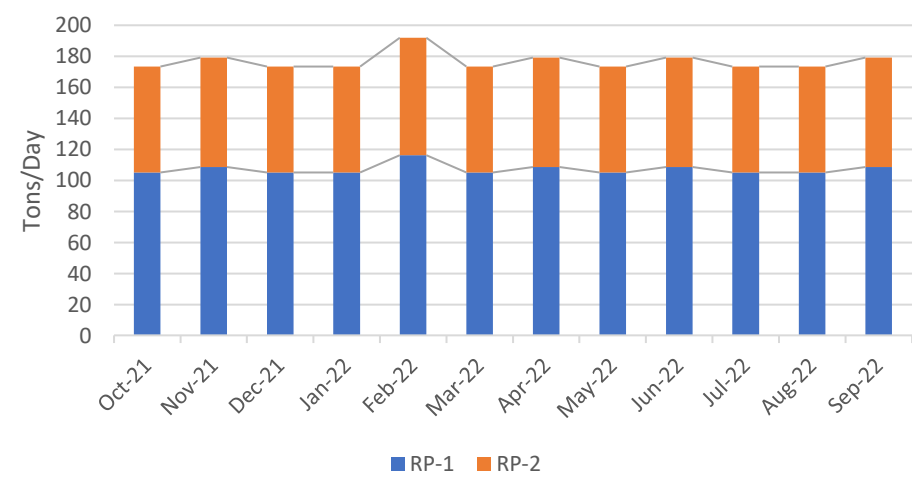


Recycled Water Flows

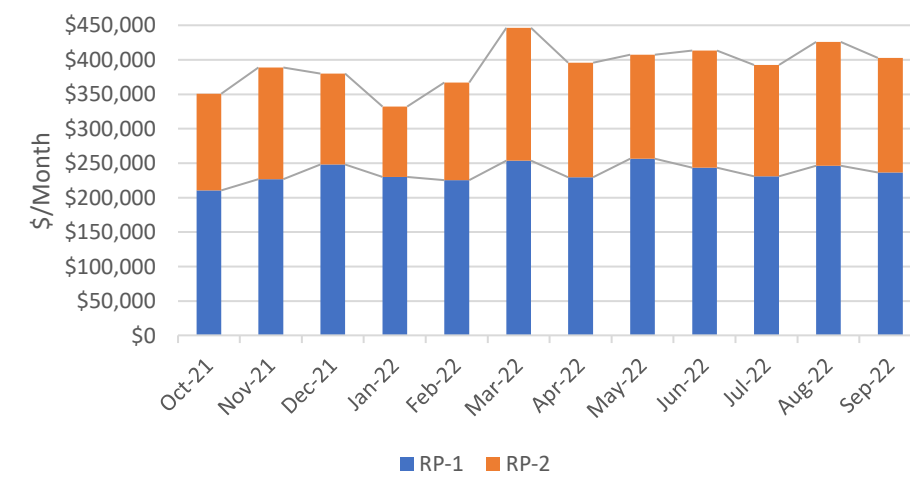


# Biosolids Production

Biosolids Produced

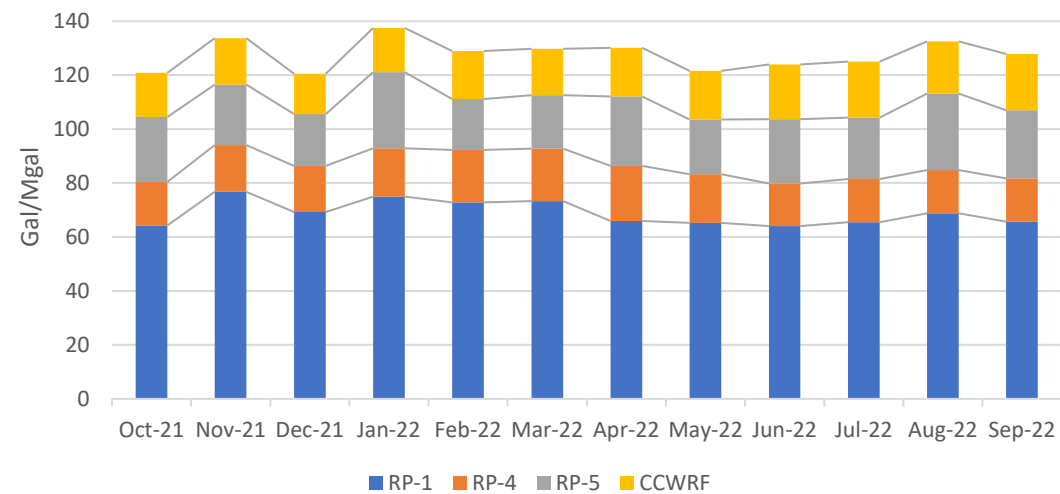


Biosolids Cost

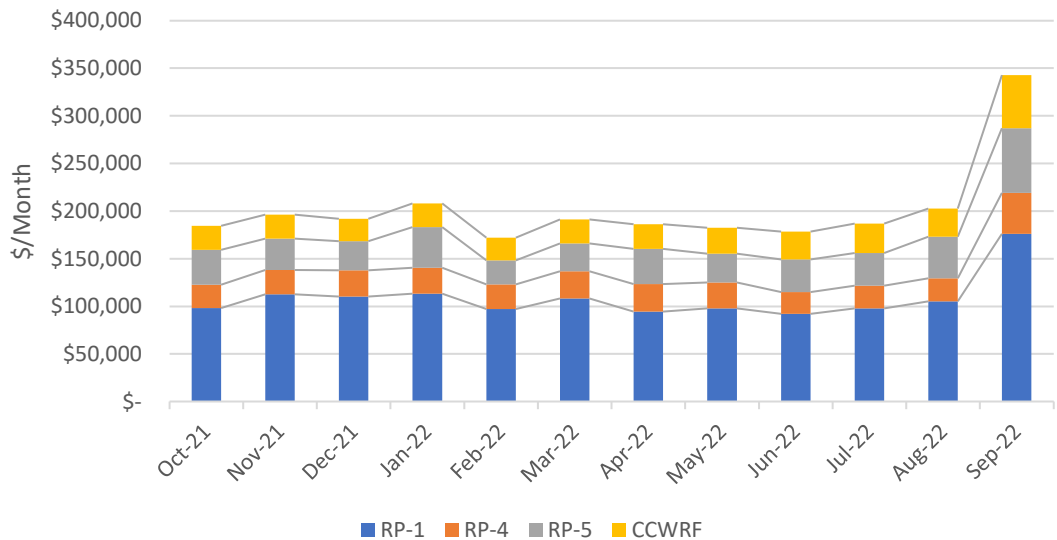


# Agency Wide Chemical Consumption

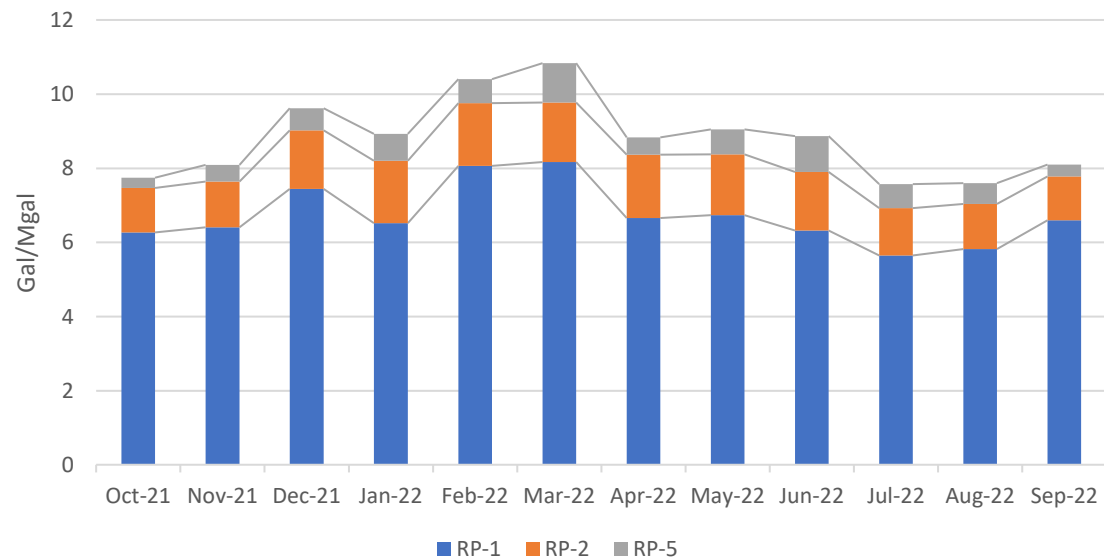
Sodium Hypochlorite Use



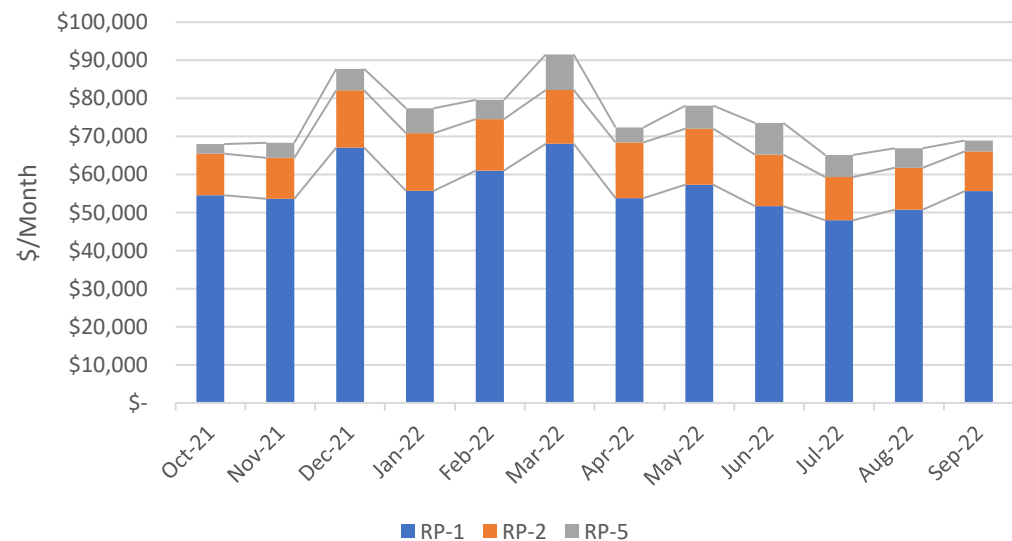
Sodium Hypochlorite Cost



Polymer Use



Polymer Cost



# Wastewater Sampling

Ontario, CA



☐ PMMoV Normalized

Sep 12, 2022

Virus / Variant copies/g

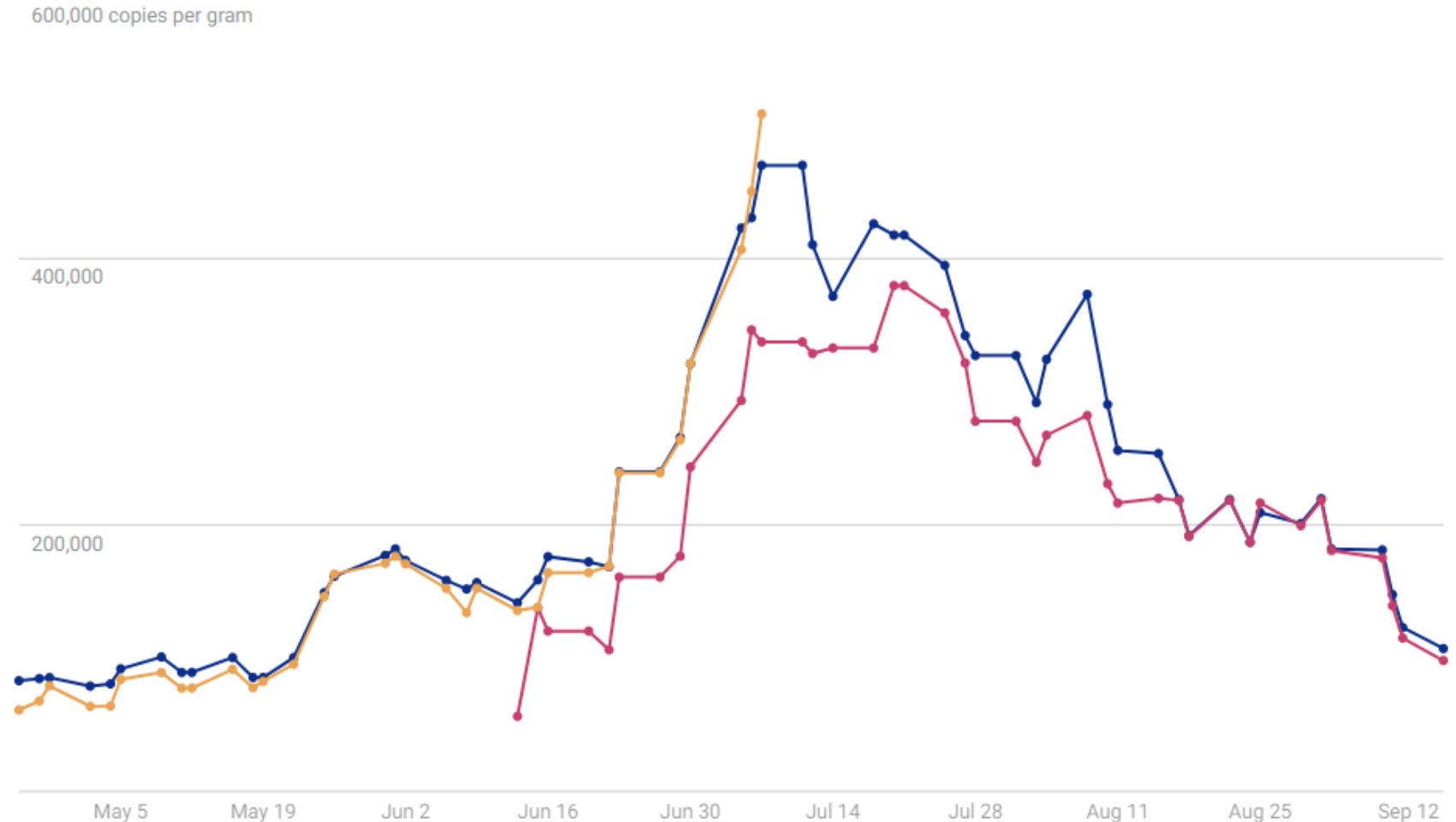
■ All SARS-CoV-2 (S Gene) 107,262

■ Omicron (BA.4 & BA.5) 98,299  
Mutation: S:HV69-70del

■ Omicron (BA.2, BA.4 & BA.5) -  
Mutation: S:LPPA24S

● Nodes represent smoothed sample values on collection dates, which are not always at regular intervals.

— Trend lines have been smoothed.



[Download raw data \(CSV\)](#)

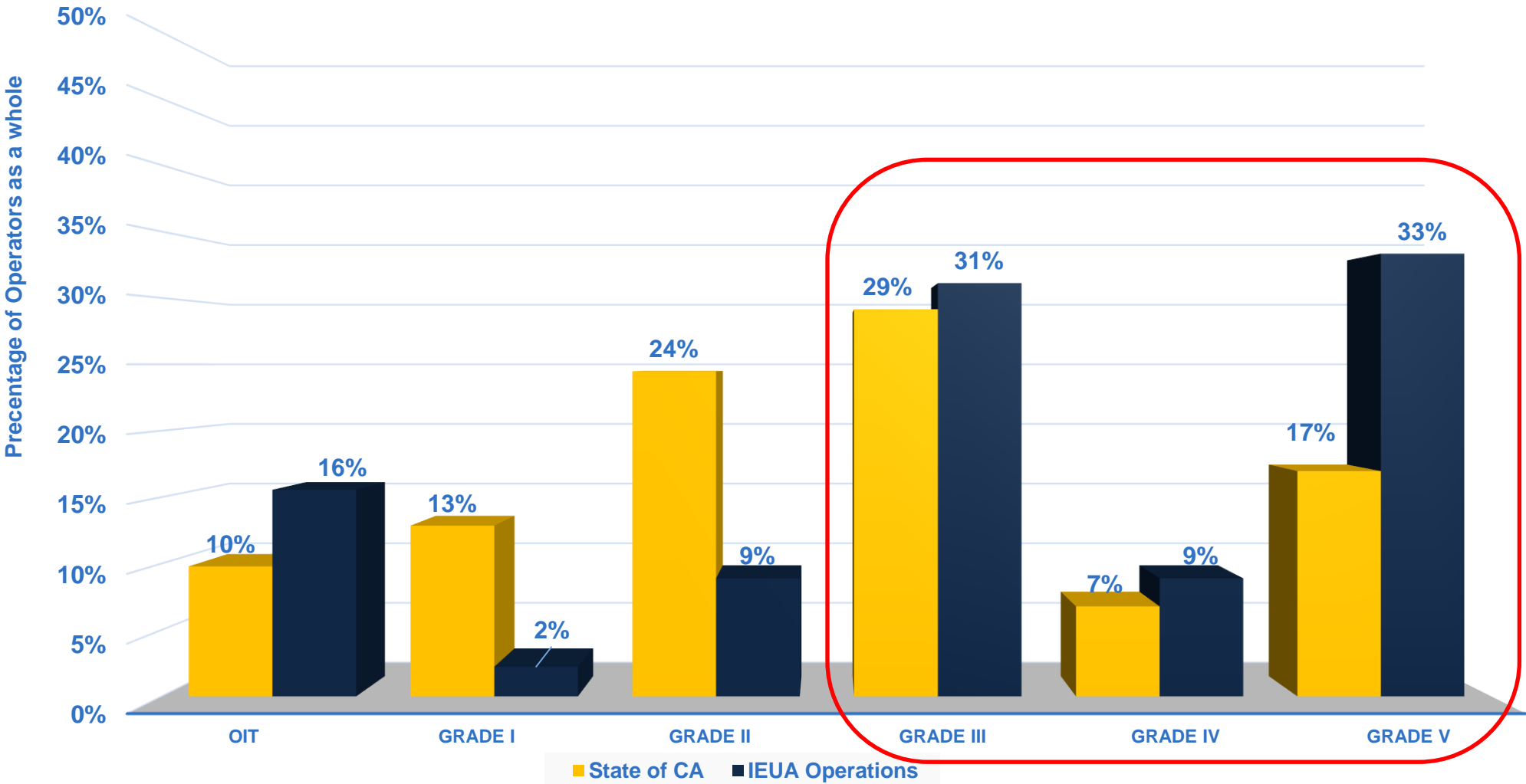
[Download data dictionary \(PDF\)](#)



# Certification Summary



State of CA versus IEUA Operator Certifications



RECEIVE AND  
FILE

**3A**



## **Regional Sewerage Program Policy Committee Meeting**

### **AGENDA**

**Thursday, November 3, 2022**

**3:30 p.m.**

**Teleconference Call**

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

**Teams Conference Link:** [https://teams.microsoft.com/l/meetup-join/19%3ameeting\\_OTMyZTdmNzltNjBiMC00NmZmLTkzOWYtOTdmZDc5MDIwNGQw%40thread.v2/0?context=%7b%22Tid%22%3a%224c0c1e57-30f3-4048-9bd2-cd58917dcf07%22%2c%22Oid%22%3a%22e1bc1283-cd05-48d8-a67b-d2365bb08cc2%22%7d](https://teams.microsoft.com/l/meetup-join/19%3ameeting_OTMyZTdmNzltNjBiMC00NmZmLTkzOWYtOTdmZDc5MDIwNGQw%40thread.v2/0?context=%7b%22Tid%22%3a%224c0c1e57-30f3-4048-9bd2-cd58917dcf07%22%2c%22Oid%22%3a%22e1bc1283-cd05-48d8-a67b-d2365bb08cc2%22%7d)

**Teleconference: 1-415-856-9169/Conference ID: 214 918 877#**

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**Roll Call**

**Public Comment**

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Comments will be limited to three minutes per speaker.

*(Continued)*

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- 1. Technical Committee Report** (*Oral*)
- 2. Action Item**
  - A. Approval of October 6, 2022 Policy Committee Meeting Minutes
- 3. Informational Items**
  - A. Regional Contract Negotiation Update (*Oral*)
  - B. Regional Contract Update – Recycled Water
  - C. RP-5 Project Update
- 4. Receive and File**
  - A. Building Activity Report
  - B. Recycled Water Distribution – Operations Summary
  - C. Planning & Resources Department Quarterly Update
  - D. Operations and Maintenance Department Quarterly Update
- 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 – December 1, 2022

## Adjourn

### DECLARATION OF POSTING

I, Laura Mantilla, Executive Assistant of the Inland Empire Utilities Agency\*, a Municipal Water District, hereby certify that, per Government Code Section 54954.2, a copy of this agenda has been posted at the Agency's main office, 6075 Kimball Avenue, Building A, Chino, CA and on the Agency's website at [www.ieua.org](http://www.ieua.org) at least seventy-two (72) hours prior to the meeting date and time above.

In compliance with the Americans with Disabilities Act, if you need special assistance to participate in this meeting, please contact Laura Mantilla at (909) 993-1944 or [lmantilla@ieua.org](mailto:lmantilla@ieua.org) 48 hours prior to the scheduled meeting so that IEUA can make reasonable arrangements to ensure accessibility.

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# Building Activity Report - YTD Fiscal Year 2022/23



**Legend**

Service Area

Unincorporated

## Residential

<=1.0

1.0 - 10.0

>10.0

## Commercial

<=1.0

1.0 - 10.0

>10.0

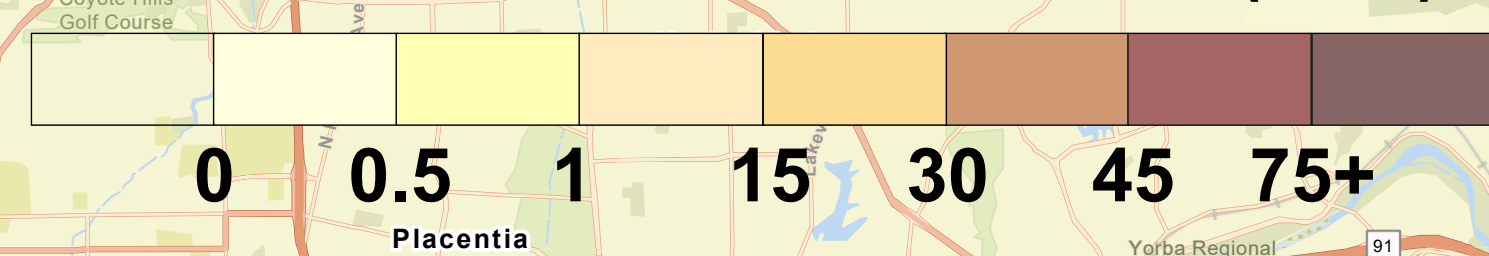
## Industrial

<=1.0

1.0 - 10.0

>10.0

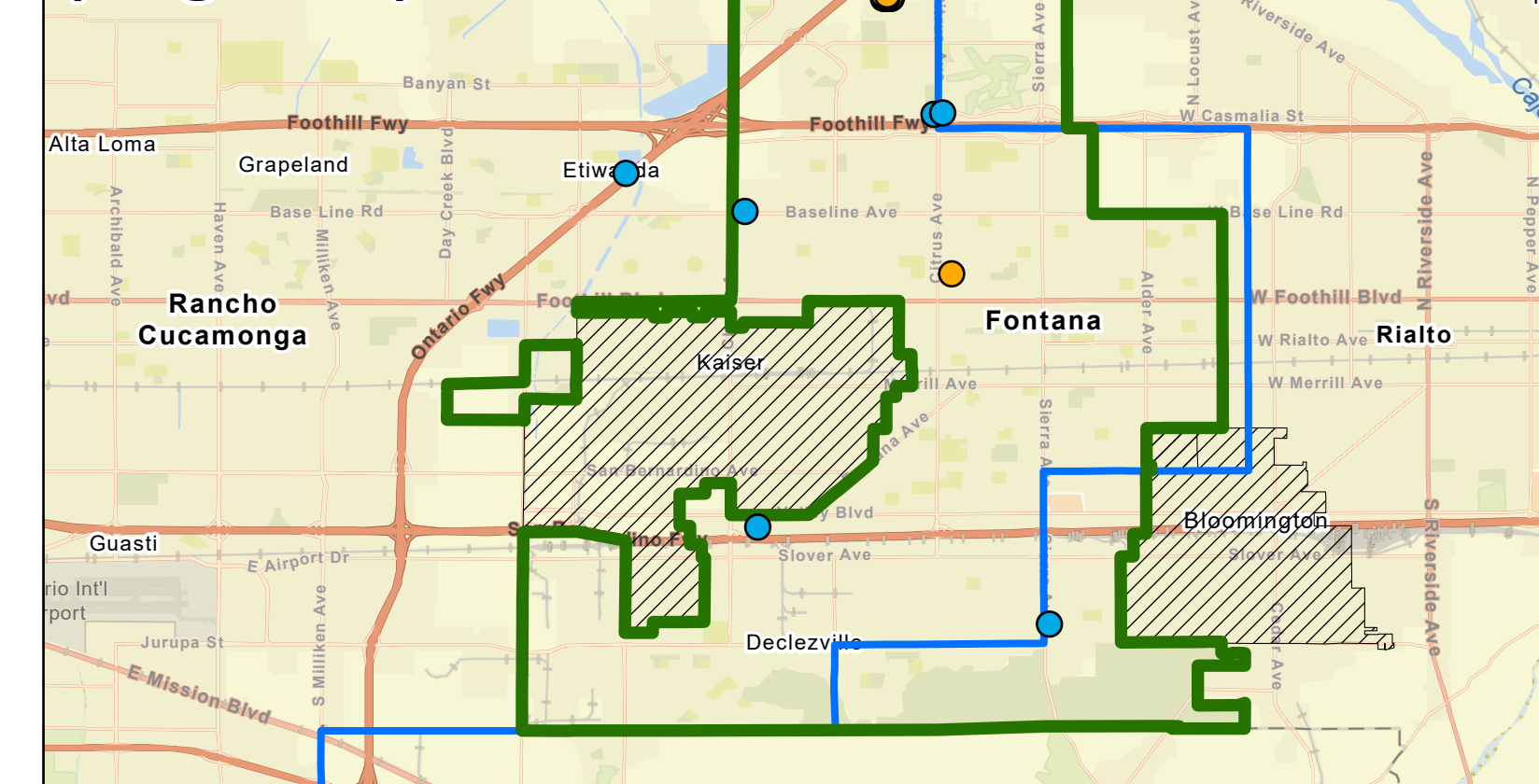
## HALF MILE GRID: TOTAL EDU's (YTD)



