AGENDA
BOARD OF DIRECTORS WORKSHOP/MEETING OF THE INLAND EMPIRE UTILITIES AGENCY*

WEDNESDAY, NOVEMBER 4, 2026
10:00 AM

AGENCY HEADQUARTERS
BOARD ROOM
6075 KIMBALL AVENUE, BUILDING A
CHINO, CALIFORNIA 91708

***A MUNICIPAL WATER DISTRICT**

VIEW THE MEETING LIVE ONLINE AT IEUA.ORG

TELEPHONE ACCESS: (415) 856-9169 / Conf Code: 202 761 127#

The public may participate and provide public comment during the meeting by joining in-person or by calling the number provided above. Comments may also be submitted by email to the Director of Board and Administrative Services Denise Garzaro at recordingsecretary@ieua.org prior to the completion of the Public Comment section of the meeting. Comments will be distributed to the Board of Directors.

CALL TO ORDER

ROLL CALL

FLAG SALUTE

PUBLIC COMMENTS

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

ADDITIONS TO THE AGENDA

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

1. WORKSHOP ITEMS

A. **SEPTIC TO SEWER FEASIBILITY STUDY 2025 UPDATE**

B. **CHINO BASIN PROGRAM UPDATE**

2. ACTION ITEMS

A. **APPROVE ADDENDUM NO. 2 TO RECIRCULATED FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT FOR CHINO BASIN PROGRAM**

Staff recommends that the Board:

1. Approve Addendum No. 2 to the Recirculated Final Program Environmental Impact Report for the Chino Basin Program; and
2. Authorize the filing of the Notice of Determination with the County Clerk and the State Clearinghouse, Office of Land Use and Climate Innovation.

B. **APPROVE MASTER SERVICES CONTRACT AMENDMENT FOR CONSULTING PROGRAM MANAGEMENT AND OWNER ENGINEERING SERVICES**

Staff recommends that the Board:

1. Approve a master services contract amendment with Jacobs Engineering Group, Inc. for the consulting program management and owner engineering services for the Early Engineering for Recycled Water Facilities Project, No. EN25022, Early Engineering for Advanced Water Purification Facilities Project, No. EN25070, Purified Water Conveyance Project, No. EN28004, Advanced Water Purification Facility Project, No. EN28007, Replenishing Facilities Project, No. WR23001, and Recycled Water Interconnection to the City of Rialto Project, No. WR23002, for a not-to-exceed amount of $10,987,137, increasing the contract amount from $15,565,731 to $26,552,868; and
2. Authorize the General Manager to execute the contract amendment, subject to non-substantive changes.

3. GENERAL MANAGER'S COMMENTS

4. BOARD OF DIRECTORS' REQUESTED FUTURE AGENDA ITEMS

5. BOARD OF DIRECTORS' COMMENTS

6. CLOSED SESSION

A. **PURSUANT TO GOVERNMENT CODE SECTION 54956.9(D)(2) - CONFERENCE WITH LEGAL COUNSEL - ANTICIPATED LITIGATION**
Two Cases

B. **PURSUANT TO GOVERNMENT CODE SECTIONS 54957 AND 54957.6 - PUBLIC EMPLOYEE PERFORMANCE EVALUATION**
Director of Board and Administrative Services

ADJOURN

Declaration of Posting

I, Denise Garzaro, CMC, Director of Board and Administrative Services 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 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 the Recording Secretary at (909) 993-1736 or recordingsecretary@ieua.org, 48 hours prior to the scheduled meeting so that IEUA can make reasonable arrangements to ensure accessibility.

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

1A

Date: November 4, 2026

To: The Honorable Board of Directors **From:** Kevin Alexander, General Manager

Committee:

Staff Contact: Elaine Jeng, Deputy General Manager

Subject: Septic to Sewer Feasibility Study 2025 Update

Executive Summary:

In 2025, IEUA awarded Woodard & Curran a contract to update the 2018 Septic to Sewer Feasibility Study. In coordination with the Sewage Collection Agencies (SCAs), the update incorporates revised septic parcel data, conversion cost estimates, and guiding criteria to support project prioritization and funding efforts.

The updated study identified 18,581 septic parcels, approximately 15 percent fewer than the 2018 comparison due to improved data quality and septic-to-sewer conversions. Estimated regional conversion costs total $1.202 billion in 2025 dollars, approximately 1 percent above the prior estimate.

The final report incorporating comments from the SCAs was completed in June 2026 and will be uploaded to IEUA's website. The study provides the SCAs with a resource for their capital improvement planning and funding applications. IEUA's role in the project is complete. IEUA will provide support to the SCAs identifying potential grant opportunities should there be interest.

Budget Impact *Budgeted (Y/N):* Y *Amendment (Y/N):* N *Amount for Requested Approval*

Regional Sewerage *Technical Committee (Y/N):* Y *Technical Meeting Date:* 10/29/2026

Policy Committee (Y/N):

Aligns with Strategic Goal:

Goal 2. Public and Environmental Health: Operate in a safe and responsible manner to support the health and environmental sustainability of our communities.

Environmental Determination:

Not Applicable

Attachments:

Attachment 1 - Powerpoint

Item No: 1622

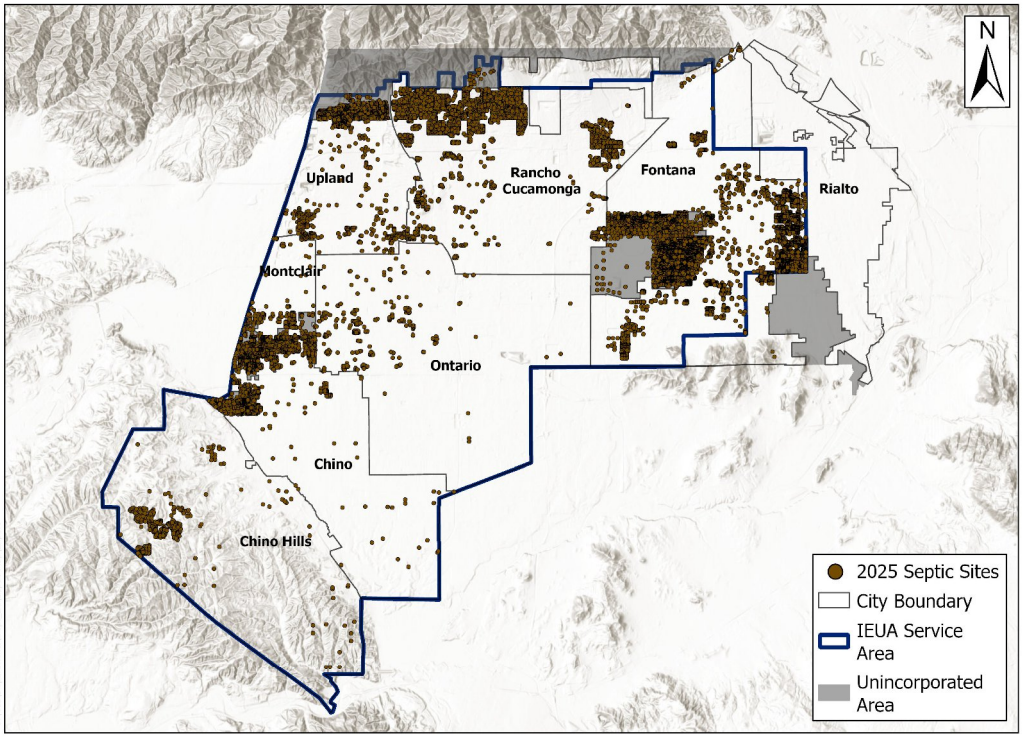
Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

Septic to Sewer Feasibility Study 2025 Update

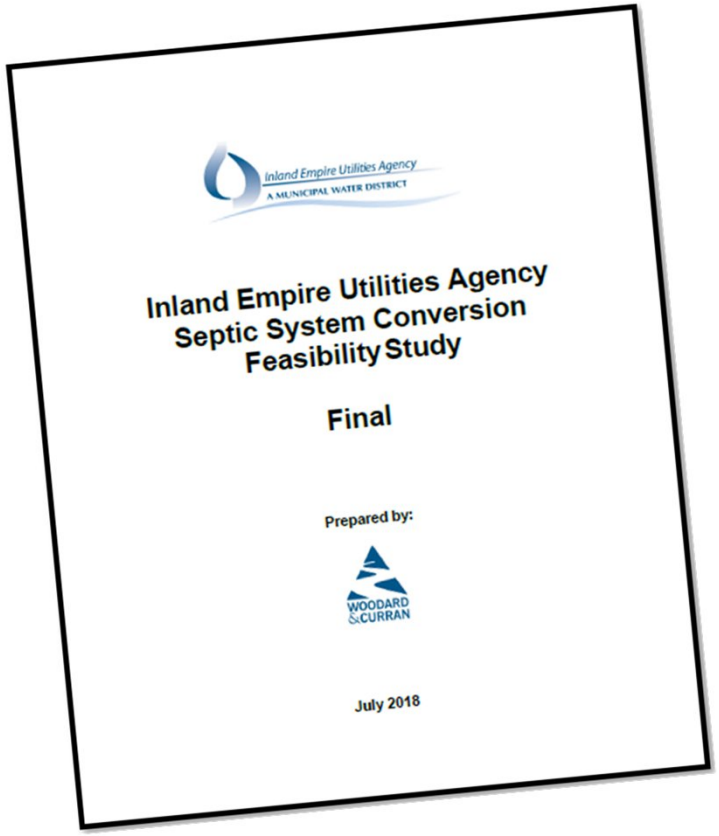
Ruben Valdez
Principal Resources Specialist

November 2026

2025 Study Septic Sewer Locations



2 Previous Study Completed in 2018



2018 Septic to Sewer Feasibility Study

- Identified potential septic properties
- Developed criteria and prioritized properties
- Estimated costs
- Reviewed funding opportunities

3 2025 Update Builds on the 2018 Efforts

Request

- Requested updated septic data and Sewer Master Plans from Sewage Collection Agencies (SCA)

Compare

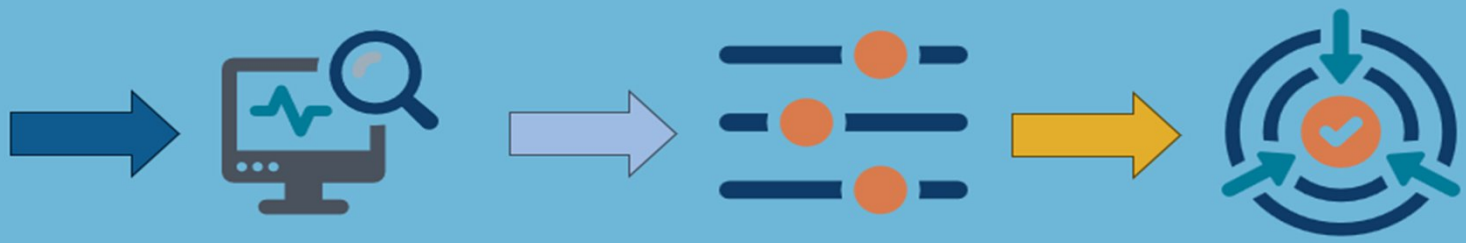
- Compared 2025 and 2018 study data
- Resolved discrepancies and duplicates
- Flagged locations for review
- Compared 2025 and 2018 conversion costs

Review

- Verified conversions using active laterals
- Reviewed Sewer Master plans
- Incorporated SCA location feedback

Finalize

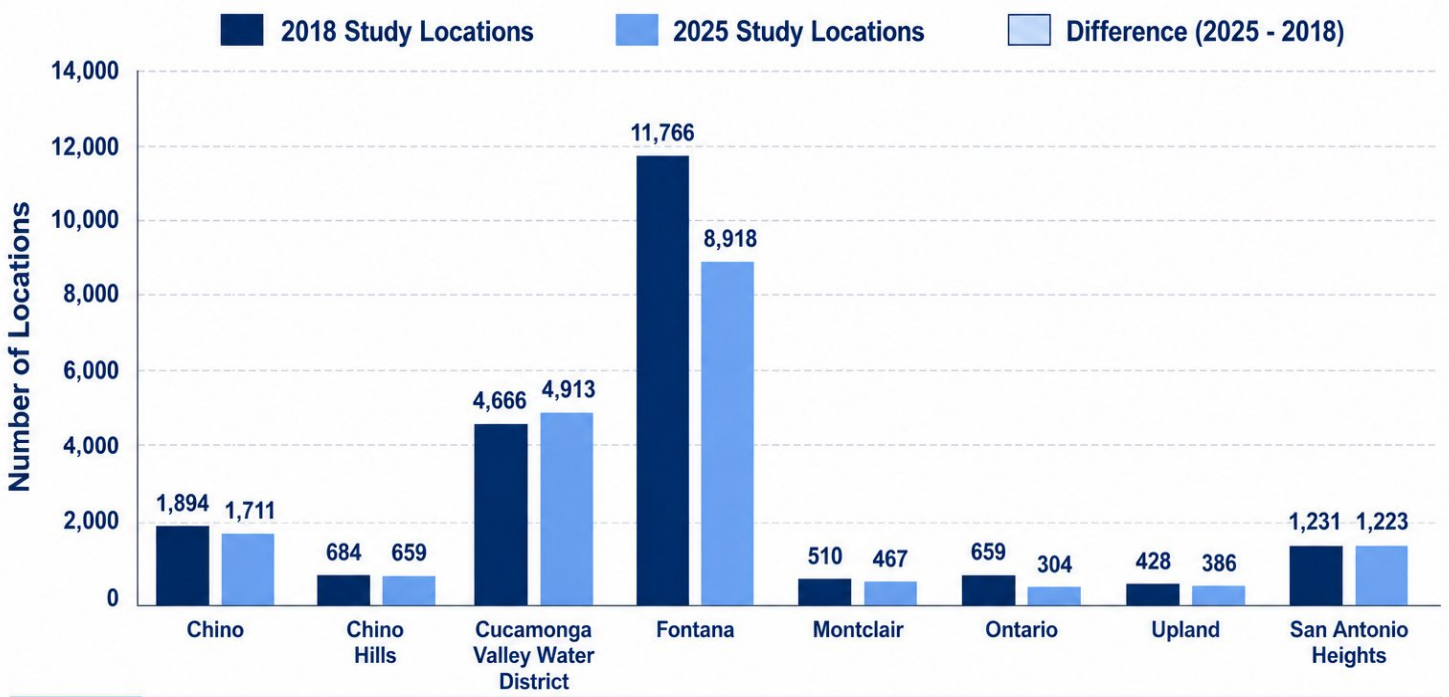
- Met with SCAs and addressed comments
- Updated data and septic location maps



4 Regional Reduction in Septic Parcels Since 2018

The approximately 15% decrease was due to:

- Improved data quality
- Septic conversions



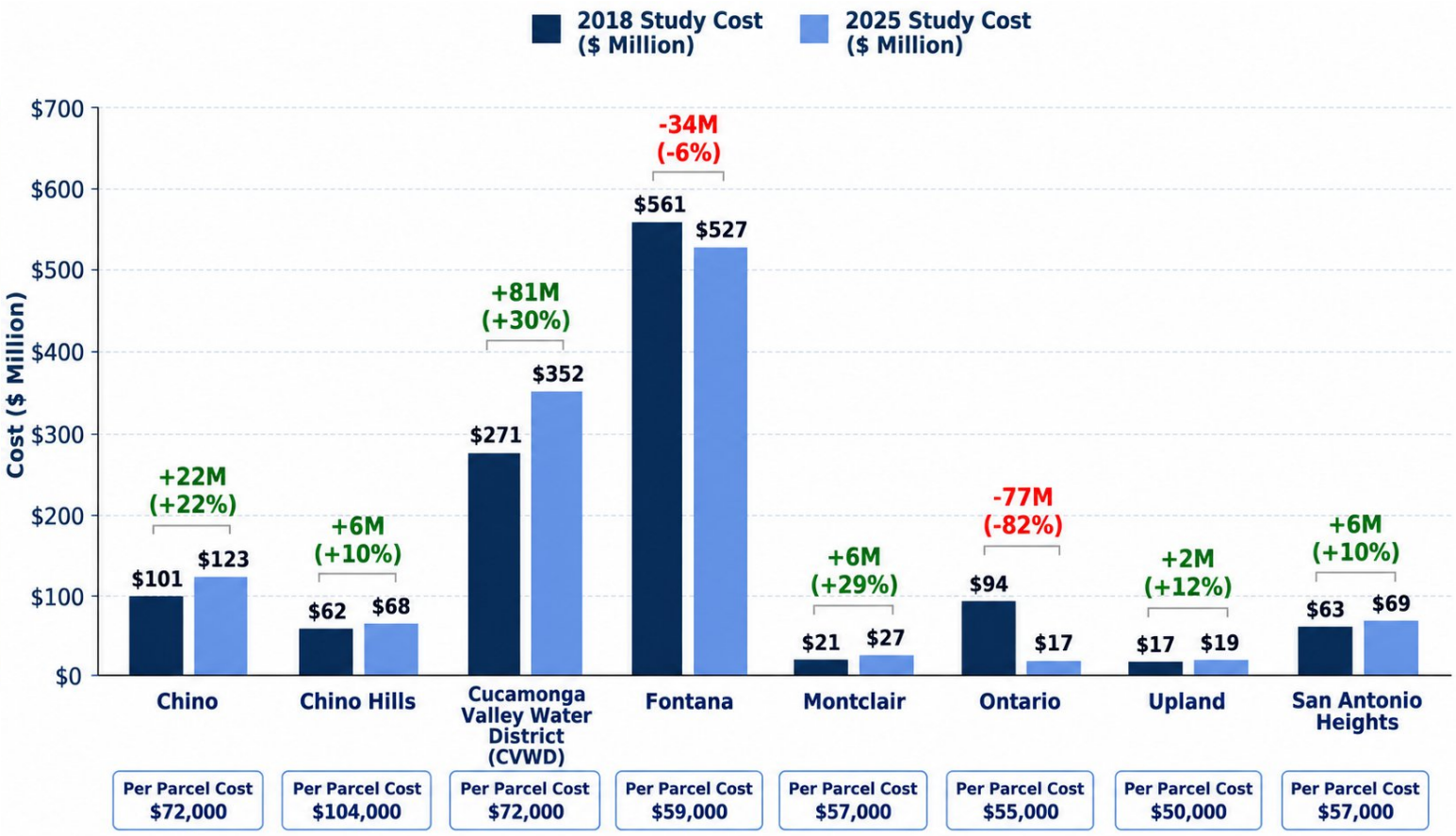
	Chino	Chino Hills	Cucamonga Valley Water District	Fontana	Montclair	Ontario	Upland	San Antonio Heights
Difference (2025 - 2018)	-183	-25	247	-2,848	-43	-355	-42	-8

TOTAL	21,838 2018 Study Locations	18,581 2025 Study Locations	-3,257 Difference (2025 - 2018)

5 Capital Cost Conversion Estimates

KEY TAKEAWAYS

- Overall program cost increased by only 1%
- 2025 Total: $1.202B (+$12M)
- Largest increases: CVWD (+$81M), Chino (+$22M)
- Largest decreases: Ontario (−$77M), Fontana (−$34M)

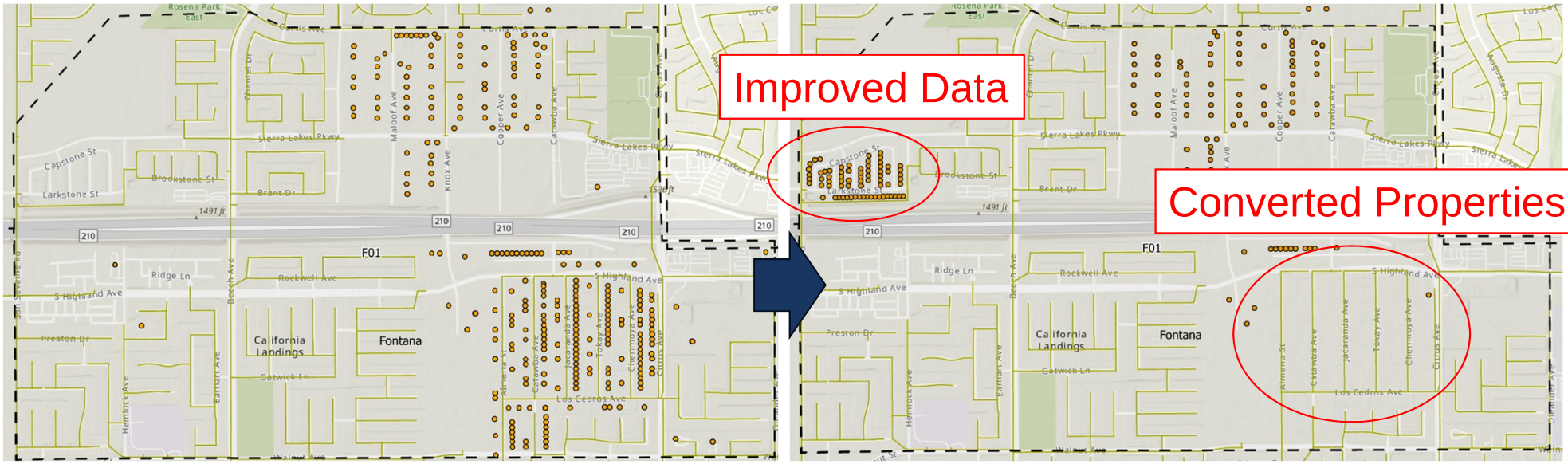


- Costs include sewer system improvements, connection fees, allowances, and IEUA sewer impact fees
- Values are shown in 2025 dollars

6 Fontana Represents a Good Example of Reduction in Parcels

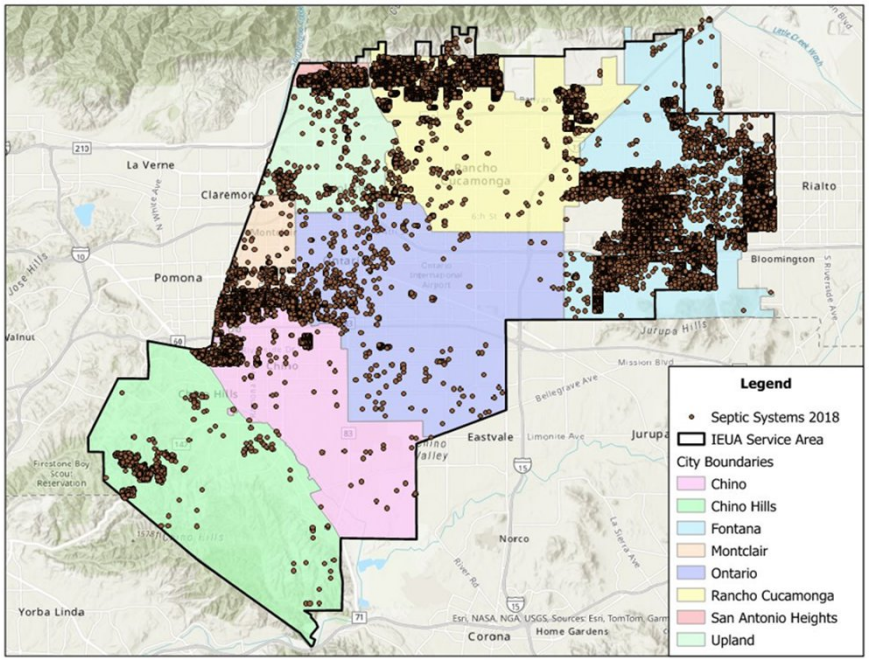
2018

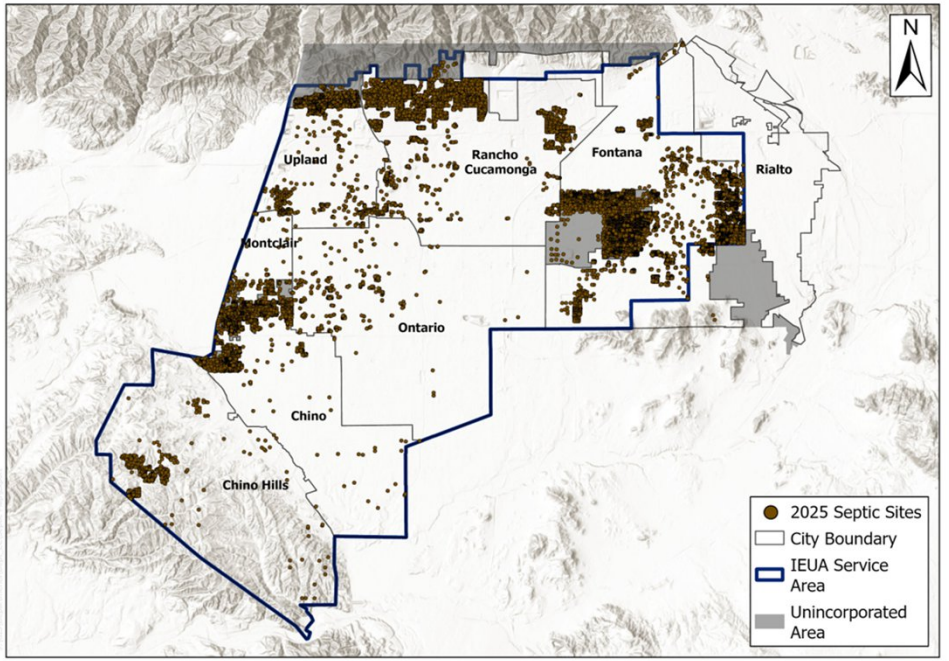
2025



156 Properties on Septic Converted

7 Side by Side Comparison of Parcels with Septic Systems





2018 → **2025**

8 Sewage Collection Agency Feedback and Comments

- Planning Assumptions: Clarify modeling, flow projections, and cost methods
- Project Optimization: Minimize lift stations, maximize gravity sewer systems, and coordinate with planned infrastructure improvements
- Funding and Implementation: Identify funding, financing strategies, and define IEUA's role in future implementation
- Prioritization: Develop a flexible framework based on each Sewer Collection Agency needs
- Report Clarifications: Clarify groundwater protection, coordination, contingencies, and connection fees

9 Guiding Criteria to Assist the SCAs in Prioritization of Converting Septic Systems



10 Available Funding for Septic to Sewer Projects

Clean Water State Revolving Fund (CWSRF) is the primary funding source for planning and construction, including Small Community Wastewater grant/principal forgiveness for eligible disadvantaged communities

Other Funding Sources:

Water Infrastructure Finance and Innovation Act (WIFIA) supports large regional projects with long-term, low-cost financing

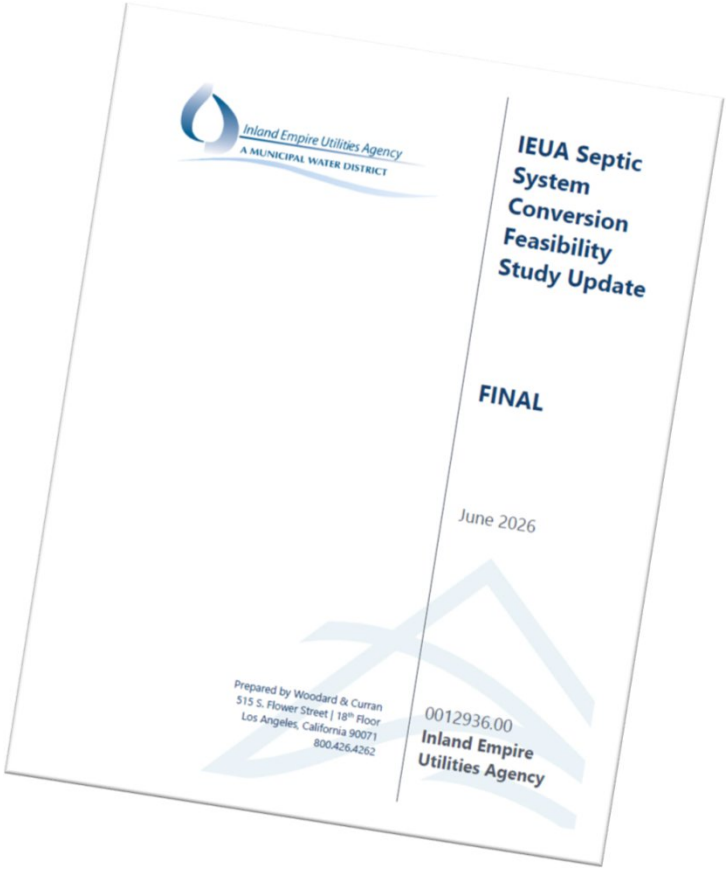
California I-Bank Infrastructure State Revolving Fund (ISRF) offers flexible financing to fill funding gaps and maintain project schedules

Fontana applied for $30M through the CWSRF principal loan forgiveness program in October 2026

The updated study was attached to support their funding application

11 Project Updates and Next Steps

- Presented preliminary report to the Regional Water Quality Control Board at the Chino Basin Day Workshop
- Final report available for SCAs for:
  - Decision making
  - Capital improvement planning
  - Grant applications
- SCAs to identify potential conversion projects and refine:
  - Project needs
  - Hydraulic analysis
  - Cost estimates
- IEUA to track and share new funding opportunities



Questions?



@IEUAwater

ieua.org

CBP

CHINO BASIN PROGRAM

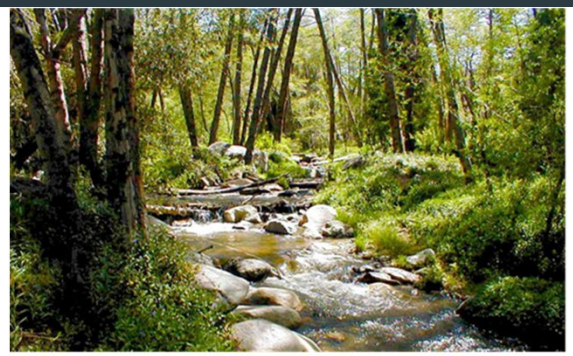


Chino Basin Program Update

Elizabeth Hurst, Chino Basin Program Manager

November 2026

Chino Basin Program Update Overview

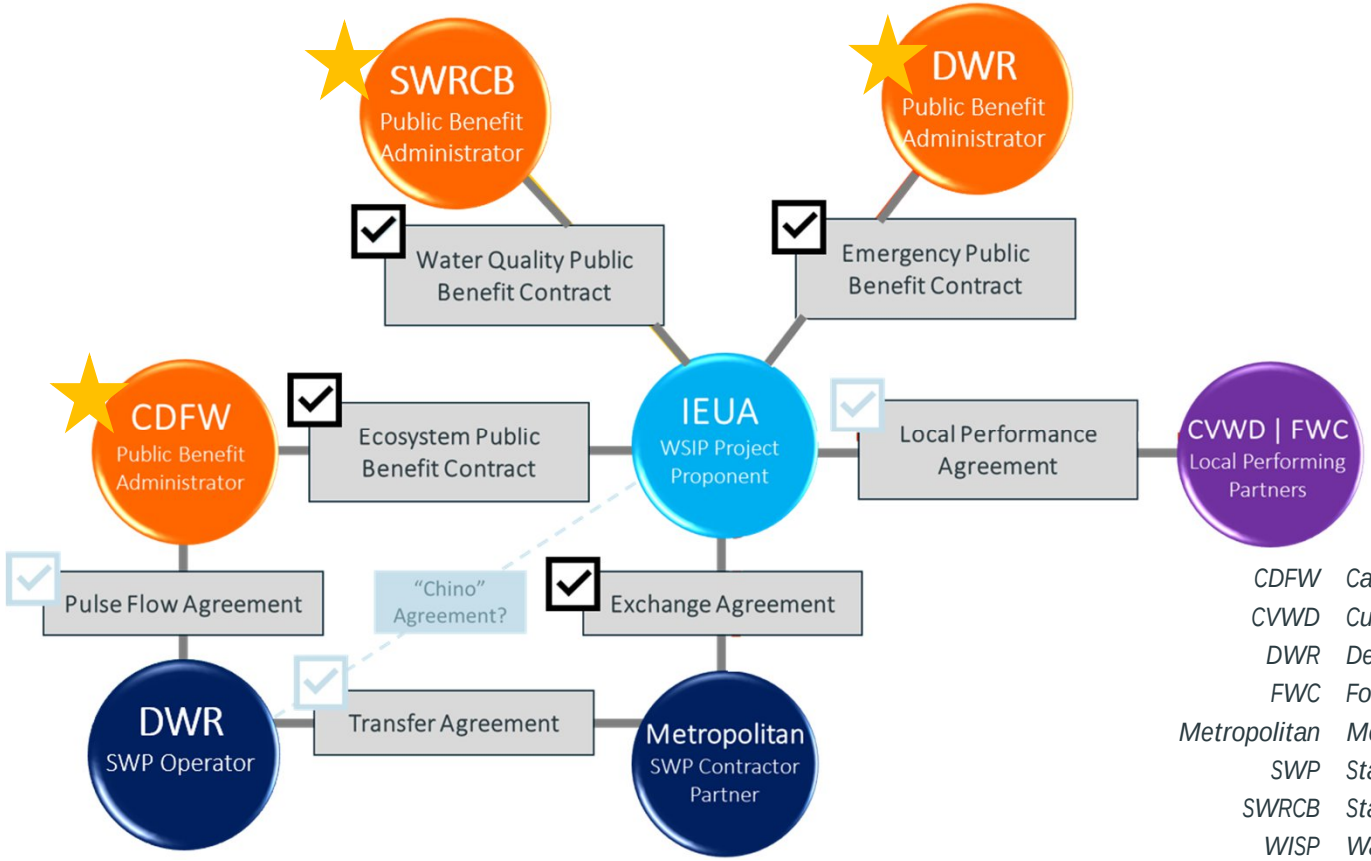






- Milestones and Events
- Grants, Funding, Rates Coordination
- Environmental Permitting Status
- Project Implementation and Engineering Update

Presentation of Public Benefit Contracts by State Agencies

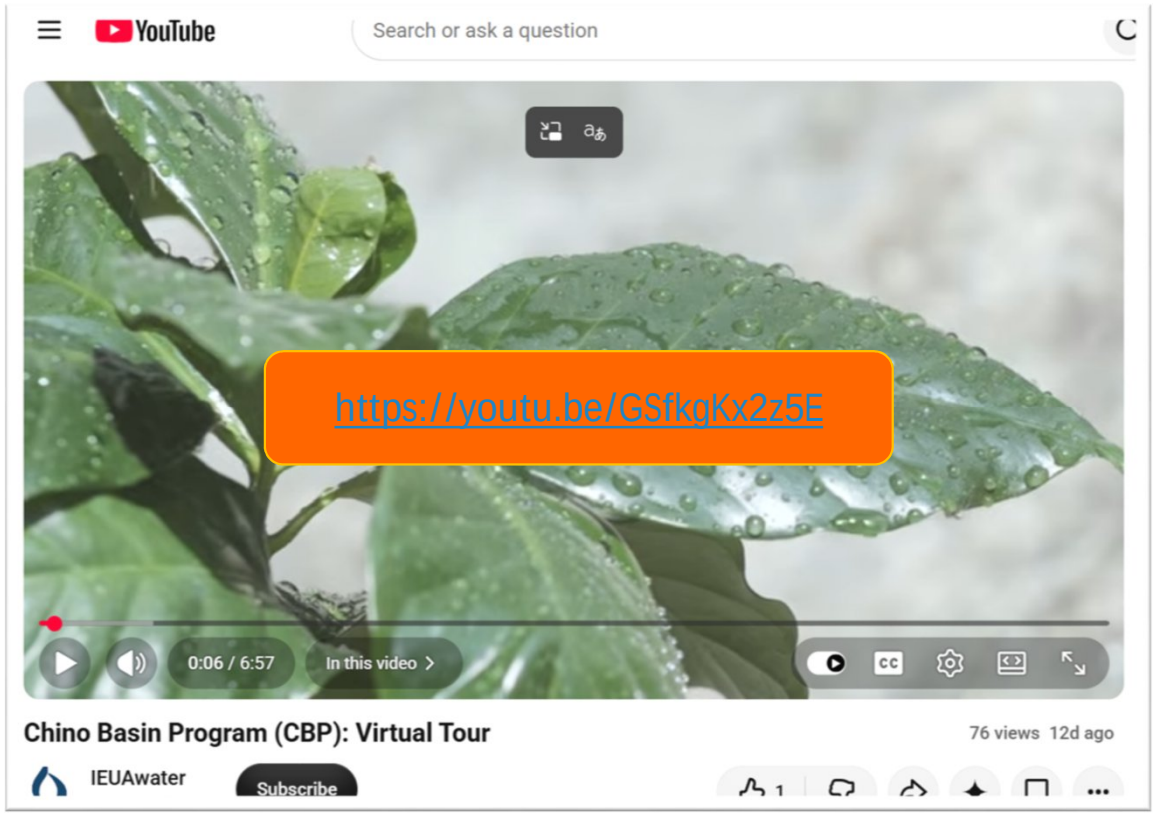




CDFW	*California Department of Fish and Wildlife*
CVWD	*Cucamonga Valley Water District*
DWR	*Department of Water Resources*
FWC	*Fontana Water Company*
Metropolitan	*Metropolitan Water District of Southern California*
SWP	*State Water Project*
SWRCB	*State Water Resources Control Board*
WISP	*Water Storage Investment Program*

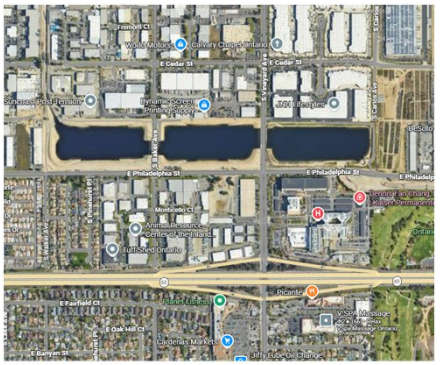
3

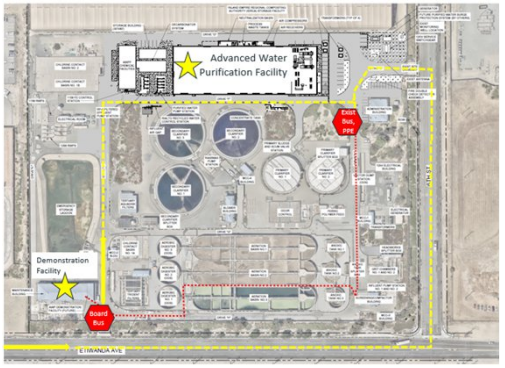
Chino Basin Program Virtual Tour

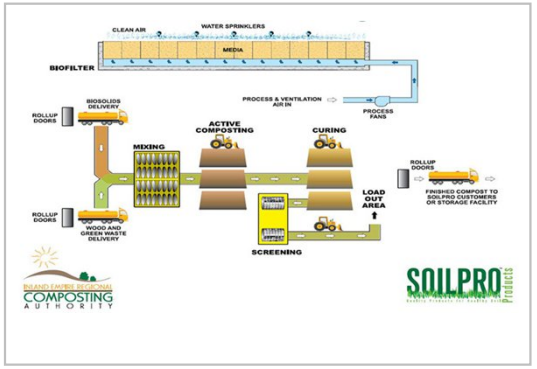


State Agency Site Visit and Tour

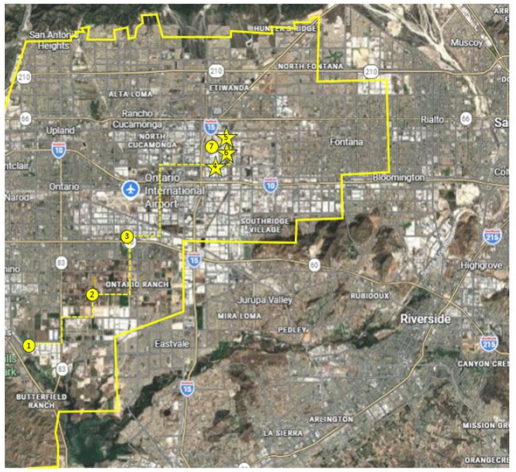












Fall 2026 IEUA Chino Basin Program Tour Map

1. IEUA Head Quarters
2. Transitioning land use: from dairy/agriculture to commercial/residential
3. Ely groundwater recharge basins
4. CBP Site: groundwater production well
5. CBP Site: aquifer replenishing injection well
6. CBP Site: Advanced Water Purification Facility and Pure Water Demonstration Site
7. Inland Empire Regional Composting Facility

5

CBP Construction and Implementation Milestones

- ☑ Complete Treatment and Storage Facilities PDR Work
  - AWPF (2023)
  - City of Rialto RW Interconnection (2024)
  - Replenishing Wells (2023)
  - Permitting and Regulatory Strategy (2023)
  - Updated cost estimates
- ☑ Complete CBP CEQA Certification (2022)
- ☑ Award Program Manager/Owner's Engineer Contract (2023)
- ☑ Exploratory Boreholes (2024)
- ☑ Execute Rialto RW Purchase Agreement (2024)
- ☑ Execute IEUA-MWD CBP Agreement (2024)
- ☑ Award Progressi… Contract for AW… RW (Summer 2025)
- ☑ Carriage/Efficier… O&M resolution…
  - DWR | USBR | IE…
- ☑ Complete Extraction Facilities PDR Work (Spring 2026)
- ☑ Wastewater Change of Use Permit submittal (Spring 2026)
- ☑ CBP PEIR Re-Certification (Jul 2026)
- ☑ Staff Draft State Public Benefit Contracts for WSIP Funds *(Sep 2026)*
  - ✓ CDFW | ✓ DWR | ✓ SWRCB

Funding Increase
+ $103.7 M
$372.8 M new total

- ☑ CWC Supplemental Funding Request *(Oct 21, 2026)*
- ☐ Final Local Performance Agreements *(2027)*
- ☐ Environmental finding of consistency *(Winter 2026/27)*
- ☐ Final State Public Benefit Contracts *(Summer 2027)*
- ☐ **WSIP Final Funding Hearing *(Fall 2027)***
- ☐ Complete construction
  - Rialto RW Interconnection *(2027-2031)*
  - AWPF *(2027-2031)*
  - Replenishing Wells *(2027-2030)*
  - MWD interconnection *(2028-2031)*
  - Extraction Wells *(2028-2031)*
- ☐ Facilities start-up commissioning, operations begin *(2031-2032)*

PDR – Preliminary Design Report, AWPF – Advanced Water Purification Facility, RW – Recycled Water, CBP – Chino Basin Program, CEQA – California Environmental Quality Act, MWD – Metropolitan Water District, O&M – Operations and Maintenance, PEIR – Program Environmental Impact Report, USBR – United States Bureau of Reclamation, CWC – California Water Commission, WSIP – Water Storage Investment Program

Chino Basin Program Facilities Overview

Facility	2026 Cost ($ M)	Benefits
Advanced Water Purification Facility (15 MGD)	$232 M	• Advance treat recycled water for storage in groundwater basin • Remove salts, CECs
Recycled Water Pipeline	$125 M	• Direct recycled water to provide steady flow for AWPF
Pure Water Recharge Facilities (aquifer replenishing wells, conveyance, GWR facilities)	$181 M	• Store purified water in Chino Basin aquifer for future use. • 15,000 AF of water to be stored each year
Production Facilities (wells, conveyance)	$337 M	• New wells to pump stored recycled water from aquifer • 40,000 AF production capacity
MWD Interconnection	$133 M	• Pump-in connection to move 10,000 AF pumped groundwater to MWD
Total	$1,008 M	

MGD – million gallons per day, CEC – constituent of emerging concern, GWR – groundwater recharge, AF – acre-feet

Chino Basin Program Facilities Overview

Facility	2026 Cost ($ M)	Benefits
Advanced Water Purification Facility (15 MGD)	$232 M	
Recycled Water Pipeline	$125 M	
Pure Water Recharge Facilities (aquifer replenishing wells, conveyance, GWR facilities)	$181 M	
Production Facilities (wells, conveyance)	$337 M	
~~MWD Interconnection~~	~~$133 M~~	~~• Pump-in connection to move 10,000 AF pumped groundwater to MWD~~
Total	$875 M	

Metropolitan and IEUA have agreed to *remove* the MWD Interconnection from the Chino Basin Program, without impacting public benefits.