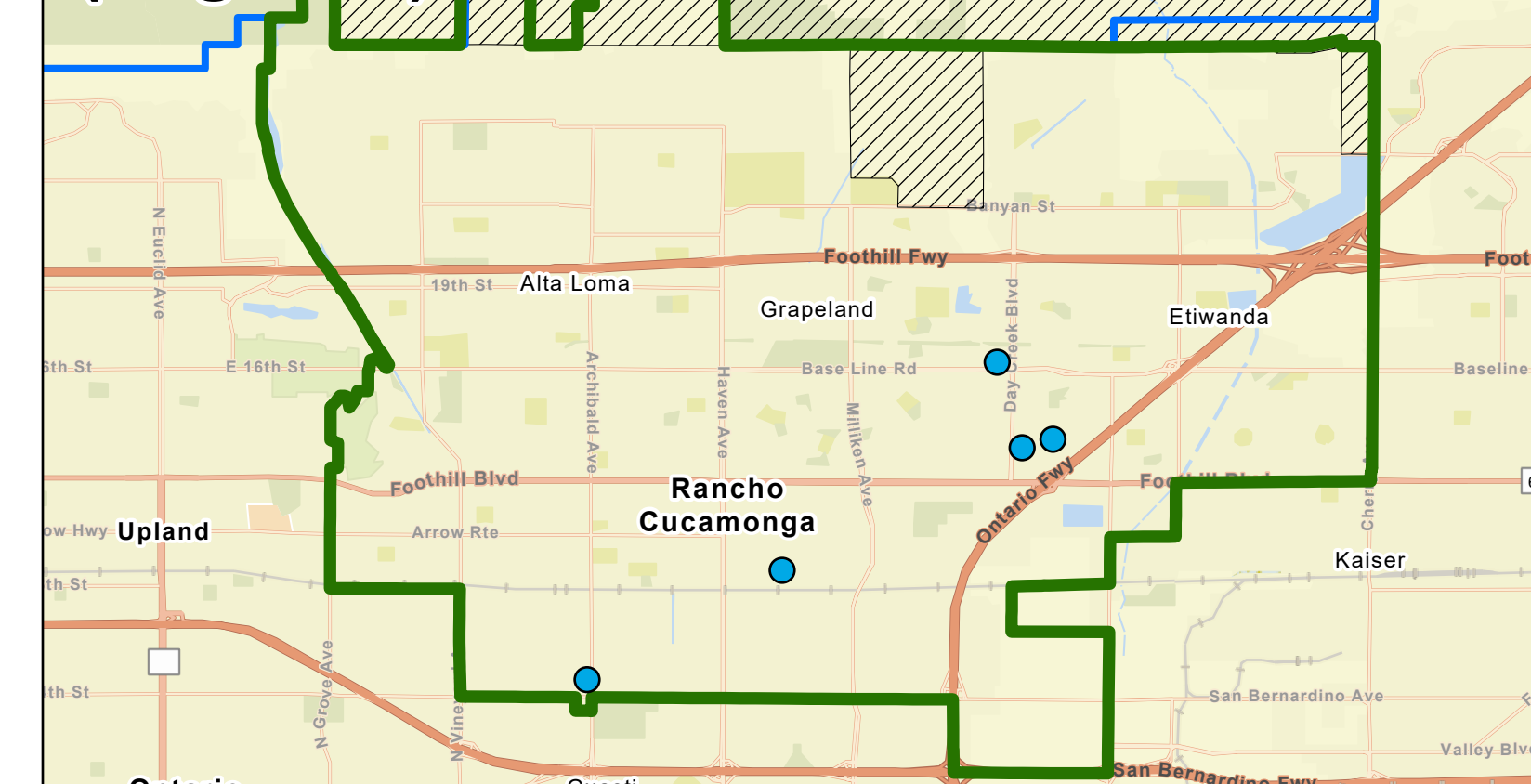
## TOTAL EDU BY WASTEWATER CONNECTION TYPE (YTD)

Contracting Agency	YTD Actual				Projected
	Commercial (EDUs)	Industrial (EDUs)	Residential (EDUs)	Total (EDUs)	
Chino	18	0	27	45	
Chino Hills	4	0	0	4	
CVWD	14	0	0	14	
Fontana	10	2	58	69	
Montclair	19	0	0	19	
Ontario	10	1	58	69	
Upland	0	0	0	0	
Total	74	3	143	220	0

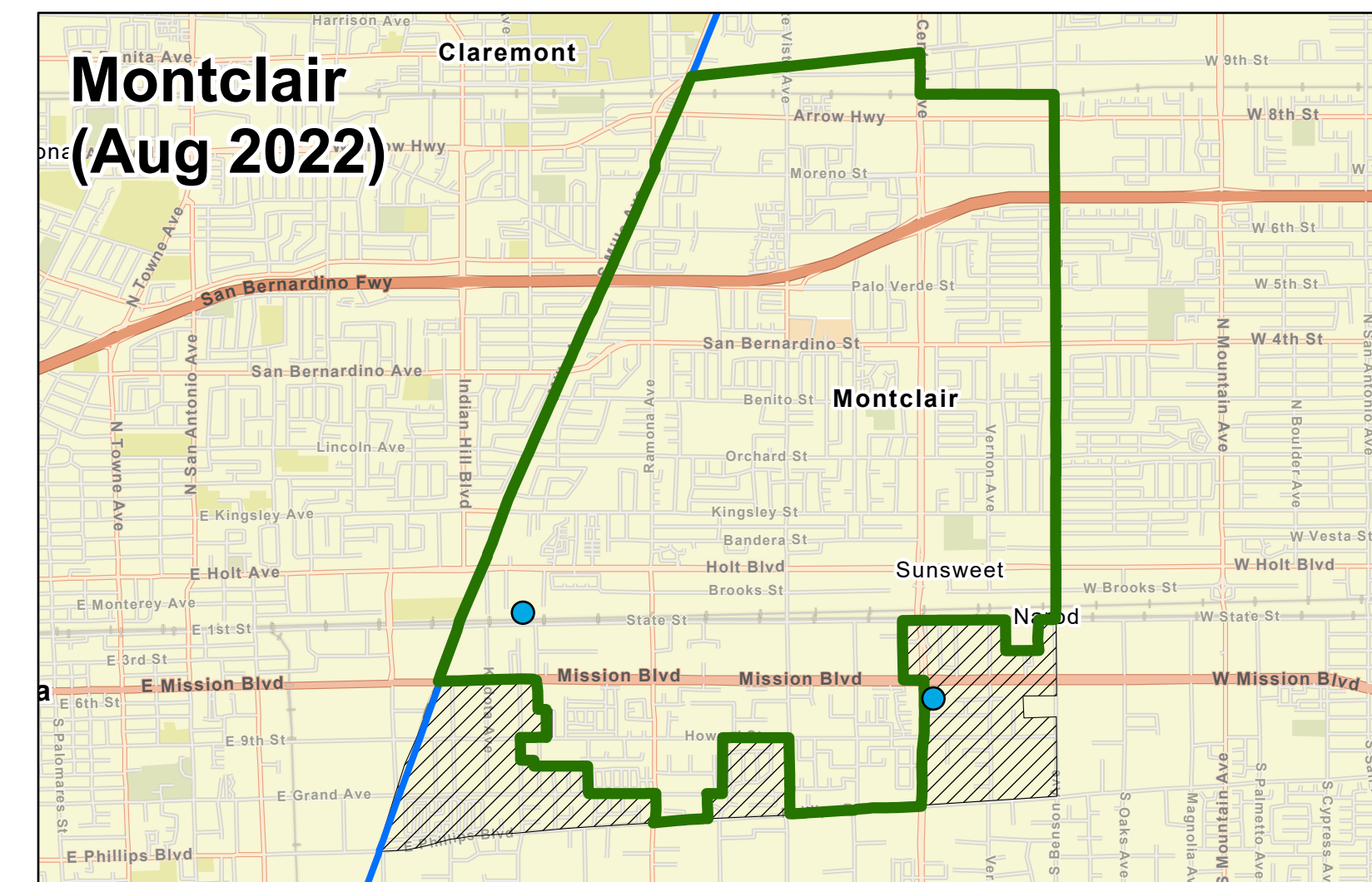
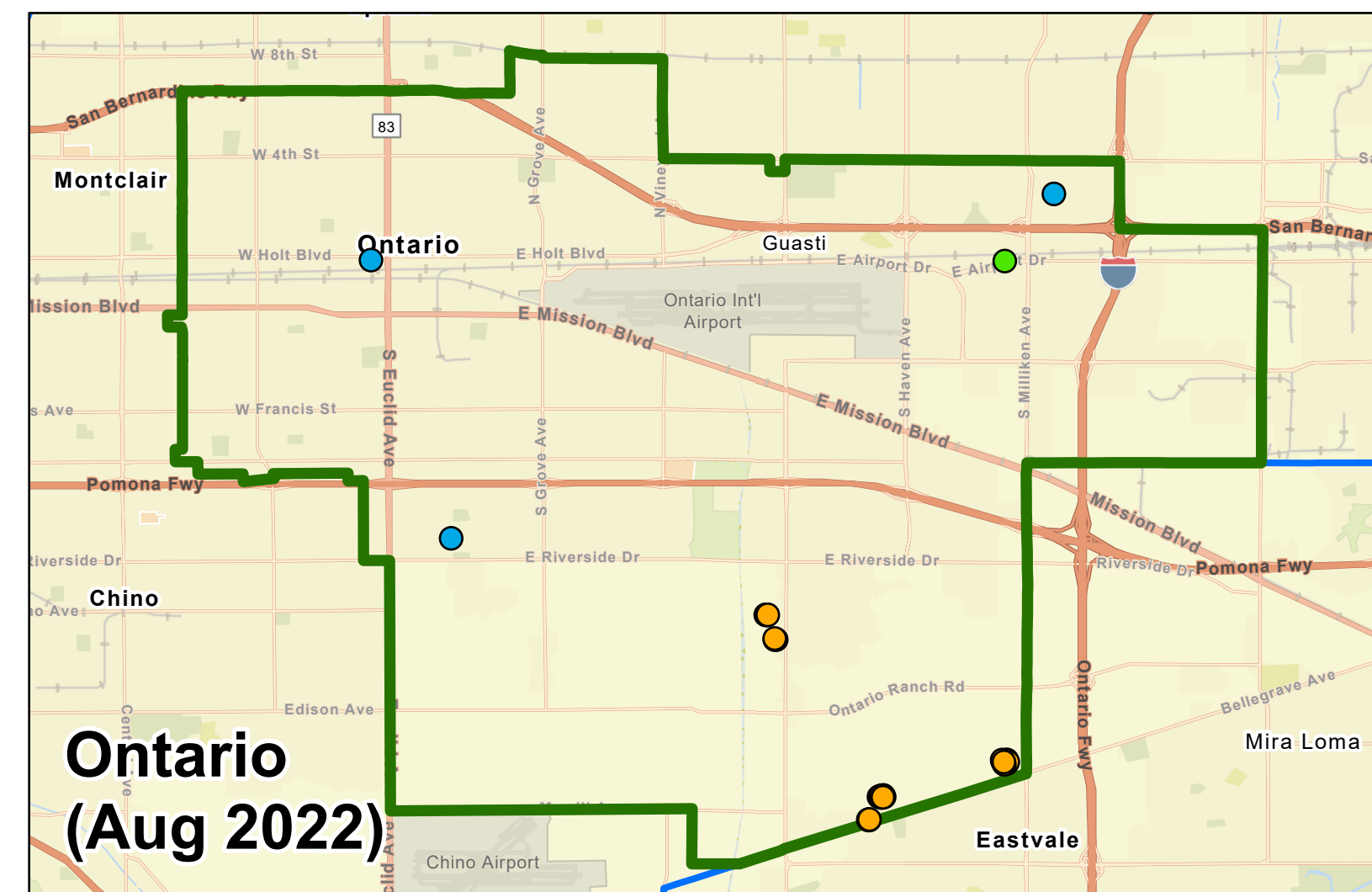
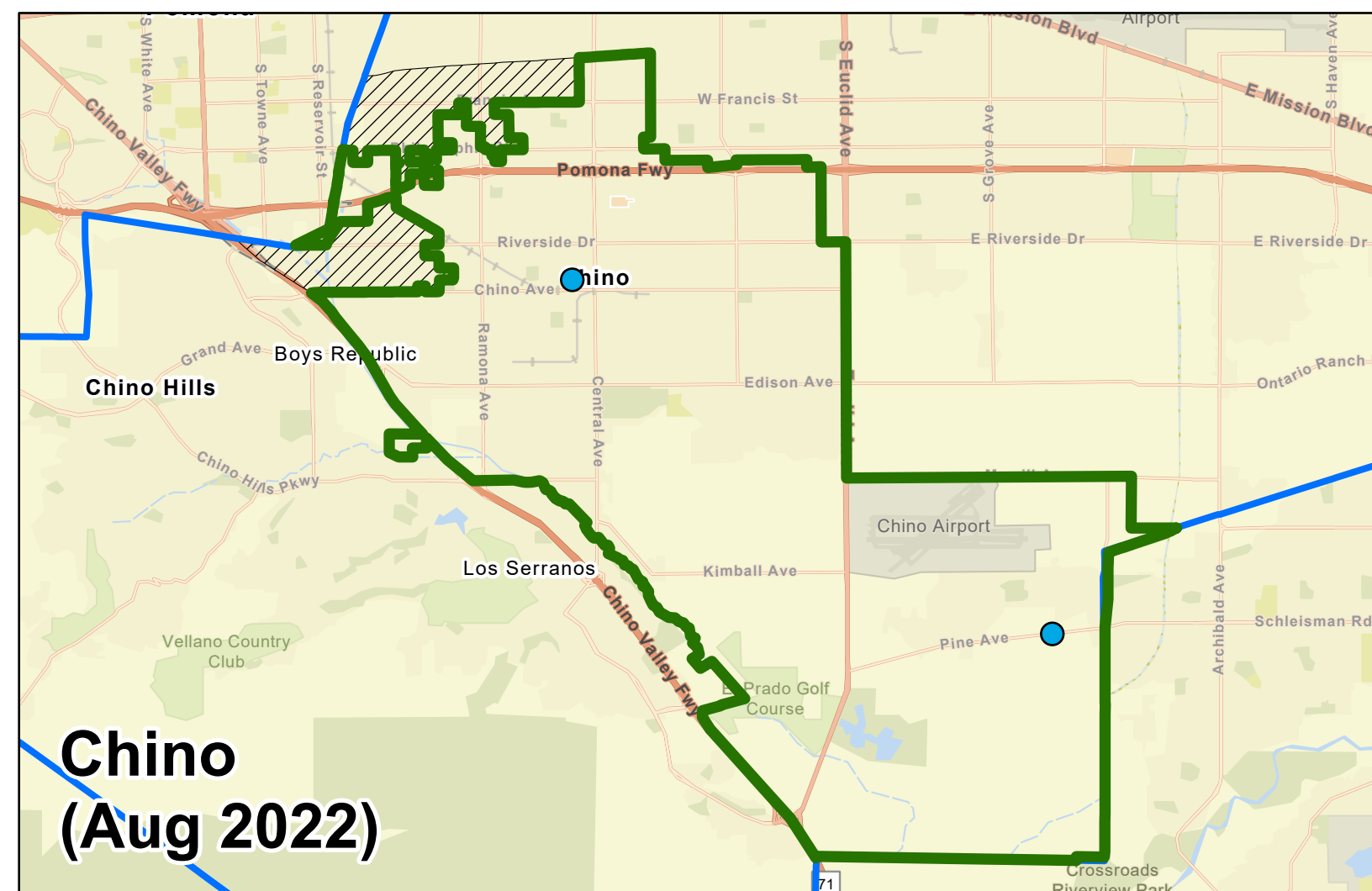
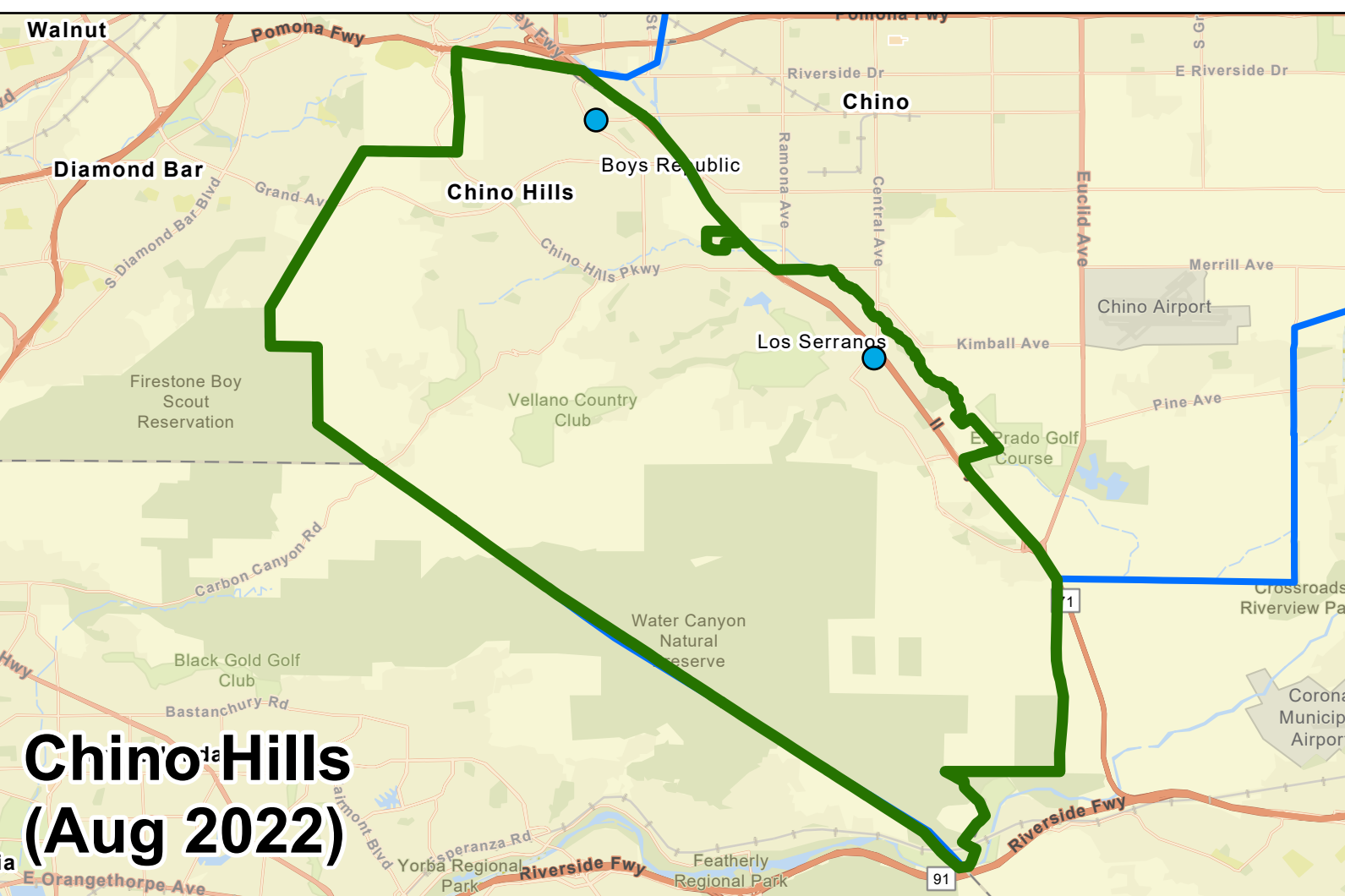
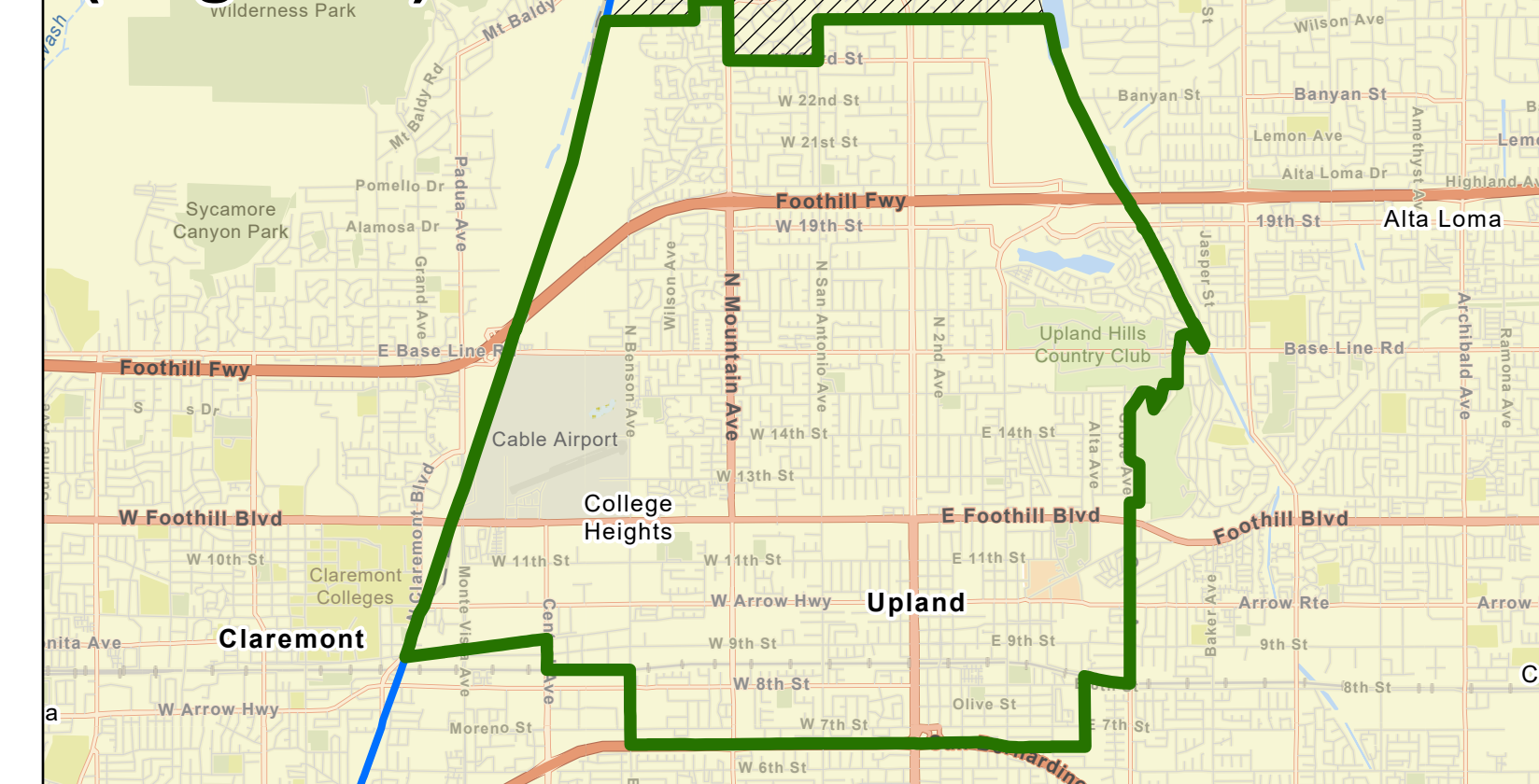
## Fontana (Aug 2022)



## Cucamonga Valley Water District (Aug 2022)



## Upland (Aug 2022)





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## IEUA RECYCLED WATER DISTRIBUTION – SEPTEMBER 2022

## TOTAL ALL PLANTS

Influent: 51.2 MGD

Delivered: 47.1 MGD

Percent Delivered: 92%

## Preliminary Deliveries

RW GWR: 18.5 MGD

RW Direct Use: 28.6 MGD

**RP-4**

Delivered: 7.9 MGD

**RP-1**

Delivered: 24.6 MGD

## CCWRF

Delivered: 7.3 MGD

**RP-5**

Delivered: 7.3 MGD

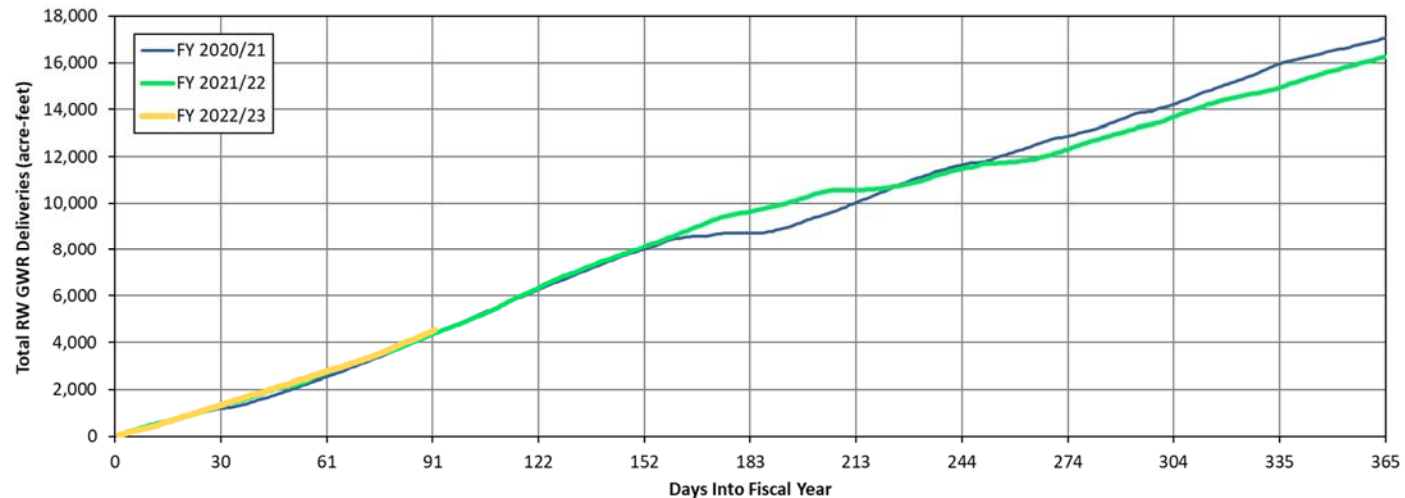
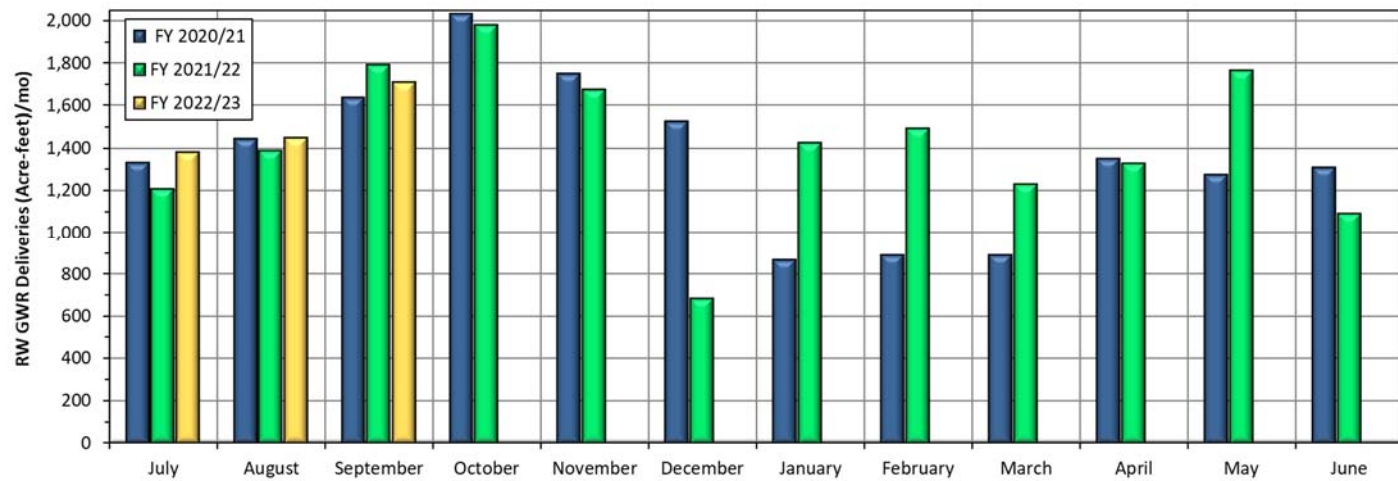
<b><u>Delivered For Groundwater Recharge</u></b>		
Storm/Local Runoff:	4.6 MGD	425 AFM
Imported Water:	0 MGD	0 AFM
<u>Recycled Water:</u>	<u>18.5 MGD</u>	<u>1,708 AFM</u>
Total:	23.1 MGD	2,133 AFM

	<u>Creek Discharges</u>	
Prado Park (001):	2.3 MGD	212 AFM
RP-1 (002):	1.8 MGD	166 AFM
RP-5 (003):	0.0 MGD	0 AFM
<u>CCWRF (004):</u>	<u>0.0 MGD</u>	<u>0 AFM</u>
Total:	4.1 MGD	378 AFM



Recycled Water Recharge Actuals - September 2022 (Acre-Feet)

Basin	9/1-9/3	9/4-9/10	9/11-9/17	9/18-9/24	9/25-9/30	Month Actual	FY To Date Actual	Deliveries are draft until reported as final and do not included evaporative losses.	
Ely	0.0	0.0	0.0	0.0	17.5	17.5	128		
Banana	40.5	50.7	35.9	94.0	74.0	295.1	394		
Hickory	0.0	6.0	0.0	0.0	0.0	6.0	97		
Turner 1 & 2	0.0	0.0	0.0	0.0	0.0	0.0	132		
Turner 3 & 4	0.0	0.0	0.0	0.0	0.0	0.0			
8th Street	5.2	5.9	0.0	0.0	7.2	18.3	517		
Brooks	5.7	47.0	51.0	59.8	43.3	206.8	207		
RP3	34.8	147.8	212.3	201.3	167.4	763.6	1702		
Declez	0.0	0.0	0.0	0.0	0.0	0.0	0		
Victoria	0.0	0.0	0.0	0.0	0.0	0.0	64		
San Seivaine	28.1	93.9	118.0	88.7	72.1	400.8	1296		
Total	114.3	351.3	417.2	443.8	381.5	1,708.1	4,536	4,387	AF previous FY to day actual



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# Planning & Resources Department Quarterly Update

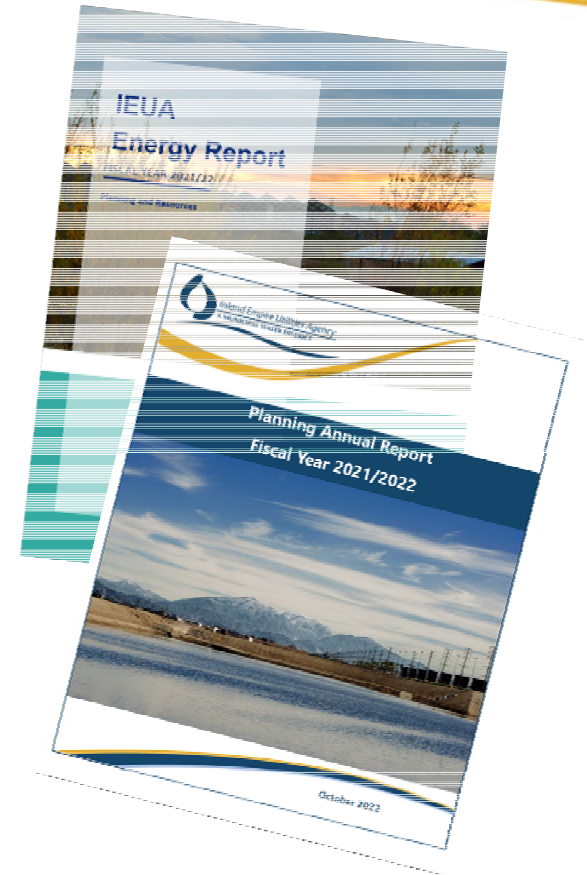
Pietro Cambiaso  
Acting Director of Planning & Resources  
October 2022



# Topics

## IEUA Planning Annual Report and Energy Report FY 2021/2022

- Mission Statement – Key areas of Service
  - Collecting and treating **wastewater**
  - Securing and supplying **imported water**
  - Promoting sustainable use of **groundwater** and development of **local water supplies**
  - Producing high-quality renewable products such as **recycled water**, compost, and **energy**

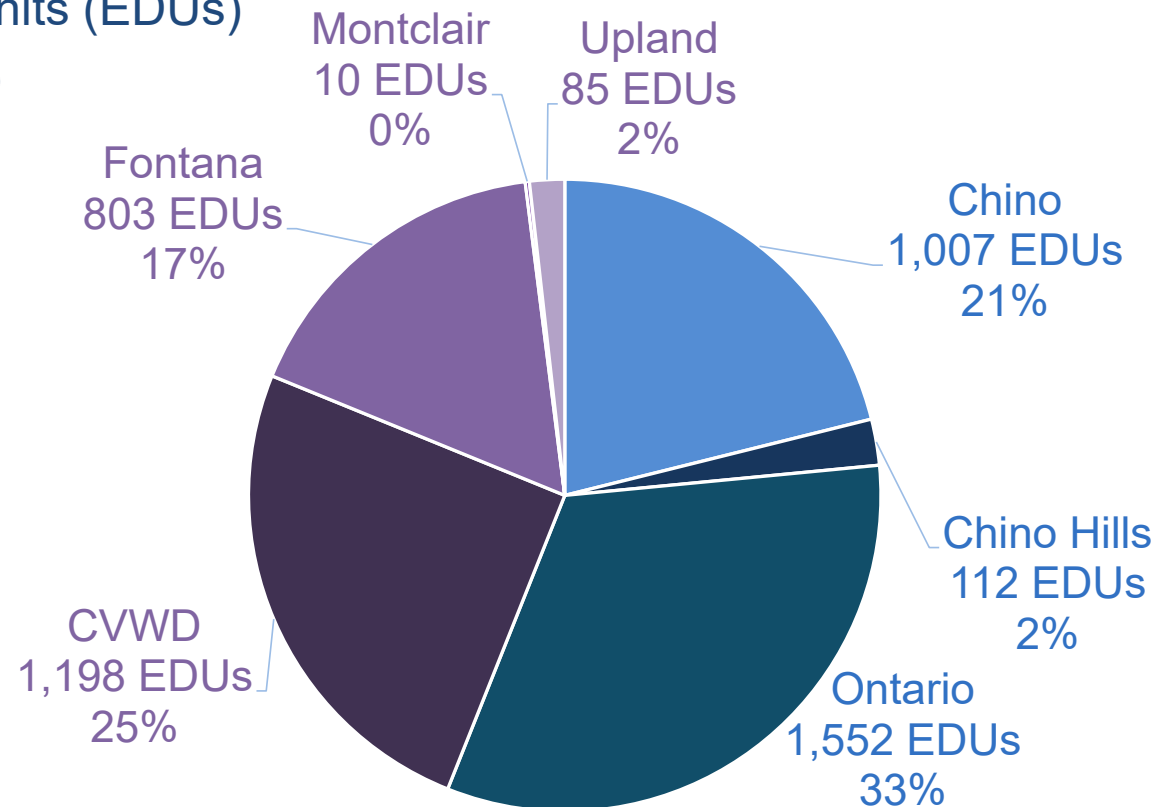


# FY21/22 Building Activity

Total 4,767 Equivalent Dwelling Units (EDUs)

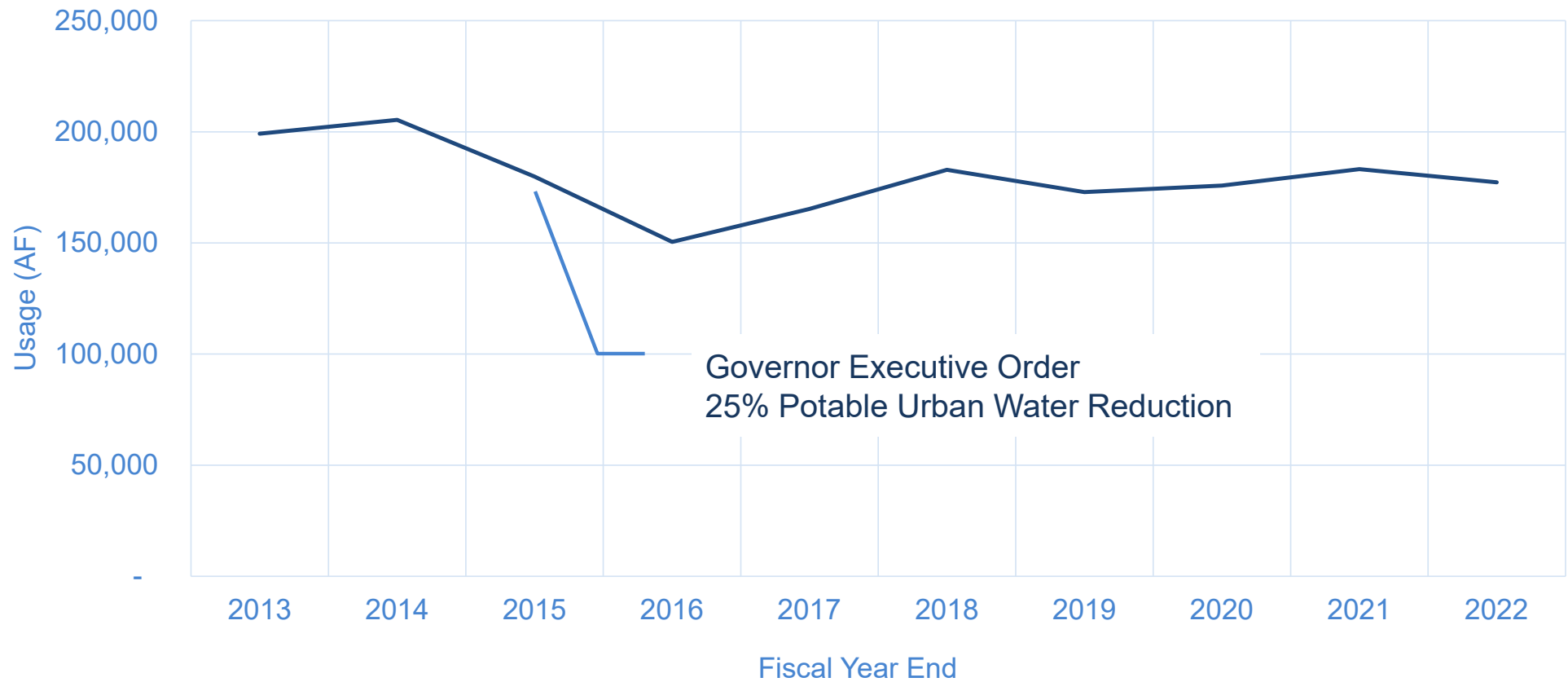
- 2,672 EDUs **South** Service Area (56%)
- 2,096 EDUs **North** Service Area (44%)

\$35.2M funding



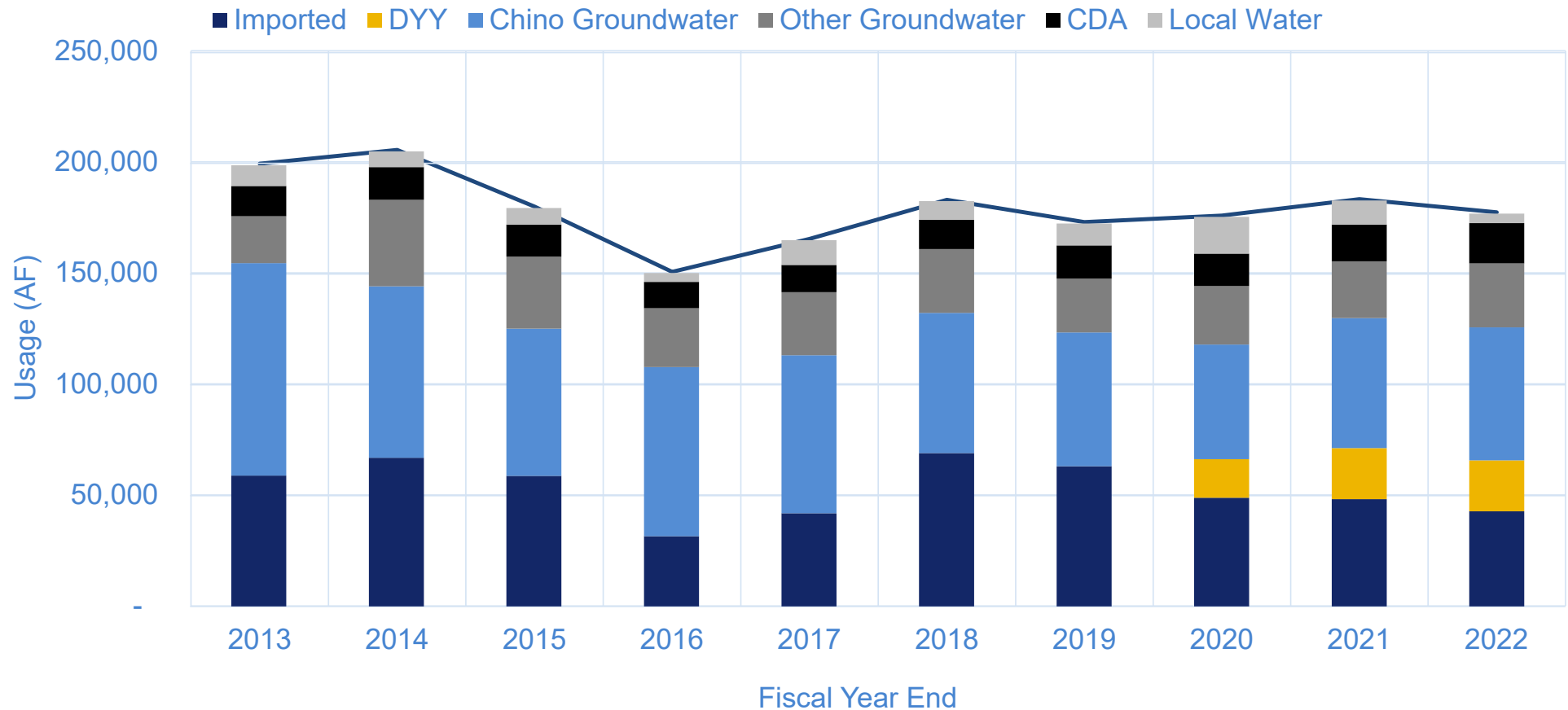
\*Partial EDUs rounded to the nearest whole number

# Regional Potable Water Demand

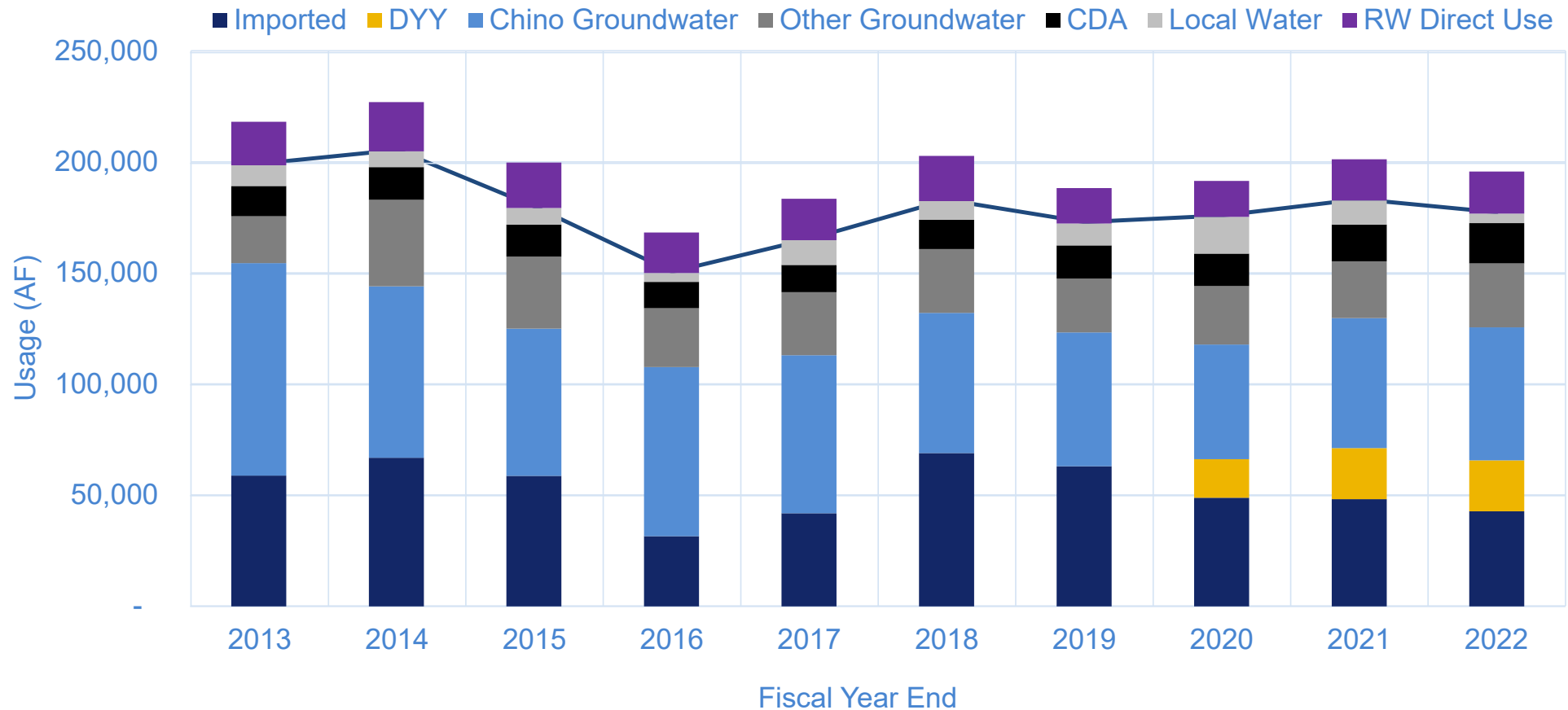




# Regional Potable Water Portfolio



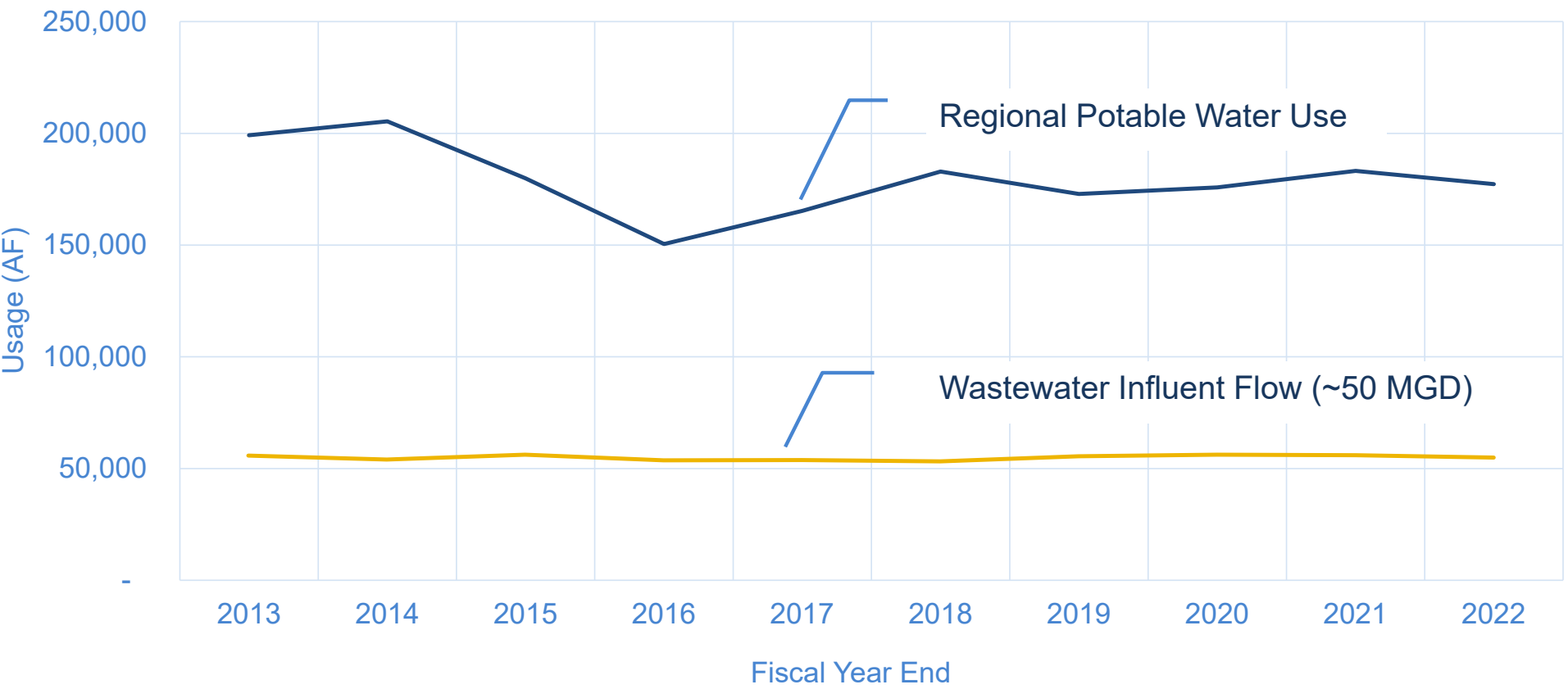
# Regional Total Water Use



\*Local water includes local surface water, intraregional sales and purchases, as well as purchases and sales from local water companies such as SAWCo and WECWC.

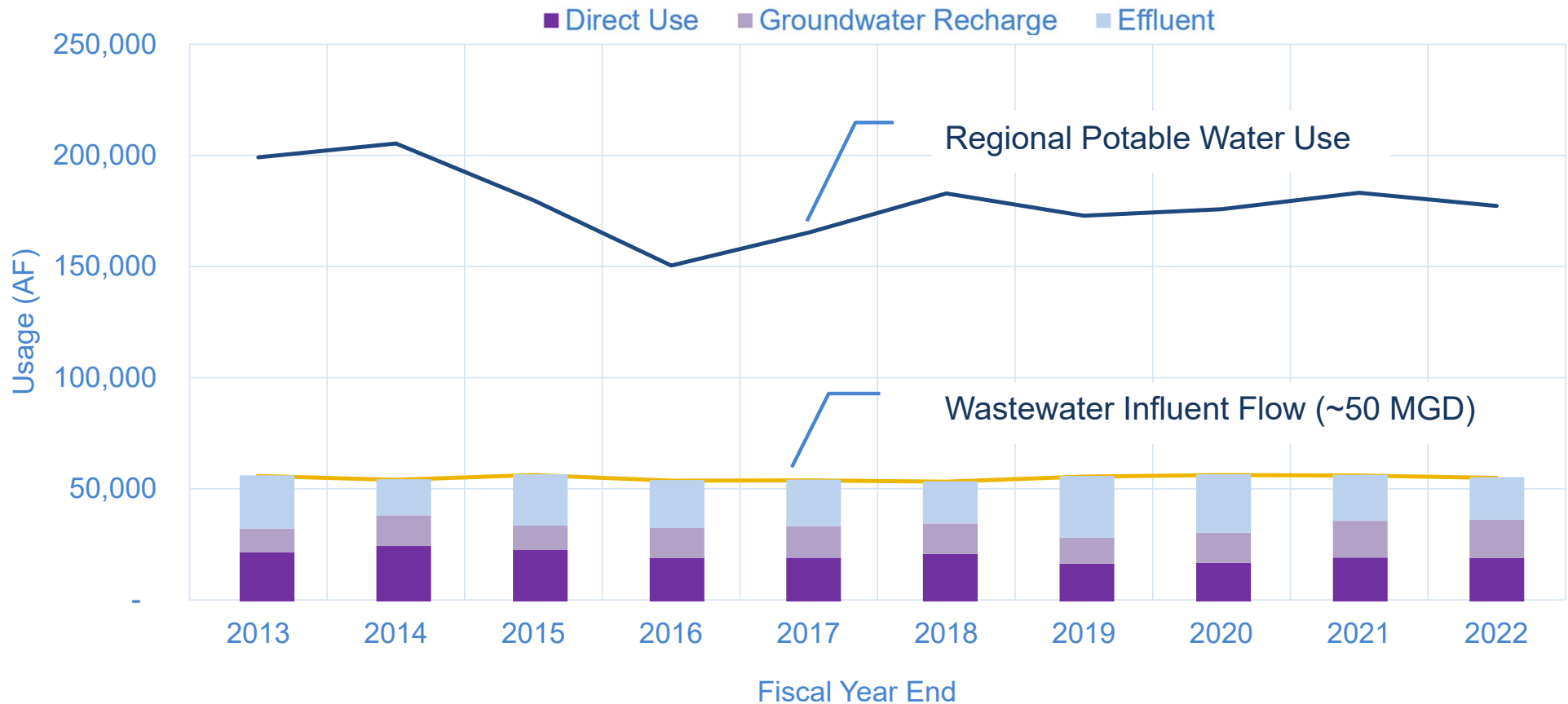
\*RW does not include 145 AF for IEUA use and 67 AF for SB County Use in RW Direct Use

# Regional Potable Water Use and Wastewater Influent Flow

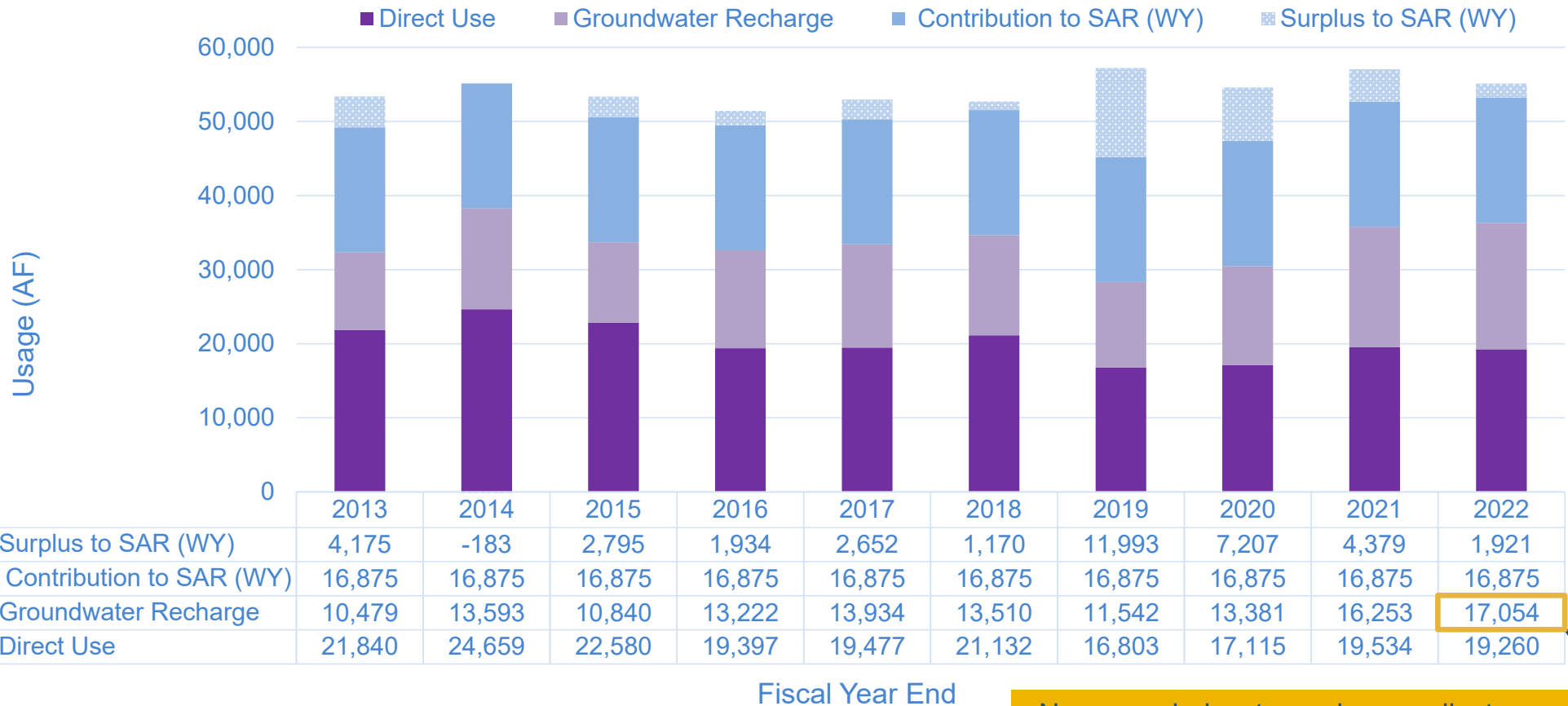




# Regional Potable Water Use Wastewater Influent Flow and Recycled Water

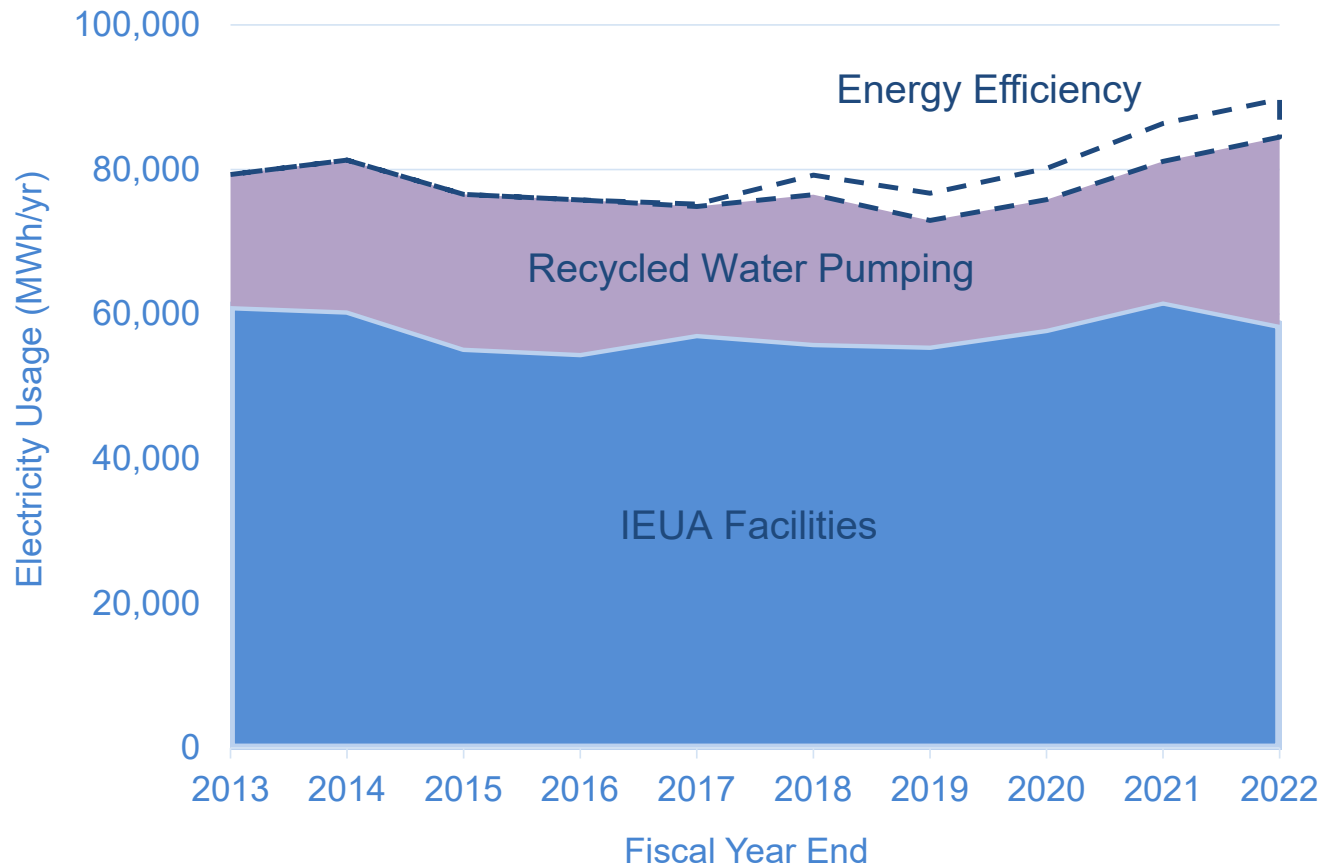


# Recycled Water Use



\*Includes 145 AF IEUA direct usage and 67 AF for County of San Bernardino Direct Usage