- ✓ Local performance= 100% in-lieu
- ✓ Maintain Pulse Flow size and capabilities
- ✓ $133 M in capital cost savings

8

Chino Basin Program Total Budget *(2017-2032)*

	2017-2026	2024-2027	2027-2032	2017-2032
Facility	**Planning and Preliminary Design Budget**	**Early Design (Progressive Design Build up to GMP)**	**Final Design/ Construction**	**Total Cumulative Budget**
"PUT" RW Treatment and Storage Facilities				
Advanced Water Purification Facility (15 MGD)		$40 M	$232 M	$276.1 M
Recycled Water Pipeline (Rialto)			$125 M	$136.1 M
Pure Water Recharge Facilities			$181 M	$203.1 M
Pure water conveyance pipelines		$21 M		
Aquifer Replenishment Injection Wells	$28.6 M			
"TAKE" Producation Facilities				
CVWD Production Facilities			$337 M	$345.2 M
FWC Production Facilities				
MWD Interconnection			~~$133 M~~	~~$137.1 M~~
Total	**$28.6 M**	**$61 M**	**$875 M**	**$964.6 M**

GMP – Guaranteed Maximum Price

Chino Basin Program Budget

Planning and Preliminary Design (2017-2026)

		IEUA							External	
		Prop. Tax	Water	Wastewater		Recycled Water			State	Federal
Facility	**2017-2026**		MEU	Con. Fee	EDU	Direct	Fixed Cost	Recjarge	CWC WSIP Early Funding	USBR Planning Grant
"PUT" RW Treatment and Storage Facilities										
Advanced Water Purification Facility (15 MGD)										
Recycled Water Pipeline (Rialto)										
Pure Water Recharge Facilities										
Pure water conveyance pipelines										
Aquifer Replenishment Injection Wells	**$28.6 M**	$15 M	-	-	-	-	-	-	$10.8 M	$2.8M
"TAKE" Producation Facilities										
CVWD Production Facilities										
FWC Production Facilities										
MWD Interconnection										
Total	**$28.6 M**	$15 M	-	-	-	-	-	-	$10.8 M	$2.8M

MEU - Meter Equivalent Unit, EDU - Equivalent Dwelling Unit

LEGEND

- Awarded
- Application Submitted/Pending
- Conditionally Awarded
- Planning to Apply

Chino Basin Program Budget

Early Design (Progressive Design Build to GMP (2017-2026)

		IEUA							External Funding				
		Prop. Tax	Water	Wastewater		Recycled Water			State		Federal		Other
Facility	2026 Cost ($ M)		MEU	Con. Fee	EDU	Direct	Fixed Costs	Recharge	SWRCB Water Rec (Prop 4) $15M max per phase/project	CWC WSIP Final Funding for CBP	USBR L Scale (Round 2)	Com Project Request	MWD FSA
"PUT" RW Treatment and Storage Facilities										$38.8 M			
Advanced Water Purification Facility (15 MGD)	**$40 M**	$40 M	-	-	-	-	-	-	$5 M		$4.6 M	$1 M	$0.4 M
Recycled Water Pipeline (Rialto)	**$21 M**	$21 M	-	-	-	-	-	-	$5 M				
Pure Water Recharge Facilities											$6.2 M		
Pure water conveyance pipelines													
Aquifer Replenishment Injection Wells													
"TAKE" Producation Facilities													
CVWD Production Facilities													
FWC Production Facilities													
MWD Interconnection													
Total	**$61 M**	**$61 M**							**$10 M**	**$38.8 M**	**$10.8 M**	**$1 M**	**$0.4 M**

FSA – Future Supply Actions

LEGEND

- Awarded
- Conditionally Awarded
- Application Submitted/Pending
- Planning to Apply

Chino Basin Program Budget

Final Design/Construction (2027-2032)

		IEUA							External Funding				
		Prop. Tax	Water	Wastewater		Recycled Water			State		Federal		
Facility	2026 Cost ($ M)		MEU	Con. Fee	EDU	Direct	Fixed Costs	Recharge	SWRCB Water Rec (Prop 4) $15M max per phase/project	CWC WSIP Final Funding for CBP	USBR L Scale (Round 3)	USBR Title XVI	FEMA BRIC
"PUT" RW Treatment and Storage Facilities	**$538 M**												
Advanced Water Purification Facility (15 MGD)	*$232 M*								**$10 M**		**$8.2 M**	**$5.6 M**	
Recycled Water Pipeline (Rialto)	*$125 M*								**$10 M**				$46.3 M
Pure Water Recharge Facilities	*$181 M*										**$11.2 M**	**$4.1 M**	
Pure water conveyance pipelines										$297.7 M			
Aquifer Replenishment Injection Wells													
"TAKE" Producation Facilities	**$470 M**												
CVWD Production Facilities	$337 M												
FWC Production Facilities													
MWD Interconnection	~~*$133 M*~~												
Total	**$875 M**								**$20 M**	**$297.7 M**	**$19.4 M**	**$9.7 M**	**$46.3 M**

TBD, Based on Current Rates Study

FEMA – Federal Emergency Management Agency, BRIC – Building Resilient Infrastructure and Communities

LEGEND

- Awarded
- Conditionally Awarded
- Application Submitted/Pending
- Planning to Apply

Chino Basin Program in IEUA Rates

Limited to Recycled Water Program Expansion ("PUT" facilities)

Facility	2026 Cost ($ M)	Benefits
Advanced Water Purification Facility (15 MGD)	$232 M	• Advance treat recycled water for storage in groundwater basin • Remove salts, CECs
Recycled Water Pipeline	$125 M	• Direct recycled water to provide steady flow for AWPF
Pure Water Recharge Facilities (aquifer replenishing wells, conveyance, GWR facilities)	$181 M	• Store purified water in Chino Basin aquifer for future use. • 15,000 AF of water to be stored each year
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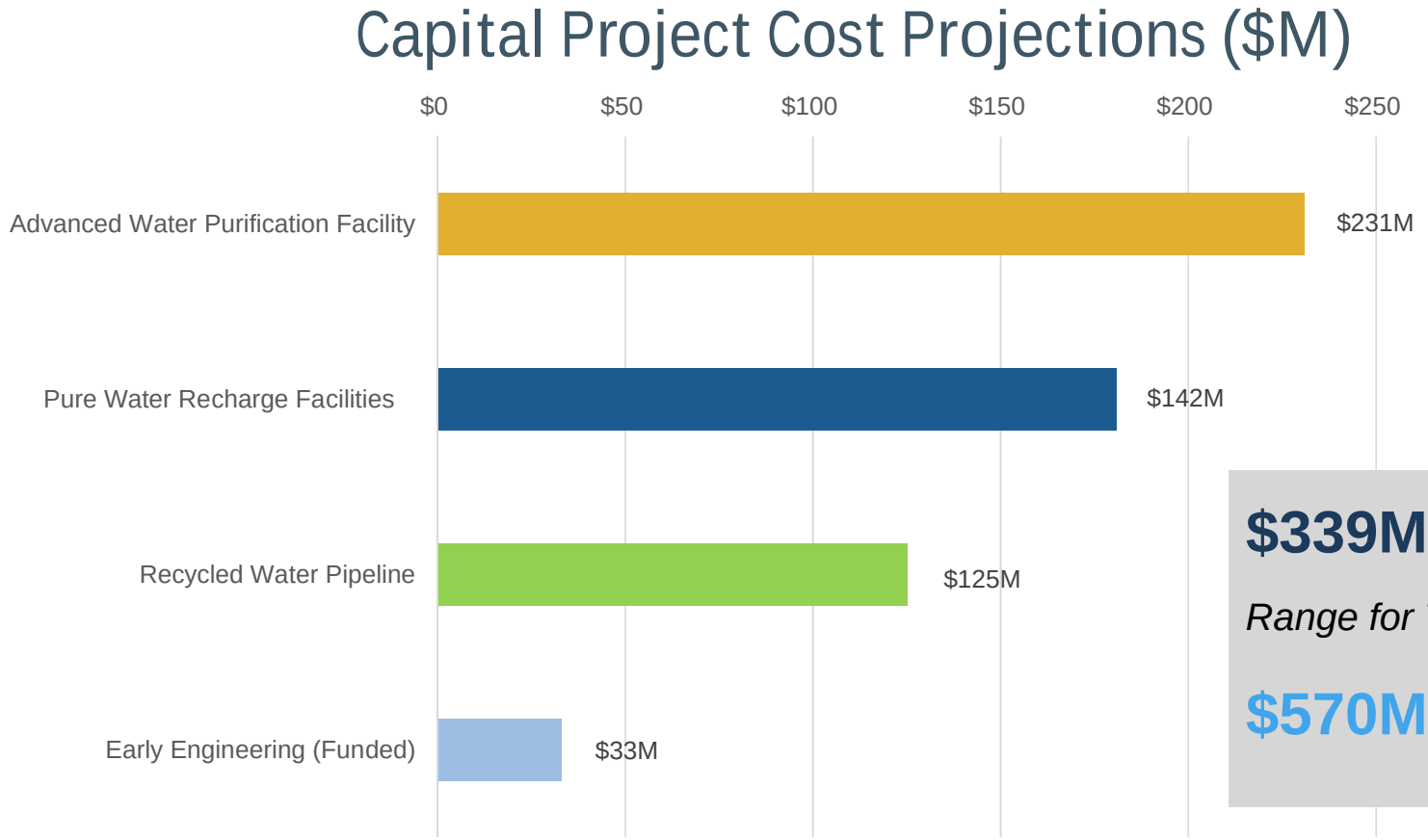
~~MWD Interconnection~~	~~$133 M~~	~~• Pump-in connection to move 10,000 AF pumped groundwater to MWD~~
Total	$875 M	

CBP- Recycled Water Program Expansion Cost Overview



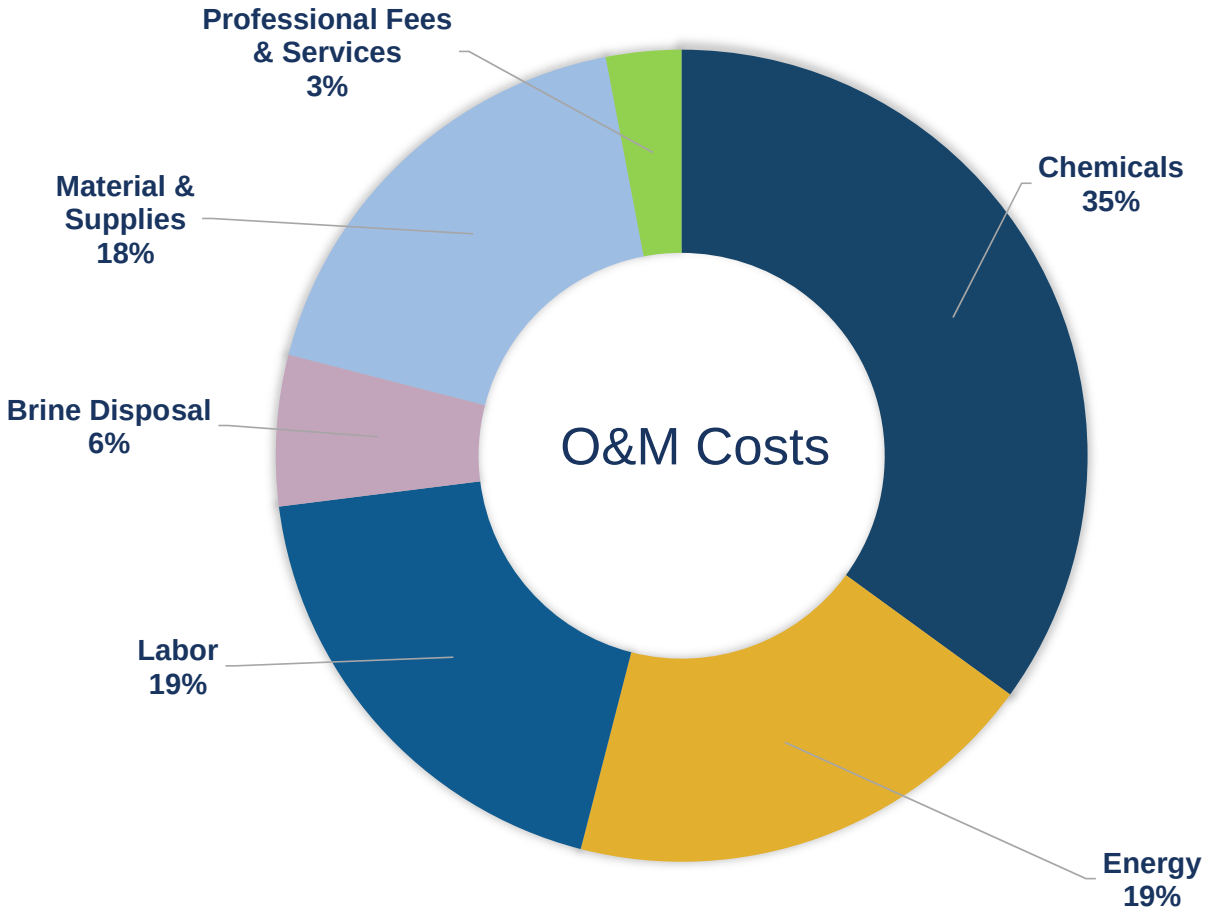
$339M-$855M

Range for Total Capital Cost

$570M **(current estimate)**

CBP- Recycled Water Program Expansion Cost

Overview: *O&M and Debt Service*



Beginning 2032

$25.4M-$27.9M

Total Annual O&M

Beginning 2027

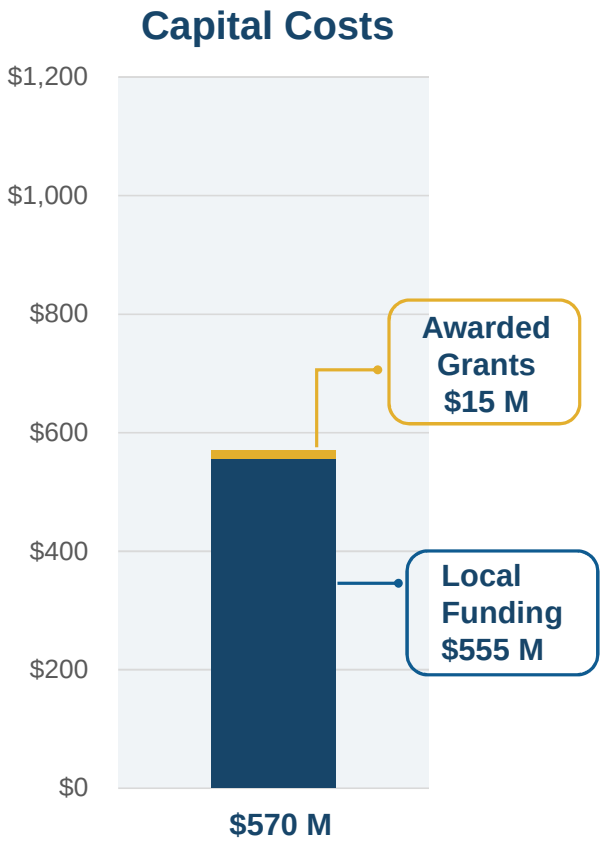
$32.9M

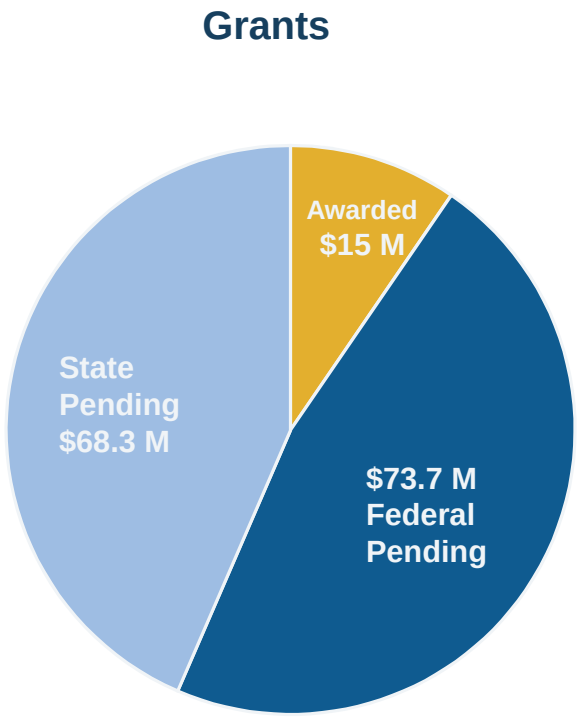
Total Annual Debt Service

30 years, without external funding

4.48% assumed interest rate

CBP- Recycled Water Program Expansion Grant Funding





RECYCLED WATER PROGRAM EXPANSION FACILITIES:

- Advanced Water Purification Facility
- Aquifer Replenishing Wells
- Recycled Water Pipeline
- Purified Water Conveyance

Finance
Cost of Service Rate Study Update



September - November 2026	December 2026 - January 2027	February 2027	April 2027
Rates Process	**Cost of Service**	**Rate Design**	**Rates Adoption**
OPEN DECISIONS • Funding sources: cost recovery share, grants, new revenue bonds, WSIP funding, and debt structure	Ten-Year Capital Improvement Plan Cost Allocation • December 2026 Budget Assumptions Workshop #1 • January 6, 2027	Budget Assumptions Workshop #2 • February 3, 2027	Rates Adoption • April 21, 2027

Q – Quarter, FY – Fiscal Year

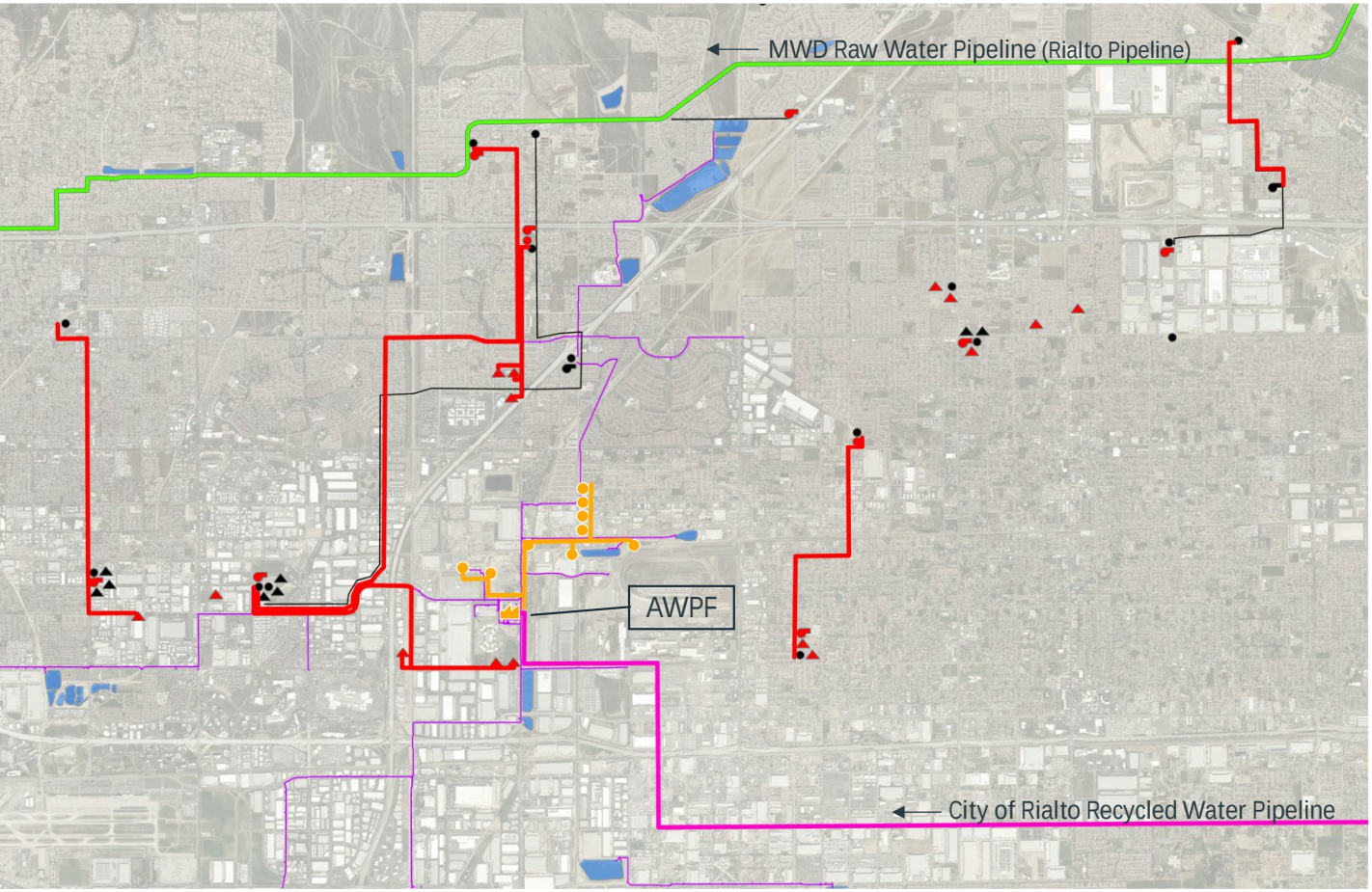
Environmental Permitting Status


Chino Creek Wetlands and Educational Park

- 1211 IEUA Wastewater Diversion Petition (filed May 2026)
- 1211 Rialto Wastewater Diversion Petition (filed May 2026)
- Chino Basin Program Environmental Impact Report (PEIR) (recertified July 2026)
- DWR Pulse Flow Supplemental Environmental Impact Report (SEIR) (certified July 2026)

Chino Basin Program Infrastructure

Regional Recycled Water Expansion and Production Facilities



LEGEND

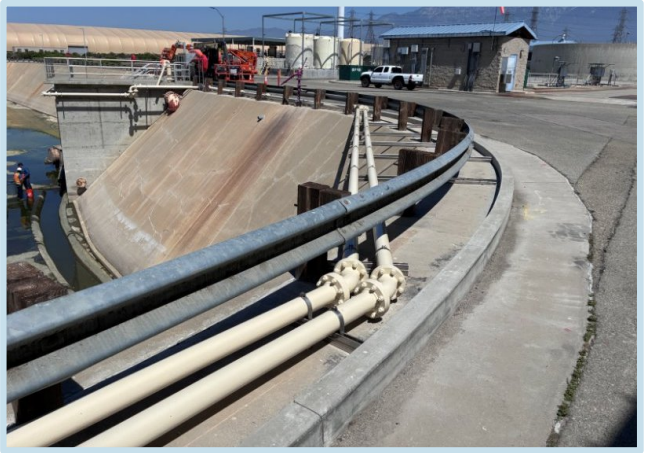
- Metropolitan State Water Project Pipeline (Rialto Feeder)
- IEUA recycled water pipelines
- Existing active recharge basins for flood, stormwater/recycled water capture
- NEW Supplemental Recycled water pipeline (Rialto)
- Pure Water pipeline and aquifer replenishing wells
- Existing potable water pipeline
- Existing reservoir
- Existing pump station
- Existing groundwater well
- NEW pumped water pipeline
- NEW reservoir
- NEW pump station
- NEW groundwater well

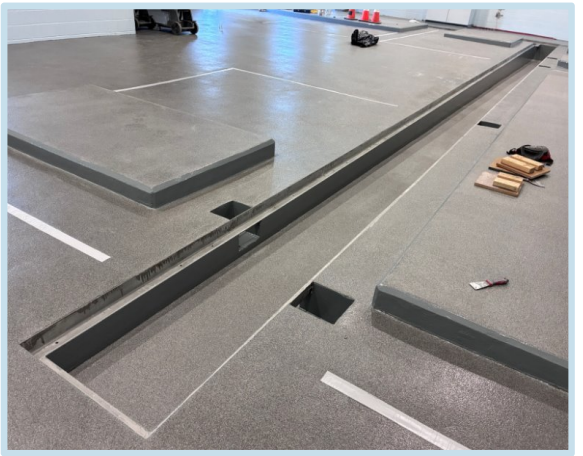
Chino Basin Program Engineering Update

Facility	2026 Cost ($ M)	Benefits
Advanced Water Purification Facility (15 MGD)	$232 M	• Advance treat recycled water for storage in groundwater basin • Remove salts, CECs
Recycled Water Pipeline	$125 M	• Direct recycled water to provide steady flow for AWPF
Pure Water Recharge Facilities (aquifer replenishing wells, conveyance, GWR facilities)	$181 M	• Store purified water in Chino Basin aquifer for future use. • 15,000 AF of water to be stored each year
Production Facilities (wells, conveyance)	$337 M	• New wells to pump stored recycled water from aquifer • 40,000 AF production capacity
~~MWD Interconnection~~	~~$133 M~~	~~• Pump-in connection to move 10,000 AF pumped groundwater to MWD~~
Total	$875 M	

CBP AWP Demonstration Facility

- Located at RP-4 in existing Maintenance Building
  - Matches location of future full-scale facility
  - Potential long-term use for testing of technological innovations
- Three potential source waters:
  - IEUA 1158 RW distribution line
  - RP-4 AquaDisk effluent
  - RP-4 CCB 1A effluent
- Membrane Filtration (MF), Reverse Osmosis (RO), and Ultraviolet with Advanced Oxidation Process (UV-AOP)



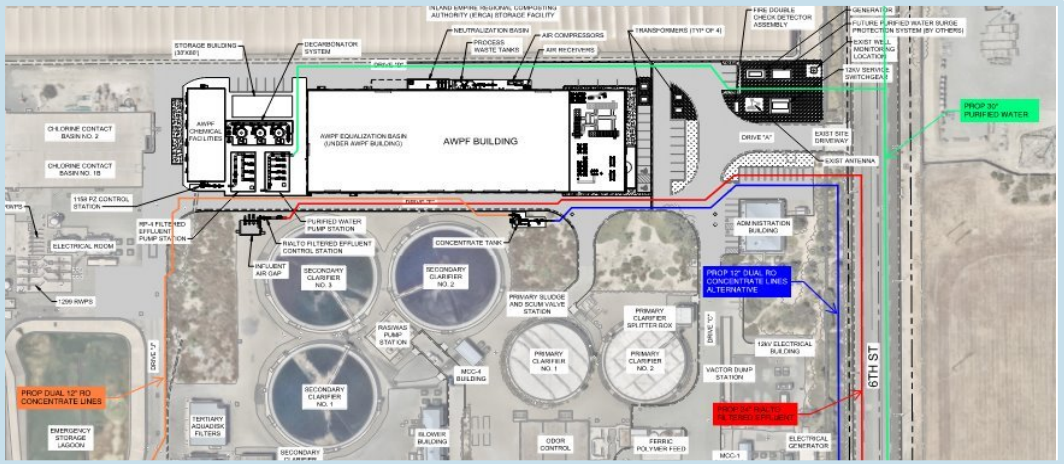


CCB – chlorine contact basin

Advanced Water Purification Facility

Purify recycled water for storage in groundwater basin

- Basis of Design Report is now complete
- Received 33 submittals and 27 RFIs
- Completed early field investigations
- Advance to 30% design
- Evaluate Value Engineering (37 ideas)
- Progressive-Design Build Team
  - JF Shea-Tetra Tech
- Independent advisory panel review completed





RFI – Request for Information

Chino Basin Program Engineering Update

Facility	2026 Cost ($ M)	Benefits
Advanced Water Purification Facility (15 MGD)	$232 M	• Advance treat recycled water for storage in groundwater basin • Remove salts, CECs
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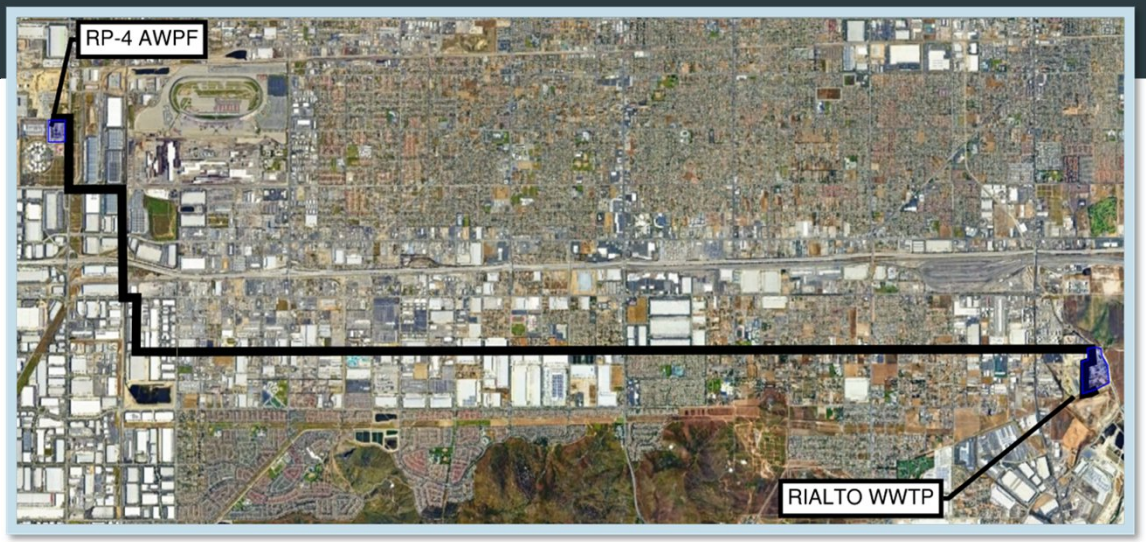
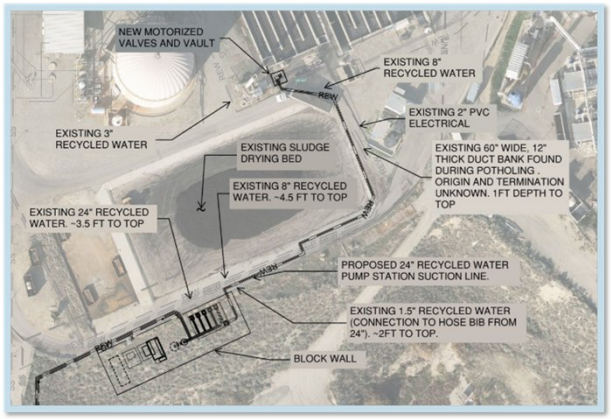
~~MWD Interconnection~~	~~$133 M~~	~~• Pump-in connection to move 10,000 AF pumped groundwater to MWD~~
Total	$875 M	

23

Rialto Alignment – Field Activity Progress

- Survey, potholing, and geotechnical investigation underway
- Completed engineering for connection to Rialto Wastewater Treatment Plant (WWTP)
- Progressive Design Build Team
  - Steve P. Rados-Stantec
- Basis of Design Report review completed September 22, 2026





Pump Station Rialto WWTP

Chino Basin Program Engineering Update

Facility	2026 Cost ($ M)	Benefits
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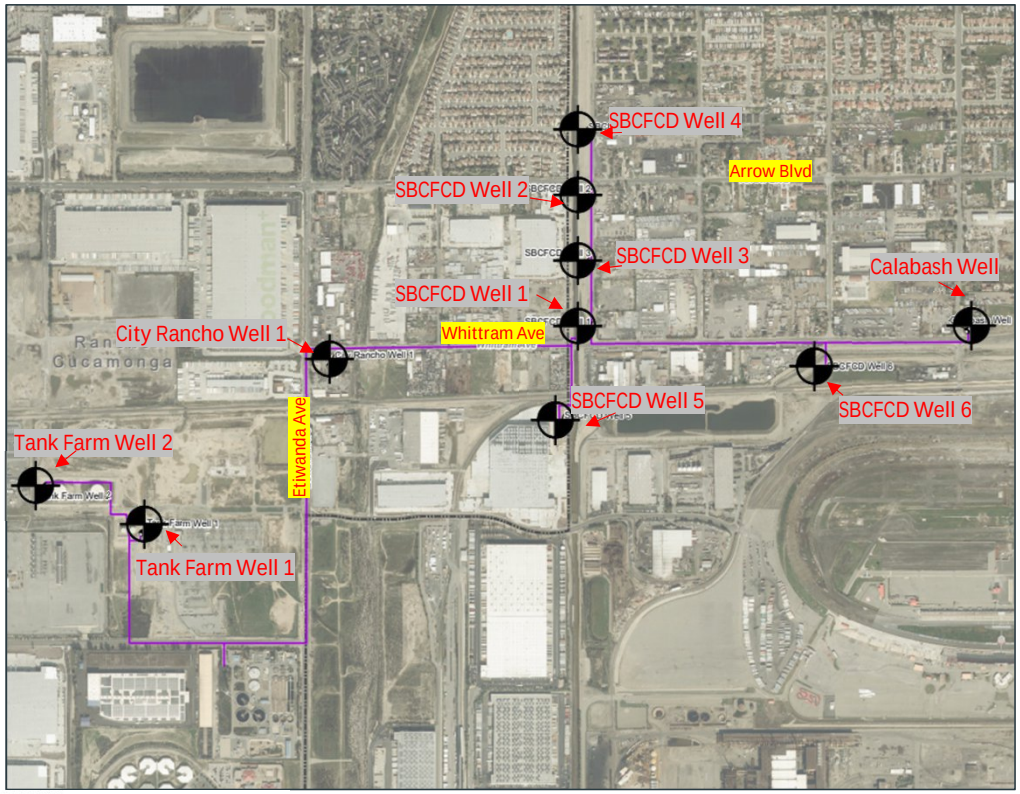
Total	$875 M	

Replenishment Well Siting/Design

Wells to Store Purified Water

- Property Acquisition
- Sequencing: Monitoring well followed by pilot well, with separate procurements for each
- Awarded the monitoring well drilling contract



Chino Basin Program Engineering Update

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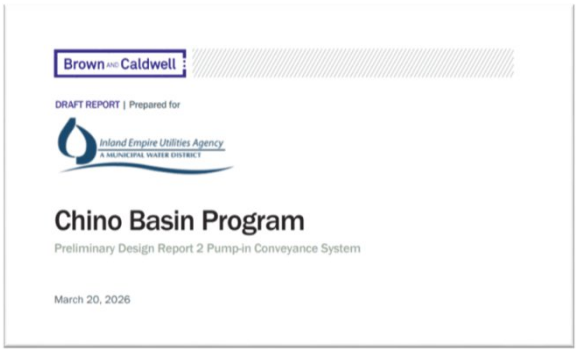
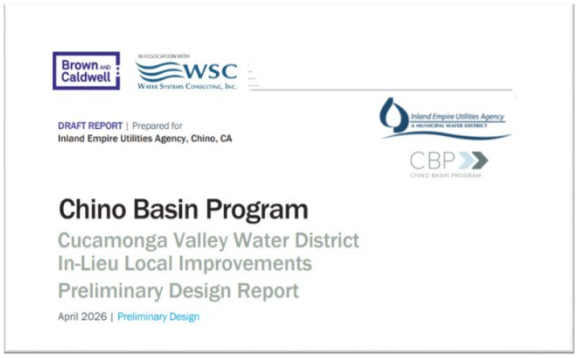
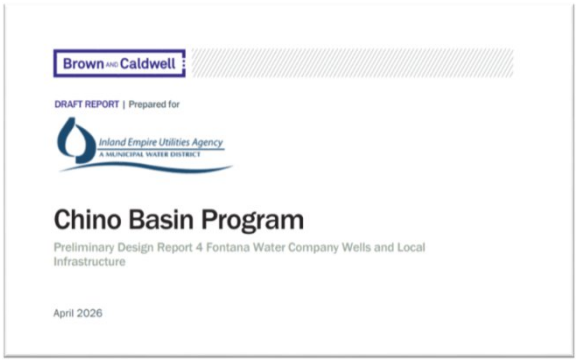
Total	$875 M	

Production Facilities Preliminary Design Reports









- ✓ Four draft preliminary design reports (PDRs) for the production infrastructure are under review:
  - MWD Pump-in Infrastructure
  - Pump-in Conveyance
  - CVWD In-Lieu Local Improvements
  - FWC In-Lieu Local Improvements
- ✓ Updated cost estimates
- Final PDRs by Fall 2026
- Value Engineering discussions Fall-Winter 2026/2027



Discussion

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

2A

Date: November 4, 2026

To: The Honorable Board of Directors **From:** Kevin Alexander, General Manager

Committee: No Committee Review

Staff Contact: Elaine Jeng, Deputy General Manager

Subject: Approve Addendum No. 2 to Recirculated Final Program Environmental Impact Report for Chino Basin Program

Executive Summary:

In June 2026, IEUA submitted a Wastewater Change Petition to the State Water Resources Control Board (SWRCB) requesting to reduce the discharge of tertiary-treated wastewater to the Santa Ana River and redirect it for advanced treatment and direct groundwater storage in the Chino Basin. The SWRCB was listed as a responsible agency for the wastewater change petition and will evaluate any significant environmental effect identified in the Recirculated Final Program Environmental Impact Report (RFPEIR) that is within their responsibility. In the Mitigation Monitoring and Reporting Plan (MMRP) for biological resources, a mitigation measure included a provision that IEUA will conduct a second-tier California Environmental Quality Act (CEQA) evaluation for a proposed wastewater diversion project.

Tom Dodson & Associates reviewed the data presented in the RFPEIR and determined that the proposed wastewater diversion project described in the Wastewater Change Petition can be addressed in an Addendum, as some changes or additions are necessary but none of the conditions described in CEQA Guidelines Section 15162 calling for preparation of a subsequent EIR have occurred per Section 15164. No additional technical studies are required. Based on this determination, an addendum to the RFPEIR is the appropriate CEQA document for the proposed wastewater diversion project.

In 2021, the Chino Basin Program (CBP) Program Environmental Impact Report (PEIR) evaluated the potential environmental effects associated with implementing the CBP projects based on the feasibility studies of the proposed facilities and identified measures to mitigate those effects. In May 2022, the IEUA Board of Directors certified the Final PEIR and adopted the MMRP. The following month, the City of Ontario filed a petition in San Bernardino County Superior Court (Superior Court) alleging that IEUA's preparation of the PEIR did not comply with the CEQA.

In December 2025, the Court issued a Peremptory Writ of Mandate directing IEUA to address three identified deficiencies and recertify the PEIR in compliance with CEQA. In response, IEUA filed a Notice of Appeal with the Superior Court and prepared a partial revision to the previously adopted CBP Final PEIR that addressed those areas. The analyses and conclusions for all other impact areas evaluated in the 2022 Final PEIR remained unchanged. In July 2026, the IEUA Board of Directors certified the RFPEIR.

Staff's Recommendation:

Staff recommends that the Board:

1. Approve Addendum No. 2 to the Recirculated Final Program Environmental Impact Report for the Chino Basin Program; and
2. Authorize the filing of the Notice of Determination with the County Clerk and the State Clearinghouse, Office of Land Use and Climate Innovation.

Budget Impact *Budgeted (Y/N):* Y *Amendment (Y/N):* N *Amount for Requested Approval*

Account/Project Name: PL19005/Chino Basin Program

Regional Sewerage *Technical Committee (Y/N):*

Policy Committee (Y/N):

Prior Board Action:

On July 15, 2026, the IEUA Board of Directors adopted Resolution No. 2026-7-1, certifying the Recirculated Final Program Environmental Impact Report for the Chino Basin Program.

On September 17, 2025, the IEUA Board of Directors approved Addendum No. 1 to the Final Program Environmental Impact Report for the Chino Basin Program Advanced Water Purification Demonstration Facility.

On May 18, 2022, the IEUA Board of Directors adopted Resolution No. 2022-5-1, certifying the Final Chino Basin Program Environmental Impact Report.

Aligns with Strategic Goal:

Goal 1. Water Supply Reliability: Provide a reliable and economical water supply that meets the evolving needs of the region.

Environmental Determination:

Addendum to

Environmental Determination Text:

IEUA prepared an addendum to the Recirculated Final Program Environmental Impact Report and a link to the RFPEIR is available for information.