# Wastewater and Recycled Water Electricity Usage



## Energy Efficiency Projects

### RP-4 Blower Upgrade and Ammonia Controls

- Expected completion October 2022
- Avoided power usage 141 kW
- Expected annual savings
  - 1,187,000 kWh
  - \$148,000
- SCE Incentive \$98,000





# Planning Annual Report

## Fiscal Year 2021/2022



**October 2022**

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## INTRODUCTION

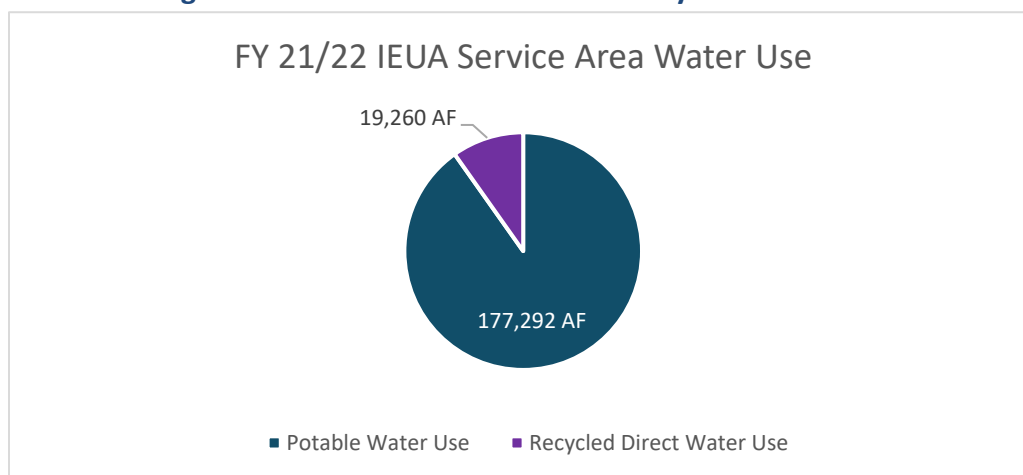
The Inland Empire Utilities Agency (IEUA) is located in Western San Bernardino County and serves approximately 920,000 residents in a 242-square mile service area. As a regional wastewater treatment agency, IEUA provides wastewater utility services to seven regional contracting agencies (RCAs) under the Chino Basin Regional Sewage Service Contract: cities of Chino, Chino Hills, Fontana, Montclair, Ontario, Upland, and Cucamonga Valley Water District (CVWD) in the city of Rancho Cucamonga. In addition to the RCAs, the Agency provides wholesale imported water from the Metropolitan Water District of Southern California (MWD) to seven retail agencies: the cities of Chino, Chino Hills, Ontario, Upland, CVWD in the city of Rancho Cucamonga, Fontana Water Company in the city of Fontana, and the Monte Vista Water District in the city of Montclair.

In addition to providing these key services, IEUA also produces and distributes high quality recycled water, implements the Chino Basin stormwater/groundwater recharge program, and provides regional water resources planning to ensure reliable, cost-effective environmentally responsible water supplies for current and future customers. The purpose of the Planning Annual Report (PAR) is to provide annually updated information about the IEUA service area's potable water, recycled water, groundwater, and wastewater. This report also provides a holistic summary of historic trends, usage patterns, current programs, and future forecasts.

## SECTION 1: ANNUAL IEUA SERVICE AREA WATER USE

IEUA monitors and compiles water use data from each of its retail agencies to track overall water demands and sources of supply. Annual water use is split between potable water usage and the direct use of recycled water. IEUA's regional water usage in FY 21/22 was 196,552 AF (177,292 AF potable usage and 19,260 AF recycled direct usage). Recycled water used for groundwater recharge is not included in this total but can be found in Section 2 of the PAR.

**Figure 1 –Service Area Potable and Recycled Water Use**





## Current Potable Water Use

Total potable water consumption within IEUA’s service area for FY 21/22 was 177,292 AF. This is approximately a 3% decrease (5,950 AF) from FY 2020/21 potable consumption of 183,242 AF. The region is now using approximately 14% less potable water than before the drought in FY 13/14 when potable consumption was at 205,381 AF. MWD Tier 1 imported water use in the region slightly decreased from 71,444 AF in FY 20/21 to 65,877 AF in FY 21/22. Both FY 20/21 and FY 21/22 MWD usage includes Dry Year Yield (DYY) water supplies. For more information on DYY, see “Dry Year Yield” in section 2 of the PAR. A breakdown of the IEUA regional usage can be found in Table 2, while a breakdown of the retail water agencies’ FY 21/22 water usage can be found in Appendix B.

## Projected Imported Water Use

Demands for MWD Tier 1 imported water brought into the region through IEUA were projected to 2045 as part of the 2020 Urban Water Management Plan (2020 UWMP). The 2020 UWMP imported water demand projections were supplied by the retail agencies to IEUA. IEUA expects imported demand to increase over the next 25 years based on the 2020 UWMP projections. The forecast presented on Table 1 below does not take into account imported water restrictions that may be implemented by MWD due to the recent drought.

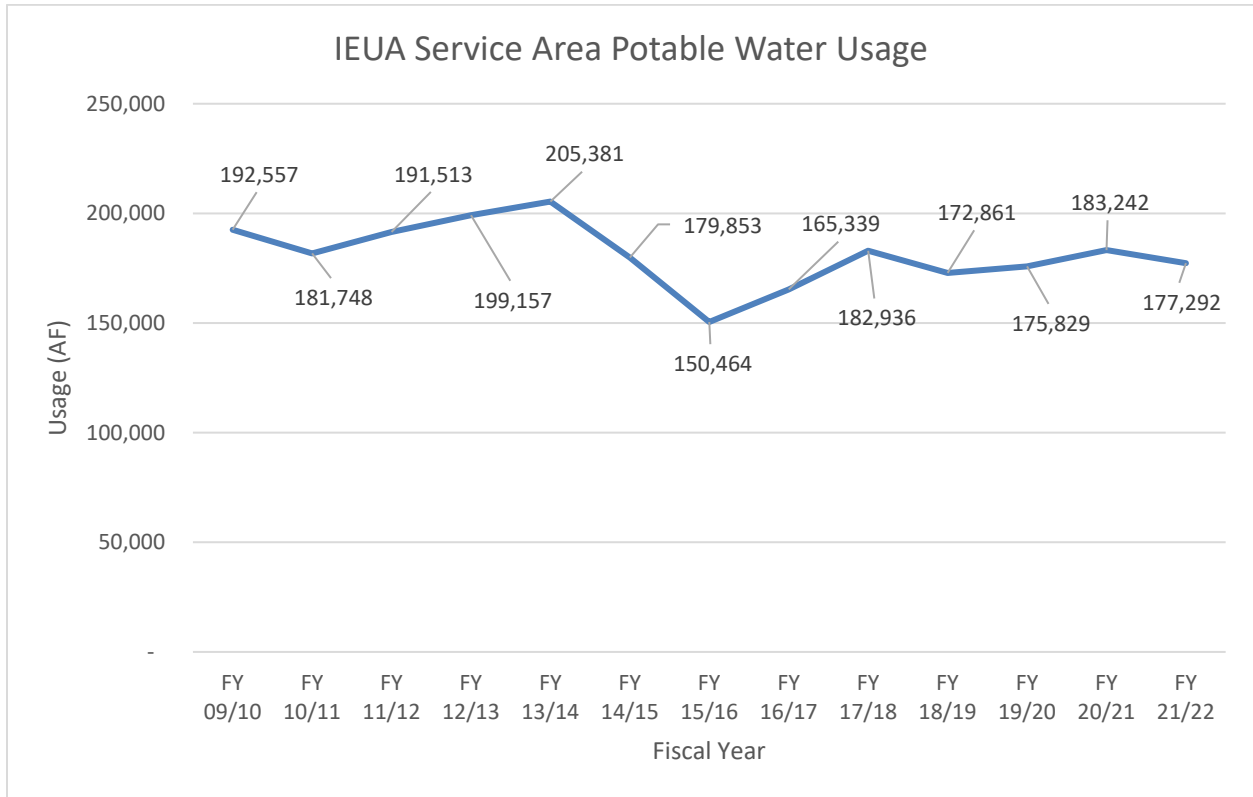
**Table 1 – Projected Imported Water Use Demands by Retail Agency (AF)**

<b>Retail Agency</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Chino	5,353	5,353	5,353	5,353	5,353
Chino Hills	7,153	7,367	7,711	7,758	7,802
CVWD	28,369	28,369	28,369	28,369	28,369
FWC	15,000	15,000	15,000	15,000	15,000
MVWD	5,000	5,000	5,000	5,000	5,000
Ontario	11,000	13,000	15,000	17,000	17,000
Upland	5,541	5,541	5,541	5,541	5,541
<b>Total</b>	<b>77,416</b>	<b>79,630</b>	<b>81,974</b>	<b>84,021</b>	<b>84,065</b>

Table 2 – Fiscal Year 2021/2022 Regional Potable Monthly Water Use

		IEUA Service Area Potable Water Use FY21/22 (AF)												
		July	August	September	October	November	December	January	February	March	April	May	June	Total
Purchases from IEUA	Imported MWD	5,913	5,729	5,131	4,298	3,977	3,353	2,677	2,170	2,364	1,747	2,359	3,246	42,965
	DYY Take	2,800	2,800	2,600	2,000	6,800	1,000	-	-	-	2,400	2,513	-	22,913
<b>Subtotal</b>		<b>8,713</b>	<b>8,529</b>	<b>7,731</b>	<b>6,298</b>	<b>10,777</b>	<b>4,353</b>	<b>2,677</b>	<b>2,170</b>	<b>2,364</b>	<b>4,147</b>	<b>4,872</b>	<b>3,246</b>	<b>65,877</b>
Production	Chino Groundwater	4,668	4,418	3,910	4,021	3,407	2,463	3,952	5,892	7,001	5,476	6,508	8,332	60,049
	Other Groundwater	3,119	3,573	3,004	1,979	1,944	1,840	1,871	1,819	2,139	2,052	2,608	2,937	28,885
	Local Surface Water	358	262	203	227	302	386	1,141	968	681	700	599	391	6,218
<b>Subtotal</b>		<b>8,144</b>	<b>8,253</b>	<b>7,118</b>	<b>6,227</b>	<b>5,652</b>	<b>4,688</b>	<b>6,964</b>	<b>8,680</b>	<b>9,821</b>	<b>8,228</b>	<b>9,715</b>	<b>11,660</b>	<b>95,152</b>
Purchases	CDA	1,457	1,541	1,600	1,638	1,577	1,474	1,535	1,123	1,600	1,621	1,482	1,557	18,205
	CVWD	-	-	-	-	-	-	-	-	-	-	-	-	-
	MVWD	594	697	675	313	286	165	218	330	324	271	438	290	4,601
	SAWCo	916	861	649	391	552	463	672	664	873	864	934	910	8,749
	West End	161	149	135	77	86	68	127	142	133	110	103	119	1,409
<b>Subtotal</b>		<b>3,128</b>	<b>3,247</b>	<b>3,059</b>	<b>2,419</b>	<b>2,501</b>	<b>2,170</b>	<b>2,552</b>	<b>2,259</b>	<b>2,930</b>	<b>2,866</b>	<b>2,958</b>	<b>2,876</b>	<b>32,964</b>
Sales	Chino Hills	(877)	(941)	(878)	(643)	(571)	(276)	(266)	(496)	(506)	(478)	(764)	(598)	(7,294)
	Ontario	(39)	(39)	(37)	(38)	(37)	(38)	(40)	(35)	(37)	(29)	(36)	(26)	(430)
	MVWD	(44)	(44)	(42)	(43)	(92)	(142)	(57)	(40)	(41)	(33)	(41)	(29)	(647)
	Upland	(877)	(822)	(612)	(353)	(465)	(498)	(620)	(629)	(836)	(835)	(898)	(884)	(8,330)
<b>Subtotal</b>		<b>(1,837)</b>	<b>(1,845)</b>	<b>(1,569)</b>	<b>(1,078)</b>	<b>(1,165)</b>	<b>(953)</b>	<b>(982)</b>	<b>(1,200)</b>	<b>(1,420)</b>	<b>(1,375)</b>	<b>(1,739)</b>	<b>(1,538)</b>	<b>(16,701)</b>
<b>Total</b>		<b>18,149</b>	<b>18,184</b>	<b>16,339</b>	<b>13,867</b>	<b>17,765</b>	<b>10,257</b>	<b>11,211</b>	<b>11,909</b>	<b>13,695</b>	<b>13,866</b>	<b>15,805</b>	<b>16,244</b>	<b>177,292</b>

**Figure 2 – IEUA Service Area Potable Water Use**





## Current Recycled Water Use

IEUA is the wholesale recycled water provider to the RCAs which work as or with retail agencies to directly serve their customers. IEUA contracting/retail water agencies which served recycled water in 2021/22 include:

- City of Chino
- City of Chino Hills
- Cucamonga Valley Water District (CVWD)
- City of Fontana (through FWC)
- City of Montclair (through MVWD)
- City of Ontario
- City of Upland

Fontana Water Company (FWC) and Monte Vista Water District (MVWD) are the water retailers in the Cities of Fontana and Montclair, respectively, but are not IEUA regional contracting agencies. FWC and MVWD retail recycled water obtained from their overlying cities, which are IEUA regional contracting agencies. San Bernardino County is currently a direct use customer of IEUA based on long standing historical contracts. Total recycled water direct use within the region was 19,260 AF in FY 21/22.

**Table 3 – Recycled Water Demand by Agency for FY 21/22**

Retail Agency	Direct Use (AF)	Percent of Direct Demand
Chino	5,222	27%
Chino Hills	1,615	8%
CVWD	1,154	6%
Fontana/FWC	375	2%
Montclair/MVWD	342	2%
Ontario	9,593	50%
Upland	747	4%
IEUA	145	1%
San Bernardino County	67	0.4%
<b>Total</b>	<b>19,260</b>	<b>100%</b>

## Projected Recycled Water Use

Direct recycled water use in the IEUA service area has been projected out to 2040 in both the 2020 UWMP and as part of the Recycled Water Demand Forecast Technical Memorandum (Demand Forecast). The 2020 UWMP recycled water projections were supplied by the retail agencies to IEUA as part of the 2020 UWMP. The Demand Forecast recycled water projections utilized land use-based demand modeling completed by IEUA in conjunction with the retail agencies in 2015 and were subsequently updated in 2021.

**Table 4 – Projected Recycled Water Direct Use Demand by Retail Agency (AF)**

Retail Agency	Projection Source	2025	2030	2035	2040
Chino	2020 UWMP	4,500	4,500	4,000	3,800
	Demand Forecast	5,498	5,780	5,961	6,178
Chino Hills	2020 UWMP	1,609	1,609	1,609	1,609
	Demand Forecast	1,858	2,047	2,047	2,626
CVWD	2020 UWMP	1,800	2,000	2,000	2,000
	Demand Forecast	2,032	2,288	2,513	2,674
FWC	2020 UWMP	1,000	1,500	2,000	2,500
	Demand Forecast	994	1,392	1,911	2,000
MVWD	2020 UWMP	1,100	1,100	1,100	1,100
	Demand Forecast	359	363	396	398
Ontario	2020 UWMP	12,168	13,465	14,330	16,059
	Demand Forecast	9,188	10,383	10,814	12,820
Upland	2020 UWMP	703	703	703	703
	Demand Forecast	940	1,022	1,062	1,158
<b>Total</b>	<b>2020 UWMP</b>	<b>22,880</b>	<b>24,877</b>	<b>25,742</b>	<b>27,771</b>
	<b>Demand Forecast</b>	<b>20,869</b>	<b>23,275</b>	<b>24,704</b>	<b>27,854</b>

## Projected Regional Water Use

Projected water use was calculated as part of the development of the 2020 UWMP. IEUA collected each retail agencies' projected water use from their respective UWMP and totaled the use to obtain a regional water use projection. Regional water use projections include both potable and recycled water direct use.

**Table 5 – 2020 UWMP Projected Water Demand by Retail Agency (AF)**

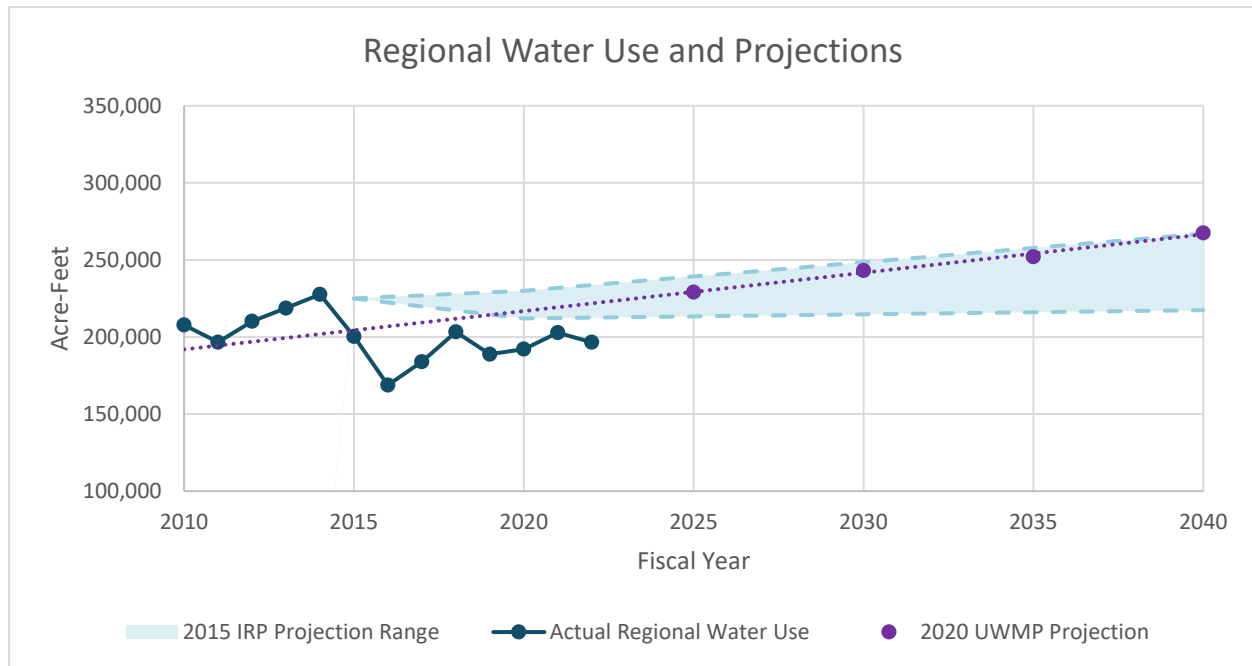
<b>Retail Agency</b>	<b>2025</b>	<b>2030</b>	<b>2035</b>	<b>2040</b>	<b>2045</b>
Chino	20,843	22,310	23,087	23,963	25,108
Chino Hills	17,120	17,334	17,678	17,725	17,769
CVWD	53,369	58,092	59,650	60,949	60,949
FWC	45,593	46,909	47,665	50,442	51,943
MVWD	14,232	14,564	15,175	15,437	15,706
Ontario	52,550	58,513	63,406	73,668	73,668
Upland	25,328	25,328	25,328	25,328	25,328
<b>Total</b>	<b>229,035</b>	<b>243,050</b>	<b>251,989</b>	<b>267,512</b>	<b>270,471</b>

Projected water use was also calculated as part of the 2015 Integrated Resources Plan (2015 IRP), which developed a range of demand possibilities to accommodate for future uncertainty caused by the various demand factors including climate change. This analysis came from demand modeling conducted as part of the 2015 IRP and 2015 Urban Water Management Plan (2015 UWMP), which found that new developments in the region are more water efficient due to changes in the plumbing code, higher density developments with less landscaping, and compliance landscape ordinance requirements set forth in AB1881.

**Table 6 – 2015 IRP Demand Forecast (AF)**

<b>Urban M&amp;I Forecast</b>	<b>2015</b>	<b>2020</b>	<b>2040</b>
High Forecast	225,000	230,000	267,000
Medium Forecast	225,000	220,100	238,600
Low Forecast	225,000	212,000	217,400



**Figure 3 – IEUA Regional Water Use and Projections**

The 2020 UWMP and 2015 IRP both reach approximately 267,000 AF in the year 2040. However, IEUA's actual FY 21/22 regional water use of 196,552 AF (177,292 AF potable use and 19,260 AF recycled direct use) is below the 2020 low demand forecast of 212,000 AF outlined in IEUA's 2015 IRP. A continuous focus on water use efficiency and per capita reductions, as required in SB X7-7, AB 1668, and SB 606 is anticipated to reduce per capita water use and demands. IEUA anticipates a slight decrease in FY22/23 water use due to conservation efforts related to the severe drought impacting the region. Long-term demands are not expected to exceed the peak 10-year demand reached during FY 13/14.

An increase to the number of Meter Equivalent Units (MEUs) in the region is anticipated. For FY 22/23 it is projected that the region will contain 418,094 MEUs, an increase of 4,268 MEUs from FY 21/22's actual MEUs count of 413,826.

Table 7 – Projected MEUs

Retail Agency	FY 21/22 Actual MEUs	FY 22/23 Projected MEUs
Chino	40,238	40,367
Chino Hills	38,924	39,305
CVWD	106,006	106,172
FWC	91,413	92,440
MVWD	21,979	22,009
Ontario	78,166	79,788
Upland	33,966	34,384
WVWD	3,134	3,629
<b>Total</b>	<b>413,826</b>	<b>418,094</b>

## SECTION 2: GROUNDWATER RECHARGE DELIVERIES

### Historical Groundwater Recharge Deliveries

The Chino Basin is one of the largest groundwater basins in Southern California containing approximately 5,000,000 AF of water with an un-used storage capacity of approximately 1,000,000 AF. Groundwater from the Chino Basin accounts for approximately 34% of FY 21/22, regional water supplies. The Chino Basin is an adjudicated basin and has been overseen by the Chino Basin Watermaster (CBWM) since 1978. The basin is dependent on rainfall and supplemental sources for recharge.

IEUA, in coordination with CBWM, the Chino Basin Water Conservation District (CBWCD), and San Bernardino County Flood Control District (SBCFCD) capture water for replenishment. Sources include recycled water from IEUA's regional water recycling plants, stormwater and dry weather flow capture, and imported water recharge.

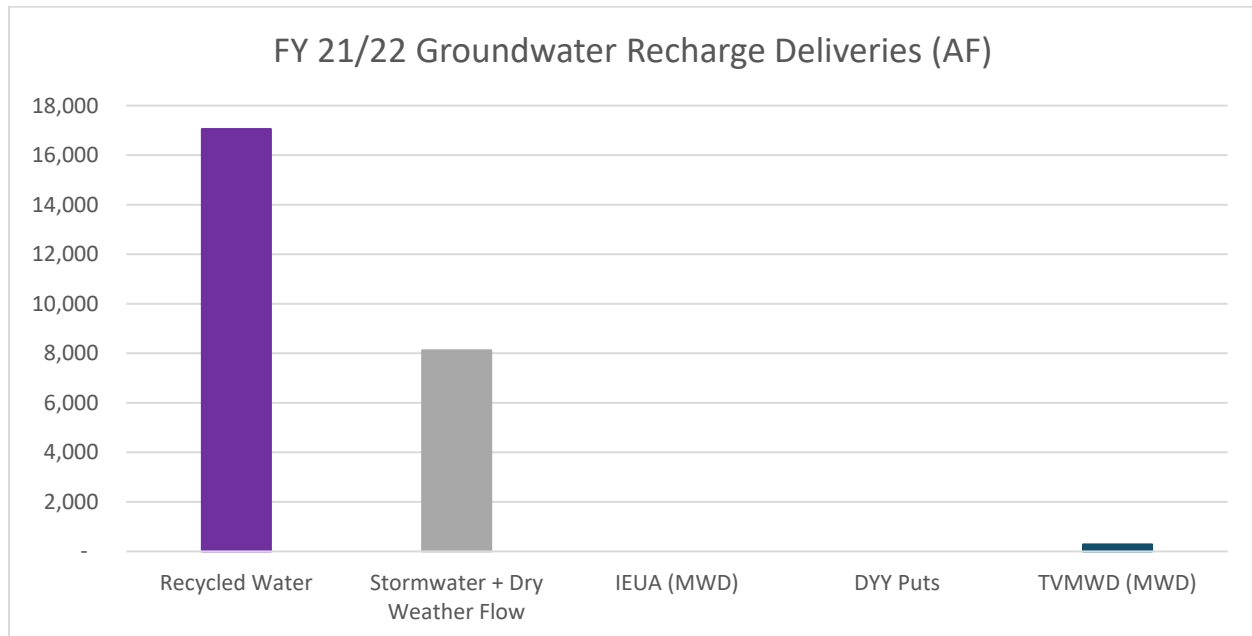
Recharged imported water is either purchased by a local agency, requested by the Chino Basin Watermaster to maintain safe operating yield of the basin, used to blend down recharged recycled water TDS levels, or as part of the Chino Basin Dry-Year Yield (DYY) Program. Total groundwater recharge delivered to the Chino Basin in FY 21/22 was 25,441 AF. Groundwater recharge deliveries is water delivered to recharge facilities and does not take into consideration evaporative or other losses that may occur prior to recharge.

**Table 8 – FY 21/22 Groundwater Recharge Sources**

Groundwater Recharge Source	Recharge (AF)
Recycled Water	17,054
Stormwater & Dry Weather Flow	8,120
Imported Water	267
IEUA (MWD)	0
DYY Puts*	0
TVMWD (MWD)**	267
<b>Total</b>	<b>25,441</b>

\*DYY Puts Exclude aquifer storage and recovery

\*\* Three Valleys Municipal Water District (TVMWD) purchases water directly from MWD.

**Figure 4 – FY 21/22 Groundwater Recharge Deliveries**

Recycled water groundwater recharge use was 17,054 AFY in FY 21/22, up 5% from FY 20/21's recycled water ground water recharge of 16,253 AF. Recycled water is recharged by IEUA on behalf of its RCAs and retail water agencies.

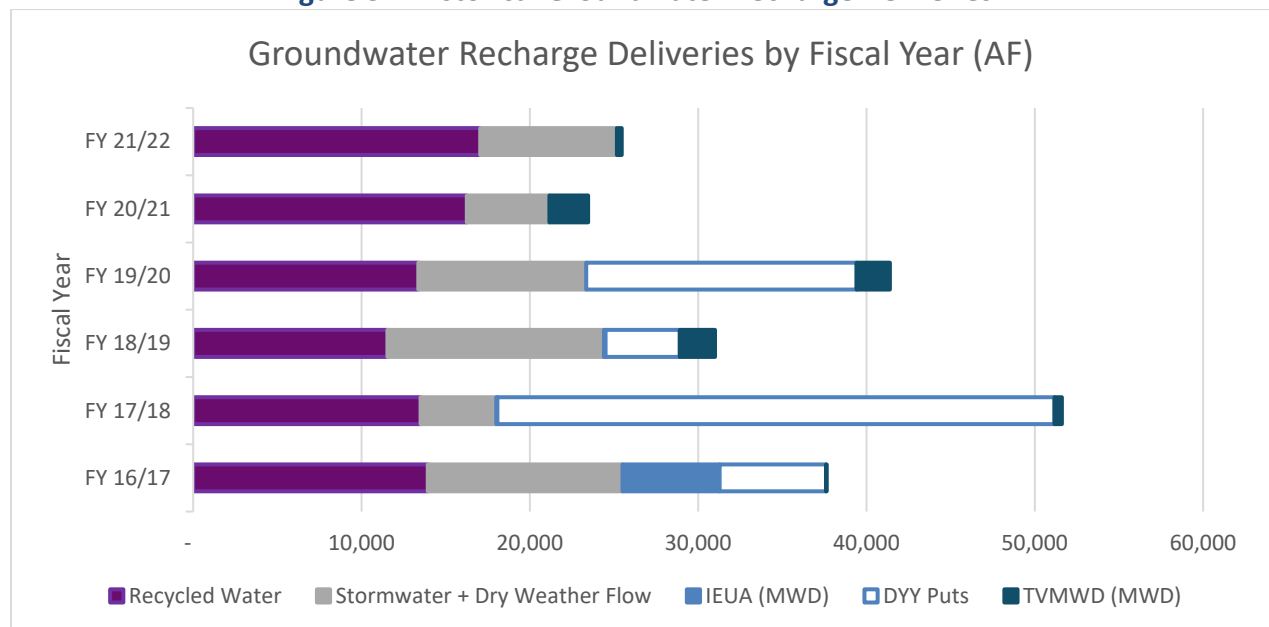


**Table 9 – FY 21/22 Recycled Groundwater Recharge Deliveries by Agency**

Retail Agency	Recharge (AF)
Chino	-
Chino Hills	1,472
CVWD	5,090
Fontana/FWC	4,311
Montclair/MVWD	687
Ontario	3,933*
Upland	1,562
<b>Subtotal</b>	<b>17,054</b>

*\*Value may adjust as allocations are still being finalized*

FY 21/22 was the highest recycled water recharge recorded to date at over 17,000 AF. The decrease in overall recharge from all sources compared to previous years is due in part to lower precipitation rates reducing stormwater availability and MWD not requesting the storage of any water for the DYY program in FY 21/22.

**Figure 5 – Historical Groundwater Recharge Deliveries**

## Projected Groundwater Recharge Deliveries

It is projected that future groundwater recharge delivery projections will remain at an estimated 16,420 AFY of recycled water as outlined in the 2018 Recharge Master Plan Update. Due to the unpredictability of storm events and variability of imported water for groundwater recharge in the IEUA region, the five-year average was taken to determine the projected recharge of stormwater and dry weather flows and imported water. Table 10 below shows the 5-year

recharge averages for recycled water, stormwater and dry weather flows, and imported water. The imported groundwater projections do not include DYY program values.

**Table 10 – Projected Groundwater Recharge Deliveries by Source**

Groundwater Recharge Source	Projected Groundwater Recharge (AF)
Recycled Water	16,420
Stormwater + Dry Weather Flow	8,071
Imported Water (No DYY)	2,163
<b>Total</b>	<b>26,653</b>

## Dry Year Yield

The DYY program provides for the storage of up to 100,000 AF of water in a MWD Storage Account in the Chino Basin pursuant to the Groundwater Storage Program Funding Agreement dated June 2003 and as subsequently amended. Signatories to the Phase I Agreement are:

- Metropolitan Water District of Southern California
- Inland Empire Utilities Agency
- Three Valleys Municipal Water District
- Chino Basin Watermaster

The DYY Agreement provides for storage of up to 25,000 AF per year unless Chino Basin Watermaster allows for more, and extraction, at MWD's call during dry years, of up to 33,000 AF per year not to exceed the amount of water in the Metropolitan Storage Account (DYY Account). In February 2019, the signatories expanded the extraction provisions so that water could be voluntarily extracted from the DYY Account outside of call years, with approval from the signatories.

From June 2017 through June 2020 a total of 63,308 AF were stored in the DYY Account; 58,372 AF by groundwater recharge and 4,936 AF by Aquifer Storage and Recovery (ASR) injected water. From July 2019 through June 2022 Cucamonga Valley Water District and Fontana Water Company have voluntarily extracted 63,308 AF, leaving the account with a balance of 0 AF.

**Table 11 – DYY Account Balance**

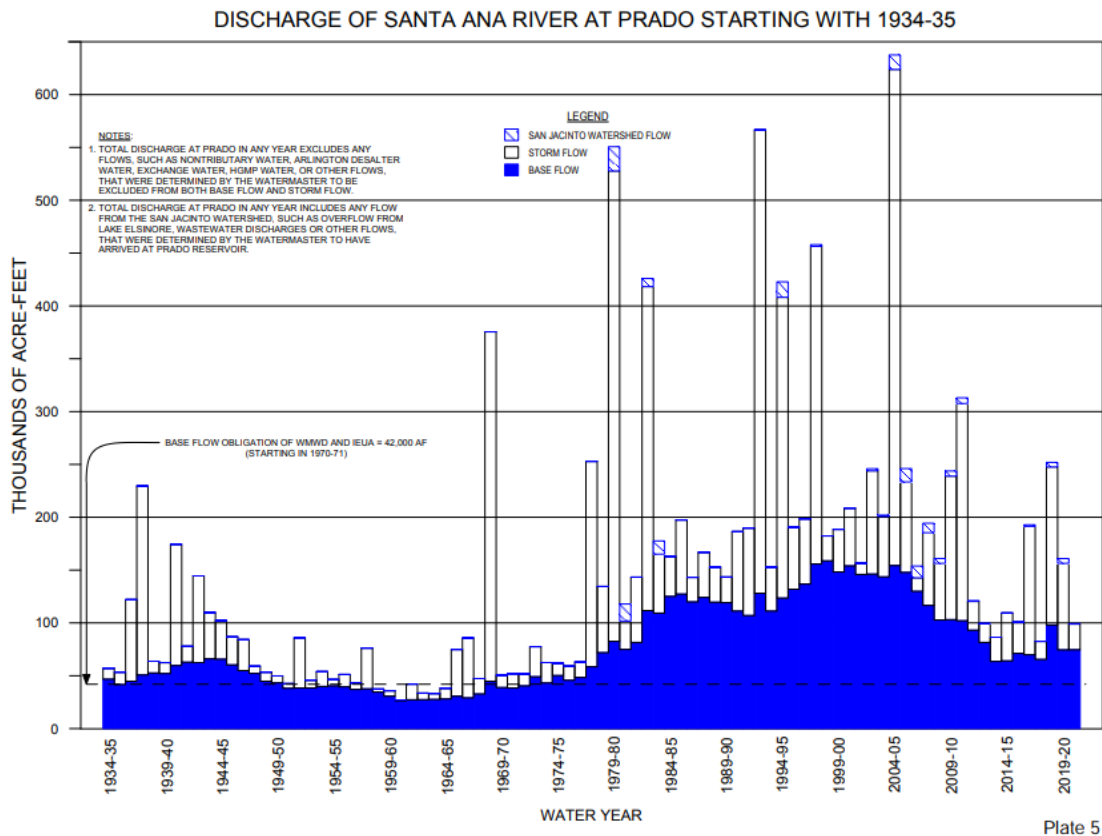
<b>DYY Account Balance (June 2017-June 2022)</b>	
<b>“PUTS”</b>	
Recharged Water	58,372 AF
ASR Injection	4,936 AF
<b>“TAKES”</b>	
CVWD	55,808 AF
FWC	7,500 AF
<b>Total</b>	<b>0 AF</b>

The DYY account balance for FY 21/22 is shown in Table 11. The account balance is currently at 0 AF. At this time, there is no plan to store additional water in the DYY account.

### **SECTION 3: SANTA ANA REGIONAL BASEFLOW OBLIGATION**

#### **Santa Ana River Regional Baseflow Obligation**

The Santa Ana River has a regional baseflow obligation established by past judgment. The baseflow obligation is a joint obligation between IEUA and Western Municipal Water District to ensure an average of 42,000 AF at Prado Dam. The minimum baseflow obligation was reduced to 34,000 AF after 1986 as long as no cumulative baseflow debt exists. In Water Year 2020/2021, baseflow at Prado Dam was 74,580 AF. More information about the Santa Ana River baseflow obligation can be found in the Santa Ana River Watermaster Annual Report.

**Figure 6 – Discharge of Santa Ana River at Prado**

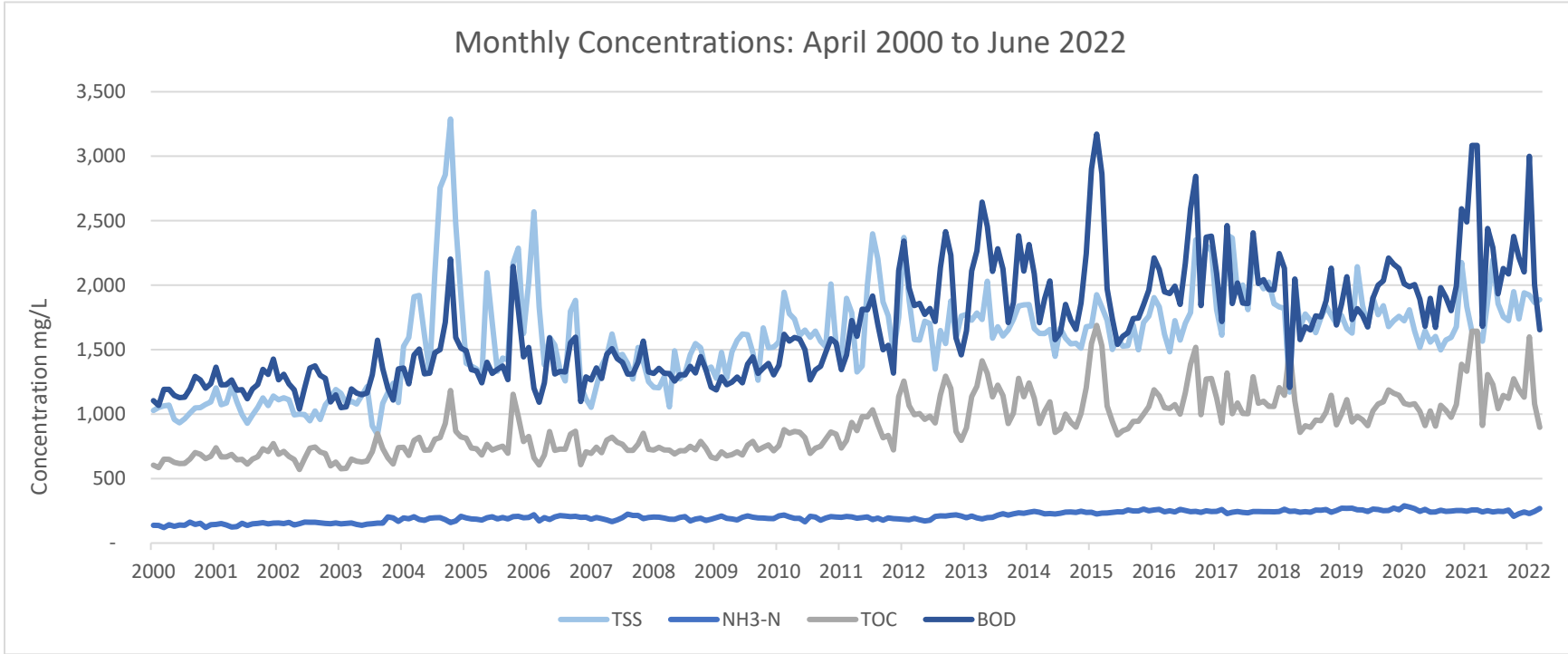
## SECTION 4: WASTEWATER

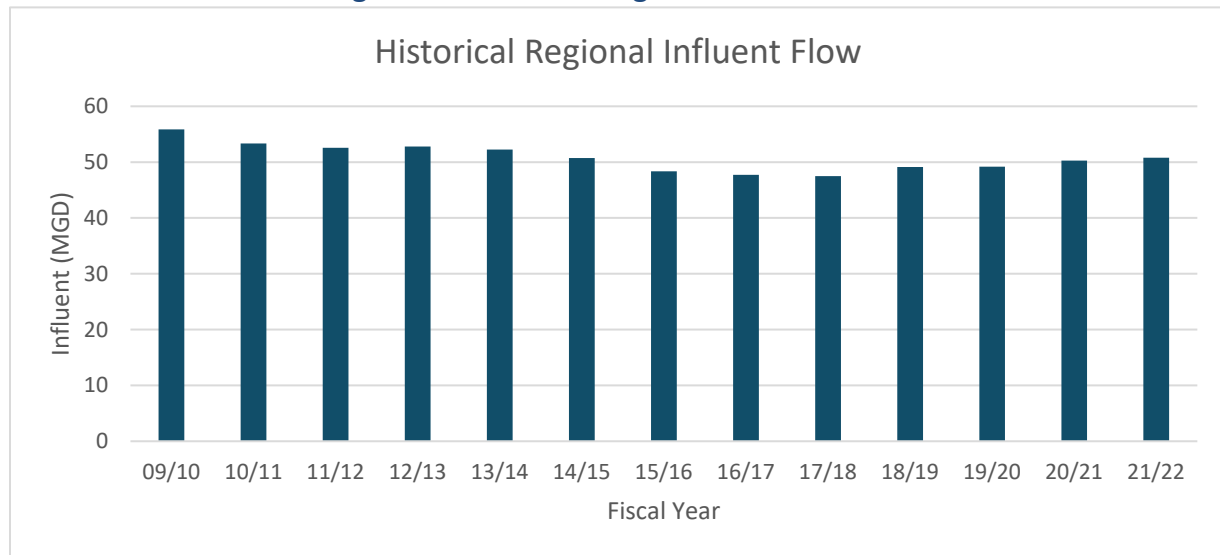
### Wastewater Actuals

Over the past decade the IEUA service area has experienced an increase in indoor water use efficiency as a direct result of drought, shifting public policy, more efficient building and plumbing codes, and effective conservation program campaigns. This increased efficiency has decreased the volume of wastewater flows received by IEUA treatment plants by approximately 10% since 2010. The flows have slightly increased over the last year, likely due to the regional population continuing to grow. Still, the combination of an increased population but overall reduced wastewater flow has resulted in an increase in the strength of the wastewater coming into IEUA's treatment facilities. This trend of increased wastewater strength is expected to continue as both the population and regional water efficiency standards continue to increase. Current and future wastewater treatment plant expansions are driven by the increased strength of wastewater flows to the facilities, rather than the volume of flows to the facilities.



Figure 7 – Monthly Concentrations: April 2000 – June 2022



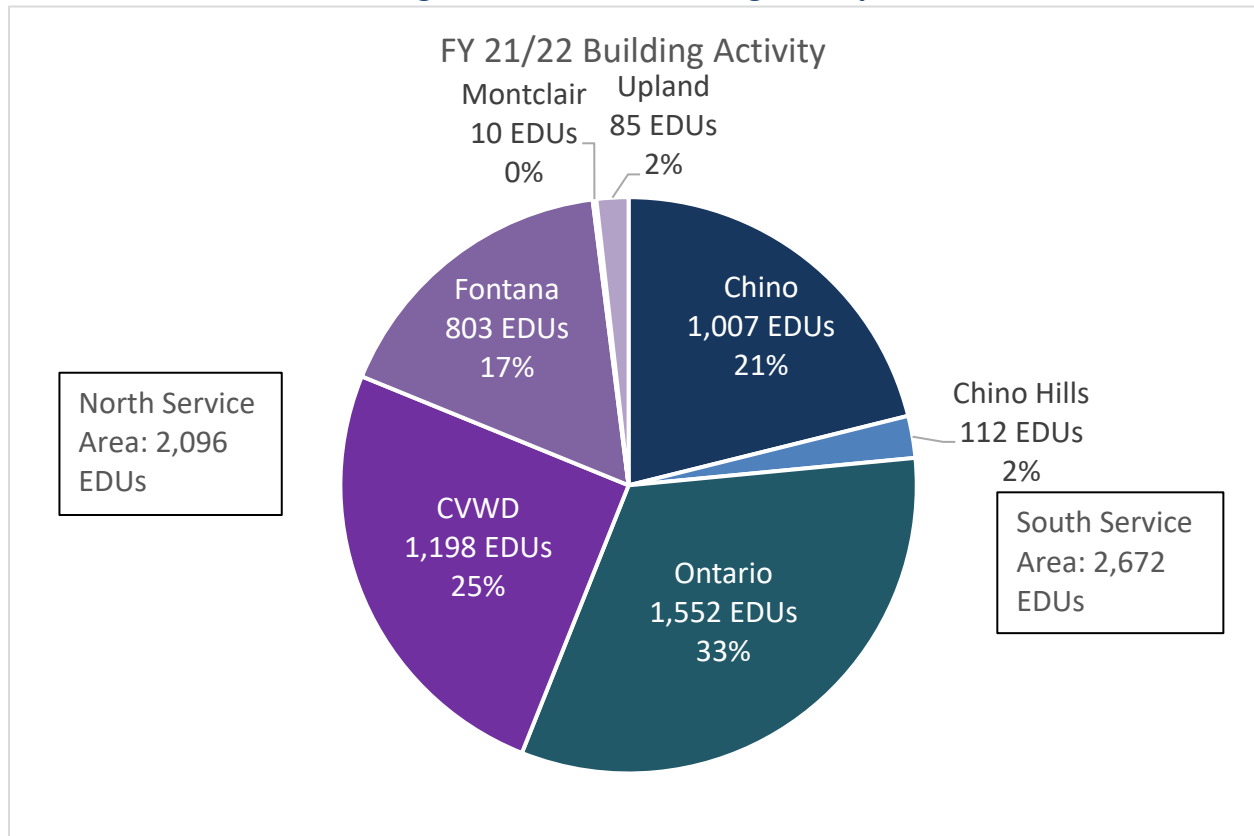
**Figure 8 – Historical Regional Influent Flows**

While wastewater flows have generally decreased since FY 09/10, recycled water use has increased. This increase in recycled water utilization can at least partially be attributed to the San Bernardino Avenue Lift Station and the Montclair Lift Station. The Montclair Lift Station pumps wastewater from portions of Montclair, Upland, and Chino to IEUA's RP-1 and CCWRF treatment plants. The San Bernardino Ave Pump Station pumps a portion of the flow from the City of Fontana to IEUA's RP-4 treatment plant. Together, these lift stations help shift flows that would naturally flow from one portion of the service area to a different treatment plant to balance flows and keep water in the northern portion of the service area. This shift in flows allows IEUA to maximize the potential for recycled water use, especially as the majority of recycled water groundwater recharge activity occurs in the northern portion of the service area. These lift stations also increase regional system flexibility and allow the treatment plants to operate as an interconnected system.

Equivalent Dwelling Unit (EDU) activity had increased in FY 21/22 with the addition of 4,767 EDUs to the region. The additional EDUs added in FY 21/22 were 4,377 EDUs lower than the RCAs projections of 9,144 EDUs and 767 EDUs more than the IEUA Budgeted Projections of 4,000 EDUs. Two sets of projections exist to allow for conservative estimates on both the flow and financial aspects of EDUs. The RCAs provide growth projections per the Regional Sewage Service Contract, which are then used to determine plant treatment capacity needs. Budgeted projections on the other hand are used by IEUA to project future funding needs. To ensure fund availability, budgeted projections are conservatively low. The result of both sets of projections is the assumption that projections are conservative, ensuring IEUA treatment plants can handle the added load while also ensuring the agency does not over project fund availability. Moving forward, IEUA will work with the RCAs to develop land use model-based growth projections to enhance projection reliability.

**Table 12 – Historical EDU Activity**

Building Activity FY 15/16 through FY 21/22			
Year	Building Activity (EDUs)	IEUA Projections (EDUs)	RCA Projections (EDUs)
FY 15/16	4,787	4,330	5,849
FY 16/17	5,189	3,000	5,277
FY17/18	5,223	4,000	5,442
FY 18/19	3,459	4,000	6,149
FY 19/20	3,435	4,000	6,390
FY 20/21	5,281	4,000	9,013
FY 21/22	4,767	4,000	9,144

**Figure 9 – FY 21/22 Building Activity**

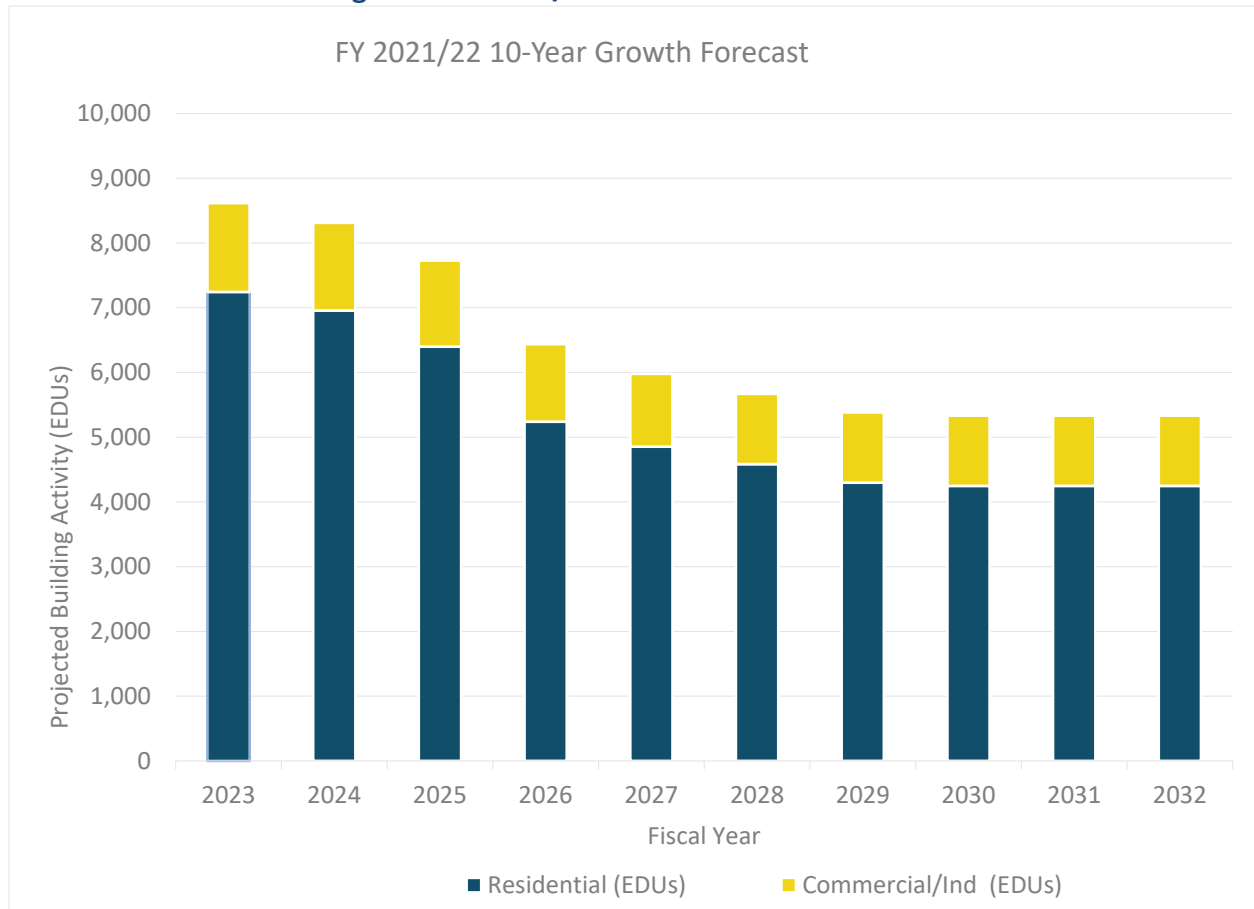
## Wastewater Projections

Wastewater flow forecasts are conducted annually and are based on four main components: (1) historical wastewater flow trends; (2) per dwelling unit wastewater generation factors, based on the 2015 Wastewater Facilities Master Plan Update (WWFMPU) projections; (3) actual influent flows measured at the treatment plants; and (4) expected future growth numbers provided by the RCAs. These projections are used to determine future demands on the Agency's facilities and help anticipate the need for modifications to treatment plants and solids handling facilities.

The WWFMPU identified the projected flows to the treatment plants in 2035 through 2060. The WWFMPU estimates that there will be a regional flow of 73.5 MGD by 2035 and an ultimate/build-out flow of 80 MGD by 2060. The increase in flows implies that there will be facility expansions over the next 20 years.

IEUA staff and RCAs are in the process of updating the 10-year demand forecast. The draft results of the 10-year capacity demand forecast survey are summarized in Figure 10 below. Approximately 73% of the projected growth over the next ten years is anticipated to be from new development in the City of Ontario and City of Fontana service areas; building activity is projected to be approximately 80% residential and 20% commercial/industrial.