Attachments:

Attachment 1 - PowerPoint
Attachment 2 - CBP RFPEIR Addendum 2 Notice of Determination

CBP

CHINO BASIN PROGRAM

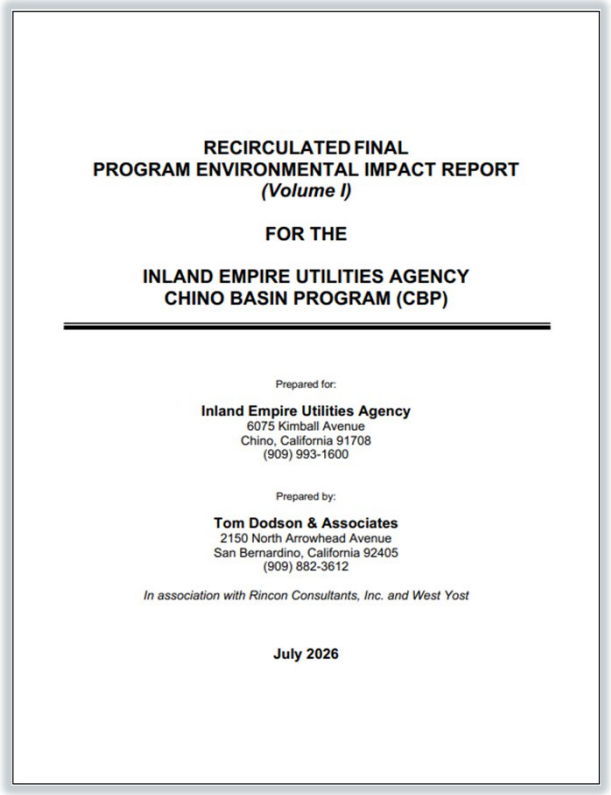


Approve Addendum No. 2 to Recirculated Final Program Environmental Impact Report for Chino Basin Program

Liza Muñoz, P.E., Senior Engineer
November 2026

Background

- May 2022: Chino Basin Program (CBP) Final Program Environmental Impact Report (PEIR) was certified by the IEUA Board of Directors
- June 2022: City of Ontario filed a California Environmental Quality Act (CEQA) challenge with the San Bernardino County Superior Court
- December 2025: Trial court ruling upheld the 2022 PEIR's technical analyses with three areas to address to recertify the PEIR
- After the ruling, IEUA and City of Ontario both filed Appeals
- July 2026: After preparing a partial revision to the PEIR according to the ruling, the IEUA Board of Directors certified the CBP Recirculated Final PEIR (RFPEIR)



RECIRCULATED FINAL
PROGRAM ENVIRONMENTAL IMPACT REPORT
(Volume I)

FOR THE

INLAND EMPIRE UTILITIES AGENCY
CHINO BASIN PROGRAM (CBP)

Prepared for:

Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, California 91708
(909) 993-1600

Prepared by:

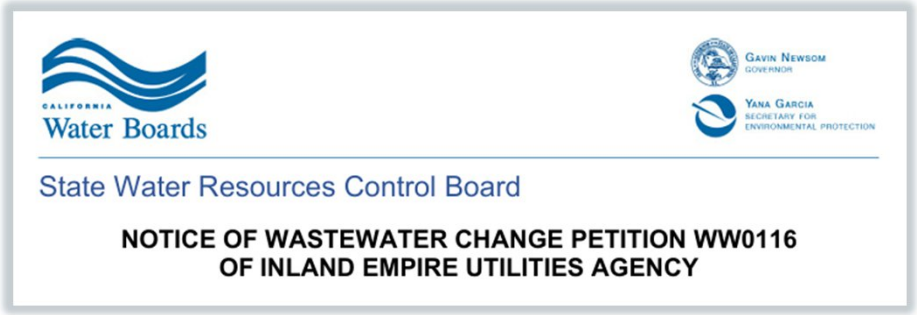
Tom Dodson & Associates
2150 North Arrowhead Avenue
San Bernardino, California 92405
(909) 882-3612

In association with Rincon Consultants, Inc. and West Yost

July 2026

CBP Second-Tier CEQA Evaluation

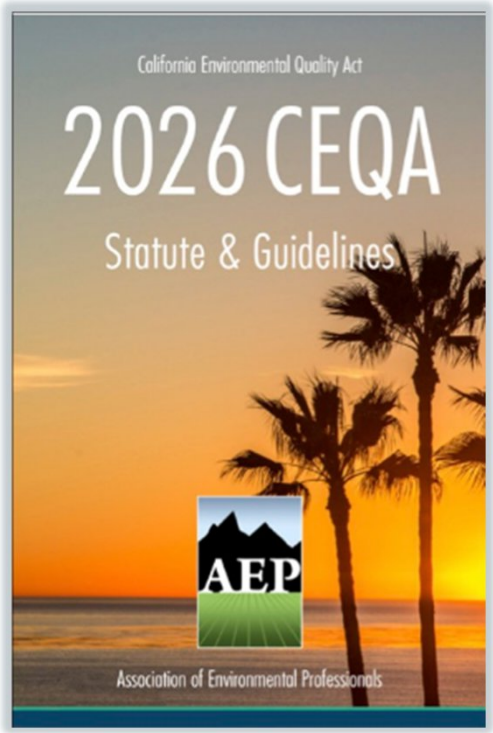
- June 2026: IEUA submitted a State Water Resources Control Board (State Water Board) wastewater change petition to reduce tertiary-treated wastewater discharges to the Santa Ana River and redirect it for advanced treatment and groundwater storage
- State Water Board acts as a California Environmental Quality Act (CEQA) responsible agency for wastewater change petitions and will review CBP CEQA documents



- Based on the preliminary designs of the CBP facilities, there were fewer facilities than what was evaluated in the 2022 CBP PEIR
- A second-tier environmental review for the proposed wastewater diversion project was conducted to comply with CEQA
- The review will determine whether the modified project would cause significant new impacts not evaluated in the 2026 CBP RFPEIR.

CBP Second-Tier CEQA Evaluation

- After the analysis of each environmental topic was completed:
  - Potential impacts of the modified project were less than identified in 2026 RFPEIR
  - No new or more significant environmental impacts than forecasted in 2026 RFPEIR
- Per CEQA Guidelines Section 15164, an Addendum is appropriate since no conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred for each environmental topic addressed in 2026 RFPEIR
- Addendum No. 2 to the 2026 RFPEIR is recommended as the appropriate CEQA environmental documentation for the modified project



EIR – Environmental Impact Report

Staff Recommendation

1. Approve Addendum No. 2 to the Recirculated Final Program Environmental Impact Report for the Chino Basin Program; and
2. Authorize the filing of the Notice of Determination with the County Clerk and the State Clearinghouse, Office of Land Use and Climate Innovation.

This item aligns with Strategic Goal(s): Goal 1. Water Supply Reliability

NOTICE OF DETERMINATION

To: San Bernardino County
Clerk of the Board
385 North Arrowhead Avenue
San Bernardino, CA 92415

and Office of Land Use and Climate Innovation
State Clearinghouse
1400 Tenth Street
Sacramento, CA 95814

From: Inland Empire Utilities Agency
6075 Kimball Avenue
Chino, CA 91708

Subject: Filing of Notice of Determination in compliance with Section 21108 or 21152 of the Public Resources Code.

Inland Empire Utilities Agency Chino Basin Program (CBP) Advanced Water Purification Facility (AWPF) Change Of Use Petition
Project Title

SCH#2021090310 Elizabeth Hurst, Chino Basin Program Manager (909) 993-1634
State Clearinghouse Number **Lead Agency Contact Person** **Telephone Number**

Project Location

The proposed project would occur within IEUA's service area, which occurs almost entirely within the Chino Groundwater Basin (Chino Basin). IEUA's service area is located in western San Bernardino County, and serves approximately 875,000 residents in a 242-square mile service area, while the Chino Basin consists of about 235-square miles of the upper Santa Ana River watershed. The Chino Basin is bounded:

- on the north by the San Gabriel Mountains and the Cucamonga Basin;
- on the east by the Rialto-Colton Basin, Jurupa Hills, and the Pedley Hills;
- on the south by the La Sierra Hills and the Temescal Basin; and
- on the west by the Chino Hills, Puente Hills, and the Spadra, Pomona, and Claremont Basins.

The Chino Basin is mapped within the USGS – Corona North, Cucamonga Peak, Devore, Fontana, Guasti, Mount Baldy, Ontario, Prado Dam, Riverside West and San Dimas Quadrangles, 7.5 Minute Series topographic maps. The center of the Basin is located near the intersection of Haven Avenue and Mission Boulevard at Longitude 34.038040N, and Latitude 117.575954W.

The majority of the infrastructure proposed as part of the CBP is proposed in the northern portion of the Basin, north of the Interstate 10 Freeway.

Project Description

At the present time, tertiary treated water is currently discharged to the Santa Ana River watershed from four IEUA WWTPs, including:

- Regional Water Recycling Plant No. 1 (RP-1);
- Regional Water Recycling Plant No. 4 (RP-4);
- Regional Water Recycling Plant No. 5 (RP-5); and
- Carbon Canyon Water Recycling Facility (CCWRF).

IEUA's four WWTPs currently discharge to four points upstream of Prado Dam:

- RP-1 and RP-4 to Prado Park Lake, tributary to Chino Creek thence to the Santa Ana River in Prado Basin;
- RP-1 and RP4 to Cucamonga Creek, tributary to Chino Creek thence to the Santa Ana River in Prado Basin;
- RP-5 to Chino Creek, tributary to the Santa Ana River, approximately 5.5 river miles upstream of

Prado Dam; and,
- CCWRF to Chino Creek, tributary to the Santa Ana River, approximately 7.2 river miles upstream of Prado Dam.

IEUA is proposing to reduce present discharges by 9,992 acre-feet per year (afy), which is an approximately 45 percent reduction of baseline average annual WWTP discharges. IEUA is also proposing to continue to discharge a minimum of 7,038 afy of treated wastewater to the Santa Ana River watershed, which is approximately 30 percent of baseline average annual WWTP discharges. The reduction in discharge to the Upper Santa Ana River watershed above Prado Dam would be from all four discharge points, but could vary in actual time based on future wastewater treatment volumes at these WWTP's. More information is provided immediately below regarding IEUA Recycled Water generation and use.

After considering the available options for complying with CEQA regarding the above described project modifications, the IEUA concluded that compiling an Addendum to the certified 2026 CBP Recirculated Final Program Environmental Impact Report (RFPEIR) would be the most appropriate way to comply with CEQA for the proposed project modifications. This approach justified the preparation of an Addendum to comply with CEQA for the proposed Modified Project. No other changes to the project evaluated in the 2026 CBP RFPEIR (Original Project) are envisioned at this time under the Addendum.

This is to advise that the Inland Empire Utilities Agency has approved the above described project on

■ Lead Agency ☐ Responsible Agency

11/4/26 and has made the following determination regarding the above described project:
(Date)

1. The project [■ will ☐will not] have a significant effect on the environment.
2. ■ Addendum No. 2 to the previously adopted CBP RFPEIR (SCH#2021090310) was prepared for this project pursuant to the provisions of CEQA.
   ☐ A Mitigated Negative Declaration was prepared for this project pursuant to the provisions of CEQA.
3. Mitigation measures [■ were ☐ were not] made a condition of the approval of the Original Project and a Mitigation Monitoring and Reporting Plan (MMRP) was adopted for the Original Project. This Addendum makes no changes to the Original Project MMRP.
4. A Statement of Overriding Considerations [■was ☐ was not] adopted for the Original Project RFPEIR.
5. Findings [■ were ☐ were not] made pursuant to the provisions of CEQA for the Original Project RFPEIR.

This is to certify that the Addendum and record of project approval is available to the general public at:

IEUA's website at https://www.ieua.org/chino-basin-program-ceqa-documents/ and digitally at 6075 Kimball Avenue, Chino, CA 91708

Signature *Title* *Date*

ADDENDUM NO. 2 TO
THE FINAL PROGRAM ENVIRONMENTAL IMPACT REPORT
FOR THE INLAND EMPIRE UTILITIES AGENCY
CHINO BASIN PROGRAM (CBP)
ADVANCED WATER PURIFICATION FACILITY (AWPF)
CHANGE OF USE PETITION

I. Introduction

Project Title Advanced Water Purification Facility (AWPF) Change of Use Petition

Lead Agency & Project Sponsor Name Inland Empire Utility Agency
Address 6075 Kimball Ave
Chino, CA 91708

Contact Person Elizabeth Hurst, Chino Basin Program Manager
Phone Number ehurst@ieua.org
Email (909) 993-1634

Project Location The proposed project would occur within IEUA's service area, which occurs almost entirely within the Chino Groundwater Basin (Chino Basin). IEUA's service area is located in western San Bernardino County, and serves approximately 875,000 residents in a 242-square mile service area, while the Chino Basin consists of about 235-square miles of the upper Santa Ana River watershed. The Chino Basin is bounded:

- on the north by the San Gabriel Mountains and the Cucamonga Basin;
- on the east by the Rialto-Colton Basin, Jurupa Hills, and the Pedley Hills;
- on the south by the La Sierra Hills and the Temescal Basin; and
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The Chino Basin is mapped within the USGS – Corona North, Cucamonga Peak, Devore, Fontana, Guasti, Mount Baldy, Ontario, Prado Dam, Riverside West and San Dimas Quadrangles, 7.5 Minute Series topographic maps. The center of the Basin is located near the intersection of Haven Avenue and Mission Boulevard at Longitude 34.038040N, and Latitude 117.575954W.

The majority of the infrastructure proposed as part of the CBP is proposed in the northern portion of the Basin, north of the Interstate 10 Freeway.

Land Use Designation Not Applicable

Zoning Classification Not Applicable

The Inland Empire Utilities Agency (IEUA or Agency) is incrementally implementing the Chino Basin Program (CBP) for which a Program Environmental Impact Report (PEIR) was prepared and approved in 2022. Litigation was filed by the City of Ontario in 2022 and in 2024, a San Bernardino County Superior Court issued its decision that identified three deficiency areas that need be corrected in the approved 2022 PEIR. IEUA published a "Recirculated" Draft PEIR with modifications addressing the three deficiencies and the IEUA Board approved

the Recirculated Final PEIR (RFPEIR) in July 2026. A copy of the Recirculated PEIR is available for review on the IEUA website at https://www.ieua.org/chino-basin-Program-ceqa-documents/.

As with any Program-level environmental document, subsequent environmental evaluations must be prepared when an element of a Program is brought forward (considered) for implementation. One major milestone of implementing the CBP has been defining the volume and source location of the IEUA recycled water that will be delivered to the Advanced Water Purification Facility for advanced treatment (polishing). Therefore, Inland Empire Utilities Agency (IEUA or Agency) completed and submitted Wastewater Change Petition WW0016 to the State Water Resources Control on June 1, 2026 (Refer to **Appendix 1** of this document) to obtain permission to relocate discharge of an estimated 9,992 acre-feet of recycled water from current points of IEUA facility discharges to the AWPF for further treatment, and subsequently to the Chino Groundwater Basin for storage and conjunctive use.

Specifically, Petition WW0016 proposes the following: "The Petitioner requests authorization to reduce the discharge of tertiary treated wastewater from four of IEUA's Wastewater Treatment Plants (WWTPs) to the Santa Ana River watershed by up to 9,992 acre-feet per year (afy) during all months of the year as part of the ongoing Chino Basin Program (Program). IEUA plans to redirect the tertiary treated water currently discharged to the Santa Ana River watershed to the new AWPF for additional treatment and then store it in the Chino Basin aquifer for subsequent extraction and delivery as potable reuse supply within IEUA's service area. The expected completion date for construction of the AWPF is 2030."

II. PROJECT DESCRIPTION

The intent of the Chino Basin Program (CBP) is to allow implementation of a Program to improve water management practices within the Chino Groundwater Basin. The Program proposed an Advanced Water Purification Facility (AWPF), new injection and extraction facilities, conveyance facilities, and water system interconnections that will allow more optimal management of local water supplies, including meeting water quality requirements for the continued use of recycled water within the Chino Basin, improved storage and recovery operations, as well as redundancies in water delivery infrastructure that will facilitate future rehabilitation and replacement of existing infrastructure. The Chino Groundwater Basin (henceforth Chino Basin) consists of about 235-square-miles of the upper Santa Ana River watershed north of Prado Dam to the San Gabriel Mountains and extending east-west from Claremont to Rialto, it is one of the largest groundwater basins in southern California.

The complete Program Project Description from the 2026 RFPEIR is provided as Chapter 3 Project Description of **Appendix 2**.

Original Project and Modified Project

At the present time, tertiary treated water is currently discharged to the Santa Ana River watershed from four IEUA WWTPs, including:

- Regional Water Recycling Plant No. 1 (RP-1);
- Regional Water Recycling Plant No. 4 (RP-4);
- Regional Water Recycling Plant No. 5 (RP-5); and
- Carbon Canyon Water Recycling Facility (CCWRF).

IEUA's four WWTPs currently discharge to four points upstream of Prado Dam:

- RP-1 and RP-4 to Prado Park Lake, tributary to Chino Creek thence to the Santa Ana River in Prado Basin;
- RP-1 and RP4 to Cucamonga Creek, tributary to Chino Creek thence to the Santa Ana River in Prado Basin;
- RP-5 to Chino Creek, tributary to the Santa Ana River, approximately 5.5 river miles upstream of Prado Dam; and,

- CCWRF to Chino Creek, tributary to the Santa Ana River, approximately 7.2 river miles upstream of Prado Dam.

IEUA is proposing to reduce present discharges by 9,992 acre-feet per year (afy), which is an approximately 45 percent reduction of baseline average annual WWTP discharges. IEUA is also proposing to continue to discharge a minimum of 7,038 afy of treated wastewater to the Santa Ana River watershed, which is approximately 30 percent of baseline average annual WWTP discharges. The reduction in discharge to the Upper Santa Ana River watershed above Prado Dam would be from all four discharge points, but could vary in actual time based on future wastewater treatment volumes at these WWTP's. More information is provided immediately below regarding IEUA Recycled Water generation and use.

Background Information on IEUA Recycled Water Resources

IEUA generates a substantial volume of tertiary quality Recycled Water from its four wastewater treatment facilities, RP-1, RP-4, RP-5 and CCWRF. Table 1 is abstracted from the CBP Recirculated PEIR and it identifies either actual (2020 discharges) or forecast discharges for five-year increments through 2040. A breakdown of Recycled Water consumption/demand for 2019/2020 is provided in Table 2. Total demand during this 12-month period was 30,495 acre-feet (AF). The remaining Recycled Water, up to 25,893 AF, was either discharged to Cucamonga or Chino Creeks, or was used onsite for operational purposes. Table 3 provides a five-year interval summary of current and projected Recycled Water demand. By 2040 demand for Recycled Water is forecast to be an estimated 44,275 AF. When compared to the projected Recycled Water supply in 2040 (Table 2), the residual Recycled Water that could be discharged is 22,865 AF, which is slightly less volume than in 2020.

Table 1: RECYCLED WATER DISCHARGE ASSUMPTIONS FOR BASELINE AND CBP DISCHARGE SCEANRIOS[1] (AF)

Agency	Facility/ Discharge Point	Baseline Discharge Scenario		CBP Discharge Scenario		Baseline minus CBP Discharge Scenario	
		2030	2040	2030	2040	2030	2040
IEUA	**001 (Prado)**	1,569	1,569	1,151	1,151	418	418
IEUA	**002 (Cucamonga Creek)**	9,079	9,079	3,637	3,637	5,443	5,443
IEUA	**RP-5 (Chino Creek)**	2,802	2,802	1,519	1,519	1,283	1,283
IEUA	**CCWRF (Chino Creek)**	3,587	3,587	737	737	2,850	2,850
Subtotal (IEUA)		**17,038**	**17,038**	**7,043**	**7,043**	**9,995**	**9,995**
SBMWD	**RIX**	20,275	20,625	20,275	20,625	0	0
City of Rialto	**Rialto**	10,137	13,115	6,637	9,615	3,500	3,500
City of Riverside	**RWQCP**	26,604	25,221	26,604	25,221	0	0
WRCRWA	**WRCRWTP**	10,800	10,800	8,300	8,300	2,500	2,500
City of Corona	**WWTP #1**	1,681	1,681	1,681	1,681	0	0
Subtotal (Non-IEUA)		**69,497**	**71,442**	**63,497**	**65,442**	**6,000**	**6,000**
Total		**86,534**	**88,479**	**70,541**	**72,486**	**15,995**	**15,995**

Table 2: RECYCLED WATER DEMAND BY AGENCY FOR FY 19/20

Retail Agency	Direct Use (AF)	Recharge (AF)	Demand (AF)
City of Chino	4,795	0	4,765
City of Chino Hills	1,417	1,188	2,605
CVWD	1,038	4,458	5,496

[1] Acronyms are defined as follows: Recycling Plant No. 5 (RP-5); Carbon Canyon Water Recycling Facility (CCWRF); San Bernardino Municipal Water Department (SBMWD); Rapid Infiltration and Extraction Facility (RIX); Riverside Water Quality Control Plant (RWQCP); Western Riverside County Regional Wastewater Authority (WRCWRA); Western Riverside County Recycled Water Treatment Plant (WRCRWTP); Wastewater Treatment Plant (WWTP)

Retail Agency	Direct Use (AF)	Recharge (AF)	Demand (AF)
Fontana/FWC	211	2,693	2,904
Montclair/MVWD	298	781	1,079
City of Ontario	7,817	3,017	10,864
City of Upland	703	1,243	1,946
IEUA	773	0	773
San Bernardino County	65	0	65
Total	**17,115**	**13,381**	**30,495**

Table 3: CURRENT AND PROJECTED RECYCLED WATER DEMAND (AFY)

	2020	2025	2030	2035	2040
Direct Use Demands[1]	17,115	20,870	23,275	24,704	27,855
Groundwater Recharge[2]	13,381	14,962	16,420	16,420	16,420
Total	30,495	35,832	39,965	41,124	44,275

NOTES: (1) From IEUA 2021 Wastewater and Recycled Water Demand Forecasts, (2) From CBWM 2020 Storage Management Plan

Forecasts through 2040 rely on the assumption that existing demand patterns will continue to expand based on historic patterns of Recycled Water demand/use, as summarized in Table 2. However, as the proposed CBP project demonstrates, in the current water industry, this fundamental assumption may change. For example, the AWPF Project will result in an increase of up to 15,000 AFY in groundwater recharge to the Chino Basin after the CBP becomes operational in about 2032.

Also note, that the available Recycled Water for discharge under the CBP provides sufficient water for discharge to continue meeting the 1969 Judgment for the Upper Santa Ana River watershed.

Chino Basin Program

The proposed CBP is forecast to install up to 17,000 acre-feet per year (AFY) of advanced water purification capacity, of which 15,000 AFY of purified water will be produced and an estimated 2,000 AFY will be reject wastewater that will be discharged to the non-reclaimable wastewater system for treatment and disposal. IEUA was identified as providing up to 11,000 AFY of tertiary treated wastewater to the AWPF in the CBP RFPEIR. The remainder was to be acquired from the City of Rialto and Western Riverside County Regional Wastewater Authority, but as of now IEUA proposes to supply 9,992 AFY of tertiary treated recycled water (the volume used in this Wastewater Change Petition WW0016) with Rialto providing up to about 3,500 AFY of the required supply.

Table 8 from the CBP RFPEIR lists the original infrastructure evaluated in the CBP RFPEIR. The proposed CBP infrastructure included 37 wells (injection, extraction and monitoring); approximately 30 miles of varying diameter pipeline (158,400 lineal feet); a reservoir (5 MG storage); four (4) pump stations; six (6) turnouts; up to five (5) booster stations; possibly three (3) wellhead treatment units; additional Safe Storage Capacity in the Chino Basin; and finally, the AWPF, which is proposed to be located at IEUA's Regional Plant No. 4. Although specific locations were not identified (except for the AWPF), all of these facilities were evaluated in the CBP RFPEIR based on stated assumptions identified in the PEIR.

Based on preliminary engineering for the CBP, the following infrastructure facilities have been identified during preliminary engineering as needed to support the operations envisioned in the PEIR: a total of 27 new wells; ten (10) new pump stations or booster pumps; two (2) well treatment units; three (3) new reservoirs, total 2 MG of storage; one (1) surge tank; and approximately 19.6 miles of new conveyance pipeline.

III. PURPOSE OF THIS ENVIRONMENTAL DOCUMENT

Wastewater Change Petition WW0016 (Petition) is currently being processed by the Santa Ana Regional Water Quality Control Board and the State Water Resources Control Board. Since approval of the Petition is a "discretionary" decision for these agencies, compliance with the California Environmental Quality Act (CEQA) is required. IEUA has already published and adopted the 2026 CBP RFPEIR. The following evaluation will be performed under Section 15162 of the State CEQA Guidelines (Subsequent EIRS and Negative Declarations) and 15164 (particularly 15164 (a) *The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR have occurred.* Depending on the findings presented below for each of the issues evaluated in the 2026 CBP RFPEIR, the findings of the CEQA evaluation can range from the need to prepare a second-tier EIR or to a finding that "none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred."

In 2022, the Inland Empire Utilities Agency (IEUA) approved the Chino Basin Program (CBP) to allow implementation of a Program to improve water management practices within the Chino Groundwater Basin. The CBP's proposed Advanced Water Purification Facility (AWPF), new injection and extraction facilities, conveyance facilities, and water system interconnections will allow more optimal management of local water supplies, including meeting water quality requirements for the continued use of recycled water within the Chino Basin, improved storage and recovery operations, as well as redundancies in water delivery infrastructure that will facilitate future rehabilitation and replacement of existing infrastructure. The Chino Groundwater Basin (henceforth Chino Basin) consists of about 235-square-miles of the upper Santa Ana River watershed, and is one of the largest groundwater basins in Southern California.

The proposed CBP is a 50-year project with the first 25-years constituting a 25-year conjunctive use project that proposes to use advanced water purification to treat and store up to 15,000 acre-feet per year (AFY). This Program will consist of Put and Take components. One of these Put components is from an AWPF. The CBP would install an AWPF at IEUA's Regional Plant Number 4 (RP-4). The intake of recycled water at this facility will total a maximum of 17,000 AFY, with a resulting 15,000 AFY of purified water derived from the AWPF processes for recharge. Additionally, tertiary recycled water conveyance would supply recycled water to the AWPF, and purified water pumping would convey water from the AWPF to injection wells for groundwater recharge.

The complete project description from the Original Project, as described in Chapter 3, Project Description, of the 2026 CBP RFPEIR (**Appendix 2)**.

Addendum Environmental Review Process

IEUA has prepared this Addendum in accordance with the current (2026) CEQA Statute and Guidelines for implementing CEQA. State CEQA Guidelines Section 15164 includes the following procedures for the preparation and use of an Addendum:

"a) The lead agency or responsible agency shall prepare an addendum to a previously certified EIR if some changes or additions are necessary but none of the conditions described in Section 15162 calling for preparation of a subsequent EIR have occurred.
(b) An addendum to a certified negative declaration may be prepared if only minor technical changes or additions are necessary or none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or negative declaration have occurred.
(c) An addendum need not be circulated for public review but can be included in or attached to the final EIR or certified negative declaration.
(d) The decision-making body shall consider the addendum with the final EIR or certified negative declaration prior to making a decision on the project.

(e) A brief explanation of the decision not to prepare a subsequent EIR pursuant to Section 15162 should be included in an addendum to an EIR, the lead agency's findings on the project, or elsewhere in the record. The explanation must be supported by substantial evidence."

Note that Section 15164(a) addresses use of an Addendum in conjunction with an EIR, which is the procedure being used in this document. If changes to a project or its circumstances occur or new information becomes available after adoption of an EIR, the lead agency may: (1) prepare a subsequent EIR if the criteria of State CEQA Guidelines Section 15162(a) are met, (2) prepare a subsequent negative declaration, (3) prepare an addendum, or (4) prepare no further documentation. (State CEQA Guidelines Section 15162(b)) When only some changes or additions to a certified EIR are necessary and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or Negative Declaration (ND) have occurred. CEQA allows the lead agency to prepare and adopt an Addendum (State CEQA Guidelines, Section 15164(a)).

Under Section 15162, a subsequent EIR is required only when:

"(1) Substantial changes are proposed in the project which will require major revisions of the previous negative declaration due to the involvement of new significant environmental effects or a substantial increase in the severity of previously identified significant effects;
(2) Substantial changes occur with respect to the circumstances under which the project is undertaken which will require major revisions of the negative declaration due to the involvement of any new significant environmental effects or a substantial increase in the severity of previously identified significant effects; or
(3) New information of substantial importance, which was not known and could not have been known with the exercise of reasonable diligence at the time the negative declaration was certified, shows any of the following:
    (A) The project will have one or more significant effects not discussed in the previous negative declaration;
    (B) Significant effects previously examined will be substantially more severe than shown in the previous EIR;
    (C) Mitigation measures or alternatives previously found not to be feasible would in fact be feasible and would substantially reduce one or more significant effects of the project, but the project proponents decline to adopt the mitigation measures or alternative; or
    (D) Mitigation measures or alternatives which are considerably different from those analyzed in the previous EIR would substantially reduce one or more significant effects on the environment, but the project proponents decline to adopt the mitigation measure or alternative."

Based on the data contained in this environmental document, IEUA has concluded that an Addendum is the appropriate environmental determination for this second-tier environmental review process to comply with the CEQA. IEUA has concluded that the Modified Project modifications constitute a "minor technical change" to the originally approved CBP.

Procedural Considerations

As discussed in the introduction, in 2022, IEUA approved the 2022 CBP PEIR. Litigation was filed by the City of Ontario in 2022 and in 2024, a San Bernardino County Superior Court issued its decision that identified three deficiency areas that need be corrected in the approved 2022 PEIR. IEUA published a "Recirculated" Draft PEIR with modifications addressing the three deficiencies and the IEUA Board approved the RFPEIR in July 2026. A copy of the Recirculated PEIR is available for review on the IEUA website at https://www.ieua.org/chino-basin-Program-ceqa-documents/. IEUA must now determine whether the proposed project described in Section I and II above (Modified Project) results in new significant impacts that were not evaluated in the certified RFPEIR (this document is inclusive of the 2022 CBP PEIR and 2026 CBP RFPEIR), which could trigger the need for an alternative CEQA environmental determination. IEUA must also decide whether an Addendum is the appropriate environmental determination for this Modified Project if it chooses to approve it for implementation. The

certified 2022 PEIR provides a baseline and cumulative environmental evaluation and determination for the activities permitted by the Chino Basin Program in the Original Project.

This Addendum No. 2 has been prepared in order to determine whether the Modified Project modification, as summarized above, would result in conditions that would require a subsequent or supplemental Environmental Impact Report (EIR), Negative Declaration (ND), and/or Mitigated Negative Declaration (MND) to be prepared because of new or additional adverse environmental impacts. This Addendum also reviews any information of substantial importance that was not known and could not have been known with exercise of reasonable due diligence at the time the RFPEIR certified in 2026. This examination includes an analysis in accordance with the provisions of Sections 15164 and 15162 of the State CEQA Guidelines (summarized above), which outline the criteria and procedures for preparing an Addendum to a previously certified RFPEIR.

Also pursuant to CEQA and the State CEQA Guidelines, the IEUA's environmental review of the modifications that make up the Modified Project is limited to examining the environmental effects associated with the physical changes in the environment from implementing the Modified Project in comparison to the Original Project, i.e., addressing the effects of the installation and operation of the demonstration facility at the same project site. This narrow focus is due to the fact that the RFPEIR has already addressed the environmental impacts of constructing and operating the Original Project.

This Addendum, combined with the certified RFPEIR, serves as the basis for this second-tier environmental review of IEUA's decision to consider the Modified Project. Addendum No. 2 modifies the RFPEIR certified in 2026 as its CEQA environmental determination. No other changes than those outlined in the preceding text are proposed at this time.

Pursuant to the provisions of CEQA and the State CEQA Guidelines, IEUA is the Lead Agency for the proposed project revisions and is charged with the responsibility of deciding whether or not to approve the proposed modifications to the project as described above and relying on this Addendum as the appropriate second-tier CEQA environmental determination. As part of its decision-making process, IEUA is required to review and consider the potential environmental effects that could result from implementing the Modified Project relative to the previously Original Project. IEUA has compiled this Addendum as the basis for making a second-tier CEQA environmental determination for the Modified Project being proposed to support the Chino Basin Program.

IV. 2022 CBP PEIR AND 2026 CBP RFPEIR ENVIRONMENTAL TOPICS

Aesthetics

The Aesthetics issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the jurisdictions (cities and counties) within which the Chino Basin Program will operate. These issues are discussed on pages 4-5 through 4-19 of Appendix 1 of Volume II of the 2026 CBP RFPEIR. Seven (7) mitigation measures were identified for implementation and with them the Original Project (CBP) was determined to have a less than significant adverse impact on the affected Aesthetic environment. The Modified Project, as defined above, will have fewer overall facilities requiring construction and operation. Refer to the text description as provided above. Based on this reduction in the number of facilities required to support the CBP at this stage of the Program's development, the potential Aesthetic impacts of the Program remain consistent with or less than forecast in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding aesthetics falls within the scope of Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Agriculture & Forestry Resources

The Agriculture and Forestry Resources issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will operate. These issues are discussed on pages 4-21 through 4-36 of Appendix 1 of Volume II 2026 CBP RFPEIR. Two (2) mitigation measures were identified for implementation and with them, the Original Project (CBP) was

determined to have a less than significant adverse impact on agriculture and forestry resources in the Chino Basin environment. According to Appendix 1 of Volume II 2026 CBP RFPEIR, all areas north of Interstate 10 have minimal agricultural resources in production. The Modified Project as defined above will have fewer overall facilities requiring construction and operation. Refer to the text description as provided above. All of these facilities are all located north of Interstate 10 and a review of the site locations for all facilities shows they do not affect known agricultural or forestry resources. Based on the preceding information regarding agriculture and forestry resources and the CBP at this stage of the Program's development, the potential Agriculture and Forestry Resource impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Agriculture and Forestry Resources falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Air Quality

The Air Quality issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will operate. These issues are discussed on pages 4-37 through 4-55 of Appendix 1 of Volume II 2026 CBP RFPEIR. One (1) mitigation measure was identified for implementation and with it (and implementation of construction rules and regulations), the Original Project (CBP) was determined to have a less than significant adverse impact on air quality resources in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring construction and operation, reducing overall ground disturbance during construction and use of electricity during operations. Based on the preceding information regarding Program emissions and the CBP at this stage of the Program's development, the potential Air Quality impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Air Quality falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Biological Resources

The Biological Resources issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will operate and areas of the Santa Ana River downstream to Prado Dam. These issues are discussed on pages 4-67 through 4-117 of Appendix 1 of Volume II 2026 CBP RFPEIR. In addition to the Biological Resources analysis in Appendix 1 of Volume II 2026 CBP RFPEIR, this document also relied on the findings of the Upper Santa Ana River (SAR) Habitat Conservation Plan (HCP). IEUA is a stakeholder in the compilation and assembly of this Draft HCP, and is also a participant in the Joint Powers Authority seeking to have the Agency's future water management "covered activities" mitigated through HCP mitigation activities in the Upper SAR. A total of twenty-six (26) mitigation measures were identified for implementation in Appendix 1 of Volume II 2026 CBP RFPEIR and with them and the Draft HCP management measures, the Original Project (CBP) was determined to contribute to one unavoidable significant adverse impact on Biology Resources in the Chino Basin environment (Santa Ana Sucker).

The San Bernardino Valley Municipal Water District (Valley District) published its draft document in 2021 and based on comments received, initiated further evaluation of HCP mitigation measures to ensure the mitigation identified in the HCP (which includes front loading mitigation to stay ahead of potential impacts under the HCP) would be sufficient to offset all covered water management activity impacts on sensitive species located upstream of Prado Dam. Refer to the San Bernardino Valley Water Conservation District's memorandum in **Appendix 3**. The Modified Project as defined above will have fewer overall facilities requiring location, construction and operation and most of these facilities, which are located within the urban area north of Interstate 10, reduce potential impacts on species covered by the HCP. In addition to reducing overall ground disturbance during construction and occupancy during operations for most IEUA CBP facilities, IEUA is relocating discharge of 9,992 AFY from its existing Regional Plants, as summarized in the project description above. This is approximately 1,000 AFY less than that which was analyzed in the CBP RFPEIR as a covered activity.

Finally, as noted, Valley District's most recent Draft Upper SAR HCP document indicates that all biological species in the Upper SAR can be sustained by stewardship management activities identified in the HCP without posing a threat to any species survival, i.e., no permanent adverse effect. Based on the preceding information regarding the current proposed facility locations in the existing urban environment and the CBP use of recycled water at this stage of the Program's development, the potential Biology Resource impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Biological Resources falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Cultural Resources

The Cultural Resources issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will operate. These issues are discussed on pages 4-118 through 4-142 of Appendix 1 of Volume II 2026 CBP RFPEIR. Four (4) mitigation measures were identified for implementation and with them, the Original Project (CBP) was determined to have a less than significant adverse impact on cultural resources in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring ground disturbance which will reduce overall ground disturbance by the Program and will be located in the most urbanized portion of the Chino Basin. Based on the preceding information regarding Program cultural resource impact and the CBP at this stage of the Program's development, the potential cultural resource impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding falls within the scope of Program approved earlier and no subsequent CEQA document is required to be prepared to address this issue. This finding regarding Cultural Resources falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Energy

The Energy issue is discussed in detail in the 2026 CBP RFPEIR that encompassed all of the potential facilities within which the Chino Basin Program will require energy to operate. These issues are discussed on pages 4-6 through 4-26 of the 2026 CBP RFPEIR. No mitigation measures were identified for implementation and the Original Project (CBP) was determined to have a less than significant adverse impact on wasteful, inefficient or unnecessary consumption of energy resources. The Modified Project as defined above will have fewer overall facilities requiring energy consumption (primarily electricity) which will reduce overall consumption by the Program relative to the Original Project (CBP). Based on the preceding information regarding Program Energy resource impact and the CBP at this stage of the Program's development, the potential Energy resource impacts of the Program will be less than identified in the 2026 CBP RFPEIR. This finding regarding Energy falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Geology & Soils

The Geology and Soils issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will operate. These issues are discussed on pages 4-163 through 4-190 of Appendix 1 of Volume II 2026 CBP RFPEIR. Three (3) mitigation measures were identified for implementation and with them, the Original Project (CBP) was determined to have a less than significant adverse impact on Geology and Soil resources in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring location, construction and operation, reducing overall ground disturbance during construction and occupancy during operations. Based on the preceding information regarding the current proposed facility locations in the existing urban environment and the CBP at this stage of the Program's development, the potential Geology and Soil impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Geology and Soils falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Greenhouse Gases

The Greenhouse Gas (GHG) issue is discussed in detail in the 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will operate. These issues are discussed on pages 4-27 through 4-58 of the 2026 CBP RFPEIR. Two (2) mitigation measures were identified for implementation and with them, the Original Project (CBP) was determined to have an unavoidable significant adverse impact on GHG issues in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring construction and operation, reducing overall ground disturbance during construction and use of electricity during operations. However, it does not appear that this reduction of GHG emissions would reduce potential impacts to a less than significant impact level. Based on the preceding information regarding Program GHG emissions and the CBP at this stage of the Program's development, the potential GHG impacts of the Program will be significant and adverse which is consistent with the 2026 CBP RFPEIR. This finding regarding Greenhouse Gases falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Hazards & Hazardous Materials

The Hazards and Hazardous Materials issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the Hazard(s) potential areas within which the Chino Basin Program will operate. These issues are discussed on pages 4-221 through 4-259 of Appendix 1 of Volume II 2026 CBP RFPEIR. Thirteen (13) mitigation measures were identified for implementation and with them, the Original Project (CBP) was determined to have a less than significant adverse impact on Hazard and Hazardous Material issues in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring location, construction and operation, reducing overall ground disturbance during construction and occupancy during operations. Based on the preceding information regarding the current proposed facility locations in the existing urban environment north of I-10 and the CBP at this stage of the Program's development, the potential Hazard and Hazardous Material impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Hazards and Hazardous Materials falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Hydrology & Water Quality

The Hydrology and Water Quality issue is discussed in detail in the 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will operate. These issues are discussed on pages 4-59 through 4-136 of the 2026 CBP RFPEIR and in the Appendices. Thirteen (13) mitigation measures were identified for implementation and with them, the Original Project (CBP) was determined to have a less than significant adverse impact on Hydrology and Water Quality resources in the Chino Basin and Santa Ana River watershed. The Modified Project as defined above will have fewer overall facilities requiring location, construction, operation and changes is WTTP discharges. These changes reduce overall ground disturbance during construction and occupancy during operations and reduce the diversions relative to the analysis in the 2026 PEIR. Refer to Table 4 extracted from the 2026 CBP RFPEIR (provided below) and Table 5 that summarizes the proposed facilities at this time. The following differences are noted:

Table 4
SUMMARY OF CBP INFRASTRUCTURE

Project Category	Infrastructure
Project Category 1: Well Development (Injection Wells, Extraction Wells, Etc.)	16 injection wells (maximum) 17 extraction wells (maximum) 4 monitoring wells (maximum) Use of existing wells including a mix of up to 4 of the following: • Use of existing Rialto Pipeline • Use of existing member agency wells • Use of existing Agua de Lejos WTP Clearwell • Use of existing Lloyd Michael WTP Clearwell

Project Category	Infrastructure
Project Category 2: Conveyance Facilities and Ancillary Facilities	Pipeline: The CBP would ultimately install a total of about 30 miles or 158,400 lineal feet (LF) of various types of pipelines. Potential alignments include a mix of the following: • TAKE 1: 9 miles of 12- to 36-inch collector pipelines • TAKE 1: 5 miles of 54-inch potable northern pipeline • TAKE 3: 9 miles of 12- to 42-inch collector pipelines • TAKE 3: 8 miles of 16- through 48-in potable northern pipeline • TAKE 3: 4 miles of 12- through 24-inch potable southern pipeline • TAKE 3: In lieu Brine Disposal IEBL 6,800 ft 8" pipeline, possible jack and bore across 300 ft under Hwy 71 and Chino Creek • TAKE 7: 7 miles of 36- to 72-inch e/w WFA pipeline • TAKE 7: 4.5 miles 24-inch e/w FWC pipeline • TAKE 7: 4.5 miles 54- to 72-inch & 36-inch CVWD/MWD pipeline • TAKE 7: 0.3 miles 54- to 72-inch MWD pipeline • TAKE 8: 6.3 miles of 48-inch CVWD pipeline • TAKE 8: 7 miles of 24-inch FWC-1 pipeline • TAKE 8: 0.7 miles of 24-inch FWC-2 pipeline • TAKE 8: 0.8 miles of 24-inch MWD pipeline • TAKE 8: 36-inch JCSD 2 miles • PUT 5: 7.1 miles of 8- to 30-inch pipeline for purified water conveyance • PUT 5: 1,400 ft (8' pipeline) NRWS brine conveyance; NRWS Capacity Units required 2,603 Reservoir: The CBP would install a circular, prestressed tank storage tank with a maximum capacity of 5 MG with possible and in-conduit hydropower facility. Pump Station: The CBP would install 4 pump stations serving various PUT and TAKE facilities. One pump station would serve PUT facilities, while up to three pump stations would support TAKE facilities. The breakdown of the types of pump stations include a mix of the following: • PUT 5: Pump station at RP-4 1,500 HP • TAKE 1: Pump Station with a max 9,300 HP, and a max of 31,100 gpm, 823 ft TDH • TAKE 3: Potable Water Pump Station #1: 7,000 HP, 23,300 gpm firm capacity, 823 ft TDH • TAKE 7: WFA Booster at 1,700 HP • TAKE 7: FWC Booster at 300 HP • TAKE 7: CVWD/MWD Booster at 4,800 HP • TAKE 8: Booster Station #1 at 5,300 HP • TAKE 8: MWD Booster at 650 HP Turnouts: The CBP would install a maximum of 6 turn-outs that would be between 12" and 72" in size to support TAKE facilities at various member agency locations throughout the Chino Basin
Project Category 3: Groundwater Storage Increase	The CBP would contemplate a tiered increase in Safe Storage Capacity that would accommodate CBP storage requirements as well as Watermaster stakeholder storage requirements as follows: the CBP proposes an increase in Safe Storage Capacity up to 720,000 AF from July 1, 2030 through June 30, 2042, and to 580,000 AF from July 1, 2042 through June 30, 2048, with the Safe Storage Capacity decreasing to 500,000 AF thereafter.
Project Category 4: Advanced Water Purification Facility and Other Water Treatment Facilities	AWPF: The CBP would install an AWPF at RP-4, which will ultimately have a capacity of 15,000 AFY. The intake of recycled water at this facility will total 17,000 AFY, with a resulting 15,000 AFY of purified water derived from the AWPF processes. Wellhead Treatment: The CBP may install up to 3 wellhead treatment facilities at locations that have yet to be selected.