**Figure 10 – FY 21/22 10-Year Growth Forecast**

*\*Projected building activity is expected to change once forecast is finalized*

## **APPENDIX A: ACRONYMS**

**AF: Acre Feet**

**AFY: Acre Feet per Year**

**ASR: Aquifer Storage and Recovery**

**CBWCD: Chino Basin Water Conservation District**

**CBWM: Chino Basin Water Master**

**CDA: California Desalter Authority**

**CVWD: Cucamonga Valley Water District**

**DYY: Dry Year Yield Program**

**EDU: Equivalent Dwelling Unit**

**FWC: Fontana Water Company**

**IEUA: Inland Empire Utilities Agency**

**IRP: 2015 Integrated Resource Plan**

**MEUs: Meter Equivalent Units**

**MGD: Million Gallons per Day**

**MVWD: Monte Vista Water District**

**MWD: Metropolitan Water District of Southern California**

**SPAR: Strategic Planning Annual Report**

**RCAs: Regional Contracting Agencies**

**SAR: Santa Ana River**

**SBCFCD: San Bernardino County Flood Control District**

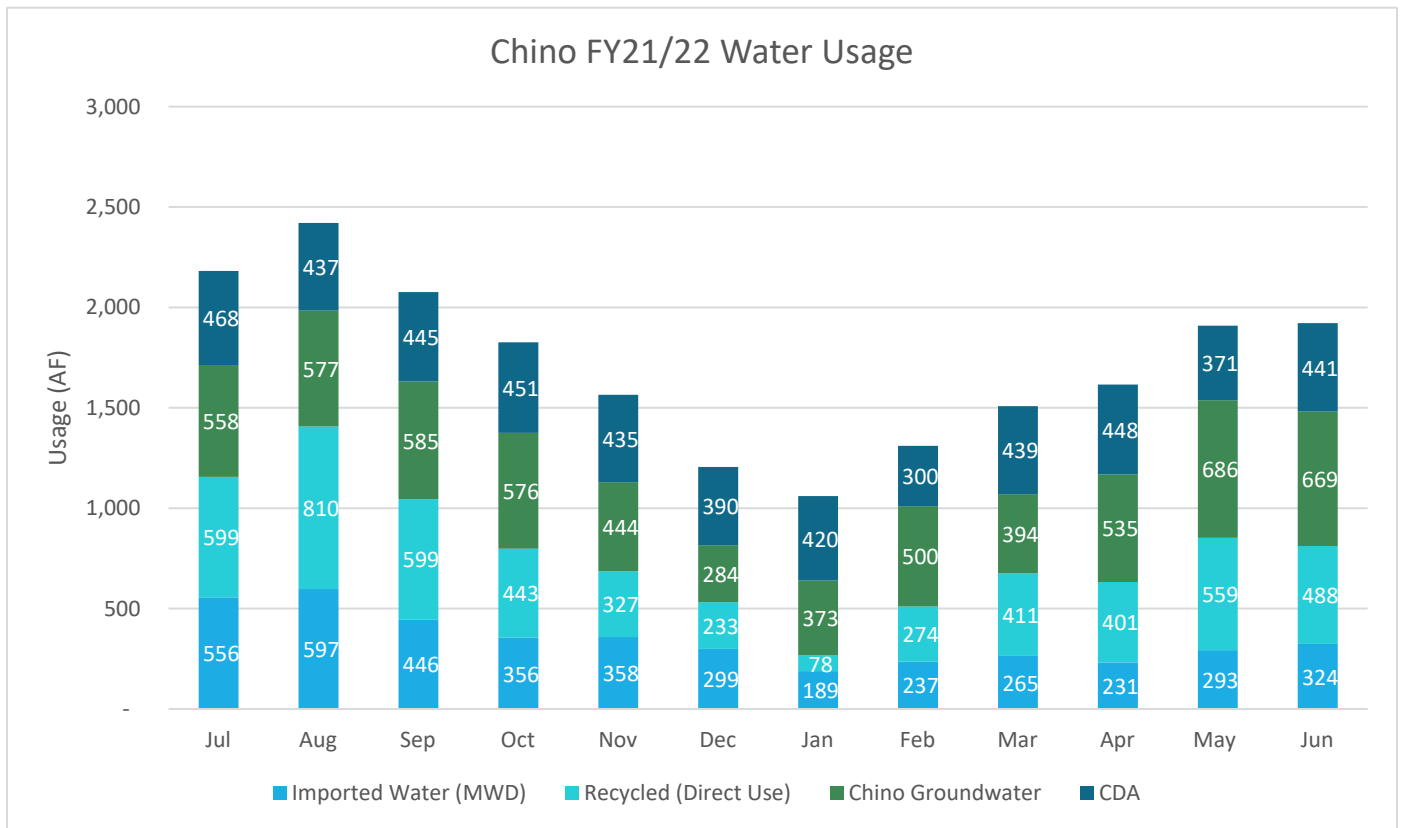
**UWMP: Urban Water Management Plan**

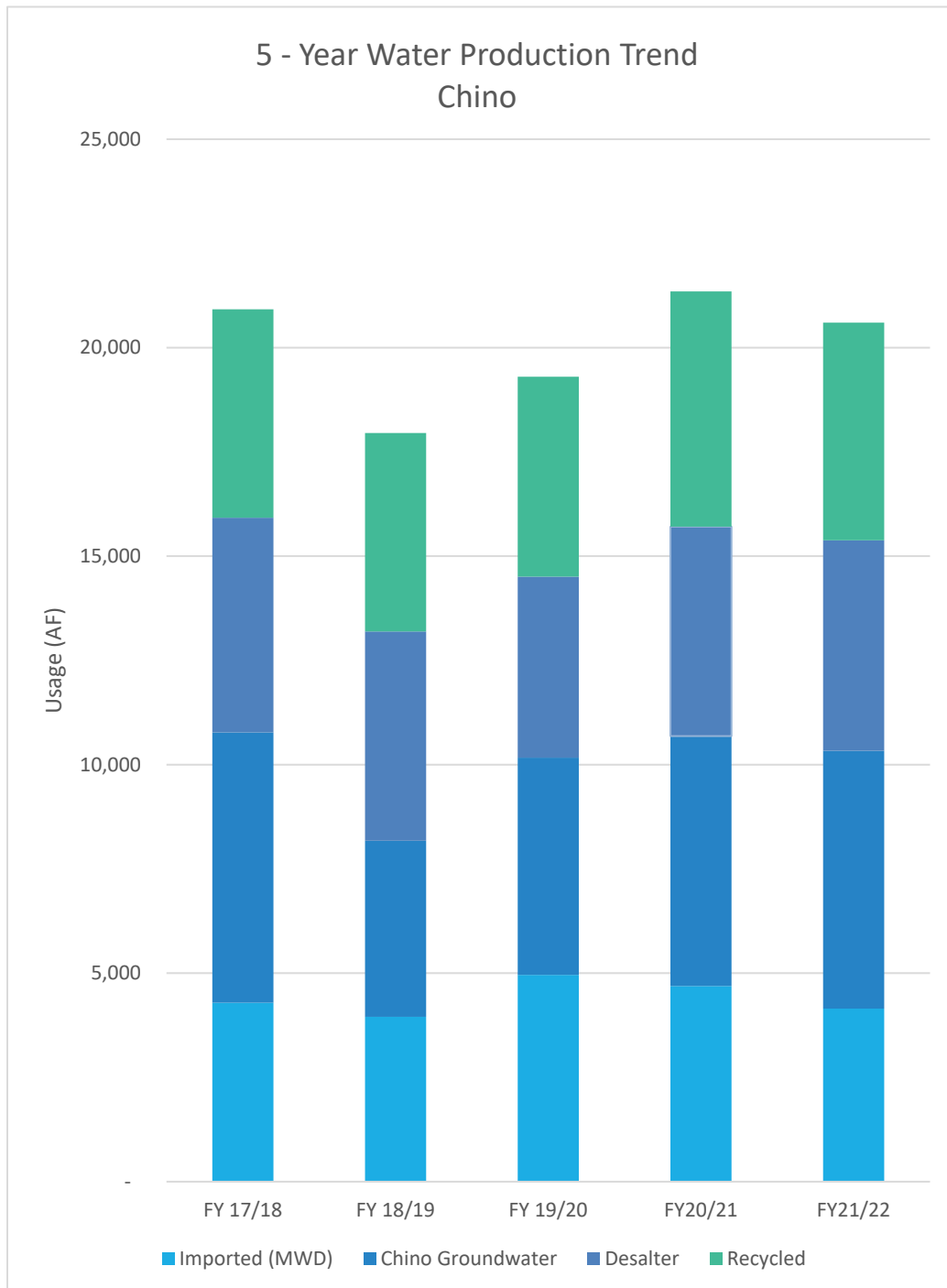
**WVWD: West Valley Water District**

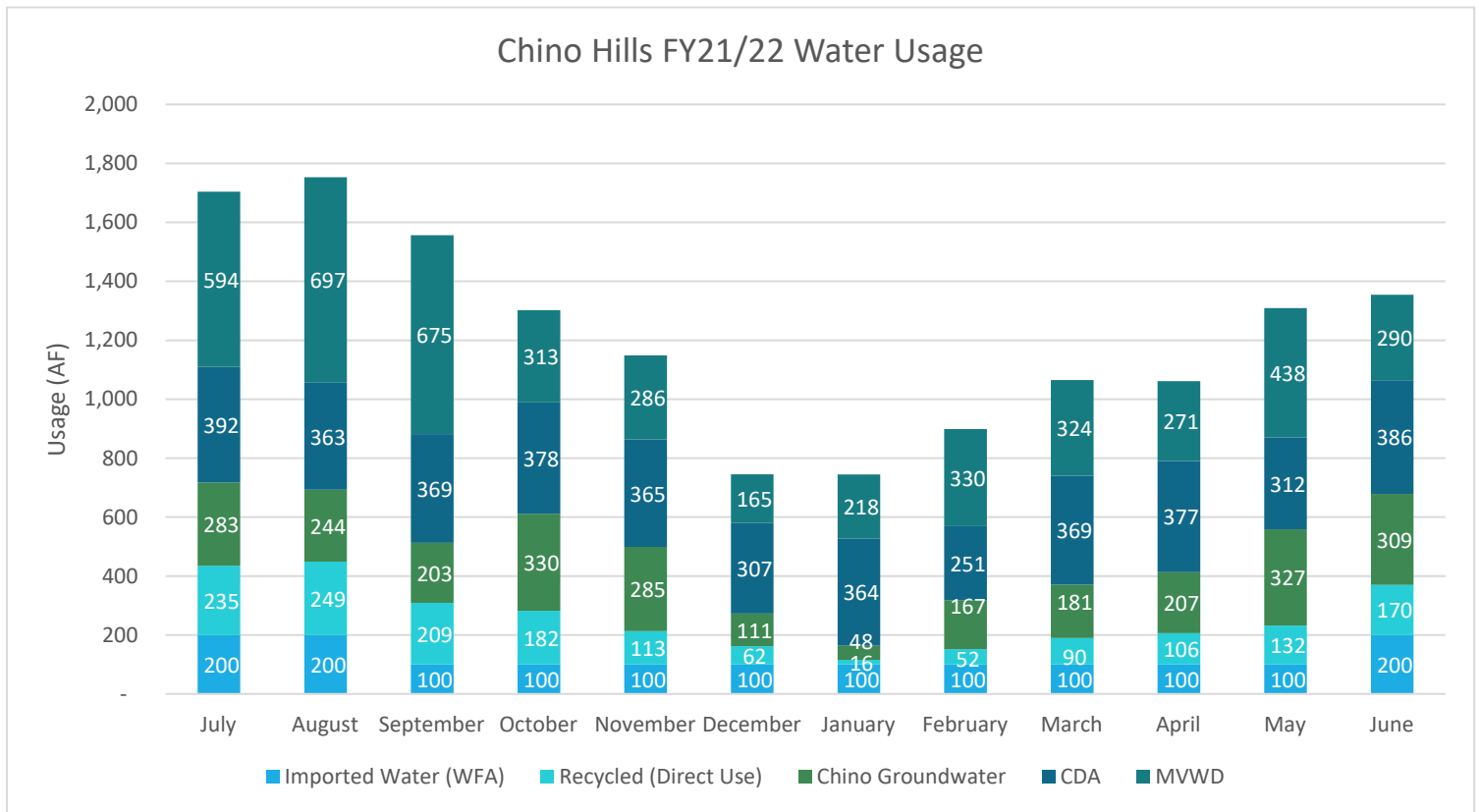
**WWFMPU: 2015 Wastewater Facilities Master Plan Update**

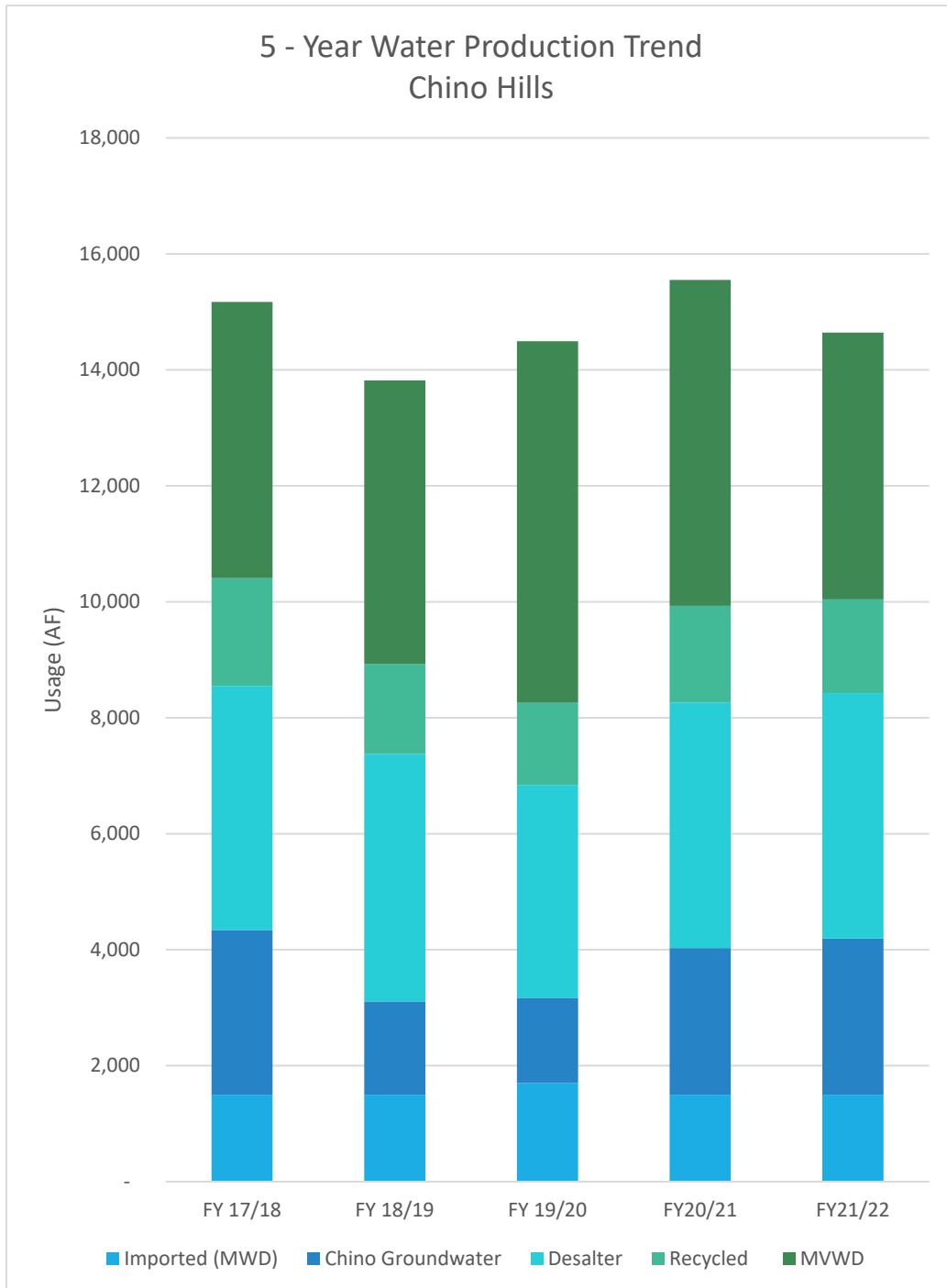
## **APPENDIX B: RETAIL AGENCY WATER USE CHARTS**