Table 5

Comparison of Original CBP to Current Proposed CBP

	Original Project	Current Project
Total # of Wells	37	27
Total Pipelines of Various Diameters	~30 miles	~23.6
Total number of Reservoirs and Capacities thereof	One 5 MG	Three 2 MG
Total Pump Stations	3	7
Total Booster Pump Stations	5	3
Surge Tank	0	1
Treatment Systems	3	2
IEUA Volume of Recycled Water Estimated for CBP Diversion	11,000 AFY	9,992 AFY

On balance substantial additional construction and slightly more recycled water diversion was estimated in the Original Project compared to the current engineering recommended facilities.

Due to the short time period between certification of the CBP PEIR in 2022 (as amended by the 2026 CBP RFPEIR) and the preparation of this Addendum, 2026, the background environmental circumstances have not changed substantially. However, in their 2026 comments on the 2026 CBP RFPEIR, the City of Ontario identified two issues that they identified as constituting changes in hydrologic circumstances that within the Chino Basin. The first issue is a recent change in the Chino Groundwater Basin Safe Yield. The Chino Groundwater Basin's Operating Safe Yield (OSY) is the legally determined, sustainable annual amount of groundwater that can be extracted from the Chino Basin without causing overdraft, harm to water quality, or contribute to other undesirable effects.

IEUA operates and manages the Chino Basin Recycled Water Groundwater Recharge Program, which is one of the key components of the Optimum Basin Management Program (OBMP), which supports the OSY. IEUA's activities related to the Chino Basin include:

- **Sponsorship and coordination:** IEUA, together with the Chino Basin Watermaster, the Chino Basin Water Conservation District, and the San Bernardino County Flood Control District, jointly sponsor the Groundwater Recharge (GWR) Program as part of the OBMP

- **Water sourcing and delivery:** IEUA provides recycled water from its treatment plants, along with imported water from the State Water Project and local stormwater, to be sent to 19 r4echarge sites across its service area

- **Groundwater Replenishment:** The Program directs these recycled waters into above-ground basins, where gravity percolation recharges the alluvial aquifers of the Basin, enhancing local groundwater supplies and improving water quality

- **Volume scale:** Currently, IEUA can recharge up to 40,000-50,000 acre-feet of imported water; 15,000-25,000 acre-feet of stormwater, and 18,000 acre-feet of recycled water each year. The Chino Basin Program will add an additional 15,000 acre-feet of stored advanced purified water as recharge.

- **Compliance and planning:** IEUA's activities are designed to meet the require4ments of court-approved basin management plans and peace agreements, and to address long-term water supply and quality changes in the Chino Basin.

The CBP (as modified herein) is consistent with these goals and will help provide an additional 15,000 acre-feet of stored, advanced treated recycled water to the Basin each year through aquifer replenishing injection wells.

Over 25 years, the CBP will add 375,000 acre-feet of high quality, low TDS water to the Basin, which will maintain ground water quality in the northern portion of the Basin to remain within the Regional Board's ground water quality dissolve solids standard for this portion of the Basin. Based on the findings presented above, IEUA's implementation of the Chino Basin Program will not contribute to adverse impacts to the OSY.

The second issue raised in City of Ontario comment relates to the Desalter Replenishment Obligation. The Desalter Replenishment Obligation (DRO) is the mechanism for replacing groundwater extracted by the Chino Basin Authority (CDA) since 2000 to produce potable water. Replenishing those extractions helps maintain sustainable ground water levels, protects water quality, and carries out the court-ordered OBMP.

The responsibility to restore the over-drafted water produced by the CDA in accordance with the OBMP rests with the Chino Basin Appropriative Pool, not IEUA. Appropriative Pool members are entities that hold water pumping rights in the Basin. Under the OBMP, Appropriative Pool members agreed to controlled overdraft associated with desalter operations to establish hydraulic control, manage basin water quality, and support development of the groundwater recharge Program. The members also committed to drawing down and no longer relying on the 400,000 acre-feet of accumulated overdraft by 2030. Accordingly, responsibility for satisfying the DRO rests with the Appropriative Pool members starting in 2031. IEUA does not have a DRO obligation and is not required to provide water to meet this obligation. Thus, implementation of the CBP has no mechanism to adversely impact the DRO.

Based on the preceding information regarding the current number of proposed facilities in the existing urban environment and the CBP at this stage of the Program's development (2026), the potential Hydrology and Water Quality impacts of the Program will be less than identified in the 2026 CBP RFPEIR. This finding regarding Hydrology and Water Quality falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Land Use & Planning

The Land Use and Planning issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential facilities within which the Chino Basin Program will be installed and operated. These issues are discussed on pages 4-337 through 4-354 of Appendix 1 of Volume II 2026 CBP RFPEIR. One (1) mitigation measure was identified for implementation and the Original Project (CBP) was determined to have a less than significant adverse impact on existing land uses and land use designations. The Modified Project as defined above will have fewer overall facilities with less potential for land use conflicts by the current proposed Program relative to the Original Project (CBP). Based on the preceding information regarding Program Land Use and Planning impact and the CBP at this stage of the Program's development, the potential Land Use and Planning impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Land Use and Planning falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Mineral Resources

The Mineral Resources issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential areas with Mineral Resources within which the Chino Basin Program will operate. These issues are discussed on pages 4-355 through 4-360 of Appendix 1 of Volume II 2026 CBP RFPEIR. One (1) mitigation measure was identified for implementation and with it, the Original Project (CBP) was determined to have a less than significant adverse impact on Mineral Resource issues in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring location, construction and operation, reducing overall ground disturbance during construction and occupancy during operations. Based on the preceding information regarding the current proposed facility locations in the existing urban environment and the CBP at this stage of the Program's development, the potential Mineral Resource impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Mineral Resources falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Noise

The Noise issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will build and operate. These issues are discussed on pages 4-361 through 4-408 of the 2022 CBP PEIR. Seven (7) mitigation measures were identified for implementation and with them, the Original Project (CBP) was determined to have a less than significant adverse impact on Noise environments in the Chino Basin. The Modified Project as defined above will have fewer overall facilities requiring construction and operation, reducing overall ground disturbance during construction and use of electricity during operations. Based on the preceding information regarding Program emissions and the CBP at this stage of the Program's development, the potential Noise impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Noise falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Population & Housing

The Population and Housing issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential facilities within which the Chino Basin Program will be installed and operated. These issues are discussed on pages 4-409 through 4-418 of Appendix 1 of Volume II 2026 CBP RFPEIR. One (1) mitigation measure was identified for implementation and the Original Project (CBP) was determined to have a less than significant adverse impact on existing Population and Housing resources. The Modified Project as defined above will have fewer overall facilities with less potential for land use conflicts by the current proposed Program relative to the Original Project (CBP). Based on the preceding information regarding Program Population and Housing impact and the CBP at this stage of the Program's development, the potential Population and Housing impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Population and Housing falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Public Services

The Public Services issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential services within which the Chino Basin Program will be installed and operated. These issues are discussed on pages 4-419 through 4-441 of Appendix 1 of Volume II 2026 CBP RFPEIR. Two (2) mitigation measures were identified for implementation and the Original Project (CBP) was determined to have a less than significant adverse impact on existing Public Service systems. The Modified Project as defined above will have fewer overall facilities with less potential for service demands by the current proposed Program relative to the Original Project (CBP). Based on the preceding information regarding Public Service system impacts and the CBP at this stage of the Program's development, the potential Public Service system impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Public Services falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Recreation

The Recreation resource issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential recreation within which the Chino Basin Program will be installed and operated. These issues are discussed on pages 4-443 through 4-451 of Appendix 1 of Volume II 2026 CBP RFPEIR. Two (2) mitigation measures were identified for implementation and the Original Project (CBP) was determined to have a less than significant adverse impact on existing Recreational resources. The Modified Project as defined above will have fewer overall facilities with less potential for conflicts with recreational resources by the current proposed Program relative to the Original Project (CBP). Based on the preceding information regarding Recreational resource impacts and the CBP at this stage of the Program's development, the potential Recreational resource impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Recreation falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Transportation

The Transportation issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the Transportation/Circulation System resources within which the Chino Basin Program will operate. These issues are discussed on pages 4-453 through 4-470 of Appendix 1 of Volume II 2026 CBP RFPEIR. Two (2) mitigation measures were identified for implementation and with them, the Original Project (CBP) was determined to have a less than significant adverse impact on Transportation/Circulation System issues in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring location, construction and operation, reducing overall traffic (trip generation) during construction and during operations. Based on the preceding information regarding the current proposed facility locations in the existing urban environment north of I-10 and the CBP at this stage of the Program's development, the potential Transportation/Circulation System impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Transportation and Traffic falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Tribal Cultural Resources

The Tribal Cultural Resources issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the potential areas within which the Chino Basin Program will install and operate CBP facilities. These issues are discussed on pages 4-471 through 4-479 of Appendix 1 of Volume II 2026 CBP RFPEIR. A total of six (6) mitigation measures were identified for implementation and with them the Original Project (CBP) was determined to have a less than significant adverse impact on cultural resources in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring ground disturbance which will reduce overall potential Tribal Cultural Resource impacts by the Program. Based on the preceding information regarding Program Tribal Cultural Resource impact and the CBP at this stage of the Program's development, the potential Tribal Cultural Resource impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Tribal Cultural Resources falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Utilities & Service Systems

The Utility and Service Systems issue is discussed in detail in the 2026 CBP RFPEIR that encompassed all of the potential utility service areas within which the Chino Basin Program will be installed and operated. These issues are discussed on pages 4-137 through 4-176 of the 2026 CBP RFPEIR. Six (6) mitigation measures were identified for implementation and the Original Project (CBP) was determined to have a less than significant adverse impact on all existing Utility systems, except GHG emissions during construction. The Modified Project as defined above will have fewer overall facilities with less potential for Utility demands by the current proposed Program relative to the Original Project (CBP). Based on the preceding information regarding Utility and Service System impacts and the CBP at this stage of the Program's development, the potential Utility and Service System impacts of the Program will be less than identified in the 2026 CBP RFPEIR but may remain significant due to cumulative construction GHG impacts. This finding regarding Utilities & Service Systems falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

Wildfire

The Wildfire issue is discussed in detail in Appendix 1 of Volume II 2026 CBP RFPEIR that encompassed all of the wildfire potential areas within which the Chino Basin Program will operate. These issues are discussed on pages 4-521 through 4-536 of Appendix 1 of Volume II 2026 CBP RFPEIR. Two (2) mitigation measures were identified for implementation and with them, the Original Project (CBP) was determined to have a less than significant adverse impact on Wildfire issues in the Chino Basin environment. The Modified Project as defined above will have fewer overall facilities requiring location, construction, a mostly urban setting, and operation, reducing overall exposure to Wildfire hazards during construction and during operations. Based on the preceding information regarding the current proposed facility locations in the existing urban environment and the CBP at

this stage of the Program's development, the potential Wildfire impacts of the Program will be less than identified in Appendix 1 of Volume II 2026 CBP RFPEIR. This finding regarding Wildfire falls within the scope of the Program approved earlier and none of the conditions described in Section 15162 calling for the preparation of a subsequent EIR or ND have occurred.

V. CONCLUSION/RECOMMENDED DETERMINATION

The information presented in the 2026 CBP RFPEIR for the Chino Basin Program was used as a basis for the analysis in this Addendum, updated with current information from sources cited, referenced, and attached. Upon review of the 2026 CBP RFPEIR, the information and findings in this Addendum and all supporting evidence, it is the conclusion of this Addendum that the potential adverse environmental impacts from implementing the currently proposed Project (Modified Project, October 2026), as described at the beginning of this document, will not cause any new or more significant impacts to the environment than forecasted in the 2026 CBP RFPEIR document as summarized in this Addendum and originally analyzed in Appendix 1. The proposed Modified Project will be required to comply with the certified 2026 CBP RFPEIR mitigation measures for construction and operation of the AWPF. Refer to the list of all mitigation measures included in the 2026 CBP RFPEIR in Appendix 1. IEUA will require all of the applicable mitigation measures to be implemented for the Modified Project. There are no new or more significant impacts that result from the proposed Modified Project modifications, based on continuing to implement the commitments found in the 2026 CBP RFPEIR.

This Addendum provides IEUA with new and updated information substantiating the conclusion that the proposed Modified Project will not cause substantial new or more significant physical changes to the environment that would require preparation and processing of a new negative declaration or a new environmental impact report. Such documentation would only be required due to the involvement of new significant environmental effects, new mitigation measures being available or required, or a substantial increase in the severity of previously identified environmental effects from implementing the Original Project (refer to Section 15162, State CEQA Guidelines). The facts and findings cited above and provided in this Addendum allow IEUA to use this Addendum in accordance with Section 15164 of the State CEQA Guidelines for considering approval of the Modified Project.

Pursuant to State CEQA Guidelines Section 15164, the CBP RFPEIR certified in 2026, as updated with the findings in this Addendum, can be relied upon for documentation of the effects of approving the Modified Project. Because the changes identified as part of the Modified Project do not exceed the thresholds outlined in Sections 15162 and 15164 of the State CEQA Guidelines, no further analysis of the environmental impacts of the proposed project is required in a Supplemental/Subsequent EIR or MND. The proposed Modified Project does not substantially alter the conclusions contained in the CBP RFPEIR as certified by IEUA in 2026. The analysis presented above of the changes to the Original Project justifies the issuance of Addendum No. 2 to IEUA's 2026 CBP RFPEIR.

This Addendum No. 2 to the 2026 RFPEIR for the proposed CBP includes the changes or additions necessary to make the certified environmental document adequate under CEQA for the Modified Project. This Addendum incorporates the certified 2026 RFPEIR, this document, and all staff reports and information submitted to the decision makers regarding environmental issues affected by the proposed Modified Project. This Addendum is intended as a document containing additional information to provide decision makers and others, as appropriate, with an objective assessment of the potential environmental impacts associated with the implementation of the proposed Modified Project.

VI. REVIEW AUTHORITY

The Inland Empire Utilities Agency serves as the CEQA lead agency for this project. It is recommended that an Addendum be certified as the appropriate CEQA environmental determination for the proposed Project modification, to allow installation of an AWPF for the CBP at IEUA's RP-4 and the identified diversion of WWTP discharges (9,992 AFY), and the supporting findings thereof. All documents supporting the Addendum, as well as the prior environmental documents, are located at the Inland Empire Utilities Agency Headquarters at 6075 Kimball Ave, Chino, CA 91708 or at its website, https://www.ieua.org/chino-basin-Program-ceqa-documents/.

VII. CERTIFICATION

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Elizabeth Hurst, Chino Basin Program Manager
Inland Empire Utilities Agency

APPENDIX 1

IEUA Wastewater Change Petition

State Water Resources Control Board

NOTICE OF WASTEWATER CHANGE PETITION WW0116 OF INLAND EMPIRE UTILITIES AGENCY

COUNTY: San Bernardino

STREAM SYSTEM: Chino Creek and Cucamonga Creek, both tributary to the Santa Ana River, thence the Pacific Ocean

On June 1, 2026, the Inland Empire Utilities Agency (IEUA or Petitioner) filed a wastewater change petition (Petition WW0116) with the State Water Resources Control Board (State Water Board or Board), Division of Water Rights (Division), pursuant to California Water Code section 1211. The Petitioner requests authorization to reduce the discharge of tertiary treated wastewater from four of IEUA's Wastewater Treatment Plants (WWTPs) to the Santa Ana River watershed by up to 9,992 acre-feet per year (afy) during all months of the year as part of the ongoing Chino Basin Program (Program). IEUA plans to redirect the tertiary treated water currently discharged to the Santa Ana River watershed to a new Advanced Water Purification Facility (AWPF) for additional treatment and then store it in the Chino Basin aquifer for subsequent extraction and delivery as potable reuse supply within IEUA's service area. The expected completion date for construction of the AWPF for the Chino Basin Program is 2032.

Tertiary treated water is currently discharged to the Santa Ana River watershed from four IEUA WWTPs, including:

(1) Regional Water Recycling Plant No. 1 (RP-1);
(2) Regional Water Recycling Plant No. 4 (RP-4);
(3) Regional Water Recycling Plant No. 5 (RP-5); and
(4) Carbon Canyon Water Recycling Facility (CCWRF).

IEUA's four WWTPs currently discharge to four points[1] upstream of Prado Dam:

(1) RP-1 and RP-4 to Prado Park Lake, tributary to Chino Creek thence the Santa Ana River in Prado Basin;
(2) RP-1 and RP4 to Cucamonga Creek, tributary to Chino Creek thence the Santa Ana River;
(3) RP-5 to Chino Creek, tributary to the Santa Ana River, approximately 5.5 river miles upstream of Prado Dam; and

[1] A map depicting the discharge points can be found in Attachment A: Project Overview Map.

(4) CCWRF to Chino Creek, tributary to the Santa Ana River, approximately 7.2 river miles upstream of Prado Dam.

IEUA is proposing to reduce present discharges by 9,992 afy, which is an approximately 45 percent reduction of baseline average annual WWTP discharges. IEUA is also proposing to continue to discharge a minimum of 7,038 afy of treated wastewater to the Santa Ana River watershed, which is approximately 30 percent of baseline average annual WWTP discharges. IEUA's four WWTPs have four permitted discharge points (DP-001, DP-002, DP-003, and DP-004), and the reduction in discharge to the Upper Santa Ana River watershed above Prado Dam would be from all four discharge points. Presently, on average, the treated effluent flow discharges from IEUA's CCWRF and RP-5 WWTPs account for approximately 50 percent of Chino Creek monthly flows. In addition, on average, the treated effluent flow discharges from IEUA's RP-1 and RP-4 WWTPs to Cucamonga Creek account for approximately 40 percent of Cucamonga Creek monthly flows.

The Santa Ana Regional Water Quality Control Board's National Pollution Discharge Elimination System (NPDES) permit CA8000409 (Order No. R8-2022-041), which applies to IEUA's wastewater treatment plant discharges, was adopted on June 3, 2022, and became effective on August 1, 2022. Order No. R8-2022-041 does not include minimum discharge requirements; however, under a separate agreement between IEUA and San Bernardino County, IEUA delivers to up to 3 million gallons per day (mgd) of recycled water to Prado Lake, contingent upon recycled water being available following IEUA distribution to its member agencies.

The Santa Ana River watershed is adjudicated by the 1969 Santa Ana River Judgment (Judgment), which requires IEUA and other Upper Santa Ana River parties above Prado Dam to release a minimum of 34,000 afy, if cumulative credits are used. IEUA's Program Environmental Impact Report (PEIR) for the Chino Basin Program estimated that the average discharge below Prado Dam under the baseline scenario (i.e., no reduction in recycled water discharge to the Santa Ana River due to operation of the AWPF) during the Program period is projected to be 167,400 afy. Under the AWPF operation assumptions, the PEIR analysis projects that the minimum average discharge below Prado Dam will be 151,000 afy. Therefore, IEUA concludes under forecast estimated flows, there would be sufficient water in the Santa Ana River to meet water delivery requirements under the Judgment. Additionally, IEUA's PEIR concluded that operation of the AWPF will not cause a significant adverse impact on hydraulic control in the Chino Basin.

In addition to the effects described above, the PEIR also evaluated impacts on water quality. Reach 3 of the Santa Ana River, located downstream of IEUA's discharges, has a total dissolved solids (TDS) objective of 700 mg/L and, historically, effluent discharges have helped to dilute the higher TDS Reach 3 flows. IEUA will continue efforts to reduce effluent TDS through optimization of wastewater treatment processes and collaboration with Metropolitan Water District to prevent TDS spikes in imported water. Additionally, IEUA actively participates in the Santa Ana Watershed Project Authority Reach 3 Special Study.

Summary of Wastewater Discharge and Proposed Changes:

Sources of Discharge: IEUA's four WWTPs include:

(1) Regional Water Recycling Plant No. 1 (RP-1);

(2) Regional Water Recycling Plant No. 4 (RP-4);

(3) Regional Water Recycling Plant No. 5 (RP-5); and

(4) Carbon Canyon Water Recycling Facility (CCWRF)

Receiving Waters:
Prado Park Lake, Chino Creek, and Cucamonga Creek, all tributary to the Santa Ana River, thence the Pacific Ocean

Points of Discharge:
Present: IEUA's four Wastewater Treatment Plants (WWTPs) currently discharge to:

Discharge Point No. 1:
Prado Park Lake, overflow from the lake to an unnamed creek, thence Chino Creek, a tributary to the Santa Ana River in Prado Basin, California Coordinate System, NAD 83, Zone 5, North 1,802,257 feet and East 6,670,010 feet, being within the northwest quarter of the northwest quarter of Section 5, Township 3S, Range 7W, San Bernadino Base and Meridian (SBB&M).

Discharge Point No. 2:
Cucamonga Creek, tributary to Mill Creek, thence Chino Creek, a tributary to the Santa Ana River in Prado Basin, California Coordinate System, NAD 83, Zone 5, North 1,831,531 feet and East 6,682,996 feet, being within the northwest quarter of the southeast quarter of Section 3, Township 2S, Range 7W, SBB&M.

Discharge Point No. 3:
Chino Creek, a tributary to the Santa Ana River, located at California Coordinate System, NAD 83, Zone 5, North 1,808,788 feet and East 6,659,283 feet, being within the southwest quarter of the southwest quarter of Section 25, Township 2S, Range 8W, SBB&M.

Discharge Point No. 4:
Chino Creek, a tributary to the Santa Ana River, California Coordinate System, NAD 83, Zone 5, North 1,816,056 feet and East 6,653,622 feet, being within the northwest quarter of the southwest quarter of Section 23, Township 2S, Range 8W, SBB&M.

Proposed: No change

Rate of Discharge:

Present:

The monthly average present (i.e., based on five-year historical average), proposed reduction, and proposed minimum discharge flows for Petition WW0116 have been converted into cubic feet per second (cfs), million gallons per day (mgd), and afy units.

	Present Discharge (2020-2024, 5-Year Average)*		
	(cfs)	(mgd)	(afy)
January	56.6	36.6	3,484
February	48.7	31.5	2,723
March	54.6	35.3	3,356
April	41.4	26.7	2,462
May	26.7	17.3	1,640
June	18.5	11.9	1,097
July	11.1	7.2	685
August	10.8	7.0	667
September	11.9	7.7	709
October	18.2	11.8	1,120
November	30.1	19.5	1,788
December	41.7	27.0	2,564
Total			22,294

* While IEUA's PEIR evaluates CBP impacts using a 2030 discharge forecast baseline, corresponding to the anticipated start of CBP operations, State Water Board staff have determined that, for purposes of reviewing Petition WW0116, the appropriate baseline is the monthly average of historical discharges from calendar years 2020 through 2024.

Present average monthly flow of 30.9 cfs (equivalent to 19.9 mgd) (Water Years 2020-2024, 5-year average) discharges to the Upper Santa Ana River watershed above Prado Dam.

Reduction:

IEUA proposes to reduce the present discharges by the following monthly volumes. Please note that subtracting the proposed bypass flows (further below) from the present flows does not equal the reduced flows and volumes. In addition, reduced discharges were calculated in monthly acre-feet, so comparing values in cfs or mgd units may result in rounding differences.

	Proposed Reduction in Discharge		
Month	(cfs)	(mgd)	(afy)
January	19.8	12.8	1,215
February	18.7	12.1	1,048
March	17.8	11.5	1,093
April	13.3	8.6	792
May	12.8	8.2	784
June	7.6	4.9	450
July	10.2	6.6	627
August	7.8	5.1	482
September	9.3	6	556
October	12	7.7	736
November	12.8	8.3	761
December	23.6	15.2	1,448
Total			9,992

Discharge flows to the Santa Ana River are proposed to be reduced by 13.8 cfs, equivalent to 8.9 mgd, per month on average.

Proposed Minimum Discharge:
IEUA proposes to maintain minimum monthly discharge volumes to the Upper Santa Ana River watershed above Prado Dam, as outlined in the table below. State Water Board staff understand that the Inland Empire Utilities Agency's proposed minimum monthly discharge volumes are consistent with those currently being evaluated under the Upper Santa Ana River Habitat Conservation Plan (USARHCP).

	Proposed Minimum Discharge		
	(cfs)	(mgd)	(afy)
January	20.2	13.1	1,242
February	18.1	11.7	1,012
March	14.2	9.2	874
April	10.8	7	644
May	7.5	4.8	460
June	3.1	2	184
July	2.2	1.5	138
August	2.2	1.5	138
September	3.9	2.5	230
October	6.7	4.4	414
November	12.4	8	736
December	15.7	10.2	966
Total			7,038

IEUA proposes to maintain average monthly minimum discharges of 9.8 cfs (equivalent to 6.3 mgd) to the Upper Santa Ana River watershed above Prado Dam.

Purposes of Use:
Present: None.

Proposed: Divert up to 9,992 afy of reclaimed water for additional treatment, indirect potable reuse via groundwater augmentation and storage in the Chino Basin aquifer, with later extraction and delivery as potable reuse supply within IEUA's service area for municipal, industrial, and irrigation purposes.

Places of Use:
Present: None.

Proposed: IEUA proposes to construct an Advanced Water Purification Facility (AWPF) at its Regional Water Recycling Plant (RP-4), which will treat up to 15 mgd of tertiary-treated wastewater effluent. The treated water will be injected into the Chino Basin aquifer through dedicated wells for groundwater augmentation and storage. Later, water will be extracted and distributed as potable reuse supply throughout the IEUA service area.

California Environmental Quality Act Compliance:

IEUA is the lead agency for the preparation of environmental documents required by the California Environmental Quality Act (CEQA) for the Chino Basin Program. IEUA

circulated a Draft Program Environmental Impact Report (PEIR) in October 2021, which was consequently certified on May 18, 2022. On June 17, 2022, the City of Ontario filed a Petition for Writ of Mandate against IEUA's PEIR in San Bernardino County Superior Court. On December 8, 2025, the Superior Court entered judgment and issued a Peremptory Writ of Mandate, ordering IEUA to vacate the Chino Basin Program PEIR certification. On April 21, 2026, IEUA completed and circulated a Recirculated PEIR, which was certified by the IEUA Board of Directors on July 15, 2026. IEUA filed a Notice of Determination as the CEQA lead agency for the Recirculated PEIR with the State Clearinghouse on July 20, 2026. On August 13, 2026, the City of Ontario filed a lawsuit challenging the Recirculated PEIR.

IEUA is currently conducting a second-tier CEQA evaluation of the PEIR's environmental findings to determine whether any impact conclusions have changed and to assess whether the PEIR remains adequate for supporting the CEQA environmental determinations for Petition WW0116. This reevaluation is intended to fulfill the requirements of PEIR Mitigation Measure BIO-25, which states: "IEUA shall conduct a second-tier CEQA evaluation for a proposed water diversion project associated with the CBP." Completion of this evaluation is anticipated by late 2026.

State Water Board staff understands that the San Bernardino Valley Municipal Water District, acting as the CEQA Lead Agency, intends to prepare a Final Environmental Impact Report for the Upper Santa Ana River Habitat Conservation Plan (USARHCP). A Draft Environmental Impact Report (SCH No. 2018121017) was issued on May 17, 2021, and includes analysis of impacts associated with a proposed covered activity designated as ID No. IEUA.4. According to Table C-1 of the USARHCP 2021 Draft EIR, proposed covered activity ID No. IEUA.4 refers to the IEUA regional wastewater treatment expansion water reuse project, anticipated to increase average annual capture by 9,991 afy/13.8 cfs/7.4 mgd. State Water Board staff reviewed a comparison of the present, proposed, and resulting reductions in discharges analyzed in IEUA's PEIR and the USARHCP 2021 Draft EIR, included as Attachment No. 1 of Petition WW0116. The comparison indicates that Petition WW0116 proposes a discharge reduction of 9,992 afy versus a reduction of 10,684 afy for the USARHCP CEQA analysis. In other words, IEUA's proposed reduction is approximately seven percent lower than what was considered for the USARHCP CEQA analysis. Attachment No. 3 of Petition WW0116, includes a letter from Ms. Joanna Gibson, the Executive Director of the USARHCP, which concludes that the quantification of IEUA's proposed diversion of treated wastewater discharges reported in the Chino Basin Program EIR is consistent with the diversions reported for proposed covered activity ID No. IEUA.4 in the USARHCP. While State Water Board staff understand that IEUA's PEIR and the USARHCP both analyze operations of the Chino Basin Program, State Water Board staff have determined that, as a responsible agency under CEQA, the State Water Board will consider the PEIR prepared by IEUA in determining whether to approve Petition WW0116.

For each significant environmental effect identified in an environmental impact report that is within the Board's area of responsibility, the Board must make one or more of the following findings: (1) changes have been required in the project that mitigate or avoid the significant effect, (2) such changes are within the responsibility and jurisdiction of another public agency and have been or can and should be adopted by that agency, or (3) specific economic, legal, social, technological, or other considerations make the mitigation measures or project alternatives identified in the PEIR infeasible. (Pub. Resources Code, §§ 21002.1, 21081; Cal. Code Regs, tit. 14, §§ 15091, 15093, 15096.).

Protest Submittal Instructions:

Any interested person may file a written protest against the approval of Petition WW0116. (Wat. Code, § 1703.1.) Protest submittal information is available at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/docs/protestsubmittalinfo.pdf

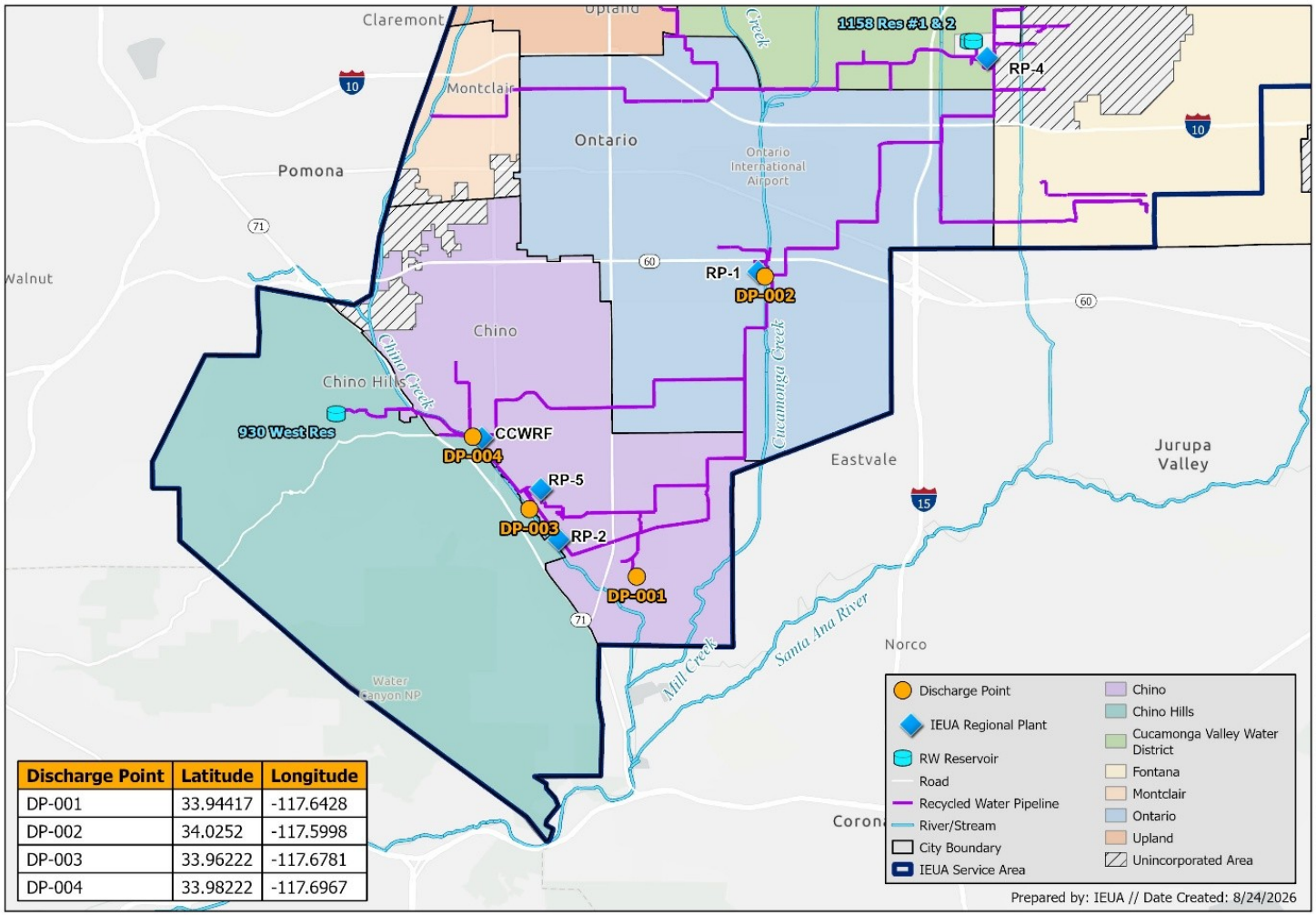
Protests must be received by the Division of Water Rights at WaterRightPetitions@waterboards.ca.gov by **4:30 p.m. on October 26, 2026**. A copy of the protest must also be provided to the Petitioner via Elizabeth Hurst, Chino Basin Program Manager at Inland Empire Utilities Agency, at ehurst@ieua.org.

More information regarding the wastewater change petition process is available at: http://www.waterboards.ca.gov/waterrights/water_issues/programs/applications/wastewaterchange

For more information regarding Petition WW0116, please contact Derek Wadsworth at derek.wadsworth@waterboards.ca.gov. Any correspondence directed to IEUA should be emailed to Elizabeth Hurst, Chino Basin Program Manager, Inland Empire Utilities Agency, at ehurst@ieua.org.

Date of Notice: **September 24, 2026**

Attachment A: Project Overview Map



Discharge Point	Latitude	Longitude
DP-001	33.94417	-117.6428
DP-002	34.0252	-117.5998
DP-003	33.96222	-117.6781
DP-004	33.98222	-117.6967

Figure 1. WW0116 Overview Map

APPENDIX 2

2026 Recirculated Final PEIR
Chapter 3 – Project Description

CHAPTER 3 – PROJECT DESCRIPTION

All exhibits are located at the end of this chapter, not immediately following their reference in the text.

3.1 INTRODUCTION

This chapter contains a detailed description of the proposed project, the Chino Basin Program (CBP), with focus on those program characteristics and activities that have the potential to cause a direct physical change in the environment, or a reasonably foreseeable indirect physical change to the environment.

Inland Empire Utilities Agency (IEUA) and local partners have developed 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. Some of the facilities included in these plans are addressed in IEUA's ten-year forecast (TYF) and Integrated Water Resources Plan (IRP). The CBP provides an opportunity to implement critical long-term project components of these plans, addressing local, regional, and potentially statewide and federal water resources management issues. The CBP is a revolutionary, first-of-its-kind program designed to help the region move beyond traditional water management practices and into a new era of water use optimization. The CBP promotes proactive investment in managing the water quality of the Chino Groundwater Basin and in meeting regional water supply reliability needs in the face of climate change, while leveraging California's interregional plumbing system and the Chino Basin's future potential for water recycling to produce benefits to local, State, and federal interest.

3.1.1 IEUA Agency Background

IEUA, located in western San Bernardino County, serves approximately 875,000 residents in a 242-square mile service area. As a regional wastewater treatment agency, IEUA provides sewage utility services to seven contracting agencies under the Chino Basin Regional Sewage Service Contract: the 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 contracting agencies, IEUA provides wholesale imported water from Metropolitan Water District of Southern California (MWD) to Water Facilities Authority (WFA), CVWD in the city of Rancho Cucamonga and Fontana Water Company (FWC) in the city of Fontana; Water Facilities Authority then serves imported water to the cities of Chino, Chino Hills, Ontario, Upland, and Monte Vista Water District in the City of Montclair and adjacent unincorporated areas (**Exhibit 1**).

IEUA is a regional sewage treatment and water agency that provides wastewater treatment, solids handling, and recycled water to the west end of San Bernardino County. Its 242-square-mile service area includes the cities of Upland, Montclair, Ontario, Fontana, Chino and Chino Hills, and CVWD, which services the City of Rancho Cucamonga and the unincorporated areas of San Bernardino County, including the Chino Agricultural Preserve. IEUA, a special assessment district, is governed by a five seat publicly elected Board of Directors. Each director is assigned to one of the five divisions which are: Division 1 - Upland/Montclair; Division 2 - Ontario/ Agricultural Preserve; Division 3 - Chino/ Chino Hills; Division 4 - Fontana; and Division 5 - Rancho Cucamonga. The Regional Technical and Policy Committees provide information on technical and policy issues, and there are representatives from each of the contracting agencies on these committees.



Exhibit 1: IEUA Service Area

Five regional water recycling plants are used to treat wastewater from IEUA's service area. They are: Regional Water Recycling Plant No. 1 (RP-1), located in the City of Ontario; Regional Water Recycling Plant No. 2 (RP-2), located in the City of Chino; Regional Water Recycling Plant No. 4 (RP-4), located in the City of Rancho Cucamonga; Carbon Canyon Water Recycling Facility (CCWRF), located in the City of Chino; and Regional Water Recycling Plant No. 5 (RP-5), located in the City of Chino. Of the five plants, RP-2 is the only plant that does not produce any recycled water. In conjunction with these facilities, IEUA maintains and operates a desalter facility, Chino I Desalter, in the City of Chino and a biosolids composting facility, Inland Empire Composting Facility, in the City of Rancho Cucamonga on behalf of the Chino Basin Desalter Authority and Inland Empire Regional Composting Authority, respectively (**Exhibit 2**). IEUA is also the MWD representative for the contracting agencies.

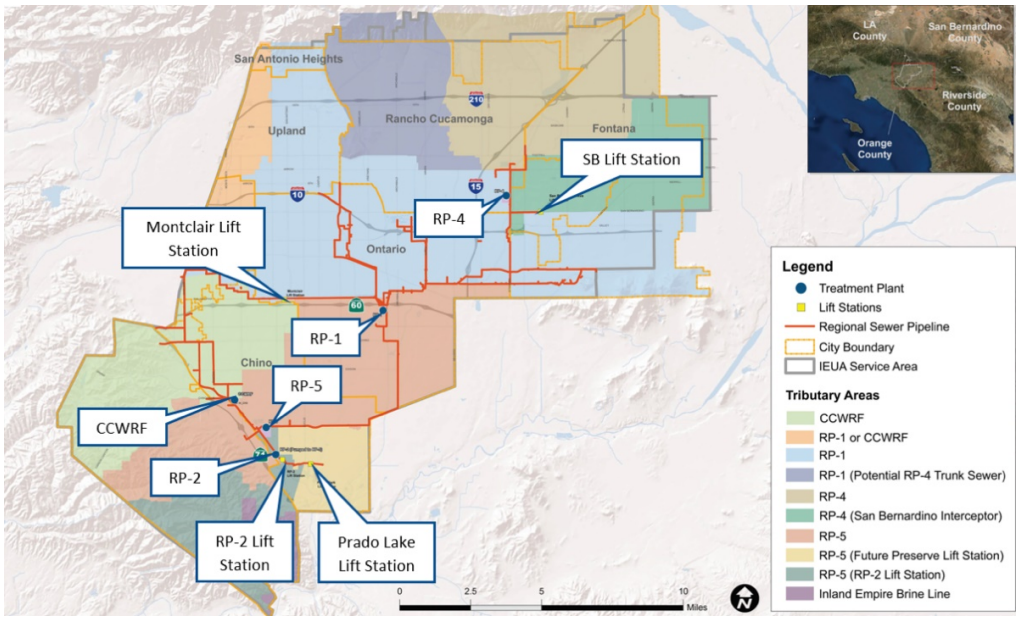


Exhibit 2: IEUA Facility Locations

The water resource inventory for the IEUA service area is made up of stormwater, recycled water, local surface water, groundwater, and imported water.

- Stormwater comes primarily from rain and snow starting in the San Gabriel Mountains and moving down through the Chino Basin watershed and diverted into groundwater recharge basins.
- Recycled water is generated from IEUA's four recycling plants.
- Local surface water is similar to stormwater, but the water is diverted and treated at a water treatment facility within the service area.
- Groundwater makes up the majority of the area's annual water supply and comes primarily from the Chino Basin and from basins adjacent to the Chino Basin. These basins include, Cucamonga, Rialto, Lytle Creek, Colton, and the Six Basins groundwater basins.
- Imported water is purchased from MWD.

Table 1 provides a recent summary of the raw water supply to the region, which is ultimately the source of supply for the recycled water processed at the IEUA water recycling facilities.

Table 1
WATER SUPPLY BY TYPE FOR IEUA SERVICE AREA

Water Supply	Percent of Total
Groundwater	30%
Desalter Product Water	15%
Imported Water (SWP)	25%
Stormwater and other local water supply	10%
Recycled Water	20%
Total	**100%**

Source: IEUA FY 2019-2020 Annual Water Use Report

3.2 PROJECT LOCATION

The Chino Basin consists of about 235-square-miles of the upper Santa Ana River watershed. The boundary of the Chino Basin is legally defined in the 1978 Judgment in the case of Chino Basin Municipal Water District vs. the City of Chino et al. The Chino Basin is an alluvial valley that is relatively flat from east to west and slopes from the north to the south at a one to two percent grade. Valley elevation ranges from about 2,000 feet in the foothills to approximately 500 feet near Prado Dam. As shown in **Figure 1**, the Chino Basin is bounded:

- on the north by the San Gabriel Mountains and the Cucamonga Basin;
- on the east by the Rialto-Colton Basin, Jurupa Hills, and the Pedley Hills;
- on the south by the La Sierra Hills and the Temescal Basin; and
- on the west by the Chino Hills, Puente Hills, and the Spadra, Pomona, and Claremont Basins.

The Chino Basin is one of the largest groundwater basins in Southern California with about 5,000,000 acre-feet (AF) of groundwater and an unused storage capacity of approximately 1,000,000 acre-feet. Cities and other water supply entities produce groundwater for all or part of their municipal and industrial supplies; and about 300 to 400 agricultural users continue to produce groundwater from the Basin. The Chino Basin is an integral part of the regional and statewide water supply system. Prior to 1978, the Basin was in an overdraft condition. After 1978,

the Basin has been operated as described in the 1978 Judgment.[1]

The principal drainage course of the Chino Basin is the Santa Ana River, which flows 69 miles across the Santa Ana Watershed from its origin in the San Bernardino Mountains to the Pacific Ocean. The Santa Ana River enters the Basin at the Riverside Narrows and flows along the southern boundary to the Prado Flood Control Reservoir where it is eventually discharged through the outlet at Prado Dam into Orange County. Chino Basin is traversed by a series of ephemeral and perennial streams that include: Chino Creek, San Antonio Creek, Cucamonga Creek, Deer Creek, Day Creek, Etiwanda Creek and San Sevaine Creek.

These creeks carry significant flows only during, and for a short time after, storm events that typically occur from November through March. Year-round flow occurs along the entire reach of the Santa Ana River due to year-round surface inflows at Riverside Narrows, discharges from municipal water recycling plants to the River between the Narrows and Prado Dam, and rising groundwater. Rising groundwater occurs in Chino Creek, in the Santa Ana River at Prado Dam, and potentially other locations on the Santa Ana River depending on climate and season.

The Chino Basin is mapped within the USGS – Corona North, Cucamonga Peak, Devore, Fontana, Guasti, Mount Baldy, Ontario, Prado Dam, Riverside West and San Dimas Quadrangles, 7.5 Minute Series topographic maps. The center of the Basin is located near the intersection of Haven Avenue and Mission Boulevard at Longitude 34.038040N, and Latitude 117.575954W.

3.3 EXISTING CONDITIONS OF THE BASIN

3.3.1 Chino Groundwater Basin

The proposed CBP envisions an increase the Safe Storage Capacity of the Chino Groundwater Basin (Chino Basin). As such, the following is a discussion of the background, existing circumstances of the Chino Basin and storage capacity thereof.

On January 2, 1975, several Chino Basin groundwater producers filed suit in the State of California Superior Court for San Bernardino County (Court) to settle the problem of allocating water rights in the Chino Basin. On January 27, 1978, the Court entered a judgment in "Chino Basin Municipal Water District v. City of Chino et. al." (Judgment). The Judgment adjudicated the groundwater rights of the Chino Basin, established the Chino Basin Watermaster (CBWM or Watermaster)—a Court created entity—to administer the Judgment, and contains a Physical Solution to meet the requirements of water users having rights in or dependent upon the Chino Basin. **Figure 2** shows the adjudicated boundary as it is legally defined in the Judgment, the hydrologic boundary, the Chino Basin management zones, and the groundwater management zones defined by the Santa Ana Regional Water Quality Control Board (Regional Board) in the Water Quality Control Plan for the Santa Ana River Basin (Basin Plan).

Watermaster is governed by a nine-member board drawn from parties from three groups: an Appropriative Pool, a Non-Agricultural Pool, and an Agricultural Pool, and three other public agencies, including IEUA, which effectively represent the water producers and wholesalers in the Chino Basin. These member agencies are considered "stakeholders" or "the Parties."

[1] Original judgment in Chino Basin Municipal Water District vs. City of Chino, et al., signed by Judge Howard B. Weiner, Case No. 164327. File transferred August 1989, by order of the Court and assigned new case number RCV51010. The restated Judgment can be found here: http://www.cbwm.org/docs/WatermasterCourtFilings/2012%20Watermaster%20Restated%20Judgment.pdf

To manage the Chino Basin for the long-term benefit of all producers in the area, the Optimum Basin Management Program (OBMP) was developed pursuant to a Judgment entered in the Superior Court of the State of California on January 27, 1978 (the Court) and compelled by further order of the Court under its continuing jurisdiction. The Watermaster administers the decree under the direction of the Court. It was granted discretionary powers to develop and implement the OBMP.

When the OBMP was developed it was expected that the Parties and other entities would use the storage space above 5,300,000 AF for conjunctive use and not exceed a storage volume of 5,800,000 AF. The Operational Storage Requirement—the storage or volume in the Chino Basin that is necessary to maintain safe yield—was estimated to be 5,300,000 AF in the OBMP. The OBMP also defined the term Safe Storage, which is an estimate of the maximum storage in the Basin that will not cause significant water-quality and high-groundwater related problems. Safe Storage was estimated to be about 5,800,000 AF in the 2000 OBMP. The Safe Storage Capacity, which is the difference between the Safe Storage (5,800,000 AF) and the Operational Storage Requirement (5,300,000 AF), was determined to be 500,000 AF in the 2000 OBMP. Water occupying the Safe Storage Capacity includes water in storage accounts (stored water), carryover water, and water that was anticipated to be stored in future groundwater Storage and Recovery Programs.

If groundwater storage exceeded 5,800,000 AF, the OBMP assumed that mitigation would be required to operate the Basin at those higher levels of storage. In the years since the 2000 OBMP was adopted, however, twenty years of additional hydrologic information, implementation experience of the OBMP through the Peace and Peace II Agreements, and related actions of the Watermaster and the Parties, have demonstrated that Safe Storage is greater than 5,800,000 AF and, although not precisely computed, the implied Safe Storage Capacity is 735,000 AF or larger.

In 2016, Watermaster identified the need to update the OBMP so that the storage management plan in the OBMP Implementation Plan could be modified to reflect an increase in managed storage accounts, which were projected to exceed the Safe Storage Capacity (SSC) limit of 500,000 AF defined in the 2000 OBMP. In 2017, IEUA adopted Addendum No. 1 to the OBMP PEIR to provide a "temporary increase in the Safe Storage Capacity from 500,000 AF to 600,000 AF for the period of July 1, 2017 through June 30, 2021 […] until a comprehensive re-evaluation of the Safe Storage Capacity value/concept can be completed before June 30, 2021."[2] Addendum No. 1 was supported with engineering work that demonstrated that this temporary increase in SSC would not cause material physical injury (MPI) to Watermaster stakeholders or loss of Hydraulic Control.[3] Addendum No. 1 was certified by IEUA in March 2017, and Safe Storage Capacity was reset to 600,000 AF through June 30, 2021.

Watermaster began the comprehensive re-evaluation of the Safe Storage Capacity concept through a stakeholder process during 2017 and 2018, which resulted in the 2018 Storage Framework Investigation Report (SFI). The SFI evaluated the Basin response, MPI and undesirable results from projections of the Parties' future storage management activities and

[2] Tom Dodson & Associates. (2017). Addendum No. 1 to the Optimum Basin Management Program Project. Page 2.
[3] MPI means material injury that is attributable to the recharge, transfer, storage and recovery, management, movement or production of water, or implementation of the OBMP, including, but not limited to, degradation of water quality, liquefaction, land subsidence, increases in pump lift (lower water levels), and adverse impacts associated with rising groundwater. MPI does not include "economic injury" that results from other than physical causes. Once fully mitigated, physical injury shall not be considered to be material. (From Peace Agreement Definitions, page 8) Further, loss of Hydraulic Control means the inability to eliminate groundwater discharge from the Chino-North Groundwater Management Zone to the Santa Ana River or its reduction to less than 1,000 AFY.

potential future Storage and Recovery Programs that could store additional water in the Basin, concurrently with the Parties (cumulatively up to 1,000,000 AF). This work was based, in part, on groundwater modeling projections of the Basin using the 2017 Watermaster model that was last previously calibrated in 2011. The SFI developed a series of metrics to identify MPI and undesirable results for the use of storage space and introduced a new term called managed storage. Managed storage includes water stored by the Parties and other entities, which fluctuates over time based on the actions of the Parties and other entities.

During the period between 2018 and mid-2020, Watermaster revised its groundwater model and renamed it the 2020 Chino Valley Model (CVM). The 2020 CVM supersedes the model version used in the 2018 SFI. The CVM was used to update pumping and recharge projections to develop an updated estimate of Safe Yield for the period 2021 through 2030 (WEI, 2020). Based on this Safe Yield Investigation, Safe Yield for the period was determined to be 131,100 acre-feet per year.[4] The Court subsequently accepted Watermaster's Safe Yield recommendation and ordered the Safe Yield changed in July 2020.

In late 2020, Watermaster identified the need to amend the OBMP so that the Safe Storage Capacity of the Chino Basin could be increased to address what Watermaster deemed a "Local Storage Limitation Solution" (LSLS).[5] As such, Watermaster and IEUA authorized the preparation of Addendum No. 2 in order to enable a study of the current Safe Storage Capacity. Watermaster facilitated the preparation of a report based on the CVM regarding the use of Chino Basin storage space to update the Safe Storage Capacity based on updated water use and Safe Yield projections.

Based on the report's projection of managed storage, the LSLS was defined by the use of storage space up to 700,000 AF through June 30, 2030, decreasing to 620,000 AF from July 1, 2030 through June 30, 2035. This definition of the LSLS balanced the need to provide for the combined use of managed storage by the Parties and the Dry Year Yield Program (DYYP)[6] through the end of the DYYP contract period (2028) and the Parties' need to hedge against future uncertainty by maximizing projected use of managed storage in the early 2030s. The increase in Safe Storage Capacity did not require the development of any new facilities or any other mitigation to minimize potential adverse impacts to the Basin, as none were projected to occur within the confines of the reset Safe Storage Capacity limits. Over time, cumulative use of the Basin for storage utilizing existing facilities at the same general existing rate of use can fully utilize managed storage space up to 700,000 AF through June 30, 2030, decreasing to 620,000 AF from July 1, 2030 through June 30, 2035. Addendum No. 2 was certified by IEUA in March 2021, and Safe Storage Capacity was reset to 700,000 AF through June 30, 2030, decreasing to 620,000 AF from July 1, 2030 through June 30, 2035.

A 2023 SFI was prepared to support the Chino Basin Watermaster Optimum Basin Management Program Update (OBMPU) Subsequent Environmental Impact Report (SEIR) resulting from

[4] As defined by the Judgment, Safe Yield means the long-term average annual quantity of ground water (excluding replenishment or stored water but including return flow to the Basin from use of replenishment or stored water) which can be produced from the Basin under cultural conditions of a particular year without causing an undesirable result.
[5] The intent of the Local Storage Limit Solution was to address the need for greater storage in the Basin to accommodate the Parties desire for greater managed storage in the Basin, whilst taking into account the Metropolitan Dry-Year Yield Program (DYYP).
[6] The DYYP can store up to 100,000 AF with maximum puts of 25,000 AFY and maximum takes of 33,000 AFY. The DYYP Storage and Recovery agreement provides that puts and takes can exceed these values if agreed to by Watermaster (as was done in fiscal years 2018 and 2009, respectively). The agreement that authorizes the DYYP will expire in 2028.

Stakeholder input in late 2022 (provided as Appendix 6b to the OBMPU SEIR).[7] The 2023 Storage Framework Investigation (SFI) provided a technical analysis of the hydrologic impacts of Storage and Recovery Programs that are contemplated in the OBMPU SEIR Project Description. The scope of work required to develop the 2023 SFI was to (i) define Storage and Recovery Program scenarios based on this OBMPU Project Description and (ii) evaluate the response of the Chino Basin to the scenarios for MPI and adverse impacts.

The projected response of the Chino Basin to the Storage and Recovery Program scenarios was simulated using the 2020 Chino Valley Model (CVM) over the period of fiscal year (FY) 2019 through FY 2060. By using the 2020 CVM as the basis for the analysis, the 2023 SFI reflected the most up to date understanding of the effects of the contemplated Storage and Recovery Programs on the Chino Basin. Put simply, the 2023 SFI analyzed the Basin response from the Chino Basin Parties' use of storage space up to 700,000 AF and the conjunctive-use by Storage and Recovery Programs from 700,000 AF to 900,000 AF, thereby contemplating an increase in SSC to 900,000 AF. The OBMPU SEIR therefore proposed the expansion of the safe storage capacity up to 900,000 AF going forward.

Thus, in 2024, the IEUA Board certified the Chino Basin Watermaster OBMPU Final Subsequent Environmental Impact Report (Final SEIR), thereby enabling the expansion of the Safe Storage Capacity up to 900,000 AF going forward (from 2024 and beyond).

3.3.2 Water Supply

Formed in 1950, IEUA is a member of the MWD and thus acts as a supplemental water provider. Approximately 25 percent of the water used in the region is imported from MWD through the State Water Project (SWP). Due to water quality limitations (salinity, total dissolved solids [TDS]) and operation of the regional recycled water program, IEUA only takes water from the SWP. IEUA strives to increase regional sustainability through the development of reliable local water supplies. These efforts include using water more efficiently, eliminating waste and unreasonable use, and making the region climate resilient through maximizing the use of recycled water. IEUA has invested in water use efficiency efforts and is on track to reduce water use.

A diverse portfolio of water supply sources has been developed within IEUA's service area. The region relies on groundwater from the Chino Basin and other basins (Cucamonga, Rialto, Lytle Creek, Colton, and the Six Basins groundwater basins), local surface water from creeks originating in the San Gabriel Mountains, recycled water produced locally, and imported water from the SWP via MWD. The IEUA IRP established a baseline water supply scenario for IEUA's service area through 2040. **Table 2** below provides the current and projected recycled water supplies in acre-feet per year (AFY) through 2040.

Table 2
CURRENT AND PROJECTED RECYCLED WATER SUPPLIES (AFY)

Recycled Water Supply	2020	2025	2030	2035	2040
	56,388[1]	60,150	63,530	64,500	67,140
NOTES: (1) For 2020, this amount is the actual supply. For 2025 to 2040, supply projections are from IEUA 2021 Wastewater and Recycled Water Demand Forecasts based on land use					

[7] Chino Basin Watermaster, 2023. 2023 Storage Framework Investigation. https://ceqanet.lci.ca.gov/2020020183/4/Attachment/oTUpcR (Accessed 01/22/26)

3.3.3 Water Demand

Current and projected recycled water demands through 2040 are provided in **Table 3** below. Recycled water demands include direct use and groundwater recharge. IEUA recycled water that is not beneficially used is discharged to the Santa Ana River as wastewater treatment plant effluent.

Table 3
CURRENT AND PROJECTED RECYCLED WATER DEMAND (AFY)

	2020	2025	2030	2035	2040
Direct Use Demands[1]	17,115	20,870	23,275	24,704	27,855
Groundwater Recharge[2]	13,381	14,962	16,420	16,420	16,420
Total	30,495	35,832	39,965	41,124	44,275
NOTES: (1) From IEUA 2021 Wastewater and Recycled Water Demand Forecasts, (2) From CBWM 2020 Storage Management Plan					

3.3.4 Water Quality

As one of the stewards responsible for managing water and wastewater in the region, IEUA continuously evaluates challenges and develops solutions to address them, all with the goal of securing a reliable/resilient, 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 percent of IEUA's water supply portfolio and hundreds of millions of dollars have been invested into the regional recycled water program.

The Regional Board's Basin Plan sets regulatory limitations for recycled water TDS and continued use of recycled water within the region depends on compliance with these limits. 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 approached the maximum effluent limit for recycled water (550 mg/L) in 2015, prompting an internal evaluation that was prepared in 2016. As demonstrated in **Exhibit 3**, recycled water TDS concentration over time shows a pattern of peaks and valleys, with a gradual increase over time. The 2016 preliminary evaluation demonstrated that TDS concentrations in water and wastewater supplies, and therefore recycled water, are steadily increasing, and drought conditions and water conserving activities exacerbate TDS concentrations in both (**Exhibit 4**). Based on this evaluation, IEUA concluded that implementation of an advanced water purification facility (AWPF) will be needed at some point to address increasing salinity. Furthermore, postponing treatment poses risks to maintaining the region's maximum benefit objectives associated with the Basin Plan, and consequently IEUA's compliance for its wastewater treatment operations. Maximum benefit objectives are defined in the paragraphs below. IEUA and the Watermaster 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 Watermaster permits.

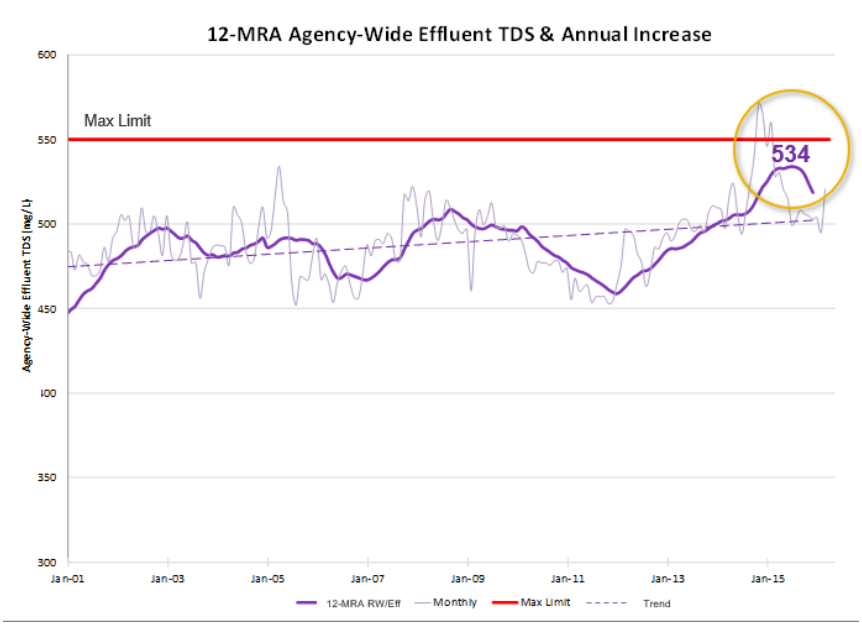


Exhibit 3: Agency-wide Recycled Water Effluent TDS Concentration (2001–2016)

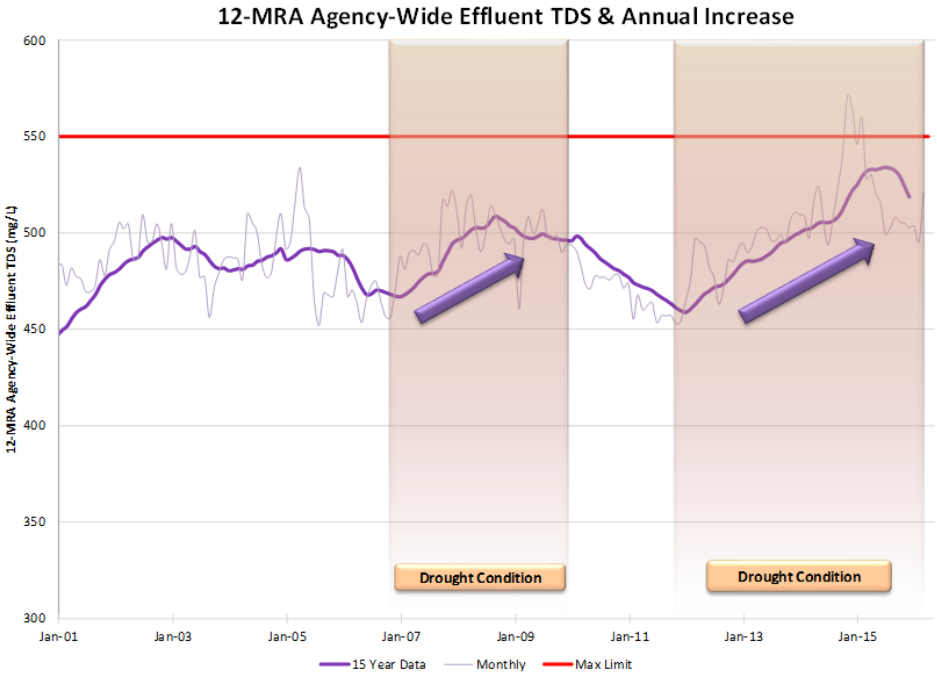


Exhibit 4: Drought & Recycled Water Effluent TDS Relationship

Subsequent to the 2016 Preliminary Evaluation, further analyses were completed in support of regional planning efforts. The primary objective for these analyses was to project when the recycled water TDS concentration would exceed the permit limit, as well as another RWQCB compliance-driven action limit (545 mg/L), which is in place to ensure TDS concentrations remain below the permit limit of 550 mg/L. 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. The analyses demonstrated increasing trends in TDS concentrations for the water supply and recycled water. Based on the analysis, exceedance of the RWQCB action limit of 545 mg/L was projected to occur in 2031. Exceedance of the permit limit of 550 mg/L was projected to occur as early as 2030, up to 2034.

Maintaining permit compliance is a critical priority for IEUA and Chino Basin stakeholders. There are strict consequences associated with non-compliance with the Basin Plan 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 to recharge the groundwater aquifer. Consequently, all effluent from IEUA's water recycling facilities will need to be discharged to the Santa Ana River. Discharge to the Santa Ana River 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 Watermaster and IEUA mitigate the effects of discharges of recycled and imported water that took place under the maximum benefit objectives." This will require AWPFs 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.

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 (CEC). 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 and PFOA Notification Level. It becomes evident, then, that even if advanced treatment is not needed for TDS compliance, it may be needed to address other regulatory challenges related to CECs within the region to continue to have access to existing supplies.

3.3.5 Recycled Water Program

IEUA has produced and distributed high quality recycled water since 1972 when the Agency expanded its services to include regional wastewater treatment. Currently, IEUA owns and operates four regional recycled water plants that produce disinfected and filtered tertiary treated recycled water in compliance with California's Title 22 regulations. As previously discussed, these four regional recycled water plants include RP-1, RP-4, RP-5, and the CCWRF. Recycled water from these plants is used within the region for direct use (irrigation, industrial, and construction purposes) and groundwater recharge.

Water recycling is a critical component of the water resources management strategy for IEUA and

the Chino Basin. The State of California has determined that the reuse of highly treated recycled water is the only new major source of water available to meet Southern California's growing water demand. IEUA currently receives over 50 million gallons per day of wastewater from its regional treatment plants. This water is treated to Title 22 regulations set forth by the State Division of Drinking Water and is then distributed throughout the service area. As noted above, IEUA delivers the recycled water to be used for direct reuse and for groundwater recharge.

Direct Reuse

Within the region, recycled water is reused for a variety of applications including landscape irrigation, agricultural irrigation, industrial process water and construction. Recycled water demands by use type for fiscal year (FY) 2019/2020 are provided in **Table 4**: Recycled Water Demand for Direct Use by Use Type for FY 2019/2020.

Table 4
RECYCLED WATER DEMAND FOR DIRECT USE BY USE TYPE FOR FY 2019/2020

Type of Use	Demand (acre-feet)	Percentage
Recharge	13,381	44%
Agriculture	5,757	19%
Landscape	9,716	32%
Industrial	1,004	3%
Construction	638	4%
Total	**30,495**	**100%**

Notes: From IEUA 2019/2020 Recycled Water Annual Report

IEUA is the wholesale recycled water provider to its member agencies, which in turn are retail agencies that directly serve their customers. IEUA member agencies which served recycled water in FY 2019/2020 include:

- City of Chino
- City of Chino Hills
- CVWD
- Fontana (through FWC)
- Montclair (through MVWD)
- City of Ontario
- City of Upland

MVWD and FWC are the water retailers in the Cities of Montclair and Fontana, respectively, and obtain recycled water from their overlying cities. San Bernardino County is currently a direct use customer of IEUA based on long standing historical contracts since 1972. **Table 5**: Recycled Water Demand for Direct Use by Agency for FY 2019/2020 shows the recycled water demand for direct use by agency.

Table 5
RECYCLED WATER DEMAND FOR DIRECT USE BY AGENCY FOR FY 19/20

Retail Agency	Direct Use (AF)	Recharge (AF)	Demand (AF)
City of Chino	4,795	0	4,765
City of Chino Hills	1,417	1,188	2,605
CVWD	1,038	4,458	5,496
Fontana/FWC	211	2,693	2,904
Montclair/MVWD	298	781	1,079
City of Ontario	7,817	3,017	10,864
City of Upland	703	1,243	1,946

Retail Agency	Direct Use (AF)	Recharge (AF)	Demand (AF)
IEUA	773	0	773
San Bernardino County	65	0	65
Total	**17,115**	**13,381**	**30,495**

Notes: From IEUA 2019-20 Recycled Water Annual Report

3.3.6 Groundwater Recharge

IEUA, the Watermaster, the Chino Basin Water Conservation District, and the San Bernardino County Flood Control District jointly sponsor the Chino Basin recycled water groundwater recharge program that is an integral part of the OBMP and the region's water supply portfolio. This program was put in place to enhance water supply reliability and to improve drinking water quality throughout the greater Chino Basin. Annually, IEUA recharges on average between 30,000 and 40,000 AF of imported water, stormwater, and recycled water. The recharge infrastructure consists of a network of pipelines that direct stormwater run-off, imported water from the SWP, and IEUA recycled water to 16 recharge sites most of which consist of multiple recharge basins. These recharge basins provide capacity to recharge up to approximately 77,500 AFY.[8]

The Chino Basin recycled water groundwater recharge program assists in mitigating future water shortages in California caused by future limitations for importing water supplies from the SWP and provides a subsurface reserve of groundwater for local use. This enhances the current reliability of local groundwater supplies for a rapidly growing population and is an integral part of local water supply planning. The groundwater recharge program is an important part of the overall Chino Groundwater Basin program and serves as a long-term solution to the water supply and water quality issues facing the greater Chino Basin.

In fiscal year 2019/2020, 13,381 acre-feet of recycled water was used for groundwater recharge. This accounts for 41 percent of the total recycled water demand within the region. Recycled water demand for groundwater recharge by agency is provided in **Table 6**: Recycled Water Demand for Groundwater Recharge by Agency for FY 2019/2020.

Table 6
RECYCLED WATER DEMAND FOR RECHARGE BY AGENCY FOR FY 19/20

Type of Use	Demand (acre-feet)
City of Chino	0
City of Chino Hills	1,188
CVWD	4,458
Fontana/FWC	2,693
Montclair/MVWD	781
City of Ontario	3,017
City of Upland	1,243
IEUA	0
San Bernardino County	0
Total	**13,381**

Notes: From IEUA 2019/2020 Recycled Water Annual Report

[8] *Annual Finding of Substantial Compliance with the Recharge Master Plan* for FY 2020-21, which can be found at page 69 of the November 2020 Watermaster Board Package here

3.4 PROJECT PURPOSE AND OBJECTIVES

CEQA Section 15124(b) states that an EIR Project Description should include "*A statement of the objectives sought by the proposed project. A clearly written statement of objectives will help the lead agency develop a reasonable range of alternatives to evaluate in the EIR and will aid the decision makers in preparing findings or a statement of overriding considerations, if necessary. The statement of objectives should include the underlying purpose of the project and may discuss the project benefits."* Thus, it is the goal of the CBP to enhance both the SWP and the Central Valley Project for the betterment of operations, environment, resilience, and reliability. The objectives described below are intended to facilitate the provisions of CEQA Section 15124(b), as the CBP objectives are suited to the purpose of this project, as defined by the lead agency, IEUA, and enable a reasonable range of feasible alternatives.

The CBP will be developed to provide flexibility to regional and local water operations, particularly during future extended droughts expected as climate change continues to impact California. New injection and extraction facilities, conveyance facilities, and water system interconnections will allow more optimal management of local water supplies, including improved storage and recovery operations, as well as redundancies in water delivery infrastructure that will facilitate future rehabilitation and replacement needs. The CBP will also develop new Southern California advanced water treatment supplies to be stored in the Chino Groundwater Basin and exchanged in dry and critical years for Southern California-bound SWP supplies stored in Northern California. The stored Northern California water will subsequently be released as multi-day pulse flows to support anadromous fish populations in the Feather River and the Sacramento-San Joaquin Delta (Delta), providing a statewide public benefit. The term for this exchange will be fixed at 25 years for a total volume of 375,000 acre-feet, after which time the CBP will be devoted to meeting local water management needs while fulfilling commitments to improve water quality in the Chino Groundwater Basin and provide a source of emergency water supply. However, as previously stated under Subchapters 1.1, Project Background and 2.3, Scope and Content of this EIR, beyond that the facilities associated with the CBP would continue to be operationally viable beyond the proposed 25-year conjunctive use project and would be available to support the goals presented in the previous sentence, to analyze the manner in which the facilities will be operated would be speculative to address at this time, and further would be evaluated as part of future master planning efforts.

The CBP would strengthen partnerships among local agencies that participate in the project and offer an opportunity for local agencies to coalesce around the future of the Chino Basin. Partnerships between local agencies, the MWD, the California Department of Water Resources (DWR), the California Department of Fish and Wildlife (CDFW), and the U.S. Bureau of Reclamation (USBR) will also be essential to the success of the project and offer a framework for future improved collaboration. The program objectives are designed to guide the development and implementation of the CBP to reflect the collective interests of this partnership. These are to:

- Meet Permit Compliance for the Continued Use of Recycled Water in the Chino Groundwater Basin.
- Maintain Commitments for Salt Management to Enable Sustainable Use of Recycled Water in the Basin.
- Develop Infrastructure That Addresses Long Term Supply Vulnerabilities.
- Provide a Source of Water for Emergency Response.
- Develop an Integrated Solution to Support Regional Water Reliability and Environmental Sustainability ~~Produce State and Federal Environmental Benefits~~.

3.5 PROJECT SUMMARY

3.5.1 Chino Basin Program Overview

The CBP was submitted for Proposition 1 – Water Storage Investment Program (WSIP) funding and was awarded $269M ~~$206.9M~~ in conditional funding as of August 2025 ~~in July 2018~~. Under the WSIP, the CBP is proposed to be a 25-year conjunctive use project that proposes to use advanced water purification to treat and store up to 15,000 AFY of recycled water in the Chino Basin and extract the water during call years, which will likely be in dry seasons.

The proposed CBP is uniquely designed to deliver public benefits including a highly reliable, dedicated environmental water supply to benefit Bay Delta instream flows, as well as enhance water supply reliability and improve water quality for water users in Southern California. Among the key attributes of the CBP is the production of a new source of highly reliable water supply for the environment. The challenges of allocating scarce water supplies among water users and the environment faced by State and federal agencies during California's recent historical drought clearly demonstrated the value of creating dependable new supplies for all California water users. Consistent with Governor Newsom's Water Resilience Portfolio Initiative, responsible public water agencies across California are adding resiliency to meet their future water needs by diversifying their water management portfolios through investment in a variety of water use efficiency and supplemental local supply programs and projects. The CBP offers an important opportunity to similarly diversify the tools available to California's environmental managers for sustaining our State's vital aquatic ecosystems.

By increasing additional available groundwater supplies in the adjudicated Chino Groundwater Basin through increased water recycling and storage, and then dedicating a like amount of water for environmental flow purposes, the CBP provides a compelling example of a conjunctive use storage project operating at both ends of the SWP. The reliability of the water designated for groundwater storage is based upon the development of new water supplies from treated wastewater secured from IEUA partner agencies. In the scope of this program, new water is secured, transported, treated, and then deposited in the Chino Groundwater Basin for ecological benefit in the Bay-Delta watershed while providing water supply reliability and improved water quality benefits to IEUA customers and partner agencies.

The CBP will provide for an exchange of new water supplies in the Chino Basin for SWP supplies in Lake Oroville in Northern California that would otherwise be delivered to Southern California. The additional Lake Oroville water would subsequently be released in the form of pulse flows in the Feather River to improve habitat conditions for native salmonids and achieve environmental benefits (**Exhibit 5**).

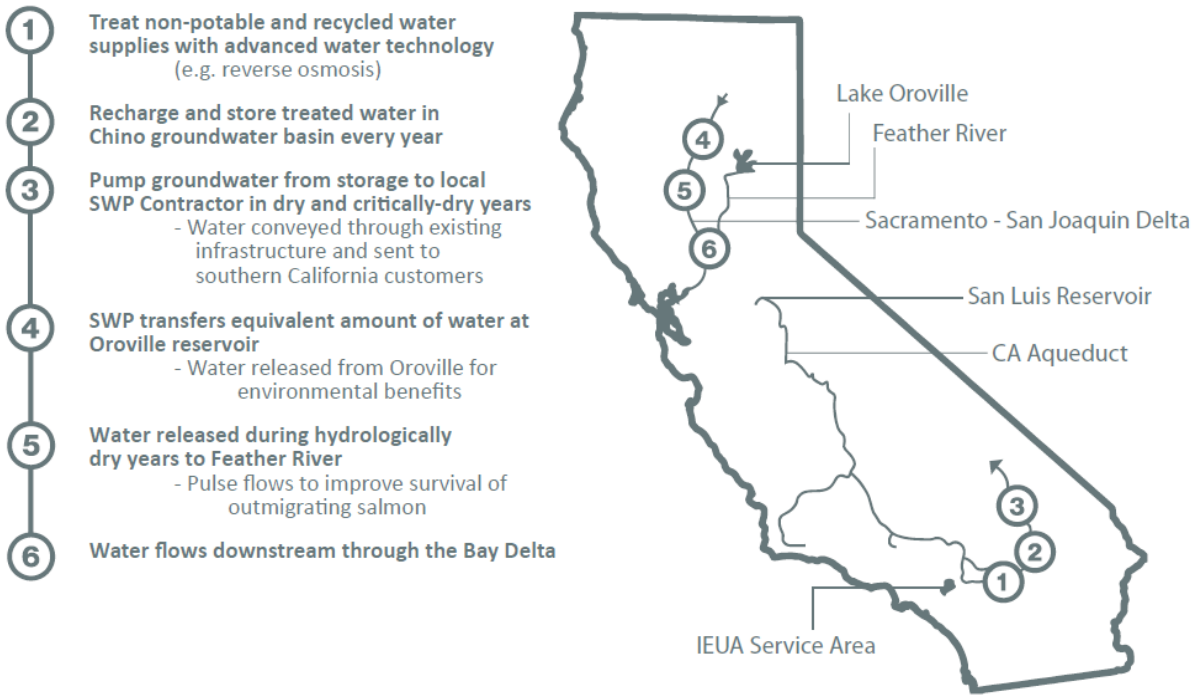


Exhibit 5: Overview of CBP Operations

The Feather River is the principal tributary of the Sacramento River, in the Sacramento Valley of Northern California. The river's main stem is about 73-miles long. Its length to its most distant headwater tributary is just over 210-miles. The lower Feather River begins in Lake Oroville, where its 4-mile-long tributary forks join together — the South Fork, Middle Fork, North Fork, and West Branch Feather Rivers. These and other tributaries drain part of the northern Sierra Nevada, and the extreme southern Cascades, as well as a small portion of the Sacramento Valley. The total drainage Basin is about 6,200-square-miles, with approximately 3,604-square-miles above Lake Oroville.

Since 1967, the Feather River's origin at the confluence of its four forks has been submerged under the waters of Lake Oroville, created by the construction of Oroville Dam in 1967. The construction of Oroville Dam created a fish passage barrier which stopped all anadromous fish, such as salmon, from migrating further upstream. At about 770 feet high, it is the tallest dam in the United States and wields nearly complete control over the flow of the Feather River by creating one of the largest reservoirs in California. The dam is the principal feature for the California SWP, storing water for more than 23 million people and 750,000 acres of farmland in Central and Southern California.

Directly downstream from Oroville Dam lies the Oroville-Thermalito Complex, which consists of two reservoirs, a Forebay and Afterbay, both used for hydroelectricity generation, although the water diverted from the Feather River for this purpose is returned to the river. Flow in the Feather River between the point of diversion and the Thermalito Outlet is commonly referred to as the Low Flow Channel. Flow in the Feather River below the Thermalito Afterbay is referred to as the High Flow Channel (**Exhibit 6**).

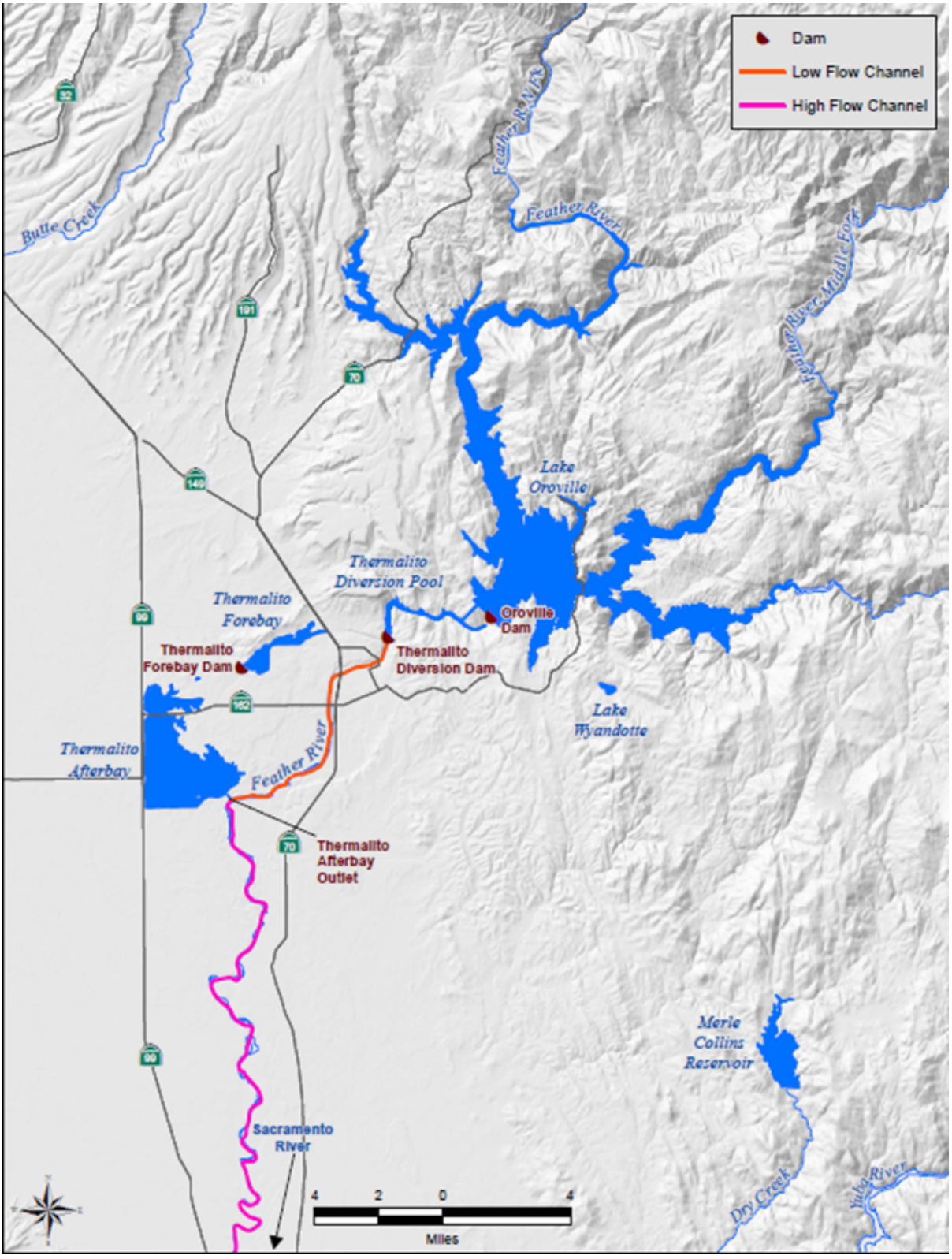


Exhibit 6: Overview of the Lower Feather River where CBP Pulse Flows would be Delivered

15,000 AFY of new water supply would be produced for a period of 25-years to provide for the State exchange, to be used in blocks of up to 50,000 AFY in dry and critical years when pulse flows in the Feather River would provide the most ecosystem benefit. The exchange would be administered through agreements with the California Department of Water Resources (DWR), the California Department of Fish and Wildlife, the Metropolitan Water District of Southern California (MWD), and other project partners, the Basin would be operated in a way which dedicates blocks of water of up to 50,000 AFY towards ecosystem benefits north of the Delta.

During the first 25 years of the Project life cycle (while the Proposition 1 WSIP water exchange commitment is fulfilled) locally produced CBP water supplies will directly replace a portion of imported supplies when an SWP water transfer is implemented by MWD and DWR and a pulse flow occurs in northern California. After fulfillment of the Proposition 1 WSIP exchange commitment, the facilities developed under the CBP by IEUA would continue to be operational as part of the overall project life cycle, and during this period the new water supply will be available for local use annually contributing to IEUA's available supply. This analysis and data contained herein focuses on the first 25-years of the CBP project life cycle (while the Proposition 1 WSIP water exchange commitment is fulfilled). This is because IEUA has concluded that it would be speculative to analyze the operation of the facilities proposed herein (refer to Chapter 3, Project Description) beyond this horizon. During the first 25 years of the CBP, operational put and take cycles are built into the program, with the intent of offsetting demand for SWP water. For the second 25 years (years 26-50), there is a lack of factual data regarding the operational characteristics of the Chino Basin, including water demand, available water supply resources, and the possible rules and regulatory environment for managing the Chino Basin water resources 25 years hence. For instance, it is not known whether the 15,000 AFY water supply generated by the AWPF proposed herein would offset local water purveyor's demand for imported water, or if it would meet a new demand in conjunction with the continued use of imported water. Further, as the 15,000 AFY water supply generated by the AWPF proposed herein would be needed, in whole, or in part, to provide water quality benefit to the Chino Basin in the collective effort to meet the water quality objectives set by the RWQCB as part of its Basin Plan. Thus, beyond that the facilities associated with the CBP would continue to be operational beyond the proposed 25-year conjunctive use project, to analyze the manner in which the facilities will be operated would be speculative to address at this time, and further would be evaluated as part of future master planning efforts.

Additionally, new water stored in the Chino Basin will also enhance emergency response water supply availability for IEUA and other participating agencies during crises such as flood or seismic events that disrupt imported water infrastructure. The infrastructure included in the CBP is consistent with infrastructure identified to reduce recycled water salinity for regulatory compliance as well as water infrastructure that has been identified through IEUA's Integrated Water Resources Plan (IRP) effort.

The program would rely on water transfer agreements through MWD. For every acre-foot of water requested for north of the Delta ecosystem benefits, IEUA would pump locally stored groundwater and deliver it to MWD or use the water locally instead of taking raw imported water from MWD (referred to as in lieu). MWD would then leave behind an equivalent amount of water in Lake Oroville to be dedicated and released for the requested ecosystem benefit. It is also envisioned that the CBP would include both storage capacity and borrowing capacity in the Chino Basin as approved by the Chino Basin Watermaster (CBWM or Watermaster). The borrowing capacity would be used to help deliver multiple consecutive, dedicated blocks of water for ecosystem benefits. This water would be borrowed from previously stored groundwater, outside of this

program, and replaced over time. Through this approach, the CBP can be operated in a way to provide up to 50,000 AFY of water for up to 7.5 years of the 25-year program (375,000 AF total) as long as the groundwater extraction does not exceed the approved borrow amount. This would result in balancing the PUTs (the components to recharge purified water to the Chino Basin) and TAKEs (the components to extract groundwater and convey potable water supply) to the Chino Basin at the end of the 25-year program, i.e., 375,000 AF would be recharged over 25 years and the same amount would be extracted over 25 years (while the Proposition 1 WSIP water exchange commitment is fulfilled).

The CBP includes two main categories of facilities: PUT and TAKE components. The PUT and TAKE components are summarized in **Table 7**. The annual PUT (the components to recharge purified water to the Chino Basin) and periodic TAKE cycles (the components to extract groundwater and convey potable water supply) are shown graphically in **Exhibit 7**. Note that each CBP scenario consists of PUT and TAKE options that vary based on the CBP scenario under consideration.

Table 7
SUMMARY OF PUT AND TAKE COMPONENTS

PUT Components	TAKE Components
• Tertiary recycled water supply and conveyance • Advanced water purification facility (AWPF) • Purified water pumping and conveyance • Groundwater recharge (injection wells and/or recharge basins)	• Groundwater extraction and treatment • Potable water pumping and conveyance • Potable water usage (MWD pump back or in-lieu)
The CBP will comprise both PUT and TAKE components.	