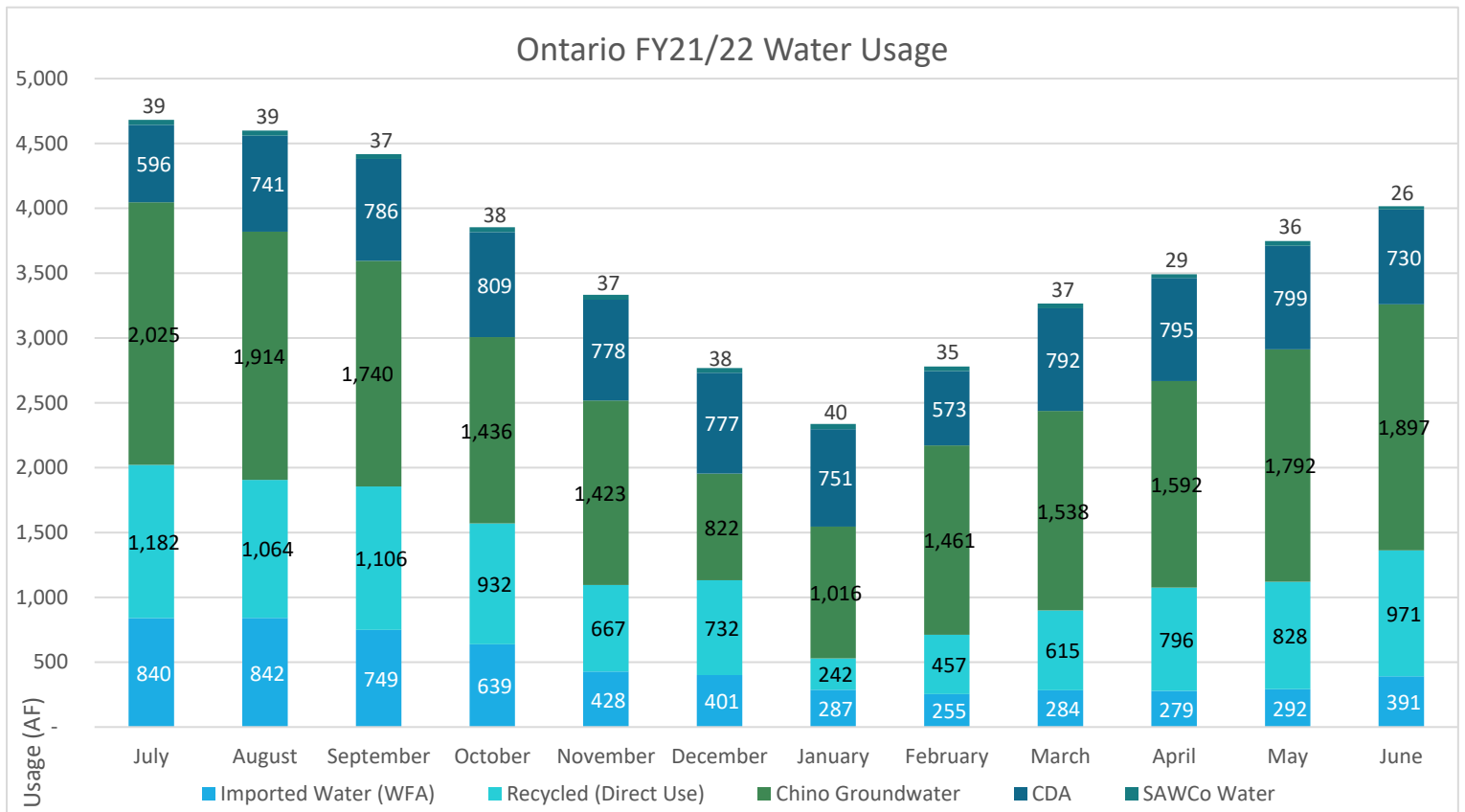


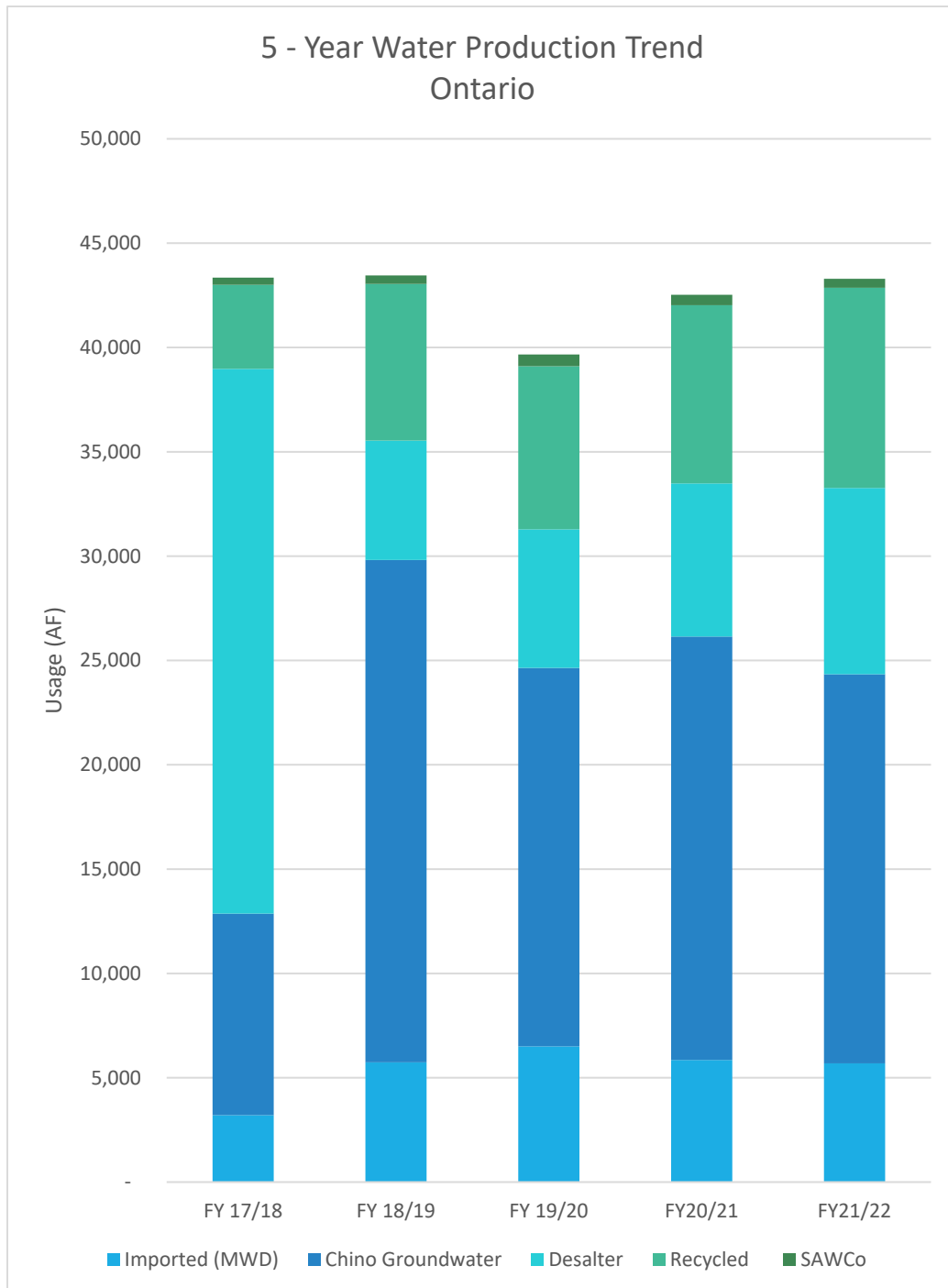


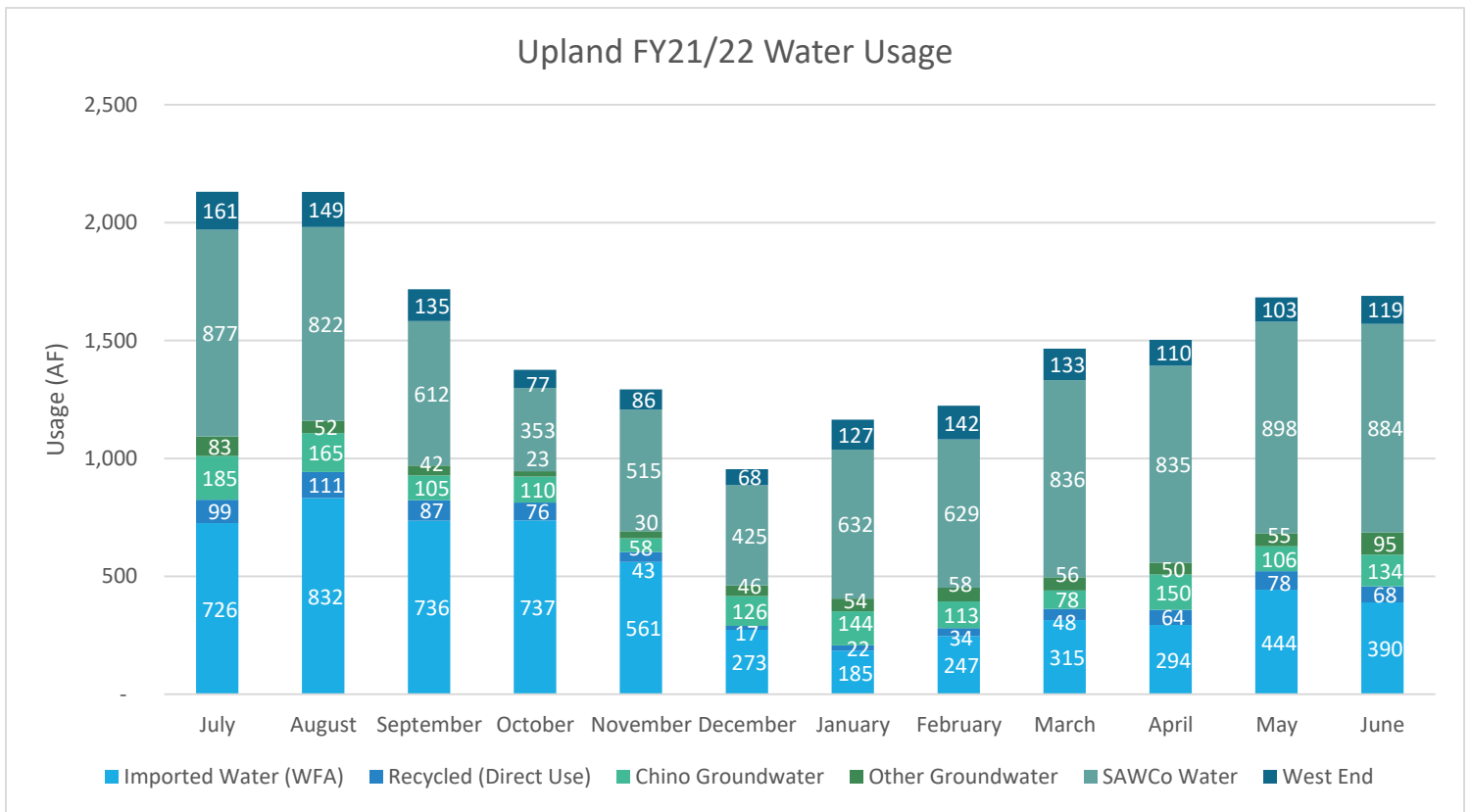


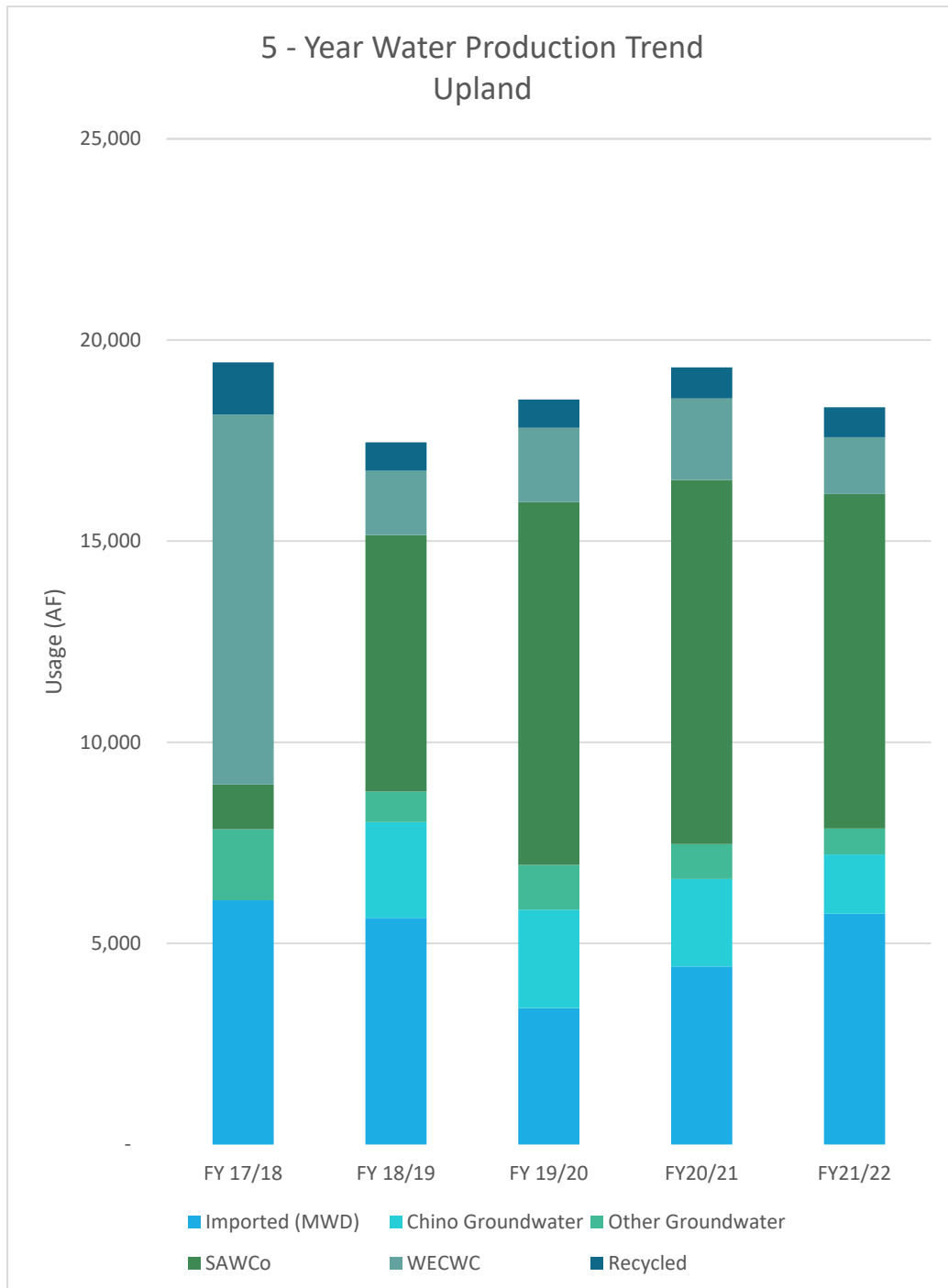




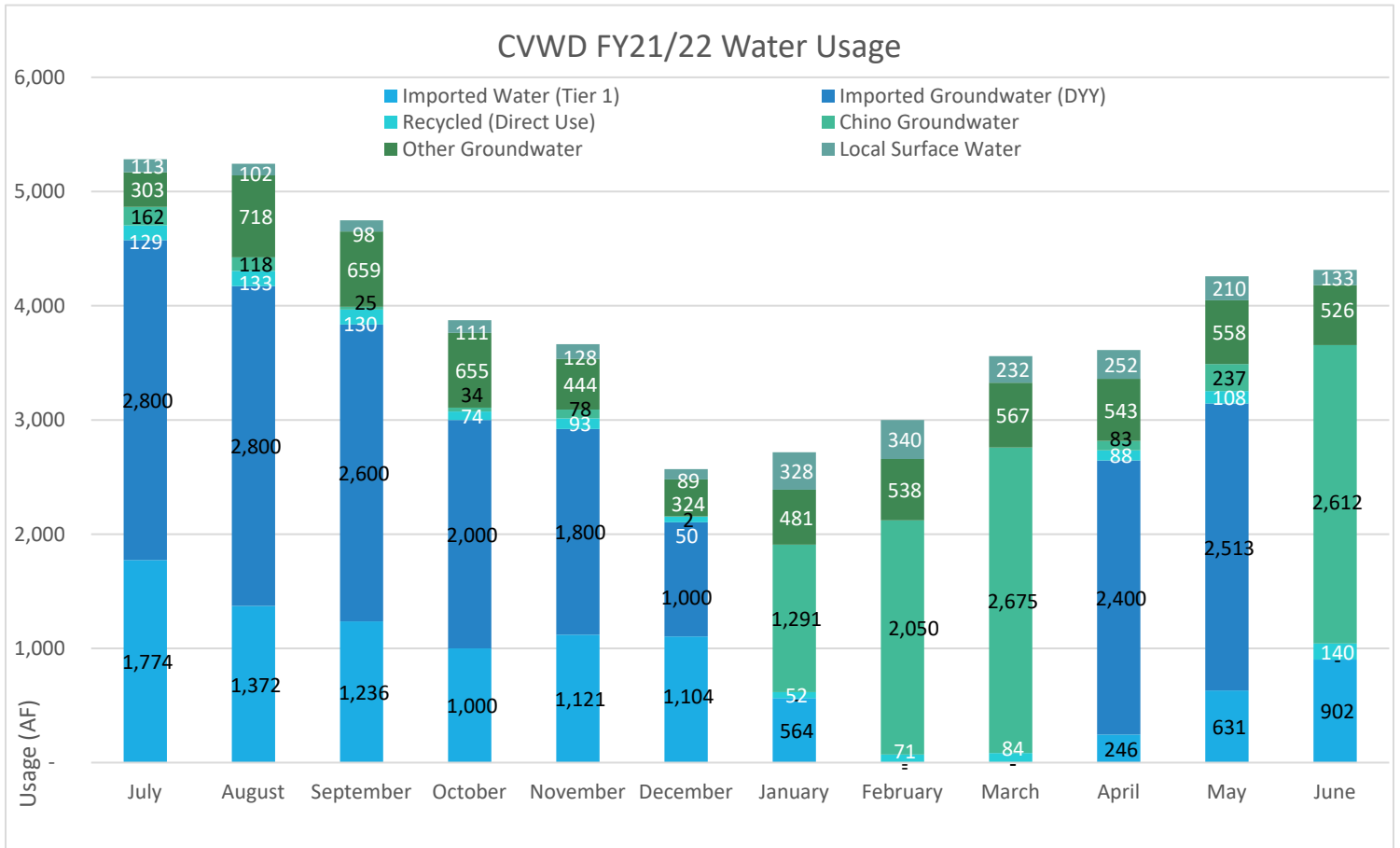


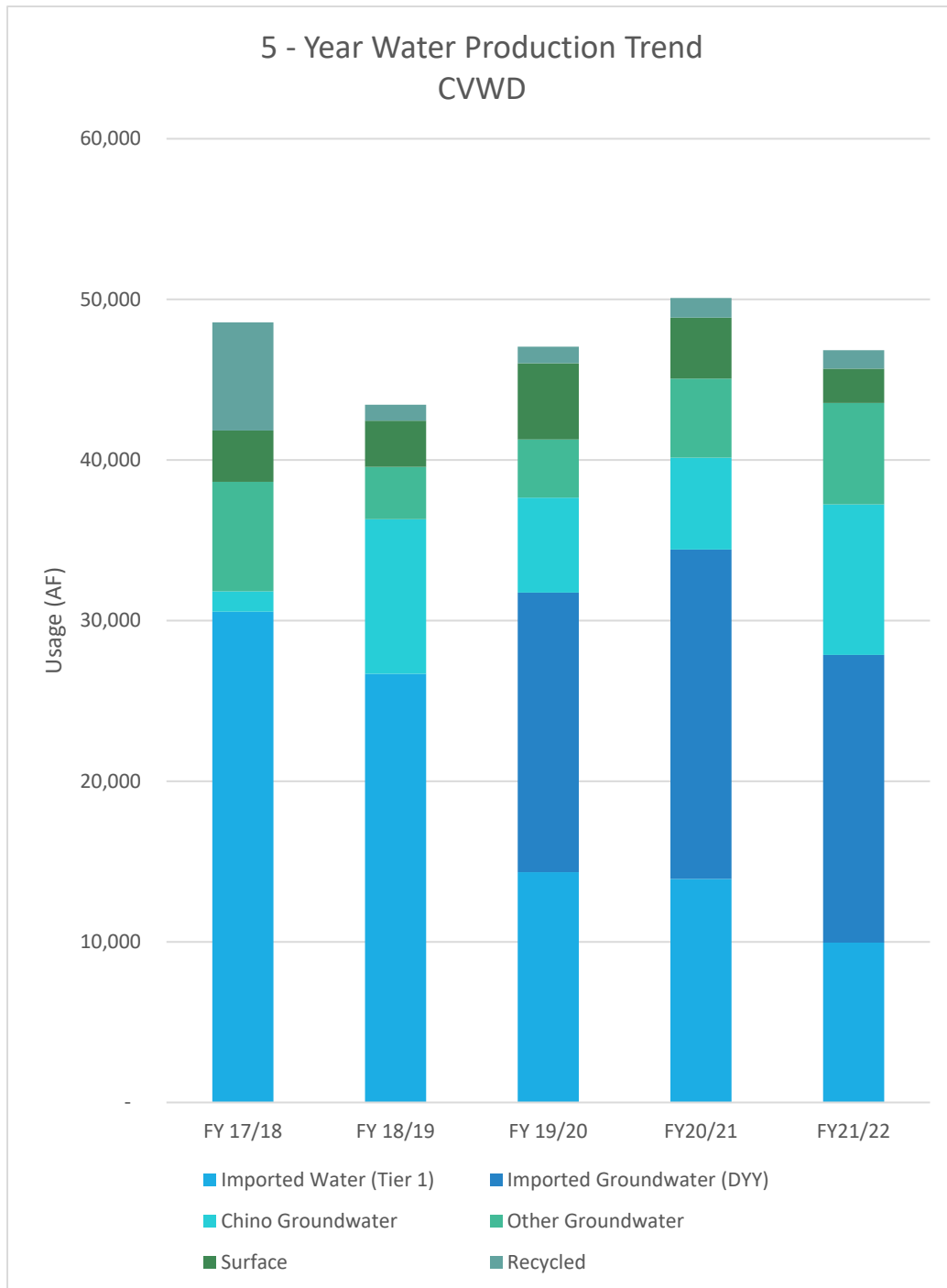


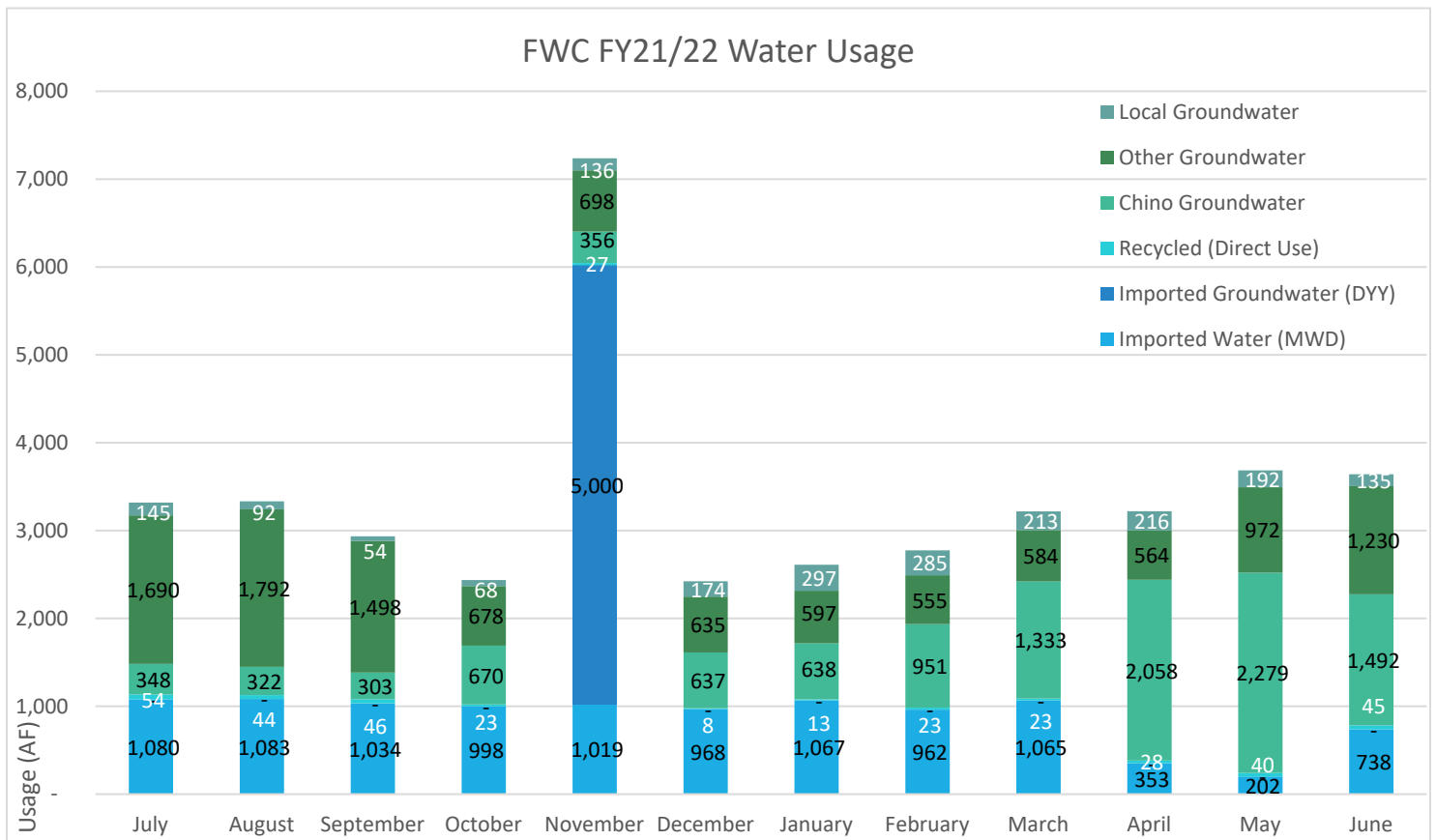


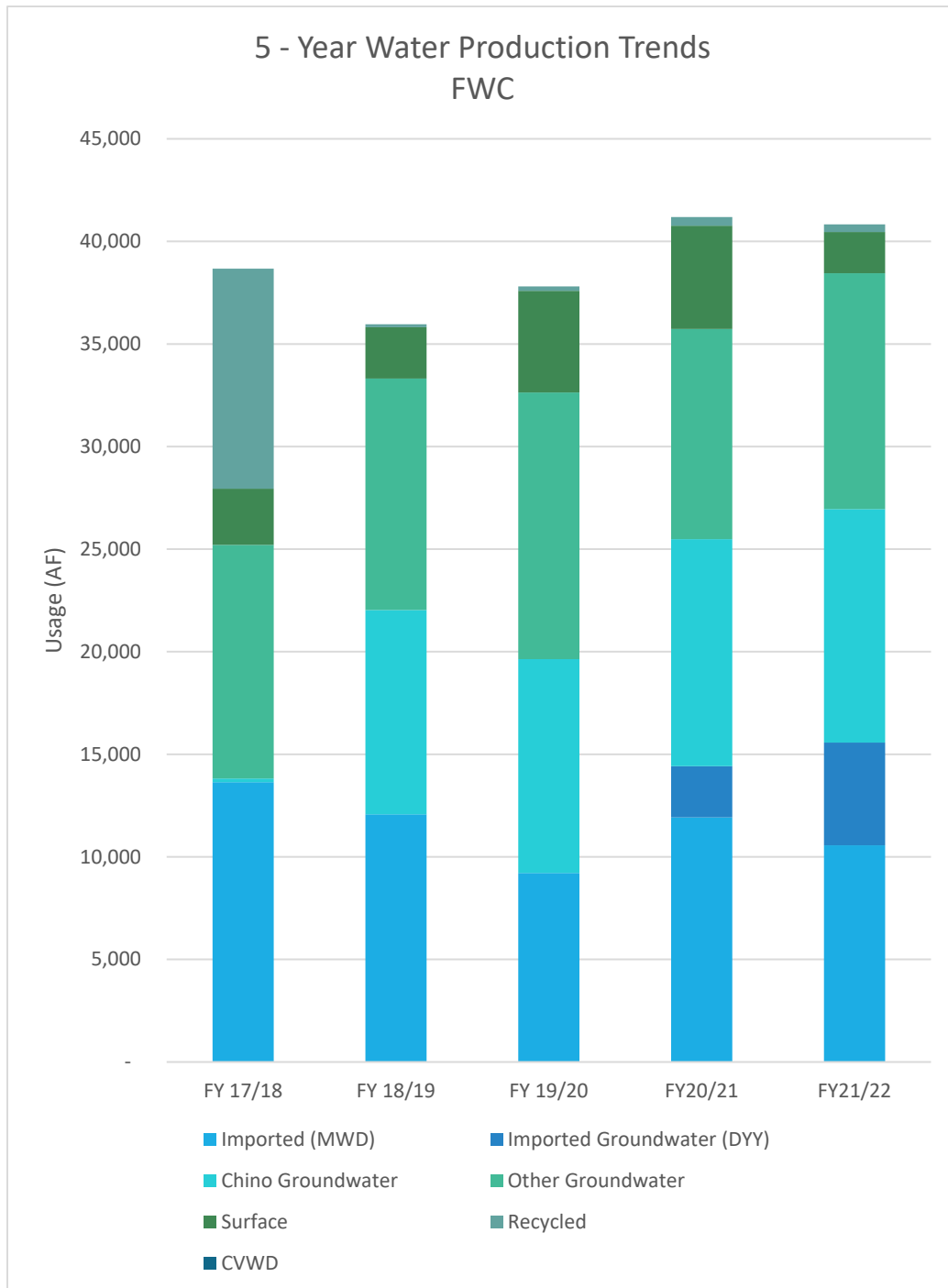




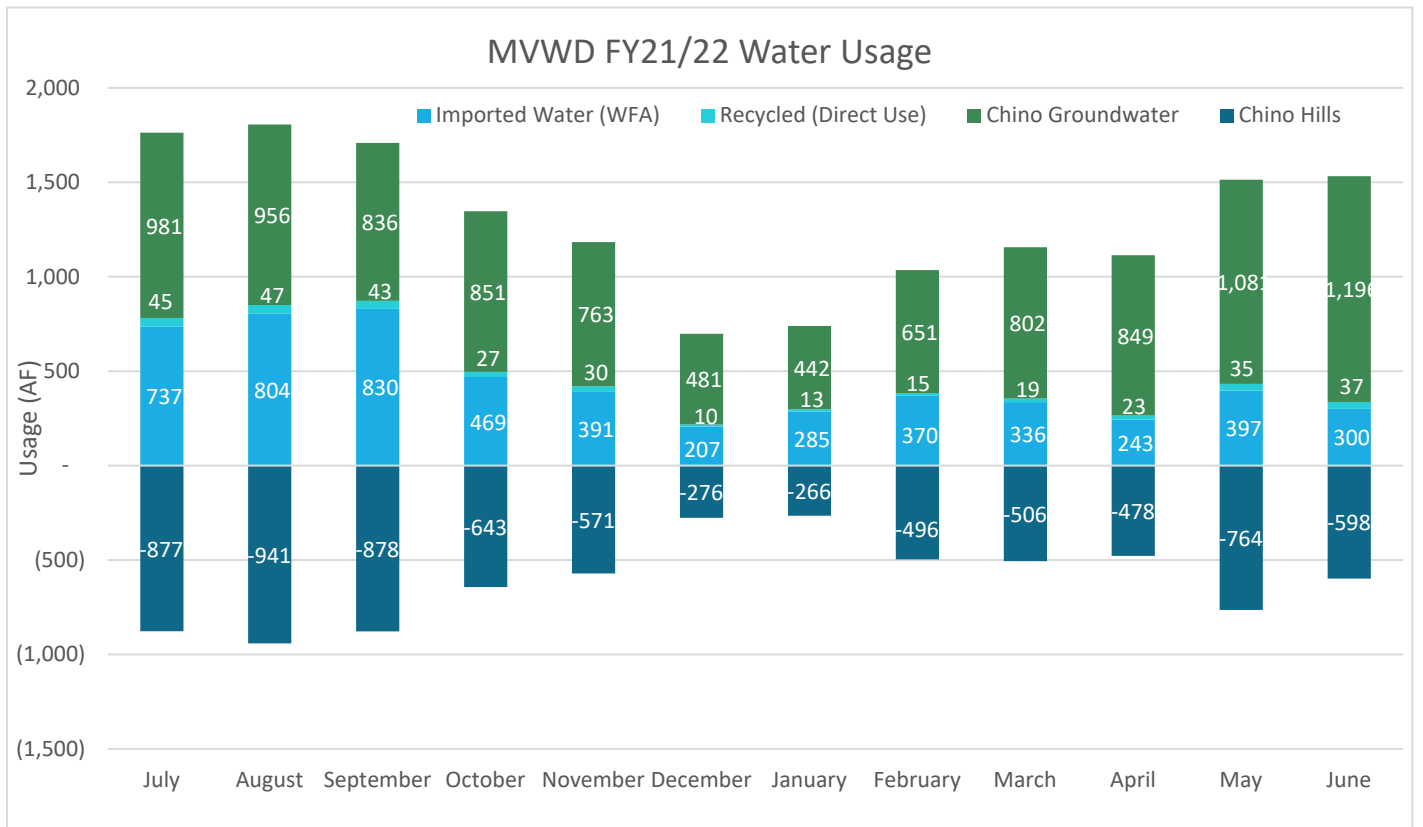


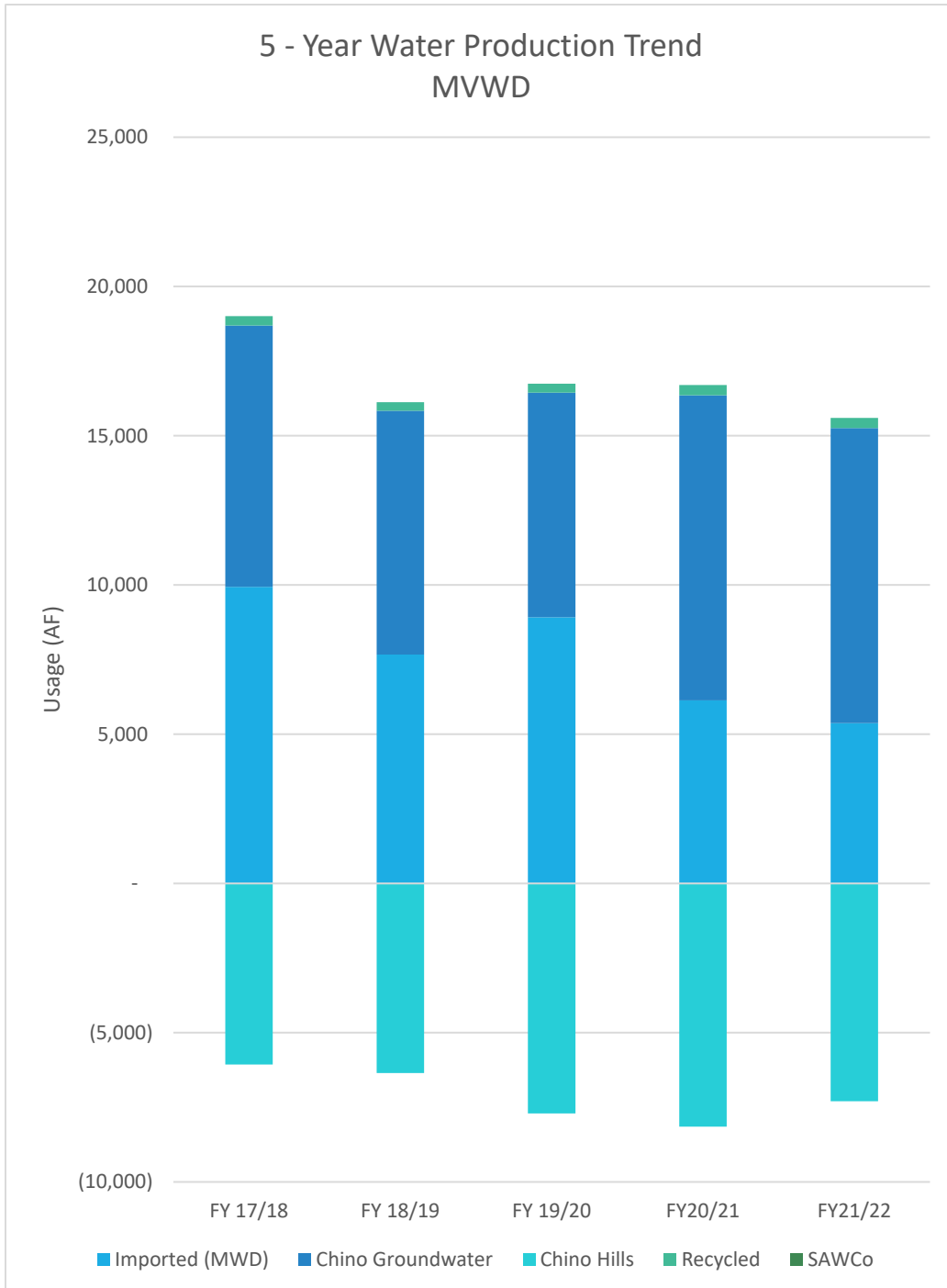


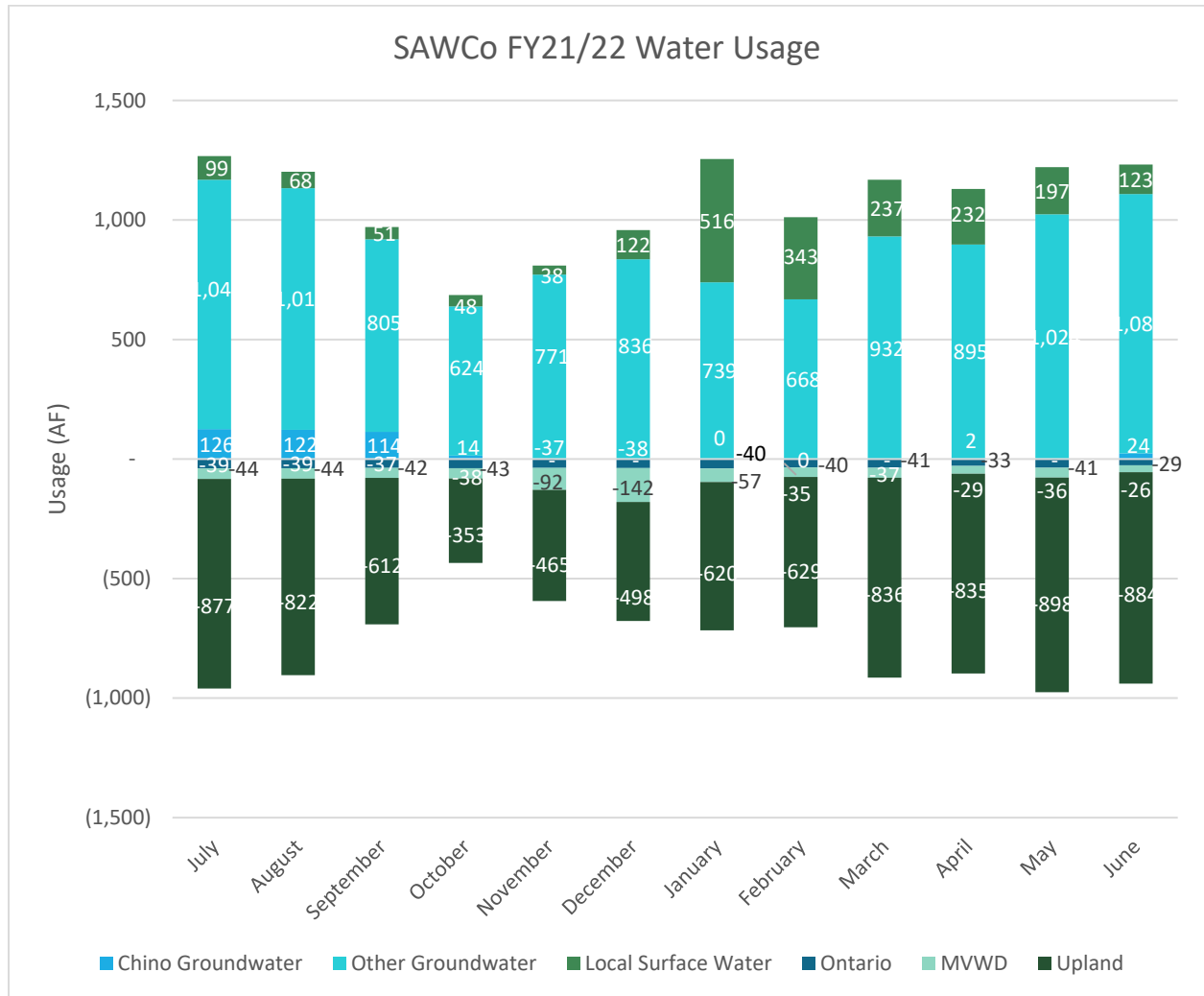


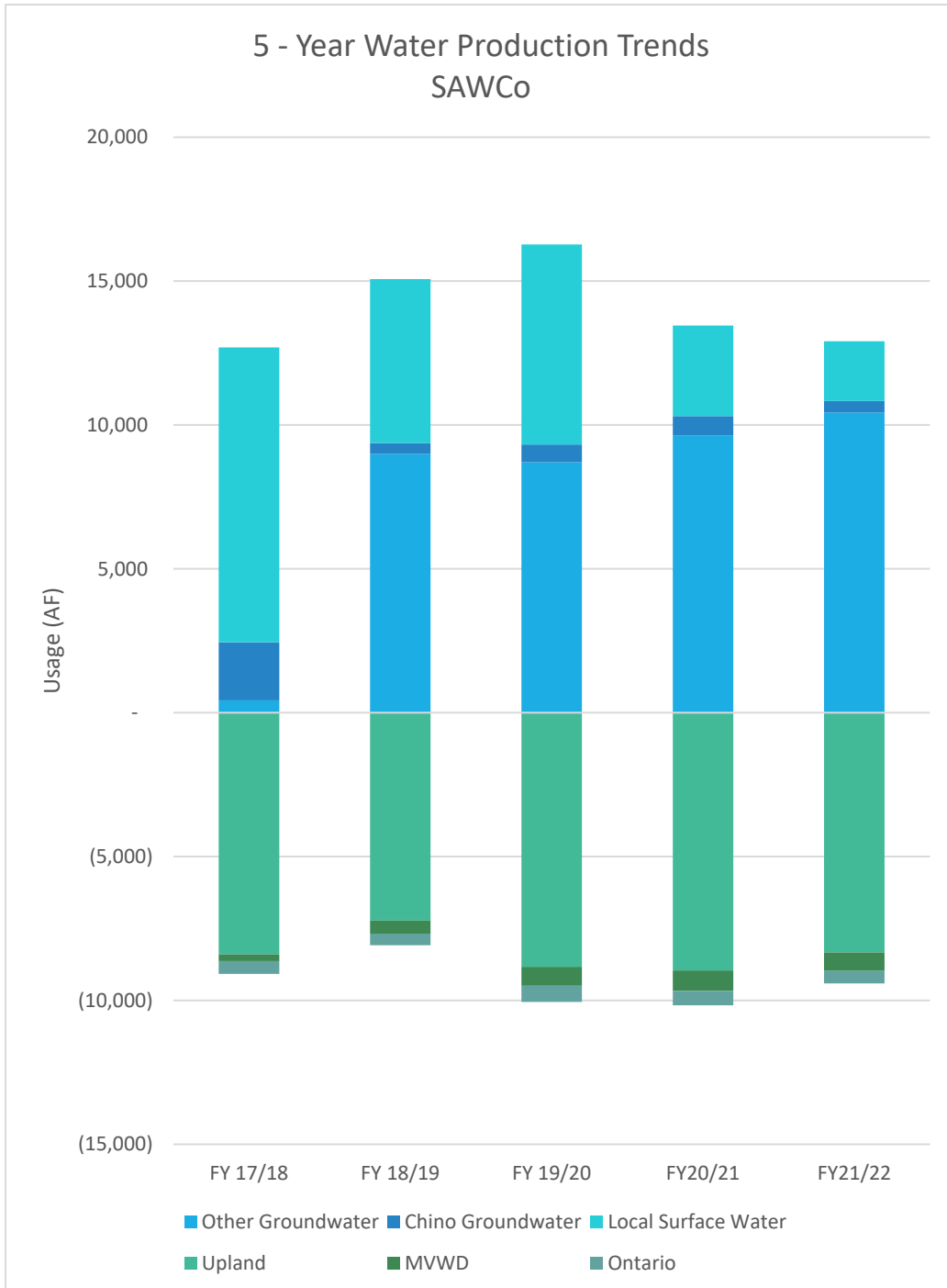












# IEUA Energy Report

FISCAL YEAR 2021/22

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Planning and Resources



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# IEUA Energy Portfolio

## Executive Summary

The 2021/22 Energy Report tracks IEUA's energy consumption and portfolio, renewable generation performance and savings, and energy efficiency projects for the fiscal year. The report includes a brief description of upcoming projects and initiatives that will be implemented over the next few years.

IEUA's energy portfolio included:

- Imported Electricity
- Solar Energy
- Wind Power
- Battery Storage
- Biogas
- Natural gas

## 2021/22 IEUA's energy use

- Total Electricity consumption: 84,470 MWh of electricity
- Renewable Energy: 7,520 MWh (10% of total electricity)
- Annual energy expenses: \$10.9 million [imported electricity, renewable energy, natural gas, and energy management services]
- Renewable energy savings since 2008: \$1,377,000.

### ***Did you know?***

*In 2019 a typical U.S. household used 11,880 kWh\**

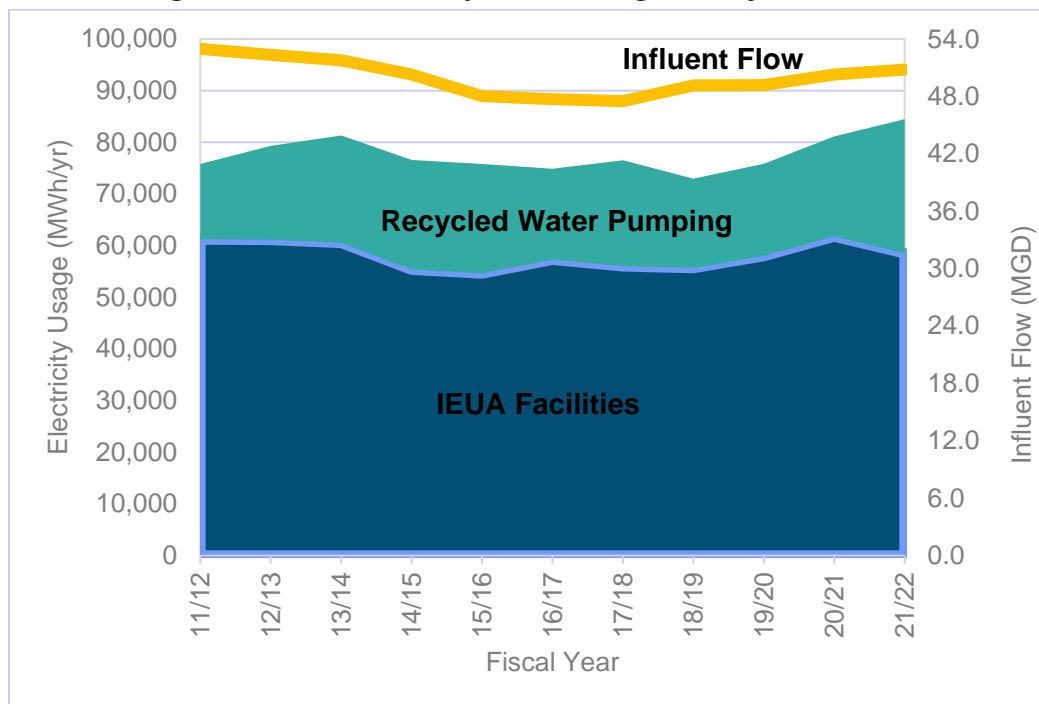
*The renewable energy generated by IEUA would be able to provide electricity to at least 633 homes.*

*Source: U.S. Energy Information Administration*

# Flow and Energy Consumption

- In 2021/22, the annual average influent flow to the regional water recycling plants was 50.8 MGD which was an increase of 1% as compared to the previous fiscal year of 50.3 MGD (Figure 1).
- In 2021/22, IEUA facilities, which include the regional water recycling plants, composting facility, and recycled water pumping, used approximately 84,470 MWh of electricity (Figure 1). The electricity consumption for 2021/22 increased by 4.1% as compared to the previous fiscal year of 81,119 MWh. This was due to the increased recycled water pumping and groundwater recharge activity.

**Figure 1: IEUA Electricity Use and Regional Influent Flows**



## Expenditure

- The cost of electricity remains the highest non-labor operations and maintenance (O&M) expenditure for IEUA. In 2021/22, the annual cost for energy related utilities and energy management was \$10.9 million compared to the previous fiscal year of \$9.7 million due to more power consumption, Southern California Edison (SCE) rates increase, and rising energy costs in California. IEUA has a diversified energy procurement approach, that includes on-site generation Power Purchase Agreements (PPA), energy demand management, electricity

purchase from Southern California Edison, and direct access contract with Shell Energy North America, that continues to provide rate stabilization and cost effectiveness.

## Renewable Energy Production and Storage

- IEUA's diverse renewable portfolio consists of 5.0 MW solar, 1.0 MW of wind, 3.0 MW of engines, and 4.0 MW battery (Figure 2). The battery storage optimizes energy management by charging from the grid during off-peak periods and discharging during on-peak periods, therefore it is not considered as onsite generation. In order to increase onsite renewable generation, IEUA plans to complete the installation of the necessary emissions control required by South Coast Air Quality Management District to have the Renewable Energy Efficiency Project (REEP) engines operating as part of the RP-5 Expansion project.

**Figure 2: IEUA's Diverse Renewable Portfolio**



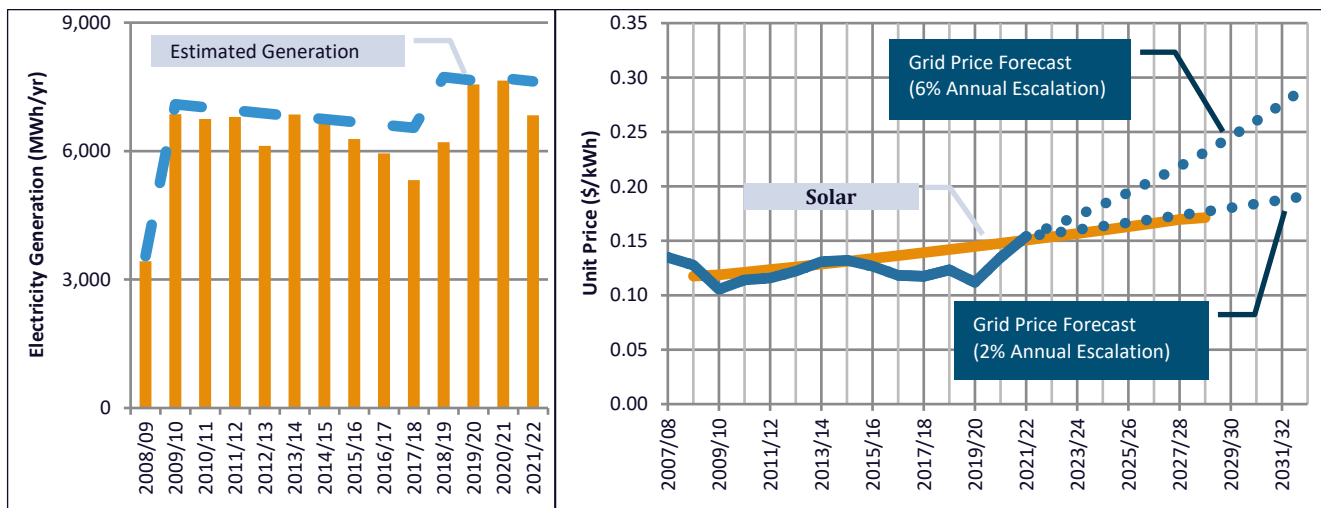
- In 2021/22, 7,520 MWh of electricity was generated onsite, 7.1% less than 2020/21. The decrease is due to performance issues with the solar systems.



- 
- IEUA's renewable portfolio generated 10% of the electricity used in 2021/22. Of the electricity consumed by IEUA;
    - 6,837 MWh was produced by the solar across IEUA facilities; and
    - 683 MWh was produced by the wind turbine at RP-4.
  - Despite PPA average rates being typically higher than the average grid price in 2021/22, renewable energy projects provided overall \$201,000 in savings, as a result of lower standby charges compared to the facility demand charge rate.
  - Generated solar electricity varies throughout the year due to the different number of sunlight hours, solar generation is usually higher in the summer and lower in the winter.
  - The REEP engine has been offline since August 2017, operation is expected to restart the engine subsequent to the completion of the RP-5 Biosolids Facility project and the installation of the emission control equipment, which is anticipated in 2025.
  - In 2015, IEUA partnered with Advanced Microgrid Solutions (AMS) through an energy management services (EMS) agreement to install 4 MW of battery storage and 1.5 MW of solar to optimize energy management and achieve cost savings through strategic procurement. The RP-1, RP-5, and CCWRF battery storage systems started commercial operation in November 2018, and the RP-4 and IERCF battery storage and solar system began commercial operation in March 2019. All facilities have completed their third year of operation. As of April 2020, the battery systems are now being operated and maintained by Enel X.

## SOLAR ENERGY

Solar across IEUA facilities generated 6,837 MWh of renewable energy, **10.6% less than 2020/21**. The decrease in output was due to solar inverters going offline and affecting system production. PPA provider is currently troubleshooting the issue.



For 2021/22, the average SunPower PPA rate for the solar was comparable to the average grid price. However, the solar projects provided approximately \$201,000 in savings, as a result of lower standby charges compared to the facility demand charge rate. The current SunPower PPA will expire in 2029. Staff will negotiate with the provider to extend the contract or purchase the solar, if cost-effective for the Agency.

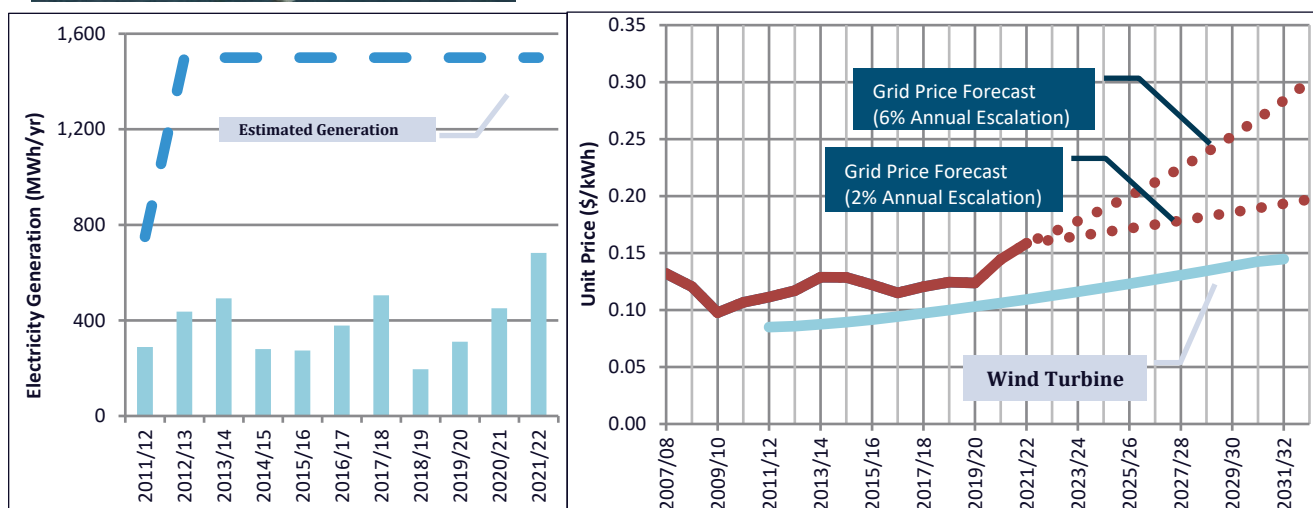
**Solar generated an overall savings of \$533,000 from 2008/09 to 2021/22**

Table 1: Savings from Solar Power PPA

<b>Savings</b> FY 08/09 – FY 20/21	\$533,000
<b>Range of Savings PPA Term</b> (FY 08/09 – FY 28/29)	\$2,018,000 (2% Esc) \$3,269,000 (6% Esc)



Wind turbine at RP-4 generated 683 MWh of renewable energy, **51% higher than 2020/21** due to favorable wind conditions. For 2021/22, the PPA rate for the wind turbine was 20% lower than the average grid price. The wind turbine provided approximately \$34,000 in savings.



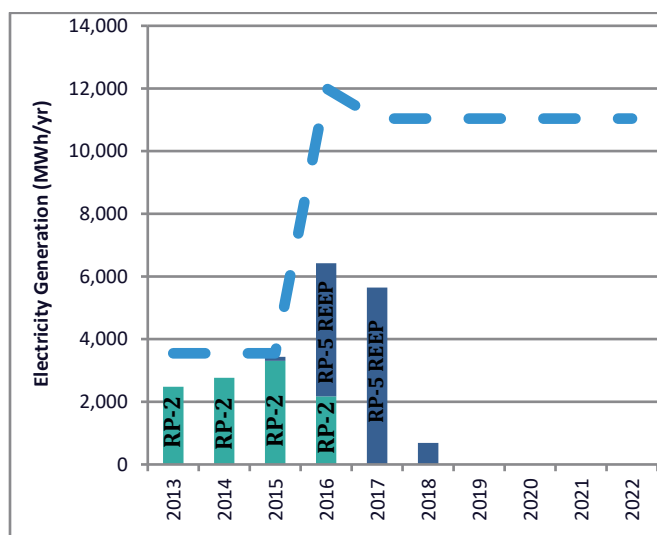
**Wind generated \$101,000 in savings from 2011/12 to 2021/22.**

*Table 2: Savings from Wind Power*

<b>Savings</b> FY 11/12 – FY 20/21	\$135,000
<b>Range of Savings PPA Term</b> (FY 11/12 – FY 31/32)	\$308,000 (2% Esc) \$467,000 (6% Esc)



Renewable energy was not generated by the REEP engines since the RP-5 Solids Handling Facility was not operational the entire fiscal year. The REEP engines at RP-5 were put offline in August 2017. **The engines are expected to go back online in 2025 after the completion of the RP-5 Biosolids Facility project**, and the installation of the SCAQMD required emission controls.





#### Battery Storage + Solar Performance

The AMS battery storage at RP-1, RP-5 and CCWRF (2.5 MW combined) started commercial operation in November 2018, and the 1.5 MW battery storage at RP-4 and 1.5 MW of solar at IERCF started commercial operation on March 2019. In the third year of commercial operation, **RP-1, RP-5, and CCWRF experienced an estimated combined average demand**

**reduction of 1,200 kW** during on-peak hours with a total bill savings of \$117,000. While the system at **IERCF and RP-4 achieved approximately an average demand reduction of 450 kW during on-peak hours and solar generation of 2,394 MWh** with a total bill savings of \$301,000 in the third term year. Since the minimum guaranteed savings per the contracts were not met, the battery system owners reconciled the remainder of the expected savings to the Agency.



**The battery storage systems incurred a \$418,000 in savings during year 3 of operation.**



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# Energy Efficiency Projects