Ultimately, the CBP brings together these components cost-effectively and greatly enhances flexibility to regional and local water operations, particularly during future extended droughts expected as climate change continues to impact California. The CBP's proposed AWPF, new injection and extraction facilities, conveyance facilities, and water system interconnections will allow more optimal management of local water supplies, including meeting water quality requirements for the continued use of recycled water, improved storage and recovery operations, as well as redundancies in water delivery infrastructure that will facilitate future rehabilitation and replacement of existing infrastructure. The CBP will utilize advanced treated water for groundwater recharge, helping to ensure water quality objectives are met and local groundwater supply is sustainable.

Furthermore, the data contained in this CBP RDPEIR is augmented by the analysis contained in the *Final Pulse Flows Component of the Water Storage Investment Program Groundwater Projects Supplemental Environmental Impact Report (2024 DWR Pulse Flow FSEIR; SCH No. 2022080216)* dated July 2024, prepared for the California Department of Water Resources (DWR) and prepared by ICF/ESA. This SEIR was circulated from February 16, 2024 to April 1, 2024, and the final document, including responses to comments, was completed in July 2024. The Pulse Flows Component is defined by the following DWR actions: (1) Release of the pulse flows from Lake Oroville into the Low Flow Channel of the Feather River, with the goal of improving habitat conditions for listed salmonids, as well as improving spawning and migration conditions for other listed and non-listed native fish species. (2) Implementation of the WSIP Operational Exchange Process that develops water used for pulse flow releases. (3) Diversion and conveyance of water

to Kern Fan and Willow Springs that would be stored, in part, for ecosystem benefit. Implementation of the Pulse Flows Component would not require construction of any new facilities in addition to those previously analyzed in the three WSIP Groundwater Projects' EIRs (including the 2022 CBP FPEIR and now this RDPEIR). Existing facilities would be used, with operations modified to support the pulse flow releases. The Pulse Flows Component study area analyzed in the FSEIR extends approximately 575 miles from Lake Oroville in Northern California to the WSIP Groundwater Projects in the San Joaquin Valley and Southern California. The 2024 DWR Pulse Flow FSEIR is presented as Subchapter 8.3 to this RDPEIR, and their information and analysis contained therein is hereby incorporated by reference as previously described in more detail under Subchapter 1.6, Impacts.

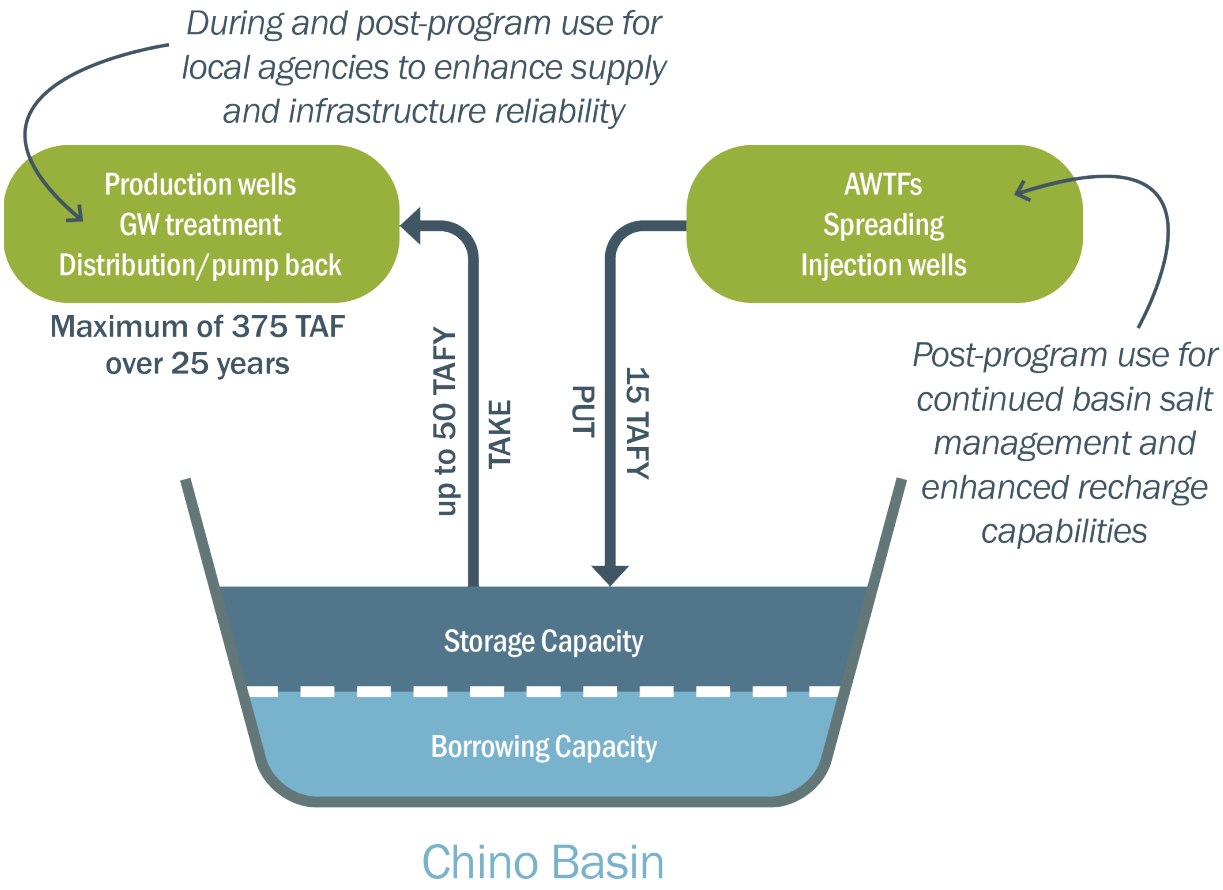


Exhibit 7: CBP PUT and TAKE Overview

3.5.2 Groundwater Storage Within the Chino Basin

The CBP will provide up to an increase in baseline storage capacity in the Chino Groundwater Basin to be used for deposit of up to 15,000 AF of advanced treated water in each year for 25-years (while the Proposition 1 WSIP water exchange commitment is fulfilled). As previously discussed, this water will be accessible for withdrawal at a maximum capacity of 50,000 AF per year, for up to three consecutive years, when an ecosystem need arises. Through this approach, and depending on existing groundwater conditions, the CBP will be able to provide advanced treated water through increased storage capacity in the Chino Groundwater Basin, which enhances operational flexibility.

~~As stated under Subsection 3.3.1, Chino Basin Groundwater,~~ The proposed CBP requires an increase in the Safe Storage Capacity of the Chino Basin in order to accommodate an addition of up to 150,000 AF of managed storage above the existing Safe Storage Capacity (700,000 AF through June 30, 2030, and to 620,000 AF from July 1, 2030 through June 30, 2035). As such, the CBP would contemplate a tiered increase in Safe Storage Capacity that would accommodate CBP storage requirements as well as Watermaster stakeholder storage requirements as follows: the CBP proposes an increase in Safe Storage Capacity up to 720,000 AF from July 1, 2030 through June 30, 2042, and to 580,000 AF from July 1, 2042 through June 30, 2048, with the Safe Storage Capacity decreasing to 500,000 AF thereafter (refer to footnote).[9] The storage increase would accommodate the CBP during its 25-year planning horizon (while the Proposition 1 WSIP water exchange commitment is fulfilled), and any future required increase in storage that may be necessary to accommodate the increased recharge and extraction capacities provided by CBP infrastructure would be addressed in future CEQA documentation. Overall, the CBP may: reduce dependence on imported water through development of infrastructure that would provide a new local source of water; improve water quality by reducing the expected TDS concentration of the AWPF effluent to 100 mg/L; and providing a new local water supply for the Basin as a result of the creation of the AWPF that would enable IEUA to continue to treat recycled water below the Regional Board's Basin Plan regulatory limits for continued Basin use. This proposed tiered increase would supersede the Safe Storage Capacity that was approved in March of 2021 by the IEUA Board and subsequently approved by the CBWM in May 2021. Furthermore, as storage space in the Basin is regulated by Watermaster, a Storage Agreement will be required in order for this proposed Safe Storage Capacity to be adopted.

3.5.3 Upper Santa Ana River Discharges

IEUA and Western Municipal Water District (WMWD) are responsible for an average annual flow of 42,000 AFY at Prado. However, when their cumulative credits exceed 30,000 AFY (which they currently do and will continue to do so for the foreseeable future), they are responsible for a minimum annual base flow of 34,000 AFY. Historically IEUA and WMWD have released a total of approximately 58,000 AFY to the Santa Ana River.

[9] The CBP proposed Safe Storage Capacity was evaluated throughout the 2022 CBP FPEIR. The CBP contemplated a tiered increase in SSC in the Chino Basin of up to 720,000 AF from July 1, 2030 through June 30, 2042; to 580,000 AF from July 1, 2042 through June 30, 2048; and 500,000 AF thereafter. This proposed tiered increase in Chino Basin SSC would supersede the SSC approved by the Watermaster in 2021. If and when the CBP is approved, IEUA would approach the Watermaster to approve the SSC required to support the CBP based on the findings in this RDPEIR. Based on the findings in the 2022 CBP FPEIR, the Groundwater Storage Increase to meet CBP operational requirements would not result in any significant adverse impacts to the environment, and this finding was not challenged in the City of Ontario's legal challenge.

Regardless, in 2024 the Chino Basin Watermaster and IEUA published and processed the Optimum Basin Management Plan Update (OBMPU) Subsequent Environmental Impact Report (SEIR). The Final version of this SEIR was certified in 2024 and was not legally challenged. Relying on the 2023 Storage Framework Investigation (SFI), which provided a technical analysis of Storage and Recovery Programs considered by the CBW, the SEIR included the following: use of storage space by members up to 700,000 AF, and conjunctive-use by Storage and Recovery Programs from 700,000 AF up to 900,000 AF. This decision enabled expansion of the SSC up to 900,000 AFY going forward from 2024 and beyond. IEUA has retained the analysis of the 700,000 AFY Safe Storage Capacity in this RDPEIR, but adequate SSC, and more, to cover the CBP required storage capacity has already been authorized through the SSC increase approved by the Chino Basin Watermaster, relying on the OBMPU PEIR.

This footnote will be repeated under the discussion under Subchapter 3.12, Summary of Facility Construction and Operations, wherein this Project Description introduces the Project Categories that make up the components of the CBP as analyzed in this RDPEIR. No further footnotes describing the SSC context will be provided in this RDPEIR analysis.

As part of meeting the CBP water demands, IEUA critically examined the potential sources of recycled water that might be available in the Upper Santa Ana River Watershed to support the water demand requirements of the proposed CBP AWPF, which is identified as 17,000 acre-feet per year (AFY). Of the 17,000 AFY that would be processed by the AWPF, 15,000 AFY of advanced treated water will be recharged to the Chino Basin annually and an estimated 2,000 AFY will be transported as reject water (brine) that will need to be disposed of through the Non-Reclaimable Waste System (NRWS). To meet this CBP demand, IEUA proposes to acquire an estimated 3,500 acre-feet (AF) of reclaimed water from the Rialto Wastewater Treatment Plant (WWTP) and 2,400 AFY of reclaimed water from the Western Riverside County Regional Wastewater Authority (WRCRWA) annually over the life of the CBP. The remainder of the recycled water deliveries to the AWPF will come from IEUA recycled water sources. The transfer of surface water will reduce the current flows into the Santa Ana River and Prado Basin. These transfers are analyzed and included in the Upper Santa Ana River Habitat Conservation Plan and Upper Santa Ana River Habitat Conservation Plan Environmental Impact Report. Furthermore, West Yost prepared an Addendum to their Technical Memorandum for the CBP (provided as Appendix 4 to Volume 2 of the ~~is~~ 2022 CBP FPEIR, which is presented as Appendix 1 to Volume 2 of this RDPEIR), which indicates that IEUA would continue to meet their baseflow obligations to the Santa Ana River, and is projected to continue to exceed their baseflow obligations to the SAR even with the proposed diversions of recycled water from IEUA, WRCRWA, and Rialto in support of the CBP AWPF; however, the proposed CBP would probably result in a reduction in surplus flows to the SAR.

3.6 REGIONAL CONTEXT AND PLANNING EFFORTS THAT INFORM THE CBP

The CBP combines various projects that will allow the region to meet the needs identified in the regional planning efforts conducted by IEUA in conjunction with its member agencies. These regional planning efforts enable IEUA to better prepare for the region's future water needs. Each planning report is backed by technical studies and supporting documentation to ensure regional planning efforts are well informed. Through these planning documents IEUA has identified future needs that the agency must meet in order to continue its track record of providing reliable, clean, and sustainable water to the region.

While each planning report is unique, there are shared themes including:

- The need to diversify water supplies and reduce dependency on imported water
- The anticipated negative impacts of climate change on water reliability
- An increasing need for advanced water treatment
- Furthering the beneficial use of water to restore natural populations and habitats

These themes have been intentionally addressed by components of the CBP. The CBP provides an opportunity to implement projects that address critical needs on a more expedited schedule, providing benefits earlier not only for the local agencies, but for CBP partners across the State.

Provided in Appendix 1 (to the 2022 CBP FPEIR, which is presented as Appendix 1 to Volume 2 of this RDPEIR), Draft Chino Basin Program Assumptions Technical Memorandum No. 1, under Section 2: Related Studies and Activities, is the complete list of regional planning documents that support the implementation of the CBP. The reviewer interested in details regarding CBP background information can review these documents for additional information.

3.7 REGULATORY REQUIREMENTS

Scenarios developed for the CBP were screened for viability in the context of regulatory compliance. Key regulatory requirements are set forth by the California State Water Resources Control Board (SWRCB), Division of Drinking Water (DDW) and the Regional Water Quality Control Board (RWQCB), Santa Ana Region, which have the following responsibilities:

- SWRCB DDW
  - Administers California's Drinking Water and Recycled Water Programs;
  - Establishes criteria to protect public health regarding recycled water production and use;
  - Develops Water Recycling Criteria in the California Code of Regulations (CCR), Title 22, which includes regulations for non-potable and potable use projects; and,
  - Participates in public hearings and makes recommendations for recycled water permits issued by the RWQCBs.

- RWQCB, Santa Ana Region
  - Establishes and oversees surface water and groundwater quality objectives to protect designated beneficial uses of waters in the region;
  - Issues and enforces water recycling and waste discharge permits and requirements; and,
  - Incorporates Title 22 requirements and recommendations from the SWRCB DDW into permits for water recycling and groundwater recharge projects.

Data provided in Appendix 1 (TM1) details the specific regulatory requirements that will govern the various aspects of the CBP. Since the program will include both groundwater replenishment and potable water production, the applicable regulations include:

- IEUA's existing water recycling and recharge permits
- Groundwater replenishment regulations; and,
- Drinking water regulations

The CBP program scenarios were developed to comply with these broad regulatory requirements. Additionally, a description of future direct potable reuse (DPR) regulations is discussed in Subsection 3.4.

While the CBP does not specifically include DPR concepts at this time, the program could be expanded to include DPR in the future. The CBP concept is based on indirect potable reuse (IPR) that relies on the ability to use the Chino Basin as a water resource storage Basin. A DPR concept could expand upon the advanced water purification concepts developed for the CBP with additional treatment/buffers and mix the water with a raw imported water source prior to water treatment, such as the Rialto Pipeline or upstream of CVWD's Lloyd. W. Michael WTP.

The main difference between IPR projects and DPR projects is the presence of an environmental buffer. An IPR project features an aquifer or reservoir that provides measurable and significant public health benefits. Lacking such an environmental buffer, a DPR project can utilize enhanced reliability from mechanical systems and treatment plant performance to replace the environmental buffer benefits and maintain an equivalent level of public health protection.

3.8 CHINO BASIN PROGRAM SPECIFICS

3.8.1 The Chino Basin Program

In August 2017, IEUA submitted a California Proposition 1 Water Storage Investment Program (WSIP) application for the CBP. ~~In July 2018,~~ The California Water Commission (CWC) approved maximum conditional funding for the proposal in the amount of $269M ~~$206.9M~~ as of August 2025. In return for this funding, the CBP will provide water supplies for public benefits as defined by WSIP, including ecosystem improvement, water quality improvement, and emergency response benefits.

The CBP will consist of AWPF, injection wells, extraction wells, groundwater treatment facilities, and a pipeline distribution network connecting the facilities to local agencies and MWD for a water exchange with the SWP. The CBP would introduce extraction wells, groundwater treatment facilities, pipelines, and interconnections to the MWD system, Rialto Pipeline. In addition, the CBP includes a combination of unused IEUA recycled water and external supplies imported to the IEUA service area as 17,000 AFY of new supply. As a result of implementation of the CBP, 2,000 AFY of water will be lost through the AWPF process each year.

The infrastructure details were evaluated based on the objectives discussed above. The preferred infrastructure design that best met the objectives defines the CBP and are shown in **Exhibit 8**. This system would collectively treat and store up to 15,000 AFY of recycled water in the Chino Basin each year, creating a new local water supply. However, the CBP also provides for an exchange of new water supplies in the Chino Basin for SWP supplies in Lake Oroville in Northern California that would otherwise be delivered to Southern California. Beginning in 2017, IEUA consulted with The Nature Conservancy and other environmental interest groups to develop an innovative project that could advance the Agency's long-range water resource plans and provide significant public benefits to both the State of California and federal interests. The concept of creating a new water supply to use in a water exchange that would allow for a "block of water" to be dedicated to ecosystem improvements in the Feather River (a significant tributary within the Bay-Delta watershed of Northern California) in dry and critical water years was identified as a high priority with significant public benefits.

The lower Feather River provides habitat for a variety of native resident and anadromous fish including spring-run Chinook salmon (*Oncorhynchus tshawytscha*) which is listed as threatened under the California and federal Endangered Species Acts, and fall-run Chinook salmon that support recreational and commercial fisheries. Low instream flows, increased water temperatures, and decreased water quality during dry and critical water years poses a significant threat to the survival of juvenile salmonid species and increased straying of returning adults in California's Central Valley.

The exchange will encompass a capacity to use this new local water supply to support an exchange of 50,000 AFY "call" for water in dry and critical years, for up to three consecutive years, that would be delivered from Lake Oroville to be used to enhance instream flows in the Feather River, providing ecosystem benefits during an extended dry period. Releases of this magnitude equate to an increase of instream flows in the low flow channel of the Feather River by 2,500 cubic feet per second (cfs) per day (baseflow is approximately 800 cfs). These releases would be designed to improve the survival rate of migrating juvenile spring-run Chinook salmon. The proposed ecosystem benefit also pledges to work with resource agencies to alter the location of spring-run Chinook smolt releases to a point further upstream. This would increase natal imprinting which in turn decreases adult stray rates upon return.

While the releases will target spring-run Chinook salmon other federally listed species would also benefit. Specifically, pulse releases would provide migratory cues for steelhead (*O. mykiss*), increase forage opportunities for rearing steelhead and green sturgeon (*Acipenser medirostris*), increase access to floodplain habitat, and decrease predation by nonnative species. These benefits are specifically identified in federal planning documents as priority recovery actions to improve habitat and survival rates for these federally listed species.

This exchange element will be in operation during the first 25-years, administered through agreements with DWR, CDFW, MWD, and other project partners. The total delivery commitment is 375,000 AF at the end of the 25-year period (while the Proposition 1 WSIP water exchange commitment is fulfilled). Afterwards, this water will be available for local use, ~~therefore~~ and would be anticipated to reduc~~e~~ing dependence on imported water, improving water quality, and providing a new local water supply for the Basin. However, as previously stated under Subchapters 1.1, Project Background and 2.3, Scope and Content of this EIR, beyond that the facilities associated with the CBP would continue to be operationally viable beyond the proposed 25-year conjunctive use project and would be available to support the goals presented in the previous sentence, to analyze the manner in which the facilities will be operated would be speculative to address at this time, and further would be evaluated as part of future master planning efforts.

In addition to the unique ecosystem improvement benefits provided by this dedicated water supply, the production of high-quality water in the Chino Basin will also deliver public benefits in the form of enhanced water quality and in the form of local water supply benefits available annually to offset the cost of imported water from MWD or banked for later extraction during dry and critical years when MWD supplies are curtailed due to reduced SWP allocations after the State performance period of 25-years (while the Proposition 1 WSIP water exchange commitment is fulfilled). The CBP also is anticipated to provide~~s~~ local emergency supply benefits during the life of the project, including the first 25-years, for when planned or unplanned service disruptions occur, and could be deployed to provide~~s~~ potential land subsidence mitigation through operational efficiencies using recharged supplies to better manage groundwater pumping in areas sensitive to subsidence.

MWD is a vital partner in implementing the CBP. MWD is a SWP Water Supply Contract holder and would serve as a fundamental party in completing proposed water exchange between supplies stored locally in the Chino Groundwater Basin and SWP supplies stored in Lake Oroville. A principle for MWD participation is that no adverse impacts should occur to MWD, its member agencies, or other SWP contractors due to CBP operations. Because real time extraction capacity from the Chino Groundwater Basin will be limited in comparison to SWP delivery capability to MWD, some reoperation of the MWD distribution system will be necessary. Operations plans will be developed to minimize the potential for reoperations. These plans include the ability for IEUA and local partners to access stored water in the Chino Groundwater Basin in lieu of planned water deliveries from MWD. In addition, the CBP would have the ability to extract stored water, treat it to meet all water quality requirements (the means of treatment are discussed under Subsection 3.9.3, below) and pump it into MWD's water distribution system. This direct delivery will utilize new interconnection infrastructure. These new water conveyance and water system interconnections also provide an important alternative source of water supply to IEUA and its member agencies during any required shutdown of MWD's major pipelines delivering water to the region, such as the Rialto Pipeline, which is planned for rehabilitation as part of a larger rehabilitation plan of MWD's pipelines within their service area.

DWR's SWP infrastructure provides the basis for the Feather River Ecosystem Water Exchange proposed by the CBP. Water supplies for Feather River Pulse flows would be released by DWR, under terms of agreements with CDFW, MWD, and others from Lake Oroville. Similar to MWD's participation conditions, a principle for the CBP operations is that no adverse impacts should occur to the SWP or SWP Water Supply Contract holders. Operations plans will be developed to minimize the potential for SWP reoperations that result in adverse impacts to other SWP purposes, including water deliveries to SWP water supply contract holders. IEUA is working with DWR as they conduct SWP operations analyses to identify potential impacts and develop operational parameters to avoid them. Preliminary operations analysis indicates that reoperations required to achieve the exchange could be successfully completed under most hydrologically dry conditions. IEUA and DWR are developing metrics and conditions that will govern reoperations during an exchange and prevent potential water supply impacts to the SWP and its contractors. Should it be determined that pulse flow exchanges in certain critical year conditions are problematic for SWP and Oroville operations, CDFW has expressed willingness to consider avoiding exchanges under those unique conditions and instead carry out exchanges in years classified as dry or below normal years.

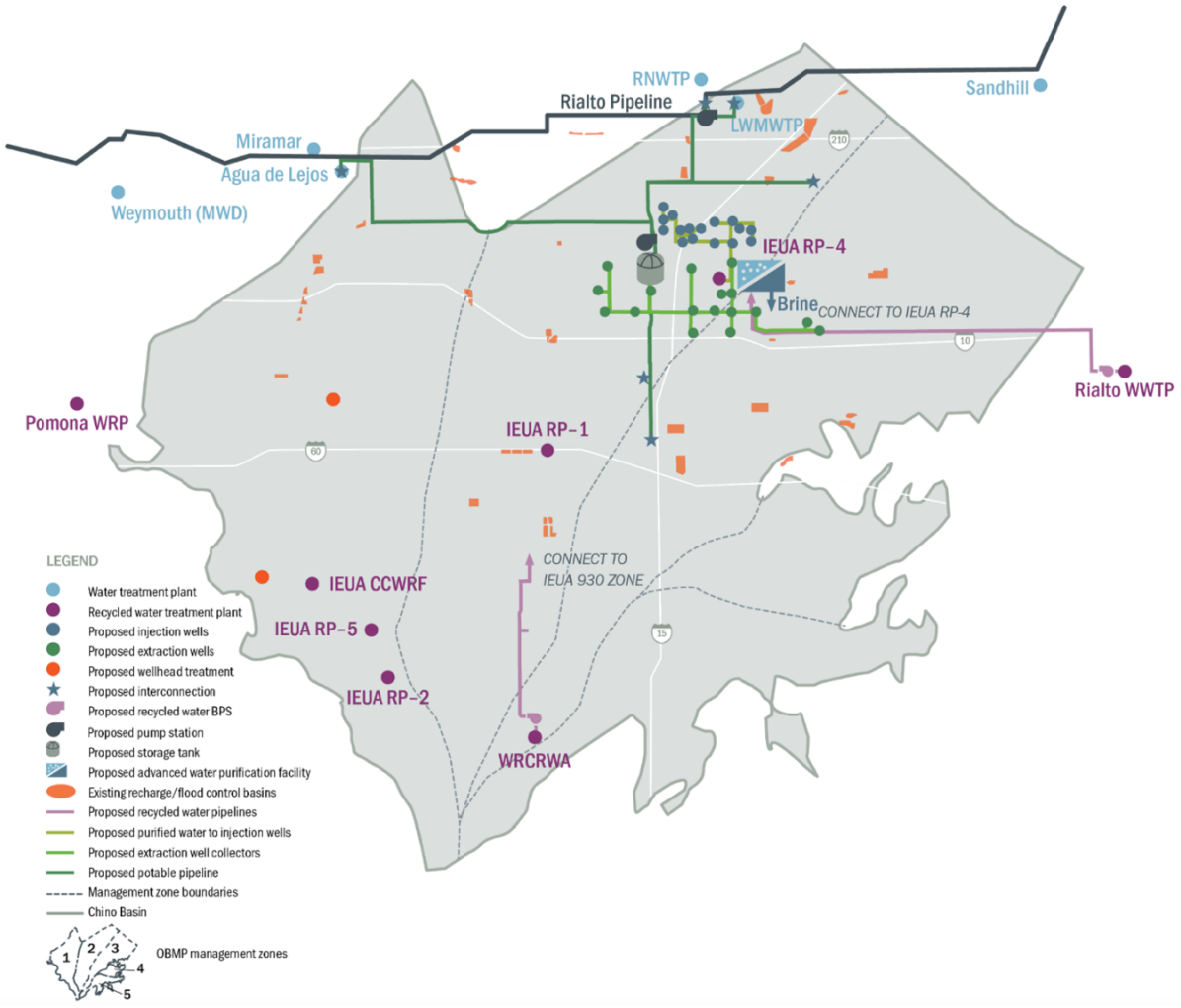


Exhibit 8: Conceptual CBP Infrastructure

Conclusion

The CBP includes water quality infrastructure, including advanced water treatment and groundwater injection facilities that would collectively treat and recharge/store up to 15,000 AFY of recycled water in the Chino Basin. The CBP would introduce water supply infrastructure, including extraction wells, groundwater treatment facilities, pipelines, and connections that are integrated with the AWPF and injection well system, as well as 17,000 AFY of recycled water, which includes unused recycled water and 6,000 AFY of external supplies.

The CBP would also include a regional pipeline connecting CBP potable water facilities to the region, as well as connections to the MWD with the ability to pump CBP potable supplies into MWD's water distribution system. As previously discussed, this connection would allow the CBP to make 50,000 AFY available to MWD in dry or critical year in exchange for the same amount of supply delivered by the SWP. In return, 50,000 AFY that would otherwise have been exported to MWD would be stored in Lake Oroville and used to enhance instream flows in the Feather River.

A summary of the infrastructure for the CBP is provided below in **Table 8**.

Table 8
SUMMARY OF CBP INFRASTRUCTURE

Project Category	Infrastructure
Project Category 1: Well Development (Injection Wells, Extraction Wells, Etc.)	16 injection wells (maximum) 17 extraction wells (maximum) 4 monitoring wells (maximum) Use of existing wells including a mix of up to 4 of the following: • Use of existing Rialto Pipeline • Use of existing member agency wells • Use of existing Agua de Lejos WTP Clearwell • Use of existing Lloyd Michael WTP Clearwell
Project Category 2: Conveyance Facilities and Ancillary Facilities	Pipeline: The CBP would ultimately install a total of about 30 miles or 158,400 lineal feet (LF) of various types of pipeline. Potential alignments include a mix of the following: • TAKE 1: 9 miles of 12- to 36-inch collector pipelines • TAKE 1: 5 miles of 54-inch potable northern pipeline • TAKE 3: 9 miles of 12- to 42-inch collector pipelines • TAKE 3: 8 miles of 16- through 48-in potable northern pipeline • TAKE 3: 4 miles of 12- through 24-inch potable southern pipeline • TAKE 3: In lieu Brine Disposal IEBL 6,800 ft 8" pipeline, possible jack and bore across 300 ft under Hwy 71 and Chino Creek • TAKE 7: 7 miles of 36- to 72-inch e/w WFA pipeline • TAKE 7: 4.5 miles 24-inch e/w FWC pipeline • TAKE 7: 4.5 miles 54- to 72-inch & 36-inch CVWD/MWD pipeline • TAKE 7: 0.3 miles 54- to 72-inch MWD pipeline • TAKE 8: 6.3 miles of 48-inch CVWD pipeline • TAKE 8: 7 miles of 24-inch FWC-1 pipeline • TAKE 8: 0.7 miles of 24-inch FWC-2 pipeline • TAKE 8: 0.8 miles of 24-inch MWD pipeline • TAKE 8: 36-inch JCSD 2 miles • PUT 5: 7.1 miles of 8- to 30-inch pipeline for purified water conveyance • PUT 5: 1,400 ft (8' pipeline) NRWS brine conveyance; NRWS Capacity Units required 2,603 Reservoir: The CBP would install a circular, prestressed tank storage tank with a maximum capacity of 5 MG with possible and in-conduit hydropower facility.

Project Category	Infrastructure
	Pump Station: The CBP would install 4 pump stations serving various PUT and TAKE facilities. One pump station would serve PUT facilities, while up to three pump stations would support TAKE facilities. The breakdown of the types of pump stations include a mix of the following: • PUT 5: Pump station at RP-4 1,500 HP • TAKE 1: Pump Station with a max 9,300 HP, and a max of 31,100 gpm, 823 ft TDH • TAKE 3: Potable Water Pump Station #1: 7,000 HP, 23,300 gpm firm capacity, 823 ft TDH • TAKE 7: WFA Booster at 1,700 HP • TAKE 7: FWC Booster at 300 HP • TAKE 7: CVWD/MWD Booster at 4,800 HP • TAKE 8: Booster Station #1 at 5,300 HP • TAKE 8: MWD Booster at 650 HP Turnouts: The CBP would install a maximum of 6 turn-outs that would be between 12" and 72" in size to support TAKE facilities at various member agency locations throughout the Chino Basin
Project Category 3: Groundwater Storage Increase	The CBP would contemplate a tiered increase in Safe Storage Capacity that would accommodate CBP storage requirements as well as Watermaster stakeholder storage requirements as follows: the CBP proposes an increase in Safe Storage Capacity up to 720,000 AF from July 1, 2030 through June 30, 2042, and to 580,000 AF from July 1, 2042 through June 30, 2048, with the Safe Storage Capacity decreasing to 500,000 AF thereafter.
Project Category 4: Advanced Water Purification Facility and Other Water Treatment Facilities	AWPF: The CBP would install an AWPF at RP-4, which will ultimately have a capacity 15,000 AFY. The intake of recycled water at this facility will total 17,000 AFY, with a resulting 15,000 AFY of purified water derived from the AWPF processes. Wellhead Treatment: The CBP may install up to 3 wellhead treatment facilities at locations that have yet to be selected.

How the CBP Meets Objectives

The CBP also helps address local and state/federal objectives as follows:

- **Meet Permit Compliance for the Continued Use of Recycled Water in the Chino Groundwater Basin:** The project provides groundwater recharge facilities to recharge high quality recycled water, thus reducing TDS levels within the Chino Groundwater Basin.
- **Maintain Commitments for Salt Management to Enable Sustainable Use of Recycled Water in the Basin:** With the implementation of AWPF with an expected effluent concentration of 100 mg/L, the recycled water TDS will be significantly reduced.
- **Develop Infrastructure That Addresses Long Term Supply Vulnerabilities:** The CBP would improve the use of recycled water at a regional level through new regional pipelines enabling greater potential access to recycled water and enhances local groundwater supplies through the installation of additional extraction wells and through the installation of new wellhead treatment systems that would bring existing out-of-service wells online.
- **Provide a Source of Water for Emergency Response:** The project results in 15,000 AFY in local supplies which can be used to augment the water supply portfolio during unplanned or catastrophic events.
- **Develop an Integrated Solution to Support Regional Water Reliability and Environmental Sustainability ~~Produce State and Federal Environmental Benefits~~:** The project develops a highly reliable new water supply ~~formally~~ dedicated to supporting regional water reliability while balancing environmental sustainability. ~~benefit that can be~~

~~deployed dynamically and managed flexibly to address varying and changing ecological needs.~~

3.9 CHINO BASIN PROGRAM PUT FACILITIES

The CBP includes two main categories of facilities: PUT, the components to recharge purified water to the Chino Basin, and TAKE, the components to extract groundwater and convey potable water supply.

The PUT components are as follows:

- **Tertiary recycled water supply** of 17,000 AFY to produce 15,000 AFY of purified water.
- **Tertiary recycled water conveyance** to supply additional tertiary recycled water to IEUA's recycled water distribution system and the AWPF(s).
- **Advanced water purification** to treat the tertiary recycled water and produce purified water suitable for groundwater recharge through subsurface application.
- **Purified water pumping and conveyance** to convey water from the AWPF(s) to the injection wells for groundwater recharge.
- **Groundwater recharge using injection wells**

To support the development of the PUT and TAKE options, and program scenarios, WEI completed initial groundwater modeling for the PUT and TAKE components as shown below in Subsection 3.9.1.

3.9.1 Initial Groundwater Modeling

During development of the PUT and TAKE options it was determined that modeling would be beneficial to help guide the development of the CBP scenarios, which each contain a set of PUT and TAKE options. Wildermuth Environmental, Inc. (WEI, now known as West Yost) completed six interim groundwater modeling scenarios for the PUT and TAKE options to determine if these operational concepts would be consistent with the Optimum Basin Management Plan, Peace Agreement requirements, and the 2020 Storage Management Plan. The modeling also evaluated potential impacts to pumping sustainability in the existing well fields due to the planned extraction wells and groundwater travel time requirements between recharge locations (i.e., injection wells) and extraction wells. This early modeling input allowed the team to refine the PUT and TAKE components to better align with Chino Basin's functional requirements.

The finalized modeling work, provided as Appendix 4 to Volume 2 of this RDPEIR, was utilized in the preparation of **Table 9**, below. This report was prepared by West Yost, and is titled "Technical Memorandum: Evaluation of the Chino Basin Program/Water Storage Investment Program" dated October 15, 2021.

The modeling runs evaluated the following PUT and TAKE components:

- Potential PUT locations, including initial and refined injection well locations in Chino Basin Groundwater Management Zone (MZ) 2.
- Potential TAKE locations in MZ-2 and MZ-3.
- Asymmetrical[10] PUT and TAKE with the majority of the groundwater recharge in MZ-2 and extraction in MZ-2 and MZ-3.

[10] Asymmetrical is when some or all the PUT operations do not occur in the same MZ(s) as the TAKE operations.

The following results were determined from the initial groundwater modeling:

- Confirmed that injection wells located in the northern portion of MZ-2 provides the capacity for the level of extraction contemplated in the CBP.
- The initial model runs indicated that hydraulic control was maintained throughout the entire program period under the assumed CBP operations.
- Impacts to net recharge[11] were minimal (see **Table 8**) under the assumed CBP operations. Scenarios with an early TAKE result in an increase of net recharge compared to the baseline condition.
- Any new risk of land subsidence due to the assumed CBP operations is projected to be minor and only occur in areas where new risks of land subsidence were already projected to occur under baseline conditions.
- The displacement of known groundwater contaminant plumes in the Chino Basin due to the assumed CBP operations is projected to be minor.
- The refined MZ-2 injection well locations (selected to reduce purified water conveyance infrastructure) and the assumed operations of the injection and extraction wells meets travel time requirements for the recharge of recycled water.
- Increased pumping sustainability challenges at existing wells are localized and temporary and can be mitigated.
- Impacts to the Basin due to asymmetrical PUT and TAKE for recharge in MZ-2 and extraction in MZ-2 and MZ-3 are projected to be minor.

Table 9 summarizes the initial groundwater modeling runs with the PUT and TAKE assumptions and the corresponding results.

Table 9
SUMMARY OF GROUNDWATER MODELING

Scenario Model Run	PUT Assumptions	TAKE Assumptions[1]	TAKE Option	Results
1/D1[4]	• 15,000 AFY via 12 injection wells in MZ-2[2]	• Standard Delivery[3] (50,000 AFY) • Extraction in MZ-2 • Call occurs in last 3 years of a 10-year cycle (e.g., Years 8-10)	1, 3, 7	• Achieved hydraulic control • Decrease in net recharge compared to baseline of about 400 AFY • Localized and temporary pumping sustainability challenges in existing well fields in MZ-2
2/D2	• 15,000 AFY via 12 injection wells in MZ-2	• Standard Delivery (50,000 AFY) • Extraction in MZ-2 • Call occurs in first 3 years of a 10-year cycle (e.g., Years 1-3)	1, 3, 7	• Achieved hydraulic control • Increase in net recharge compared to baseline of about 840 AFY • Localized and temporary pumping sustainability challenges in existing well fields in MZ-2

[11] Net recharge is net inflow to the basin excluding the direct recharge of Supplemental Water.

Scenario Model Run	PUT Assumptions	TAKE Assumptions[1]	TAKE Option	Results
3/D3	• 15,000 AFY via 12 injection wells in MZ-2	• Standard Delivery (40,000 AFY) • Extraction in MZ-2 • Call occurs in last 3 years of a 10-year cycle (e.g., Years 8-10) • Pumping of about 4,000 AFY in non-call years to increase total TAKE to equal the total PUT, less the average decrease in net recharge caused by the CBP scenario.	8	• Achieved hydraulic control • Decrease in net recharge compared to baseline (260 AFY) is accounted for by reduced TAKE • Localized and temporary pumping sustainability challenges in existing well fields in MZ-2
4/D4	• 15,000 AFY via 12 injection wells in MZ-2	• Standard Delivery (40,000 AFY) • Extraction in MZ-2 • Call occurs in first 3 years of a 10-year cycle (e.g., Years 1-3) • Pumping of about 4,400 AFY in non-call years to increase total TAKE to equal the total PUT.	8	• Achieved hydraulic control • Increase in net recharge compared to baseline of about 680 AFY • Localized and temporary pumping sustainability challenges in existing well fields in MZ-2
5/D5	• 12,000 AFY via 12 injection wells in MZ-2	• Standard Delivery (40,000 AFY) • Extraction in MZ-2 • Call occurs in last 3 years of a 10-year cycle (e.g., Years 8-10)	8	• Achieved hydraulic control • Decrease in net recharge compared to baseline of about 330 AFY • Localized and temporary pumping sustainability challenges in existing well fields in MZ-2
6/D6	• 12,000 AFY via 12 injection wells in MZ-2	• Standard Delivery (40,000 AFY) • Extraction in MZ-2 • Call occurs in first 3 years of a 10-year cycle (e.g., Years 1-3)	8	• Achieved hydraulic control • Increase in net recharge compared to baseline of about 680 AFY • Localized and temporary pumping sustainability challenges in existing well fields in MZ-2
D7	• 15,000 AFY via 12 injection wells in MZ-2	• Standard Delivery (50,000 AFY) • Extraction in MZ-2 • Call occurs in last 3 years of a 10-year cycle (e.g., Years 1-3); first call is delayed 3 years to occur in the first 3 years of the second 10-year cycle	1, 3, 7	• Achieved hydraulic control • Decrease in net recharge compared to baseline of about 750 AFY • Localized and temporary pumping sustainability challenges in existing well fields in MZ-2

Notes: [1]No pre-delivery was assumed for all initial model runs since this is the most conservative extraction assumption. Pre-delivery would have less impacts on the Chino Basin.
[2]Several additional wells are planned to be constructed for the CBP to provide redundant capacity. These are assumed to be inactive in the model.
[3] Standard delivery (no pre-delivery): The TAKE facilities would be sized to deliver the specified AFY of groundwater from the Chino Basin to MWD regional facilities or directly to member agencies.
[4] Scenarios starting with "D" denote scenarios that simulate the effects of reduced wastewater discharge due to the planned CBP operations. Assumptions for these scenarios are described in more detail in Second Addendum to the Evaluation of the Chino Basin Program/ Water Storage Investment Program prepared by West Yost and provided as an Attachment to the Responses to Comments in the Final PEIR.

3.9.2 Tertiary Recycled Water Supply and Quality

To meet the CBP objectives, various recycled water supply sources were considered that would

allow IEUA to expand both direct use and groundwater recharge of tertiary recycled water as well as meet the future needs of CBP. The CBP will require 17,000 AFY of tertiary recycled water to produce 15,000 AFY of purified water.

The recycled water supply sources considered for the CBP include IEUA, the Rialto WWTP, and the Western Riverside County Regional Wastewater Authority (WRCRWA) treatment plant. The seasonal and diurnal availability of recycled water could impact the AWPF sizing and operations. An evaluation of seasonal availability was also conducted to confirm that the AWPF could be supplied with a constant supply of recycled water to most cost-effectively produce purified water. New recycled water supplies that can provide constant flow year-round, such as WRCRWA and the Rialto WWTP, have the biggest benefit to the CBP to supply the AWPF at a constant rate and eliminate the need for seasonal storage.

Diurnal recycled water supply fluctuations were assumed to be managed with existing and new equalization basins and recycled water storage tanks, which will be analyzed in more detail in future phases of the Program. The external recycled water supplies both have existing or planned equalization that will allow them to deliver a constant recycled water supply to IEUA's system Equalization basins to manage diurnal recycled water supply fluctuations within IEUA's system were assumed for the AWPF components.

An analysis of IEUA's recycled water system was also completed using IEUA's recycled water model to confirm that recycled water can be conveyed to the appropriate locations in the recycled water system to meet current and future direct use and tertiary GWR demands as wells as future CBP demands.

Overall Recycled Water Quality

The overall impact of recycled water quality on the AWPF design is discussed in this section.

At RP-4, it is assumed that the AWPF influent would similarly reflect the RP-4 values reported in **Table 10** with slightly lower chloride, sodium, pH, and NDMA levels for 60 percent of the influent flow on average. The remaining 40 percent of the RP-4 AWPF influent flow would reflect the water quality from IEUA's recycled water distribution system, comprised of a varying blend of recycled water from RP-1, WRCRWA, and/or the Rialto WWTP. **Table 10** summarizes the projected water quality for the proposed RP-4 AWPF assuming the following for each condition and this projected water quality was used to develop the CBP scenarios considering the AWPF at RP-4 AWPF.

- **Average:** 60 percent RP-4 and 40 percent RP-1.
- **Minimum:** Minimum of RP-4, RP-1, WRCRWA, and the Rialto WWTP.
- **Maximum:** Maximum of RP-4, RP-1, WRCRWA, and the Rialto WWTP.

Table 10
PROJECTED AWPF INFLUENT WATER QUALITY

Constituent [1]	Average	Min	Max
Calcium (mg/L Ca^{2+})	41	25	68
Magnesium (mg/L Mg^{2+})	9.4	7.0	11
Sodium (mg/L Na^{+})	96	75	140
Potassium (mg/L K^{+})	15	14	18
Barium (mg/L Ba^{2+})	0.012	0.008	0.053
Copper (mg/L Cu^{+2})	0.004	0.0004	0.079

Constituent (1)	Average	Min	Max
Iron (mg/L Fe^{2+})	0.068	0.000	0.112
Manganese (mg/L Mn^{2+})	0.018	0.002	0.037
Ammonium (mg/L NH_{4+} as N)	<0.1	<0.1	14.0
Aluminum (mg/L Al^{3+})	0.077	0.024	1.2
Bicarbonate (mg/L HCO_{3-})	166	100	230
Sulfate (mg/L SO_4^{2-})	52	39	264
Chloride (mg/L Cl^-)	112	58	190
Fluoride (mg/L F^-)	0.22	0.10	0.54(2)
Nitrate (mg/L NO_{3-} as N)	5.1	2.7	12
Phosphate (mg/L PO_4^{3-})	2.6	0.1	12
Silica (mg/L SiO_2)	22	4.0	31
pH	7.06	5.9	8.5
Alkalinity (mg/L as $CaCO_3$)	136	82	178
Hardness (mg/L as $CaCO_3$)	142	91	230
Boron (mg/L)	0.24	0.18	0.63
TOC (mg/L)	4.9	3.4	48
TDS (mg/L)	475	199	660*
1,4-Dioxane (µg/L)	1.0	ND	1.1
NDMA (ng/L)	4.4	<1.4	7.0
NMOR (ng/L)	66	6.9	350
Temperature(°C)	25	16(3)	36

Notes: This data assumes an Average of 60 percent RP-4 and 40 percent RP-1; a Minimum of RP-4, RP-1, WRCRWA, and the Rialto WWTP; and, a Maximum of RP-4, RP-1, WRCRWA, and the Rialto WWTP.
(2) Removed 68 mg/L outlier from WRCRWA data set.
(3) Removed 6.7°C outlier from WRCRWA data set.

Recycled Water Hydraulic Modeling

The recycled water model was used to support the development of CBP scenarios to (1) complete a recycled water distribution analysis to confirm that IEUA's existing recycled water system has sufficient capacity to convey water and maintain adequate pressures once the external supplies and the AWPF are incorporated into the system and (2) estimate tertiary recycled water pumping requirements whether the AWPF is located at RP-1 or RP-4.

The elements of the recycled water system included in the hydraulic model and recent system improvements are listed below:

- Pipelines: The recycled water pipelines are included in the hydraulic model, and include the pipeline length, diameter, roughness coefficient, and a check valve if the pipe does not allow reverse flow. The Baseline Pipeline and the Napa Lateral pipelines were constructed after the 2016 model calibration and are included in the model.
- Junction: The junctions in the recycled water model are necessary to connect joining pipelines at intersections. The elevation is defined at the junctions and necessary for the model to calculate system pressures. The system demands and demand patterns are also applied to the junctions.
- Tanks: The recycled water system includes 22.5 MG of available storage within six storage tanks. These tanks provide operational storage during times of peak demands. The

modeled tanks include properties such as elevation, minimum and maximum water level, and diameter.

- Pumps: The pumps at each pump station are included in the model and run based on their pump curve and operational controls. The RP-1 1158 Pump Station was recently upgraded to include higher capacity pumps and was also updated in the model.
- Reservoirs: Fixed head reservoirs[12] are used to model the water recycling plants.
- Valves: The model includes both pressure reducing valves (PRV) and flow control valves (FCV). The PRVs are representative of actual PRVs in the recycled water system that allow higher pressure zones to supply lower pressure zones. The PRVs includes the valve diameter, pressure setting, and operational controls as applicable. The FCVs in the model are located on the discharge side of IEUA's water recycling plants to control the recycled water supply. Diurnal production curves developed from the SCADA data during the 2016 calibration are applied to each plant to mimic the actual production at each plant throughout the day.

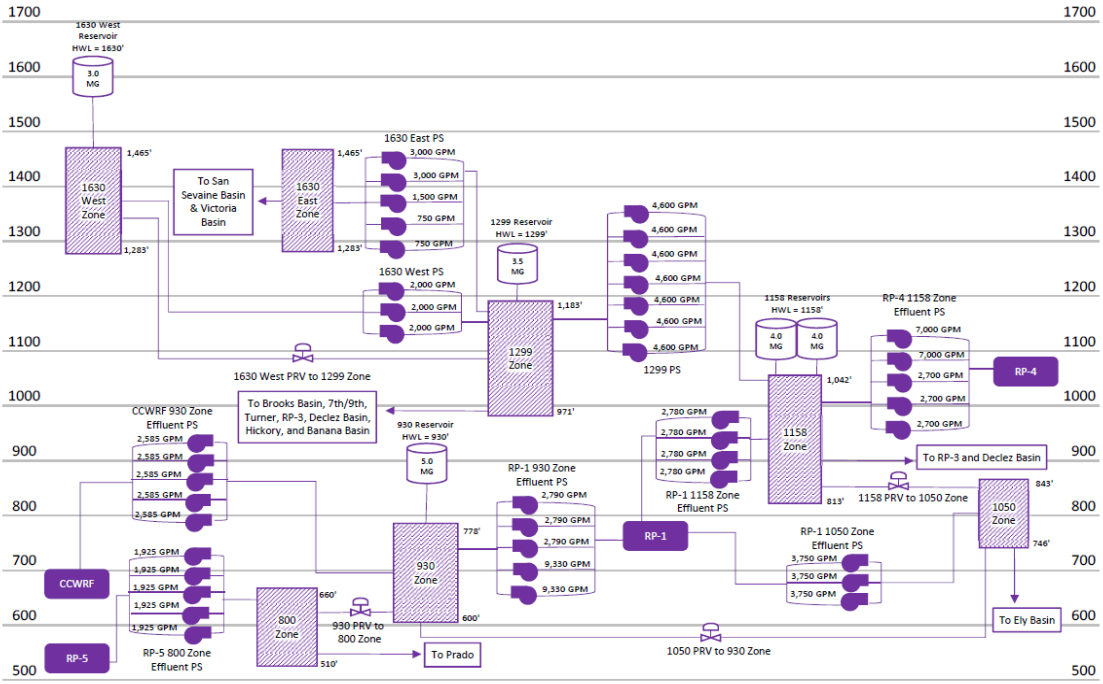


Exhibit 9: Recycled Water System Hydraulic Profile

3.9.3 Advanced Water Purification

The PUT options include advanced water purification to meet long-term salinity requirements in the Chino Basin. In addition, subsurface application through injection wells is assumed for groundwater replenishment, which also requires purified water. This section discusses the AWPF assumptions for the PUT options.

Potential AWPF Locations

The potential AWPF locations impact treatment process selection and infrastructure requirements for tertiary recycled water, purified water, and brine conveyance. The closer that the AWPFs can

[12] The reservoir is operated by a specified head elevation. This elevation is maintained in the model.

be sited to source water supply (tertiary recycled water), the groundwater recharge locations, and brine disposal will result in lower capital and operating costs. To avoid additional costs and schedule delays associated with siting and purchasing land for an AWPF, only IEUA-owned or stakeholder-owned properties were considered.

Of IEUA's existing four regional water recycling facilities (RP-1, RP-4, RP-5, and CCWRF), RP-1 and RP-4 were identified as the two most-feasible locations for the future AWPF. However, ultimately, the Technical Memorandum No. 2 (TM2), Chino Basin Put, Take, and Program Alternatives Evaluation (Appendix 2) indicates that RP-4 has been selected as the preferred location for the AWPF over RP-1 due to its proximity to recharge basins, its greater capacity to pump to recharge basins, future injection wells, space availability, ability to integrate with future direct potable reuse opportunities and proximity of surface water treatment plants, its consistency with the SFI recharge prioritization, and overall operational flexibility. An AWPF at RP-4 will meet regulatory and permit requirements. Additionally, RP-4 is located near extensions of the Non-Reclaimable Wastewater System (NRWS) for brine disposal.

Purified Water Goals

Purified water must meet the treatment goals set forth by the CCR Title 22 Division 4, Chapter 3, Article 5.2 for IPR and groundwater replenishment through subsurface application. In addition, product water must meet the Basin Plan groundwater objectives for minerals and drinking water MCLs and Recycled Water Policy requirements regarding the SNMP, maximum benefit, and monitoring constituents of contaminants of emerging concern in the Upper Santa Ana River Basin (hydraulic sub area 801.21). **Table 11** summarizes the treated water goals based on this regulatory framework.

Table 11
PURIFIED WATER GOALS FOR IPR GROUNDWATER REPLENISHMENT VIA SUBSURFACE INJECTION IN THE UPPER SANTA ANA RIVER BASIN

Parameter	Criteria	Regulation
Enteric Virus	>12 log reduction	CCR
Giardia cysts	>10 log reduction	CCR
Cryptosporidium oocysts	>10 log reduction	CCR
TOC	≤ 0.25 mg/l in 95% of weekly samples within first 20 weeks ≤ 0.5 mg/L 20-week running average and average of last 4 weekly samples	CCR
Total Nitrogen	≤ 10 mg/L average of twice weekly samples	CCR
Nitrate (as N)[1]	≤ 4.2 mg/L 5-year running average	Basin Plan
1,4-dioxane	>0.5 log reduction by AOP	CCR
Inorganic Chemicals in Table 64431-A, except for nitrogen compounds	≤ MCLs in quarterly samples	CCR
Radionuclide Chemicals in Tables 64442 and 64443	≤ MCLs in quarterly samples	CCR
Organic Chemicals in 64444-A	≤ MCLs in quarterly samples	CCR
Disinfection Byproducts in Table 64533-A	≤ MCLs in quarterly samples	CCR
Lead and Copper	90th percentiles ≤ Action Levels	CCR
Secondary Drinking Water Contaminants in Tables 64449-A and 64449-B	≤ sMCLs in annual samples	CCR
Priority Toxic Pollutants in 40 CFR Section 131.38	≤ DDW-specified priority toxic pollutants and NLs[(2)] in quarterly samples	CCR

Parameter	Criteria	Regulation
DDW-Specified Chemicals based on Engineering Report, Affected Groundwater Basin(s), and Wastewater Source Control	As specified by DDW in quarterly samples	CCR
NDMA	≤ 10 ng/L	CCR
TDS[1]	≤ 680mg/L	Basin Plan
Chloride	≤ 500 mg/L	Basin Plan
Sulfate	≤ 500 mg/L	Basin Plan
Boron	≤ 0.75 mg/L	Basin Plan
Sodium	≤ 180 mg/L for municipality use	Basin Plan
Sodium Absorption Ratio	≤ 9 for agricultural use	Basin Plan

Notes: [1] Criteria applies the Basin Plan's "Maximum Benefit" objectives but if the Regional Board determines it is lowering the water quality and not a maximum benefit to the Basin, the "Antidegradation" objectives will apply with Nitrate (as N) and TDS needing to meet 2.9 mg/L and 250 mg/L, respectively, for a 5-year running average (RWQCB – SA, 2019).
[2] Notable among which is the NDMA goal of 10 ng/L or less. (Listed as a separate row in this table for emphasis)
[3] A draft of the Lead and Copper Rule Long-Term Revisions was published in November 2019 and a final rule is expected to be released in fall 2020. Compliance is likely to begin around 2023.

Process Rationale

IEUA is planning to upgrade the secondary treatment systems at both RP-1 and RP-4 plants with membrane bioreactor (MBR) systems, although the RP-1 upgrade is planned in the near term (online by 2030) and RP-4 is in the long term (approximately 2040). It is assumed that if the AWPF is implemented at RP-4 the treatment train would be *Membrane Filtration (MF)- Reverse Osmosis (RO)- Ultraviolet (UV) Advanced Oxidation Process (AOP) (MF-RO-AOP)*. IEUA could potentially convert an AWPF at RP-4 to MBR-RO-AOP when the MBR is implemented at RP-4. As IEUA has selected RP-4 as the preferred AWPF location, the *Membrane Bioreactor (MBR)-Reverse Osmosis (RO)- Ultraviolet (UV) Advanced Oxidation Process (AOP) (MBR-RO-AOP)* treatment train at RP-1 will not be discussed further in this Project Description.

This process train—MF-RO-AOP—is described in subsequent sections.

RP-4 Membrane Filtration (MF)- Reverse Osmosis (RO)- Ultraviolet (UV) Advanced Oxidation Process (AOP) (MF-RO-AOP)

All existing potable reuse facilities in California utilize MF as pretreatment for RO. MF removes suspended solids, reduces turbidity, and achieves credit for up to 4-log reduction of protozoa through daily integrity testing. If the AWPF is constructed at RP-4, then the treatment train would be MF-RO-AOP since the future conversion at RP-4 to MBR is planned for the long term.

Additionally, the MBR-RO-AOP process at RP-1 would remove pathogens including Virus, *Giardia* cysts, Virus, and *Cryptosporidium* oocysts to at or below the minimum regulatory requirements. If desired, IEUA could claim additional virus credit through final chlorine disinfection though this level of treatment is not required at this time (refer to Appendix 1 to the 2022 CBP FPEIR [TM1, Subsection 4.2.3] for the specific pathogen log removal credits).

AWPF Capacity and Redundancy Assumptions

The most economical approach to size an AWPF is to provide a near constant flow of approximately 17,000 AFY to produce the purified water goal of 15,000 AFY. **Exhibit 10** shows the required flow rates and assumed recoveries MF-RO-AOP at RP-4. MF backwash waste would return to the upstream wastewater treatment plant in order to minimize losses through the system. During the water purification process, of the stream of recycled water that the AWPF would

receive, a small percentage is lost to the water purification process. While available proprietary and non-proprietary high recovery RO treatment technologies could conceivably achieve 93% recovery, pilot testing achievable recovery on the anticipated water quality and corresponding impacts to concentrate disposal would be required before constructing a full-scale system.

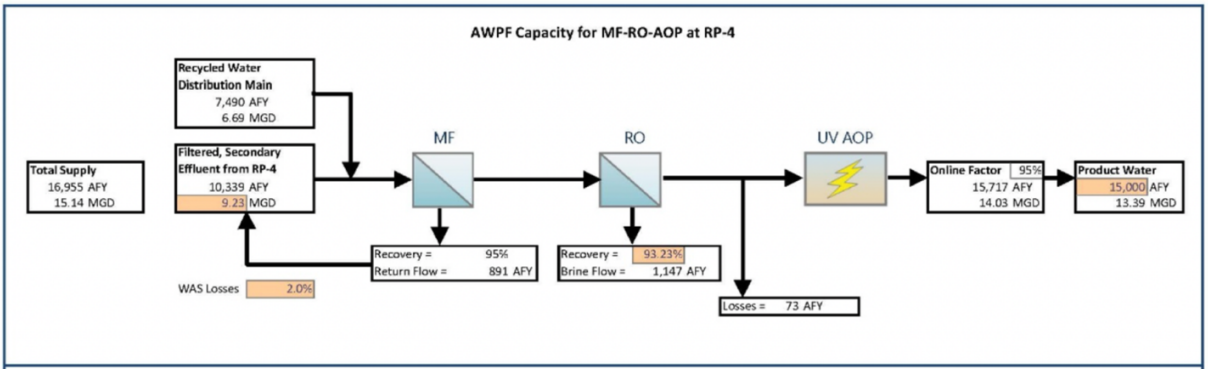


Exhibit 10: AWPF Capacities for MF-RO-AOP at RP-4

Redundancy requirements are established by the function of the facility and criticality of continuous full capacity operations. In order to maintain the high online factor required to reliably produce 15,000 AFY with limited supply, the design includes fully redundant trains for all processes. **Table 12** summarizes the redundancy planned for the AWPF along with the anticipated offline time.

Table 12
REDUNDANCY REQUIREMENTS

Process	Duty + Standby	Online Factor	Required Downtime
MF System			
MF Feed Tanks	1 + 0	98.6%	5 days per year to drain, clean, and inspect
MF Feed Pumps	3 + 1	100%	21 days per 5 years per pump
MF Strainers	3 + 1	100%	14 days per year per strainer
MF Trains	7 + 2	100%	12 days per year per train for CIP; 7 days per year per train for maintenance; 100 minutes per day for MC/backwash/PDT
MF Backwash Pumps	1 + 1	100%	21 days per 5 years per pump
MF Backwash Blowers	1 + 1	100%	2 days per year per blower
RO System			
RO Feed Tank	1 + 0	98.6%	5 days per year to drain, clean, and inspect
RO Feed Pumps	4 + 1	100%	21 days per 5 years per pump
Cartridge Filters	4 + 1	100%	1 day per 3 months per cartridge filter
RO Trains	4 + 1	100%	1 day per train per year for CIP; 28 days per 5 years per train for maintenance
RO Interstage Booster Pumps	4 + 1	100%	21 days per 5 years per pump
RO Flush Tank	1 + 0	98.6%	5 days per year to drain, clean, and inspect
RO Flush Pumps	1 + 1	100%	21 days per 5 years per pump
UV-AOP System			

Process	Duty + Standby	Online Factor	Required Downtime
UV Reactors	1 + 1	100%	14 days per year per reactor for bulb, sleeve, and ballast replacement
Factor to Account for Time to Switch Over to Duty Train in the Event of Failure		99.5%	20 failures per year; 2 hours to recover from each
Anticipated Online Time		**95.4%**	

The proposed AWPF located at RP-4 would utilize an MF-RO-AOP treatment process. The sizing assumptions for the 15,000 AFY AWPF at RP-4 are summarized in **Table 13**, below.

Table 13
SIZING ASSUMPTIONS FOR 15,000 AFY AWPF AT RP-4

Process or Facility	Description	Units	Value[1]
Equalization	Equalization Tank	MG	1.2[2]
MF System	MF system production capacity	MGD	15.1
	MF feed pumps	No.	3 + 1
	Capacity, per pump	gpm	4,700
	MF strainers	No.	3 + 1
	Capacity, per strainer	gpm	4,700
	MF trains	No.	7 + 2
	Filtrate flow, per train	gpm	1,500
	MF backwash pumps	No.	1 + 1
	Capacity, per pump	gpm	2,010
RO System	RO system production capacity	MGD	14.1
	RO feed tank	gal	105,000
	RO feed pumps	No.	4 + 1
	Capacity, per pump	gpm	2,640
	Cartridge filters	No.	4 + 1
	Capacity, per cartridge filter	gpm	2,640
	RO trains	No.	4 + 1
	Permeate, per train	gpm	2,450
	RO interstage booster pumps	No.	1 Per Train
	Capacity, per pump	gpm	650
	RO flush tank	gal	18,900
	RO flush pumps	No.	1 + 1
	Capacity, per pump	gpm	900
UV-AOP System	UV-AOP system production capacity	MGD	14.1
	UV reactors	No.	2 + 1
	Flow, per reactor	gpm	4,900
Chemical Facilities	Sulfuric acid tank	No.	2
	Tank volume	gal	11,900
	Sodium hypochlorite tank	No.	2
	Tank volume	gal	13,100
	Caustic soda totes	No.	2

Process or Facility	Description	Units	Value[1]
	Tote volume	gal	300
	Ammonium sulfate tank	No.	1
	Tank volume	gal	13,500
	Antiscalant tank	No.	1
	Tank volume	gal	6,100
	Hydrogen peroxide tank	No.	1
	Tank volume	gal	7,300
	Sodium bisulfite tote	No.	2
	Tote volume	gal	300
Post Treatment	Lime system	No.	2 + 0
	Decarbonator system	No.	2 + 0
CIP Systems	MF CIP system tanks	No.	2
	RO CIP system tanks	No.	2
	RO CIP cartridge filter	No.	1

Notes: [1]Equipment quantities are shown in the format of duty + standby, i.e., MF feed pumps are 3 + 1, or 3 duty + 1 standby.
[2]Size is limited by available space near existing chlorine contact basins. The size and location of the equalization tank will be evaluated in more detail during future phases of the project.

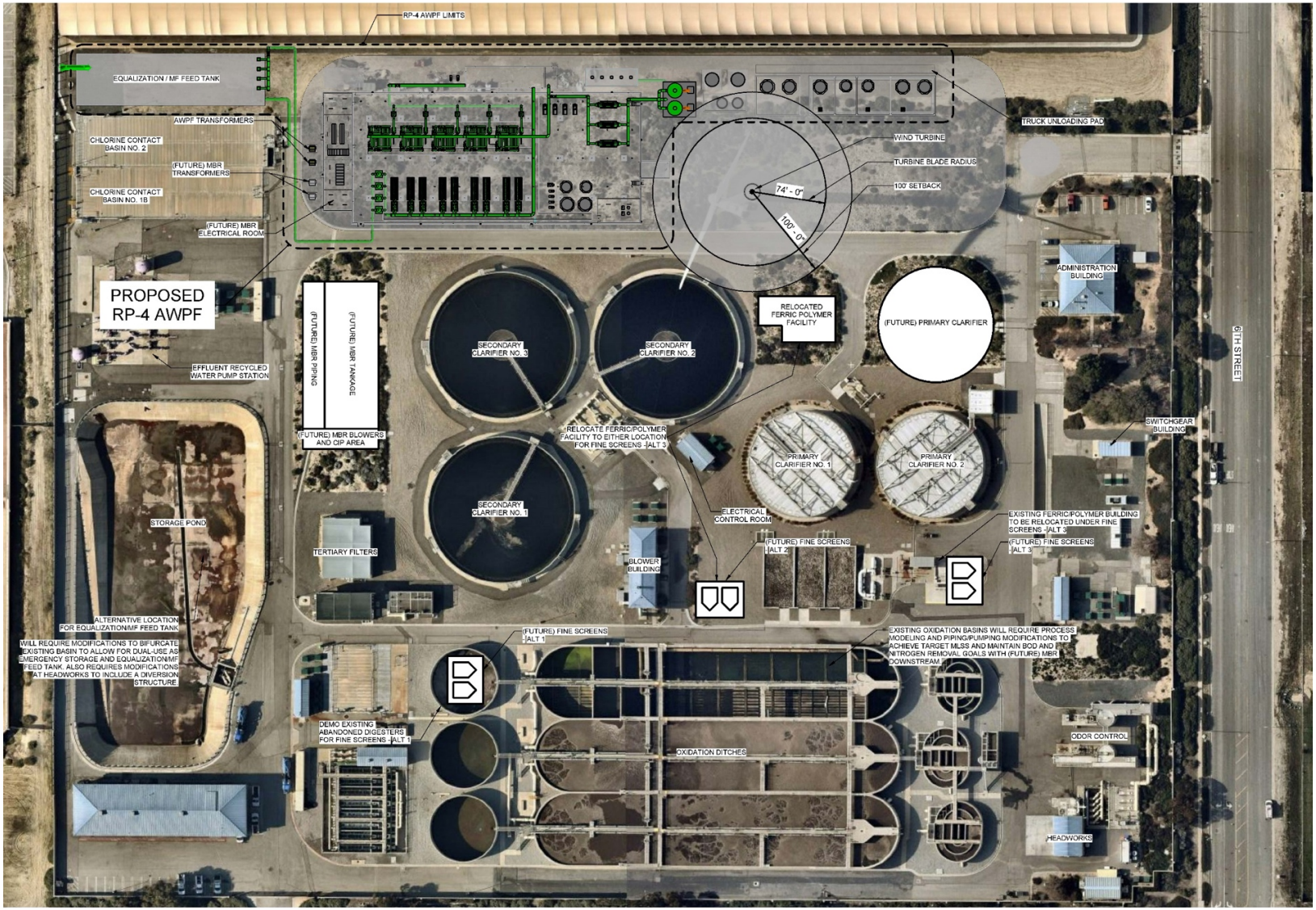


Exhibit 11: RP-4 Site Layout

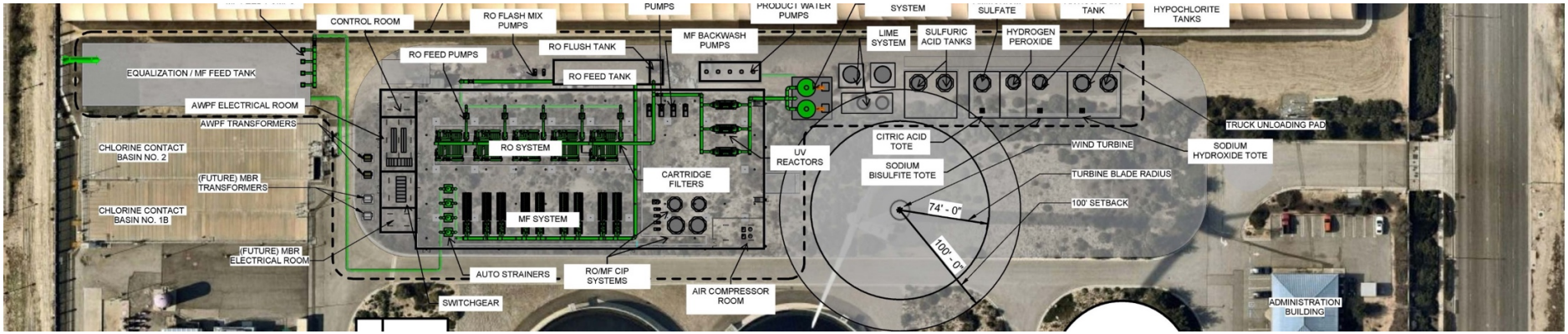


Exhibit 12: RP-4 AWPF Site Layout

Brine Disposal

As stated above, during the water treatment process, of the stream of recycled water that the AWPF would receive, a small percentage is lost to the water purification process. This small percentage that is lost to the water purification process is called brine. The AWPF requires brine disposal for the brine stream generated by RO treatment. Refer to Technical Memorandum 3 (TM3), provided as Appendix 3 to the 2022 CBP FPEIR, which presents a summary of NRWS infrastructure, available capacity in each system, requirements for new connections and tie-ins, a summary of system costs for connection capacity and operations, and future considerations for brine conveyance and scaling mitigation. New connections to the NRWS consider the existing hydraulics, requirements for physical connection, and operations and maintenance.

IEUA operates the Non-Reclaimable Wastewater System (NRWS), which is infrastructure for disposal of high-salinity wastewater (brine) and other non-reclaimable high-strength wastewater. The NRWS is comprised of three pipelines shown on **Figure 3**: the NRWS pipeline, the Etiwanda Wastewater Line (EWL), and the Inland Empire Brine Line (IEBL). The NRWS is split into two service areas within IEUA's jurisdiction. The North NRWS is comprised of the NRWS pipeline and EWL, while the South NRWS is comprised of the IEBL. The NRWS pipeline and the EWL ultimately convey flow to the Los Angeles County Sanitation Districts (LACSD) through the Joint Outfall System (JOS). The IEBL directly conveys flow to the Orange County Sanitation District (OCSD) by gravity. The NRWS is shown graphically in **Exhibits 13 and 14**.

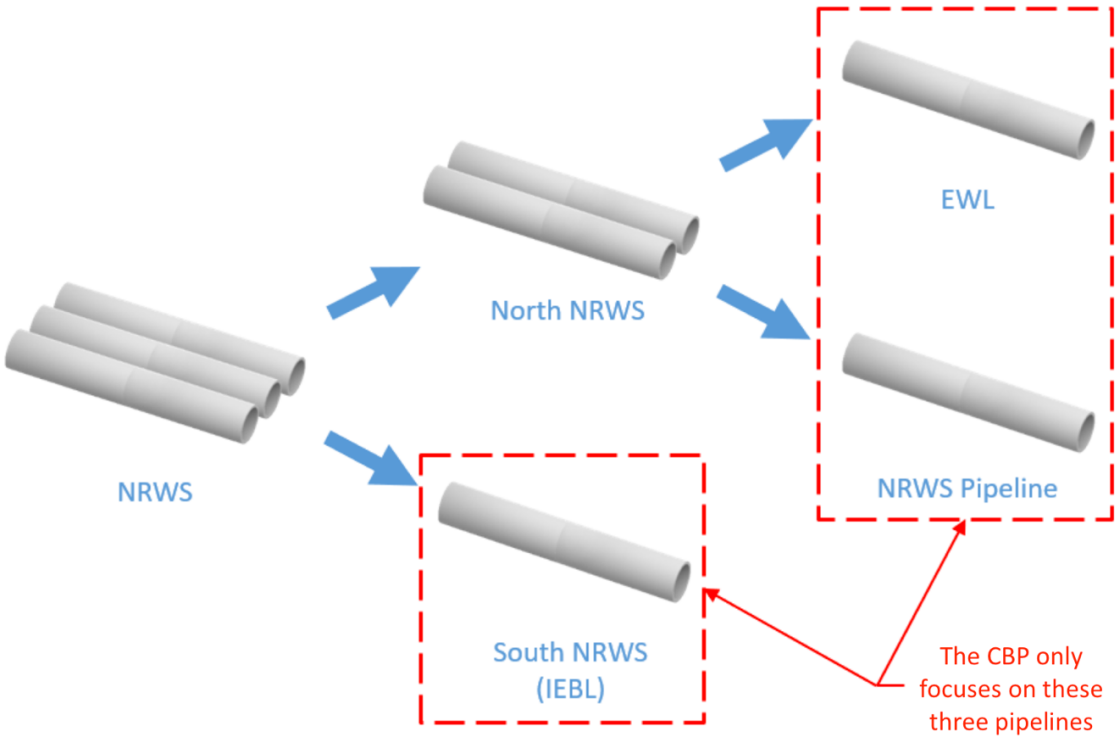


Exhibit 13: NRWS Nomenclature

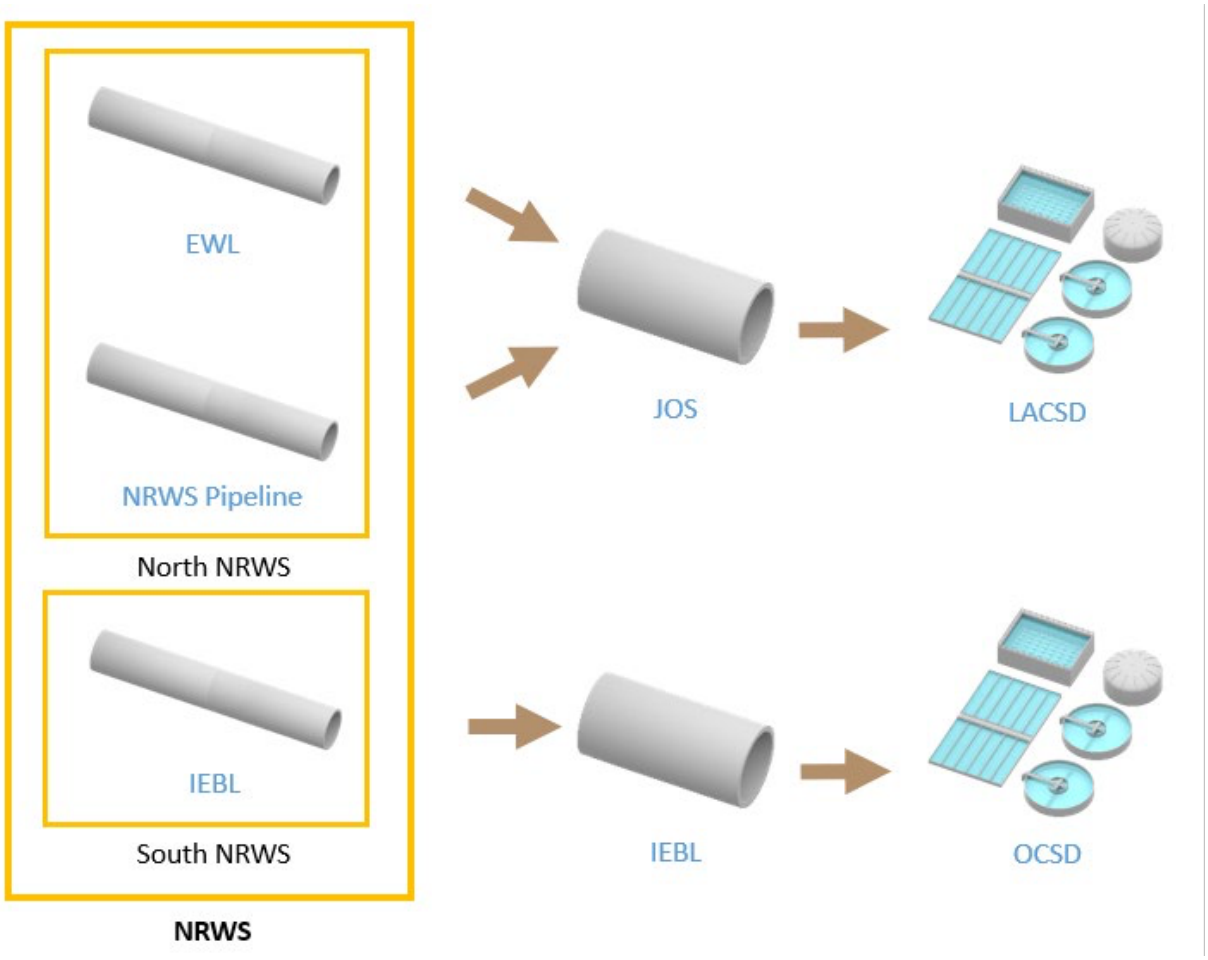


Exhibit 14: Overall System Schematic

New Connections to the NRWS

To discharge to the NRWS, the user must obtain a Wastewater Discharge Permit and purchase capacity units (CU) for the respective pipeline. The typical terms for the permit are five years for the NRWS pipeline and EWL and two years for the IEBL. Permit application and renewal fees vary by industry and are listed in the Resolutions for each pipeline. **Exhibit 15** summarizes the steps to obtain a permit.



Exhibit 15: Typical Process for Wastewater Discharge Permit

Plans detailing the facility layout, points of connection to the NRWS, and monitoring station must be submitted with the Wastewater Discharge Permit Application. The materials that must be submitted with the Wastewater Discharge Permit Application can be located at IEUA's website.[13]

3.9.4 Groundwater Recharge

The PUT options include recharging purified water to the Chino Basin to achieve two goals: capitalizing on storage within the Basin as well as reducing the overall salinity of the Basin. The groundwater recharge component includes both where to recharge the water and how to recharge the water.

This section discusses the groundwater recharge assumptions for the PUT options, which are presented in the following sections:

- Recharge locations in the Chino Basin, which need to consider the characteristics of the Chino Basin, groundwater quality, and recovery of the stored water.
- Recharge method, including injection wells and recharge basins
- Monitoring wells

Recharge Locations

The northern portion of MZ-2 was identified as the primary recharge location for purified water as part of the Storage Framework Investigation (WEI, October 2018). The northern portion of MZ-2 is generally outside of known areas of contamination and does not have known subsidence constraints or significant pumping depressions. The Storage Framework Investigation also included managed storage and recovery programs within operational bands 2, 3, and 4. For these storage and recovery programs, ASR wells, which can be used for both injection and extraction, were assumed in the northern MZ-2 area in two east-west alignments in Rancho Cucamonga. ASR wells were not considered in the CBP as current regulations do not allow ASR wells to inject and extract purified recycled water, although this may be considered in the future with evolving regulations.

For the PUT options, two sets of potential injection well locations in MZ-2 were identified, which are as follows:

Initially, potential injection well locations were identified in MZ-2 in Rancho Cucamonga in similar locations as assumed for the Storage Framework Investigation. One east-west alignment was assumed on the Pacific Electric Inland Empire Trail and one along Foothill Boulevard.

In order to reduce the infrastructure required to convey the purified water from the AWPF to the injection wells, a second set of injection well locations have been identified in MZ-2. These were located further south than the initial set (closer to both RP-1 and RP-4) to reduce the overall purified water pipeline lengths. The east-west alignments of injection wells were assumed along Foothill Boulevard and Arrow Route in Rancho Cucamonga.

Preliminary groundwater modeling was completed for both sets of preliminary injection well locations and results indicate that both options align with the OBMP objectives and the SFI. The second set of injection wells (located on Foothill Boulevard and Arrow Route) are assumed for the PUT options to reduce the overall infrastructure costs. This scenario would reduce the infrastructure required to convey the purified water from the AWPF to the injection wells. These

[13] https://www.ieua.org/everything-water/pretreatment-source-control/wastewater-discharge-permits/

were located further south and closer to both RP-1 and RP-4 to reduce the overall purified water pipeline lengths. The east-west alignments of injection wells were assumed along Foothill Boulevard and Arrow Route in Rancho Cucamonga. Injection wells in MZ-1 and MZ-3 were also investigated as part of the project:

Recharge Method

Existing recharge basins are used to recharge a combination of stormwater, tertiary recycled water, and imported water into the Basin. These recharge basins are highly utilized, especially seasonally during storm events, and do not have sufficient year-round capacity for the additional purified water (15,000 AFY) to be recharged as part of the CBP. The PUT options were developed assuming injection wells would be used to recharge purified water.

Injection Wells

Injection wells will be used to recharge purified water to the Chino Basin drinking water aquifers. Injection wells allow for consistent recharge of specific aquifers and are not subject to stormwater capacity restraints like recharge basins. Each injection well will be constructed to the State of California regulations. Each well site will include a concrete pad, superstructure, necessary safety features, signage, and flowmeters. Each injection well is estimated to require a site space of 100 feet by 100 feet (0.23 acres) that will accommodate the initial well construction, the wellhead equipment, and future well maintenance and redevelopment. It is assumed that land would need to be purchased for each injection well. An example injection well site is shown in Photo 1, below.



Photo 1: Example Injection Well Site

The capacity of each injection well is assumed to be 50 percent of the average pumping rate of nearby production wells. Based on the data included in the Storage Framework Investigation (WEI, October 2018) and the characterization of each management zone, the estimated injection wells capacities for MZ-2 are 830 gpm and 3.77-acre feet per day (AFD).

Preliminary groundwater modeling was completed for preliminary injection well locations and results indicate that the proposed PUT options align with the OBMP objectives and the Storage Framework Investigation. The second set of injection wells (located on Foothill Boulevard and Arrow Route) are used for the PUT options as the superior option to reduce the overall infrastructure costs.

Table 14 summarizes the MZ-2 injection wells assumed for the PUT options. The number of injection wells was determined using the maximum capacity per well, defined above.

Table 14
MZ-2 INJECTION WELLS

Recharge Goal (AFY)	Maximum Capacity per Injection Well (gpm)	Conceptual Design	
		Number of Injection Wells	Capacity per Injection Well (gpm)
15,000	830	Duty = 12, Standby = 4 Total = 16	775

Injection well capacities are dependent on the well maintenance and other operational assumptions. Standard injection well operational procedures include assuming wells do not sit idle for longer than one week, are exercised near design flow rates, are backflushed for approximately one hour a week, and are rehabbed every three to five years. Redundant injection wells are recommended to allow for backflushing and well rehabilitation while meeting the continuous recharge rate of 15,000 AFY. Test injection wells are likely to be required to collect site specific information to guide injection well design.

The recommended redundancy for injection wells is one standby well for every three active wells. For example, if all 15,000 AFY (41.1 acre-feet per day (AFD)) is proposed to be recharged in MZ-2, then 12 operating wells and four standby wells (16 wells total) are recommended based on the estimated MZ-2 injection well capacity projected above, and the recommended redundancy requirements. One example operating scenario would be to group the wells into four sets of four wells each where at any one time three wells would be active and one standby. The active wells would be cycled on a weekly basis to make sure that each well is not inactive for more than a week.

Monitoring Wells

Per the Title 22 regulations for groundwater replenishment using recycled water, monitoring wells are required to monitor water quality in the groundwater Basin. The regulations require that at least two monitoring wells be constructed downgradient of the replenishment location. One must be located at least two weeks but no more than six months downgradient travel time through the aquifer and at least 30 days upgradient from the nearest drinking water well, and the second well must be located between the replenishment location and the nearest downgradient drinking water well. A total of 4 monitoring wells were included in each PUT option to comply with these requirements.

3.9.5 PUT Facilities Summary

PUT Option 5 (PUT-5) assumes that the AWPF is located at RP-4, where 15,000 AFY of purified recycled water is produced and recharged into MZ-2. The elements of PUT Option 5 are as follows:

- Recharge location
  - MZ-2: All purified water would be recharged via injection wells in MZ-2, which is consistent with the Storage Framework Investigation.
- AWPF
  - The AWPF (MF-ROP-AOP) would be located at RP-4. The preliminary RP-4 AWPF layout is shown in **Exhibit 12**.
- Conveyance
  - Purified water would be pumped from the AWPF to the injection well sites in MZ-2.
  - Brine from the AWPF would be pumped in to the NRWS pipeline and conveyed to LACSD for disposal.

PUT Option 5 is summarized in **Table 15** and shown in **Figure 4**.

Table 15
PUT FACILITIES

Parameter	Description
Recharge Locations	MZ-2
AWPF	
Location	RP-4
Process	MF/RO/UV-AOP
Capacity (AFY)	15,000
Purified water conveyance	
Pipelines[1]	7.1 miles (8-inch to 30-inch)
Pump station[2]	
Location	RP-4
Size	1,500 HP
Number of injection wells	16 (12 duty, 4 standby)
Brine conveyance[3]	
Disposal system	NRWS
Pipeline	1,400 ft (8-inch)

Notes: [1]Pipelines are discussed under Subsection 3.11, 3.10.5, and 3.10.6
[2]Pump Stations are discussed under Subsection 3.10.5 Delivery to Hydraulic Elevations Above the Blending Reservoir
[3]Brine Conveyance is discussed under Subsection 3.11.4 and 3.9.3, above.

3.10 CHINO BASIN PROGRAM TAKE FACILITIES

The CBP includes two main categories of facilities: PUT, the components to recharge purified water to the Chino Basin, and TAKE, the components to extract groundwater and convey potable water supply. The TAKE components are as follows, with the corresponding section noted:

- Groundwater extraction and treatment
- Potable water pumping and conveyance

- Potable water usage
  - MWD pump back
  - In lieu usage

To support the development of the PUT and TAKE options, and program scenarios, WEI completed initial groundwater modeling for the PUT and TAKE components. The initial groundwater modeling results are discussed in Subsection 3.9.1. The following table summarizes the TAKE Options that will be considered as part of the overall CBP Project.

Table 16
TAKE OPTIONS SUMMARY

TAKE Options	Description			Call Year Deliveries			Total Delivery over 25 Years		
	Pump Back and/or In-Lieu	Standard Delivery		Pump Back (AFY)	In-Lieu (AFY)	Total (AFY)		Call Year Deliveries (AF)	Total (AF)
TAKE-1	100% Pump Back	Standard		50,000	-	50,000		375,000	375,000
TAKE-3	Partial Pump Back and Partial In-Lieu	Standard		25,500	24,500	50,000		375,000	375,000
TAKE-7		Standard		28,000	22,000	50,000		375,000	375,000
TAKE--8	Partial Pump and In-Lieu	Standard		10,000	30,000	40,000		300,000	300,000

3.10.1 Groundwater Extraction and Storage

The goal of the TAKE components is to deliver the 375,000 AF of potable water from the Chino Basin over the 25-year project life cycle of the CBP (while the Proposition 1 WSIP water exchange commitment is fulfilled). The 375,000 AF would replace water supply that would otherwise be imported from the Sacramento-San Joaquin Delta (Delta), which will be done either by delivering extracted groundwater to MWD's regional facilities for eventual distribution to member agencies (MWD pump back), or by delivering groundwater directly to member agencies for their use in-lieu of receiving imported water deliveries from MWD, which is referred to as In-Lieu CBP.