- IEUA continues to work with Southern California Edison and Southern California Regional Energy Network (SoCalREN) to conduct comprehensive energy audits and to implement projects to reduce electricity consumption and demand throughout its facilities and operations.
- Since the start of the partnership in 2015, the Agency's implementation of energy efficiency projects has accumulated:
  - Expected annual savings: 5,236,000 kWh and \$615,000
  - Incentive: \$491,000
  - Avoided power usage: 474 kW

## Aeration Blower Replacement

- These projects will replace the existing aeration blowers with energy efficient blowers at RP-4 and CCWRF, which are expected to be completed in October 2022 and January 2024, respectively. In total, both projects are expected to save the Agency an estimated 2,198 MWh/year or \$275,000/year.

## CCWRF Odor Control Equipment Replacement

- The CCWRF Improvements project will replace the existing odor control system with biotrickling filters by January 2024. In addition to continuing to address plant odor, the measure will also provide energy savings of about 247 MWh/year or \$31,000/year.

## Process Optimization

- Automated ammonia controls will be installed at RP-4 and CCWRF by October 2022 and January 2024, respectively. The ammonia controls will optimize operation and reduce power consumption of the aeration blowers. These projects would result in an estimated savings of 683 MWh/year or \$85,000/year.

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# Other Projects

## **Southern California Gas Company (SoCalGas) Interconnection Study**

- SoCalGas conducted a renewable natural gas (RNG) interconnection screening study at no cost to the Agency. This preliminary analysis determined the nearest pipeline location with the capacity to accept RNG from RP-1. The SoCalGas Interconnection Study will be utilized in IEUA's RP-1 Beneficial Use of Biogas Feasibility Study update.

## **RP-5 Solids Handling Facility (SHF) Request for Information**

- In FY 20/21, IEUA conducted a business case study to evaluate future uses of the RP-5 SHF, developing the following project alternatives:
  - Status quo – Idle assets and land
  - Lease for organics processing
  - Sell for organics processing
  - Lease as logistics hub
  - Sell as logistics hub
- The study concluded that the preferred alternative at this time is the Status Quo because of the benefits of using the facility as a construction staging site and contractor parking area for the RP-5 Expansion Project, and the costs associated with moving the RP-5 expansion contractor elsewhere.
- IEUA will be issuing a Request for Information (RFI) to gauge market interest in RP-5 SHF from any Private or Public Venture. The responses received will better define the Request for Proposal for a future project.

# Upcoming Projects

## **Energy Service Provider (ESP) RFP**

- IEUA currently participates in a program known as Direct Access (DA) that allows the purchase of electricity from an ESP instead of the local utility, SCE. Purchases of electricity through DA has consistently reduced overall IEUA costs and are an integral part of the IEUA Energy Management Plan. The Agency currently purchases electricity for the power needed at the Regional Water Recycling Plant No.1 (RP-1), Regional Water Recycling Plant No.2 (RP-2), and

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Carbon Canyon Water Recycling Facility (CCWRF) from Shell Energy North America (US), L.P. under a Master Energy Sales Agreement (MESA), which is set to expire on June 30, 2023. Staff will continue to monitor the energy market, forecast future rates, and compare DA and bundled rates at IEUA's facilities.

## SCE Charge Ready 2 Program Update

- Through the Charge Ready 2 program, SCE will design, construct, and install electric vehicle (EV) charging infrastructure. The customer is only required to purchase and install the EV chargers. IEUA submitted applications for charging infrastructure for 4 facilities in 2021. RP-1 is approved for 35 ports, and an agreement between SCE and IEUA has been executed. Applications for CCWRF and Headquarters were considered but did not meet program eligibility requirements. RP-4 project feasibility is still under review.

## Beneficial Use of Biogas

- IEUA evaluated opportunities to beneficially use the biogas generated at RP-1 in addition to onsite use for digesters heating. Staff is currently updating the study to consider new technologies, and incorporate recent changes in funding, capital and energy costs.

# Other Energy Related Activities

## Isle Energy Management & Optimization Partnership

- IEUA continues to partner with Isle Utilities along with several agencies nationwide to discuss the challenges and successes of implementing energy optimization projects. Isle will invite vendors who will propose successful technologies and practices to reduce and optimize energy usage and onsite renewable generation.

## SCE Rate Increases

- During the FY 2021/22, SCE increased their rates by an estimated 10% based on facility billing as compared to the previous fiscal year of 20%. SCE is expected to increase rates about 3% from June 2022 to the end of 2022 and is forecasting a slowdown in rate increases. Staff is working with SCE to validate the billing accuracy and will continue to collaborate with the utility to enroll in the most cost-effective available rate.

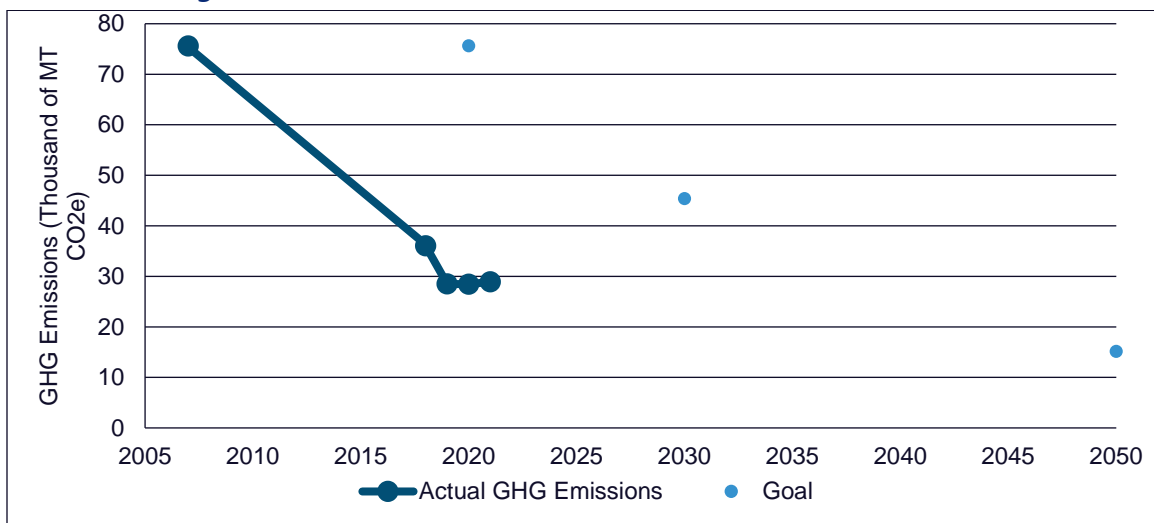
## Enrolling in SCE's Green Rate

- SCE Green Rate Program gives the opportunity to purchase electricity from 100% renewable resources for commercial accounts with average usage of 782 kWh/month or lower. In January 2022 staff enrolled all 33 eligible accounts to the Green Rate to reduce the Agency's GHG emissions and minimize carbon footprint at no additional cost.

## Climate Change Action Plan

- In 2018, IEUA staff developed a Climate Change Action Plan that described the vision and direction needed to bolster IEUA's water management system and minimize its carbon footprint. IEUA is following AB 32 standards using the oldest emission baseline data available to reduce GHG levels to 2007 levels by 2020, 40 percent below 2007 levels by 2030, and 80 percent below 2007 levels by 2050. 2021 greenhouse gas emissions (GHG) slightly increased 1.7% from 2020, which is 62% below the 2007 baseline levels.

**Figure 3: Greenhouse Gas Emissions Actuals and Goals**



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- IEUA is planning to implement capital projects and will continue to optimize operations and maintenance activities to allow the Agency to continue to prepare its system for the effects of climate change by focusing on increasing the use of zero-carbon energy sources and reducing energy consumption. The majority of the projects being explored fall into four categories, solar, hydropower, biogas (renewable methane), and energy efficiency. The current list of projects being explored by IEUA, are in varying degrees of planning and review with some being feasible for pre-design as soon as 2023 while others are 10 or more years out.
  - Potential projects
    - Solar:
      - evaluating feasibility for remote solar and battery storage system through a public private partnership to generate bill credits through the Renewable Energy Self-Generation Bill Credit Transfer (RES BCT) program
      - favorable outlook for the carport solar because of the forecasted SCE rate increase and higher facility load.
    - Hydropower: a feasibility study conducted in FY 19/20 at two proposed locations deemed the project to be not feasible. Staff will re-evaluate in the future.
    - Biogas: staff is currently updating the RP-1 Beneficial Use of Biogas Feasibility Study to evaluate cost effective alternative consistent with the Agency's Business Goals.
    - Energy efficiency: multiple ongoing expected to be completed by 2023, RP-4 blowers and ammonia controls expected to be online in September 2022.