The 375,000 AF would be used during dry years (call years) when less water is imported from the Delta. Two groundwater extraction scenarios were assumed for the TAKE options:

- Standard delivery (no pre-delivery): Assuming a maximum pumping rate of 50,000 AFY, 7.5 call years would occur over the 25-year 25-year project life cycle of the CBP (while the Proposition 1 WSIP water exchange commitment is fulfilled) ~~project~~. The TAKE facilities would be sized to deliver 50,000 AFY of groundwater from the Chino Basin to MWD regional facilities or directly to member agencies.

An option to directly delivering extracted CBP groundwater to member agencies for in-lieu use is to provide new local wells or wellhead treatment to existing wells, which is referred to as In-Lieu Local. Examples for this type of in-lieu use include adding groundwater treatment to wells that are currently offline due to groundwater contamination. For these example In-Lieu Local projects, up

to 3,000 AFY is assumed to be treated at member agency wells, for a total of 6,000 AFY if two such projects are implemented. This sum of water would already be within member agency service areas and is assumed to not require any additional infrastructure other than wellhead treatment. This would reduce the total amount of water required to be extracted from the proposed extraction wellfield and conveyed through TAKE facilities by up to 6,000 AFY.

Extraction Wells

Multiple extraction wells are required to meet baseline (50,000 AFY) project option. Up to 17 extraction wells would be required depending upon the option selected.

Site Selection

The location of potential extraction well sites was determined through the identification of land within the Chino Basin with the following attributes:

- Undeveloped parcels.
- Parcels located at the intersection of streets. These sites would provide for easy access to the site during construction, maintenance, and rehabilitation activities.
- Located within the groundwater MZ desired for extraction well options (predominantly MZ-2 as evaluated in the SFI)

It was assumed that the minimum extraction well size would need to be a minimum of 100 feet by 100 feet (0.23 acres) to allow for construction, periodic well rehabilitation, and the drilling of a new well, should the original well fail and need to be replaced. Photo 2 is a photo of a well site measuring 100 feet by 100 feet during well rehabilitation. As shown, well rehabilitation (and drilling) activities required adequate space for pump column laydown, well rig placement, spoils placement, and decant tanks for well development.



Photo 2: Well Rehabilitation Activities

Production Capacity
The estimated flowrates of proposed wells in the area are between 1,500 gpm and 2,000 gpm, based on production data from other nearby wells. It is assumed that one redundant well would be constructed for each option such that the firm production capacity with the largest well offline would still produce the amount of CBP water required for the option. A sampling port would be installed at all wellheads to facilitate routine water quality sampling. Each well would be able to deliver water to an HGL of 1,180 feet (ft), which is the operational water elevation of the proposed blending and storage reservoir. Chlorine would be injected at each wellhead to prevent biological growth in well collector pipelines.

Well Collector Pipelines
A network of pipelines would be installed to connect each well to the blending and storage reservoir. The collector pipeline diameters would range from 12- to 54-inch, and are sized to keep pipeline velocity below 5 feet per second (fps). Collector pipes are considered separately from the regional potable pipelines because they would convey raw groundwater to a reservoir for blending. After blending in the reservoir and addition of chlorine, the water would be considered potable. It is assumed that additional groundwater treatment would not be necessary as water quality in the proposed wellfield location meets drinking water standards. If additional treatment becomes necessary in the future, either a wellhead or centralized treatment facility can be integrated and located at either an individual well site or adjacent to the blending and storage reservoir.

Redundancy Requirements
It is assumed that one redundant well would be required for each option to accommodate capacity loss from hydrogeologic conditions, poor water quality, or maintenance shutdowns. In the event multiple wells are offline or have reduced production capacity at a given time, the online wells can be pumped at a higher rate until the wells are back online. The extraction wells design should include variable frequency drives (VFD) and the ultimate design point should be at maximum drawdown and lowest anticipated static groundwater level so that additional production is possible.

Blending and Storage Reservoir
A circular, prestressed tank storage reservoir is recommended near the extraction wellfield to collect groundwater from all proposed wells prior to MWD pump back and/or in-lieu usage by agencies. The storage reservoir will have two purposes:

1. If an extraction well begins to pump contaminated groundwater, the reservoir will provide an opportunity for blending, which can avoid taking the well offline or the need for treatment.
2. The storage reservoir will serve as a forebay for the pump station that will be needed to boost water to elevations well above the extraction well field, and to break head for water to be delivered to lower elevations. This will also provide a constant head for the wells to pump against, rather than having the variability of discharge pressure that may come from having the wells pump directly into a high-pressure transmission line.

The reservoir would provide short-term storage and blending. Because the reservoir will primarily be used for blending and not storage, it is assumed that the reservoir volume would be determined based on retention time, and not hours of stored water available to meet demands. For blending purposes, it is assumed the retention time would need to be three hours. The reservoir outlet(s) will serve as the sampling point for water quality analyses for potable water.

Groundwater treatment for centralized extraction wells is not anticipated due to the groundwater extraction locations being focused in the better water quality areas of MZ-2, blending in the storage reservoir, and water quality in MWD's Rialto Pipeline. In the event that treatment is needed in the future, the land acquired for the reservoir should to be large enough to accommodate a future treatment system.

3.10.2 Groundwater Treatment

Groundwater treatment for the centralized extraction wells is not anticipated but could be needed for In-Lieu Local projects where wellhead treatment is added to existing wells that are out of service due to groundwater contamination. Potential groundwater treatment technologies that could be used for wellhead treatment for potential In-Lieu Local projects include reverse osmosis, advanced oxidation, ion exchange, granular activated carbon (GAC), and biological treatment.

Based on the potential groundwater contaminants that may be found in the Chino Basin, a wide variety of treatment processes must be evaluated; these processes all have various degrees of efficacy depending on the mix of contaminants present. Groundwater treatment technologies may include more conventional best available technologies (BAT) or biological treatment, the latter being an emerging treatment technology in the water sector. **Exhibit 16** shows the range of conventional treatment technologies that are available for various groundwater contaminants.

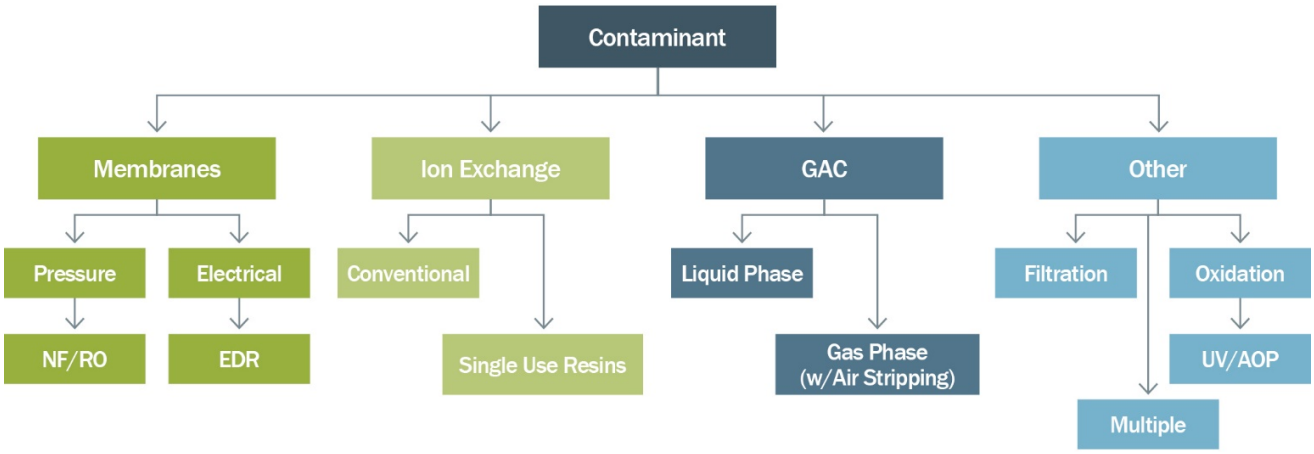


Exhibit 16: The Universe of Conventional Groundwater Contaminant Treatment Options

Membrane processes, especially RO, will remove many contaminants but are limited to higher molecular weight compounds and generally ineffective for the removal of compounds like NDMA and 1,4-dioxane.

Ion exchange, while typically utilized by engineers for the removal of nitrate, perchlorate, hexavalent chromium, and some TDS, will be ineffective at volatile organic carbon (VOC) removal.

GAC is often the treatment option of choice for VOCs but can become a costly option for some poorly absorbed compounds such as 1,2,3-TCP and trichloroethylene (TCE) and will require frequent change outs to meet effluent water quality objectives.

Finally, advanced oxidation processes, such as UV-AOP, are well suited for some difficult to treat compounds like 1,4-dioxane and NDMA but cannot treat compounds such as 1,2,3-TCP and carbon tetrachloride (CTC) without using extremely high UV doses, which will result in significant power consumption.

PFAS, a large class of emerging contaminants including PFOS and PFOA, has been detected in drinking water supplies across the United States and now have notification levels and response levels established in California. GAC or IX are the two main treatment technologies used for PFAS; RO is also effective for PFAS removal, but more expensive to construct and operate.

Table 17 summarizes the efficacy of various treatment processes for different, and common, groundwater contaminants.

Table 17
CANDIDATE TECHNOLOGIES TO REMOVE POSSIBLE CONSTITUENTS OF CONCERN

Constituent	Treatment Technologies							Most Common Processes for this Constituent
	GAC	Air Stripping (A/S) + Vapor Phase GAC	IX	RO	AOPs	Biological (Fixed Bed/ Fluidized Bed)	MBR	
Organic Constituents								
TCE	✓	✓		✓	✓	✓	✓	A/S & GAC
Perchloroethylene (PCE)	✓	✓		✓	✓	✓	✓	A/S & GAC
MTBE	✓				✓	✓	✓	GAC
1,4-dioxane					✓	✓	✓	AOP
NDMA					✓	✓	✓	UV
1,2,3-TCP	✓				✓	✓		GAC
PFAS	✓		✓	✓				GAC/IX
Inorganic Constituents								
Nitrate			✓	✓		✓	✓	IX
Hexavalent Chromium			✓	✓		✓	✓	IX
Perchlorate			✓	✓		✓	✓	IX
Iron								Oxidation & Filtration
Manganese								Oxidation & Filtration

3.10.3 MWD Pump Back

MWD operates three raw water transmission pipelines near the project area shown in **Figure 5** that could all be suitable for MWD Pump Back: Rialto Pipeline, Upper Feeder Pipeline, and Etiwanda Pipeline.

Under normal operation, the Rialto Pipeline delivers raw water from the Devil Canyon Afterbay (which receives water from the East Branch of the State Water Project) westerly to turnouts at the FWC Sandhill WTP, CVWD Lloyd W. Michael WTP, CVWD Royer Nesbit WTP (currently offline), WFA Agua de Lejos WTP, and Three Valleys Municipal Water District (TVMWD) Miramar WTP. The Rialto Pipeline also delivers raw water to various spreading basins for groundwater recharge in the Cucamonga Basin and northern areas of the Chino Basin. After turnouts to those agencies, the Rialto Pipeline delivers raw water west to the MWD F.E. Weymouth WTP (Weymouth), for ultimate delivery to Los Angeles and Orange Counties.

The Rialto Pipeline is the only appropriate pipeline to pump CBP potable water into in order to keep reclaimed water within the Chino Basin. Since the Rialto Pipeline is a raw water pipeline, the potable water generated by CBP would be considered raw water once pumped into the Rialto Pipeline. There are no MWD treated water pipelines near the proposed extraction wellfield.

TAKE options that include MWD Pump Back will require a pump station to lift extracted groundwater from the elevation of the reservoir at the extraction wellfield (between 1,000 ft and 1,200 ft above mean sea level (AMSL) to the static HGL of the Rialto Pipeline of 1,936 ft AMSL. While the hydraulic grade line (HGL) of the Rialto Pipeline decreases from 1,936 ft AMSL as it flows west due to head-loss, the pump back facilities should be capable of pumping to the Devil Canyon Afterbay static head of 1,936 ft AMSL to maintain operational flexibility. MWD Pump Back will also require a large-diameter pipeline from the extraction wellfield to the Rialto Pipeline, and a new or retrofitted turnout into the Rialto Pipeline

Water Quality Considerations

The extracted groundwater being delivered to the Rialto Pipeline must be of quality not to significantly diminish the quality of existing raw water in the Rialto Pipeline and, per MWD requirements, must meet primary and secondary MCLs. Water quality data from existing production wells near the proposed extraction wellfield in northern MZ-2 were collected to estimate the water quality of extracted CBP groundwater. Likewise, water quality data from the Devil Canyon Afterbay were provided by MWD to represent Rialto Pipeline water quality.

The blended Rialto Pipeline/CBP water quality was calculated using a mass balance based on the maximum annual CBP delivery of 50,000 AFY and typical Rialto Pipeline flow of 614 MGD. The estimated water quality for CBP water, the Rialto Pipeline water quality, and the blended CBP and Rialto Pipeline water quality is presented in **Table 18**.

Table 18
BLENDED WATER QUALITY

Constituent	CBP Blended Extraction Wells[1]	Rialto Pipeline[2]	CBP/Rialto Pipeline Blend[3]	Primary *(Secondary)* MCL
TDS (mg/L)	235.6	254.0	252.8	*(500.0)*
Nitrate-N (mg/L)	3.3	0.4	0.6	10.0
Hardness (mg/L)	146.7	94.0	97.6	-
EC (µS/cm)	3844.4	457.0	452.1	*(900.0)*
pH	7.8	8.1[4]	8.1	-
Calcium (mg/L)	45.1	20.0	21.8	-
Magnesium (mg/L)	7.7	11.0	10.8	-
Sodium (mg/L)	19.6	52.0	49.8	-
Potassium (mg/L)	1.8	N/A	N/A	-

Constituent	CBP Blended Extraction Wells[1]	Rialto Pipeline[2]	CBP/Rialto Pipeline Blend[3]	Primary *(Secondary)* MCL
Bicarbonate (mg/L)	178.7	72.0	79.2	-
Chloride (mg/L)	9.4	72.0	67.8	*(250.0)*
Sulfate (mg/L)	15.1	33.0	31.8	*(250.0)*
Perchlorate (µg/L)	2.4	05	0.2	*6.0*
Hexavalent Chromium (µg/L)	3.4	05	0.2	*10.06*

Notes: [1]Based on 5-10 years water quality data of nearby production wells.
[2]Rialto Pipeline water quality assumed to be equivalent to Devil Canyon Afterbay water quality as provided in MWD Bulletin 132-13 from April 2015, Table 4-1.
[3]Calculated by mass balance of typical Rialto Pipeline flowrate (614 MGD) and maximum proposed CBP flowrate (50,000 AFY, 44.64 MGD). CBP water would account for approximately 6.8% of the combined flow.
[4]CVWD LWMWTP Master Plan, October 2010
[5]No data, which suggests that these constituents were not sampled because not typically present in surface water. For this analysis, they were assumed to be zero.
[6]The hexavalent chromium MCL was rescinded but is anticipated to be re-proposed at this same level in the future. Total chromium has an MCL of 60 µg/L.

Table 18 above shows that the projected, blended water quality for the CBP extraction wells is of high quality and, in many cases, the extraction well water quality exceeds that in Rialto Pipeline. The lack of perchlorate and hexavalent chromium data for the Rialto Pipeline suggests that these constituents were not sampled. These constituents are not typically present in surface water and for this analysis it is assumed that they have low or zero concentration in the Rialto Pipeline. The projected levels for the CBP water alone are below the MCL for perchlorate and the assumed future MCL for hexavalent chromium. Considering the significant dilution that will occur in the Rialto Pipeline once the CBP water is pumped in, treatment is not anticipated to be required.

The CBP water would be sampled and monitored at or near the turnout into the Rialto Pipeline. It is anticipated that MWD will provide a list of constituents to be monitored at regular intervals to verify the quality of water being delivered. Constituents to be monitored may include TDS, nitrate, hardness, chloride, sulfate, perchlorate, hexavalent chromium, 1,2,3-TCP, and other contaminants that may present treatment challenges or that have primary and secondary MCLs for drinking water. The frequency of the sampling is unknown at this time.

PFAS

PFAS sampling was completed in 2019 and 2020 and results are forthcoming. The following describe sampling that has been undertaken to date:

- The only sampling completed on Chino Basin groundwater to date was through Unregulated Contaminant Monitoring Rule (UCMR 3), which was for 30 active wells.
- All UCMR3 data showed that all samples were non-detect. However, UCMR3 data was analyzed using older analytical methods with a higher detection limit than the current NLs. Therefore, it is inconclusive as to whether the CBP groundwater will require treatment for PFOA and PFOS.
- The CBWM monitors some wells in Chino Basin and have added PFOA and PFOS sampling to their constituents. The first samples were collected in 2019.
- A couple of drinking water agencies in the Chino Basin area were served sampling orders from DDW and had to start quarterly sampling in June. These agencies are waiting to see data has been uploaded to DDW's online database.
- The CDA started sampling at desalter wells, but data is not yet available.

Operational Considerations
It is assumed that the MWD Pump Back would operate at a constant rate over the entire calendar year and would not vary to meet seasonal demands. The system is anticipated to deliver water at 50,000 AFY (~31,100 GPM) constantly during call years and would not operate during non-call years.

The high-hydraulic grade line (HGL) in the Rialto Pipeline changes as flow varies seasonally so MWD would likely maintain operational control over the pump back conveyance system for more streamlined operation of the pump station with MWD's control system. The interconnection between the MWD Pump Back and the Rialto Pipeline will also include a backflow prevention mechanism to prevent raw water in the Rialto Pipeline from contaminating the potable water in the CBP conveyance system since the MWD Pump Back will not be hydraulically isolated from the In-Lieu CBP system delivering potable water to member agencies.

Water may be delivered back to the Rialto Pipeline either by retrofit of an existing turnout off the Rialto Pipeline, or by a newly constructed tap into the Rialto Pipeline. There is currently one turnout off the Rialto Pipeline that is unused, CB-7, which has an 18-inch diameter and a capacity of approximately 6,944 GPM. Where a maximum pump back flowrate of 10,000 AFY or less to MWD will, pumping back through CB-7 is feasible, or a new connection to the Rialto Pipeline could be installed. All options that require more than 10,000 AFY of pump back to MWD will require construction of a new turnout. A new turnout would likely be placed between connections CB-16 (Lloyd W. Michael WTP) and PM-21 (Miramar WTP) to reduce the length of pipe required between the Rialto Pipeline and the extraction wellfield and/or other potable water distribution facilities.

3.10.4 In-Lieu CBP and In-Lieu Local

CBP water could also be delivered directly to local agencies and used in-lieu of imported water. Member agencies would receive a direct delivery of CBP water for use instead of imported water that originates from the Rialto Pipeline.

- In-Lieu CBP would be water from the extraction wellfield delivered to agencies through a new conveyance system, and
- In-Lieu Local would be water from wellhead treatment on existing wells or new wells delivered using only existing conveyance infrastructure.

TAKE options that include In-Lieu CBP would have a regional conveyance system including pipelines, pump stations, and turnouts and would be owned and operated by IEUA to deliver extracted CBP groundwater from the extraction wellfield to turnouts into the member agencies' distribution systems. Each member agency receiving CBP water will have a direct turnout into their local distribution system, and options requiring member agencies to use existing interconnections to deliver CBP water to other member agencies will be avoided. An effort will be made to design the regional conveyance system to deliver CBP water directly to member agencies in the pressure zone that they currently receive imported water in order to avoid requiring operational changes from shifting water sources. Member agencies may also request their CBP turnout to be in pressure zones in their system with higher demands if it will give them operational flexibility, water supply reliability, and/or relieve some capacity-constrained portions of their system.

Minimum Plant Flows
The amount of CBP water member agencies can receive in-lieu of Rialto Pipeline raw water is

limited by the minimum flowrate required to keep each WTP operating reliably. Because In-Lieu Use involves member agencies taking CBP water directly rather than Rialto Pipeline raw water through their respective WTP, only so much can in-lieu water can be received before demand on the WTPs falls below their minimum acceptable flowrate.

Water Quality Considerations

Extracted groundwater for in-lieu use would need to be of potable quality as it will be delivered directly to member agencies' distribution systems. **Table 16**, above, provides the anticipated quality of extracted groundwater based on samples from existing nearby potable wells in the previous 5 to 10 years. The CBP water is expected to meet primary and secondary MCLs and is assumed to not require treatment prior to delivery into each member agency's system. However, each well will include chlorine for disinfection, and the proposed reservoir at the extraction wellfield will also include chlorine to maintain chlorine residual in the tank and chlorine residual in the regional distribution pipelines.

The WFA Agua de Lejos WTP uses chloramines for disinfection at its WTP, leaving residual chloramine in the WFA distribution system and in its members' systems as well. There may be adverse water quality affects from mixing water with residual chlorine and residual chloramine, such as disinfection byproduct production. If concerns arise from mixing the two types of disinfected water, the disinfection strategy at turnouts from chlorinated regional CBP facilities to local agency systems using chloramine will require evaluation to determine the optimum blending strategy.

Water quality will be monitored in the potable water reservoir near the extraction wellfield. Water will also be sampled at various locations throughout the regional distribution system to ensure that water being delivered to member agencies meets drinking water quality requirements. It is anticipated that agreements will be made between member agencies and IEUA that provides a set of water quality requirements, or that the CBP water deliveries will only be required to meet the primary and secondary MCLs for drinking water.

Operational Considerations

The regional CBP delivery system for In-Lieu CBP, including wells, reservoirs, pump stations, pipes, and turnouts, would be owned and operated by IEUA. The system would primarily operate as a constant flow system, simultaneously pumping, conveying, and delivering groundwater to member agencies at the designated flowrate for either a call year or non-call year. The system would not have the ability to increase production to accommodate increased summertime demands, except in non-call years for options that include pre-delivery, as the average flow rate for the non-call year would be less than the maximum capacity of the conveyance system.

If a well began producing water with a high level of a contaminant that could not be blended out by the rest of the production wells, a redundant well would be operated to make up the water deficit. If a redundant well is unavailable or already producing water, the production of the other well could be increased slightly to make up the deficit of the offline well.

TAKE options that include In-Lieu CBP, i.e., direct deliveries of extracted groundwater in-lieu of imported water to member agencies, will include dedicated pipelines, pump stations, and turnouts owned and operated by IEUA. Turnouts will be metered to track deliveries of CBP water made to member agencies to accurately determine how much water member agencies are using in-lieu of imported water. Like In-Lieu CBP, water deliveries from In-Lieu Local projects would need to be metered to track deliveries of CBP water made to member agencies for accurate accounting.

In-Lieu Local

The In-Lieu Local delivery mechanism involves using either new or existing wells and piping to locally produce groundwater stored by CBP. If existing wells were used for In-Lieu Local, then it was assumed that only existing wells that are currently offline would be considered to exclusively to produce CBP water when they are brought back into service.

In-Lieu Local projects have been incorporated into the CBP, though the specific member agencies that might participate in these projects are unknown. Additionally, the specific locations of the wells within member agency service areas are unknown.

IEUA member agencies have many existing wells that are currently offline that previously extracted potable water from the Chino Basin. The wells are generally not in operation due to the concentrations of constituents such as 1,2,3-TCP, nitrate, PFAS, etc., the concentrations of which exceed the MCL. As such, the CBP assumes that a wellhead treatment facility would be required to reduce the concentration of constituents that degrade water quality to below the MCL for each constituent, and resume operation of the existing wells for potable water usage.

The wellhead treatment system that would be installed to connect the existing wells to the wellhead treatment would utilize a treatment system appropriate to treat the constituents of concern affecting the specific well or group of wells.

This project assumes that up to 9 wells, and up to 3 wellhead treatment systems (averaging 3 wells per treatment systems) could be installed to support the CBP. These wellhead treatment systems are assumed to be capable of treating up to 3,000 AFY per wellhead treatment system or up to 6,000 AFY. The table below outlines the In-Lieu Local assumptions.

Table 19
POTENTIAL IN-LIEU LOCAL
WELL USE AND WELLHEAD TREATMENT FACILITY

Parameter	Description
Wellhead Treatment Facility	
Location	Member Agency, Existing offline Well
Treatment Capacity (Product Water)	Up to 3,000 AFY per wellhead treatment system, maximum of 6,000 AFY assumed to be treated in total
Number of Extraction Wells (existing)	9 total
Brine Conveyance	
Disposal System	Assumed utilization of the IEBL
Disposal Capacity	4,900 gpd per wellhead treatment system
Pipeline Length	Up to 6,800 LF (8-inch)

In-Lieu CBP

Both In-Lieu CBP and MWD pump back involve the direct delivery of CBP water to a member agency or to MWD, respectively, from a dedicated regional potable CBP pipeline. Therefore, they are essentially the same regarding operations and construction of new facilities, the only difference being the location where the CBP water is being delivered. Both delivery mechanisms have three components:

- Groundwater Extraction and Blending, which includes extraction wells, well collector pipelines, and a blending and storage reservoir.

- Delivery to Hydraulic Elevations Above the Blending Reservoir, which includes pump stations, high-hydraulic grade line (HGL) potable water pipelines, and turnouts and in-conduit hydropower facilities (refer to Subsection 3.10.5).
- Delivery to Hydraulic Elevations Below the Blending Reservoir, which includes low-HGL potable water pipelines and turnouts and in-conduit hydropower facilities (refer to Subsection 3.10.6).

3.10.5 Delivery to Hydraulic Elevations Above the Blending Reservoir

Delivery to hydraulic elevations above the blending reservoir includes one or more pump stations, potable water pipelines, and turnouts and hydropower facilities to agencies with HGLs higher than the storage reservoir. The HGL of the Rialto Pipeline, as well as some member agencies pressure zones, is higher than the proposed storage and blending reservoir. To deliver In-Lieu CBP water or MWD pump back water to those pressure zones, a pump station and pressurized pipeline network is required above the reservoir. Coincidentally, the project area is on a south facing slope from the San Gabriel Mountain Range to the north, and all of the delivery locations that are higher in elevation than the proposed reservoir are north of the reservoir as well. The inverse is true that all delivery locations south of the proposed reservoir are lower in elevation than the reservoir.

Agencies that may receive water from the Component B facilities include the following with the HGL of the facility indicated:

- Metropolitan Water District (MWD): Rialto Pipeline – 1,936 ft
- Cucamonga Valley Water District (CVWD): Zone III – 1,658 ft
- Fontana Water Company (FWC): Highland Zone – 1,504 ft
- Water Facilities Authority (WFA): Agua de Lejos WTP Clearwell – 1,632 ft

Pump Stations

TAKE options include the construction of Potable Water Pump Station #1, which is to be located adjacent to the proposed reservoir and would use the reservoir as a forebay to provide suction head. Typically, Pump Station #1 would lift water up to the highest HGL of all of the Component B turnouts (Rialto Pipeline, HGL 1,936 ft). Because all other Component B turnouts are lower than the Rialto Pipeline, this would result in over-pressurizing some water which would require Pressure Reducing Valve (PRV) stations or in-conduit hydropower facilities to reduce the head.

In some options, it is more cost effective to construct a second pump station (Potable Water Pump Station #2) to lift MWD's share of water to the HGL of the Rialto Pipeline (1,936 ft), rather than requiring Pump Station #1 to lift all water in Component B up to 1,936 ft. This was typically done when the allocation of water to MWD was low enough to make the cost of constructing Pump Station #2 lower than the cost of losing energy from over-pressurizing water to every other member agency turnout in Component B. In options with Pump Station #2, Pump Station #1 lifts water to the HGL of the second highest turnout in Component B (CVWD Zone III – 1,658 ft), and Pump Station #2 takes only MWD's share of water and lifts it from 1,658 ft to the Rialto Pipeline HGL. The decision to construct a second pump station would be re-evaluated using a hydraulic model in the preliminary design phase once the preferred TAKE option has been selected.

High HGL Potable Water Pipelines

A potable pipeline network is proposed north of the blending and storage reservoir to deliver water to the agencies and pressure zones listed above under 3.10.5. The primary feature is the northern pipeline, which would comprise pipelines with diameters ranging from 30 and 54 inches and would align from the reservoir north along Milliken Avenue, east along Baseline Road, and north along

Day Creek Boulevard to the general area of the CWWD Lloyd W. Michael WTP. The Lloyd W. Michael WTP is owned and operated by CVWD and is the location of some of CVWD's Zone III tanks. This northern pipeline would supply CVWD Zone III and the MWD Rialto Pipeline.

For options that include delivery to FWC's Highland Zone, a 24-inch pipeline would branch off from the northern pipeline at the intersection of Day Creek Boulevard and Baseline Road and would align East in Baseline Road until reaching FWC's system.

For options that include delivery to WFA, a proposed 36 to 72-inch east-west pipeline would branch off from the northern pipeline at the intersection of Foothill Boulevard and Milliken Avenue. The east-west pipeline would align in Foothill Boulevard until turning North at Mountain Avenue in Upland, then turning west again at 18th Street toward the Agua de Lejos WTP. The east-west pipeline would terminate at its connections to Agua de Lejos. Maps of all potable pipeline alignments are provided with the TAKE options below under 3.10.7, TAKE Facilities Summary.

Turnouts and In-Conduit Hydropower Facilities

MWD would receive delivery of CBP water into the Rialto Pipeline near the Lloyd W. Michael WTP in Rancho Cucamonga (off the northern pipeline). A new turnout would need to be constructed from the regional CBP pipeline into the Rialto Pipeline. The turnout would include a sampling port for monitoring CBP water quality flowing into the Rialto Pipeline, and a backflow prevention device to prevent water from the Rialto Pipeline from entering the CBP pipeline. Because the CBP regional pipeline network is potable and Rialto Pipeline is raw, the Division of Drinking Water would be involved in the permitting of the interconnection between the Rialto Pipeline and the CBP pipeline. Very strict redundancy and safety requirements to ensure the potable pipelines are not contaminated with raw Rialto Pipeline water would be required.

CVWD Zone III would receive delivery of CBP water at the storage tanks on the Lloyd W. Michael WTP site from the northern pipeline. The HGL of the northern pipeline would be 1,936 ft (Rialto Pipeline) in some options, and therefore the turnout to CVWD Zone III may include a PRV station of in-conduit hydropower facility to recapture energy. The CVWD Zone III turnout would include a sampling port to monitor water quality entering CVWD's system.

FWC Highland Zone would receive delivery of CBP water into a transmission main in Baseline Avenue (Baseline becomes "Avenue" East of the Fontana/Rancho Cucamonga city line). The HGL of the Highland Zone is 1,504 ft, and the FWC Highland turnout would always require a PRV station or in-conduit hydropower facility to reduce pressure to the Highland Zone HGL. The FWC Highland turnout would include a sampling port to monitor water quality entering FWC's system.

WFA owns and operates the Agua de Lejos WTP in Upland. The Agua de Lejos WTP has a clear well with a surface elevation of 1,632 ft more than 450,000 people in the west-end of San Bernardino County, and is governed by its member agencies: the City of Chino, the City of Chino Hills, MVWD, the City of Ontario, and the City of Upland. The Agua de Lejos clear well is the ideal location to deliver CBP water because it provides the CBP water in the same location as imported water currently enters their systems. The new system would connect to the Agua de Lejos Clearwell from the proposed east-west pipeline, including a sampling port to monitor water quality entering their systems.

3.10.6 Delivery to Hydraulic Elevations Below the Blending Reservoir

Delivery to hydraulic elevations below the blending reservoir includes the potable water pipelines

and turnouts and hydropower facilities to agencies with HGLs lower than the storage reservoir. As such, the CBP proposes a north-south pipeline that would go from the northern portion of IEUA's service area to the southern portion of IEUA's service area. Due to elevation changes, some delivery locations are at HGLs below the proposed reservoir and can receive water via gravity.

Low-HGL Potable Water Pipelines

The southern pipeline would deliver CBP water from the proposed reservoir to IEUA member agencies. The pipeline is anticipated to vary in size between 24 and 36-inches based on the delivery amount to those agencies proposed in each option. The southern pipeline is alignment location has not yet been determined.

Turnouts and In-Conduit Hydropower Facilities

The southern pipeline may require one or more turnouts to reach member agencies. Because of the anticipated high difference in HGL from the proposed reservoir (1,180 ft) to the certain areas within IEUA's service area, it is assumed that an in-conduit hydropower facility may be at one or more turnouts. However, at other locations there is not enough of a difference in head to justify an in-conduit hydropower facility at possible turnout locations.

Sampling ports would be included at all turnouts to monitor water quality entering member agencies' systems.

3.10.7 TAKE Facilities Summary

TAKE-1: 100% pump back with standard delivery

TAKE Option 1 (TAKE-1) includes delivery of 50,000 AFY of CBP water to the Rialto Pipeline during call years, with standard delivery (i.e., no pre-delivery of CBP water during non-call years) and no delivery of CBP water to member agencies for in-lieu. **Table 20** provides the breakdown of CBP water deliveries to MWD and the member agencies during call and non-call years in TAKE-1.

Table 20
TAKE OPTION 1 DELIVERIES TO EACH AGENCY (AFY)

Agency	Call Year	Non-Call Year
Metropolitan Water District	50,000	-
IEUA Member Agencies	-	-
TOTAL	**50,000**	-

Note: [1]Water supplied from the WFA Agua de Lejos WTP.

TAKE Option 1 includes the following facilities, shown on **Figure 6**:

- Component A – Groundwater Extraction and Blending
  - 17 extraction wells
  - 9 miles of 12- to 36-inch collector pipelines
  - 5 MG Storage Tank #1
- Component B – Delivery to Hydraulic Elevations Above the Blending Reservoir
  - Potable Water Pump Station #1: 9,300 HP, 31,100 gpm firm capacity, 823 ft total dynamic head (TDH)
  - 5 miles of 54-inch potable northern pipeline

  - Proposed 54-inch turnout to the Rialto Pipeline
- Component C – Delivery to Hydraulic Elevations Below the Blending Reservoir
  - None
- Component D – Delivery to member agencies via In-Lieu Local (Example Projects)
  - None
- Existing Facilities
  - Rialto Pipeline (HGL 1,936 ft)

TAKE Option 1 would be operated to deliver 50,000 AFY to the Rialto Pipeline during call years. Although the facilities would not be operated for Program purposes during non-call years, the infrastructure would be available for local and/or regional uses. The operation of the TAKE-1 components during call years is described below.

- Component A – Groundwater Extraction and Blending
  - The extraction wells, collector pipes, and Storage Tank #1 would extract and blend 50,000 AFY (about 31,100 gpm) of groundwater during call years.
- Component B – Delivery to Hydraulic Elevations Above the Blending Reservoir
  - Storage Tank #1 would serve as a forebay for Potable Water Pump Station #1. During call years, Pump Station #1 would deliver 50,000 AFY of water to the Rialto Pipeline through a proposed 54-inch northern pipeline and a proposed 54-inch turnout into the Rialto Pipeline.

TAKE-3: Partial pump back and partial in-lieu with standard delivery

TAKE Option 3 (TAKE-3) involves the delivery of 50,000 AFY combined during call years to the Rialto Pipeline, five member agencies, and Jurupa Community Services District. Since this option is based on standard delivery, no water would be delivered during non-call years. **Table 21** provides the deliveries to each Agency in TAKE-3.

Table 21
TAKE OPTION 3 DELIVERIES TO EACH AGENCY (AFY)

Agency	Call Year	Non-Call Year
Metropolitan Water District	25,500	-
IEUA Member Agencies	24,500	-
TOTAL	**50,000**	**-**

Note: [1]Water supplied from the WFA Agua de Lejos WTP.

TAKE Option 3 includes construction or use of the following facilities, shown on **Figure 7**:

- Component A – Groundwater Extraction and Blending
  - 15 extraction wells
  - 9 miles of 12- to 42-inch collector pipelines
  - Storage Tank #1: 5 MG and in-conduit hydropower facility
- Component B – Delivery to Hydraulic Elevations Above the Blending Reservoir
  - Potable Water Pump Station #1: 7,000 HP, 23,300 gpm firm capacity, 823 ft TDH
  - 8 miles of 16- through 48-in potable northern pipeline (includes branches to Fontana Water Company (FWC) and Cucamonga Valley Water District (CVWD)
  - Proposed 16-inch turnout to FWC Highland Zone (and optional hydropower facility)
  - Proposed 24-inch turnout to CVWD Zone III (and optional hydropower facility)
  - Proposed 36-inch turnout to the Rialto Pipeline
- Component C – Delivery to Hydraulic Elevations Below the Blending Reservoir

  - 4 miles of 12- through 24-inch potable southern pipeline
  - Proposed 12-inch turnout to unknown member agency
- Component D – Delivery to member agencies via In-Lieu Local (Example Projects)
  - Up to 6,000 AFY wellhead treatment by 3 wellhead treatment systems treating water pumped from up to existing member agency 9 wells.
- Existing Facilities:
  - Rialto Pipeline (HGL 1,936 ft)
  - Member agency wells

TAKE Option 3 would be operated to deliver 50,000 AFY to the Rialto Pipeline, member agencies, and JCSD during call years only. Although the facilities would not be operated for Program purposes during non-call years, the infrastructure would be available for local and/or regional uses. The operation of the TAKE-3 components would be as follows:

- Component A – Groundwater Extraction and Blending
  - The extraction wells, collector pipes, and Storage Tank #1 would extract and blend 44,000 AFY (about 27,300 gpm) of groundwater during call years.
- Component B – Delivery to Hydraulic Elevations Above the Blending Reservoir
  - Storage Tank #1 would serve as a forebay for Potable Water Pump Station #1. During call years, Pump Station #1 would deliver 37,500 AFY combined of water to the Rialto Pipeline, CVWD Zone III, and FWC Highland Zone through the proposed 7.1-mile northern pipeline network and turnouts to all three agencies.
- Component C – Delivery to Hydraulic Elevations Below the Blending Reservoir
  - Potable Water Pump Station #1 is designed to lift water to an HGL of 1,936 ft to be able to deliver to the Rialto Pipeline. CVWD and FWC, who would both receive water from Pump Station #1, are at HGLs much lower than 1,936 ft. To recapture some of the lost energy from over-pumping, in-conduit hydropower facilities are proposed at both the CVWD and FWC turnouts. Preliminary calculations showed that the energy loss from over-pumping and recovering energy from hydropower facilities is less costly than the expense of constructing two additional pump stations designed to deliver water exactly to the HGLs of CVWD and FWC (1,658 ft and 1,504 ft, respectively).
  - Water would flow by gravity from north to south in a pipeline with a size between X" and X"; The volume of water that would flow by gravity under this option is anticipated to be 6,500 AFY of water. Water would flow by gravity from Storage Tank #1 South to turnouts to member agencies along a proposed 24-inch southern pipeline. Coming from an HGL of 1,180 in Storage Tank #1, an in-conduit hydropower facility may be appropriate at some turnout locations, but not at others.
- Component D – Delivery to member agencies via In-Lieu Local (Example Projects)
  - The remaining 6,000 AFY would be delivered to member agencies via In-Lieu Local and groundwater treatment. TAKE Option 3 proposes up to three new groundwater treatment facilities for member agencies that would enable reactivation of local wells currently offline due to water quality. These facilities would produce up to 3,000 AFY of potable supply which they would use in-lieu of MWD Rialto Pipeline Water. Existing infrastructure would be utilized to convey treated groundwater throughout their distribution systems to their customers. The Program would help fund these facilities in exchange for in-lieu participation.

TAKE-7: Partial pump back and partial in-lieu

TAKE Option 7 (TAKE-7) involves the delivery of 50,000 AFY combined during call years to the Rialto Pipeline, WFA, CVWD, and FWC. **Table 22** provides the deliveries to each agency for

TAKE-7.

Table 22
TAKE OPTION 7 DELIVERIES TO EACH AGENCY (AFY)

Agency	Call Year	Non-Call Year
Metropolitan Water District	28,0000	
IEUA Member Agencies	22,000	-
TOTAL	**50,000**	

Notes: [1]Water supplied from the WFA Agua de Lejos WTP.

TAKE Option 7 includes construction or use of the following facilities, shown on **Figure 8**:

- Component A – Groundwater Extraction and Blending
  - 9 extraction wells
  - 6 miles of 12- to 36-inch collector pipelines
  - 5 MG Storage Tank #1
- Component B – Delivery to Hydraulic Elevations Above the Blending Reservoir
  - 8 miles of 12- to 36-inch northern pipeline
  - Proposed 12-inch turnout to FWC Highland Zone
  - Proposed 12-inch turnout to CVWD Zone III
  - Proposed 54- to 72-inch turnout to the Rialto Pipeline
  - 9 miles of 36- to 72-inch east-west pipeline
  - Proposed 36-inch turnout to Agua de Lejos clear well (WFA)
  - WFA Booster Pump Station at 1,700 HP
  - FWC Booster Pump Station at 300 HP
  - CVWD/MWD Booster Pump Station at 4,800 HP
- Component C – Delivery to Hydraulic Elevations Below the Blending Reservoir
  - None
- Component D – Delivery to member agencies via In-Lieu Local (Example Projects)
  - None
- Existing Facilities
  - Rialto Pipeline (HGL 1,936 ft)
  - Member agency wells
  - Agua de Lejos WTP Clearwell (HGL 1,632 ft)
  - Lloyd Michaels WTP Clearwell (HGL 1,658 ft)
  - FWC Highland Zone (HGL 1,504 ft).

All facilities in TAKE Option 7 would be operated to deliver 50,000 AFY to the Rialto Pipeline and member agencies, during call years. The following discusses call year operation.

- Component A – Groundwater Extraction and Blending
  - The extraction wells, collector pipes, and Storage Tank #1 would extract and blend 50,000 AFY (about 31,000 gpm) of groundwater.
- Component B – Delivery to Hydraulic Elevations Above the Blending Reservoir
  - Storage Tank #1 would serve as a forebay for Potable Water Pump Station #1, #2 and #3. Pump Station #1 would deliver 36,000 AFY combined of water to the Rialto Pipeline and to CVWD Zone III (HGL 1,658 ft). Pump Station #2 would deliver 4,000 AFY of water to FWC Highland Zone (HGL 1,504). Pump Station #3 would deliver 10,000 AFY of water to WFA Agua de Lejos clear well (HGL 1,632 ft)

through the east-west pipelines network, and four turnouts.

TAKE-8: Partial pump back and partial in-lieu

TAKE Option 8 (TAKE-8) involves the delivery of 40,000 AFY of CBP water to all MWD, CVWD and FWC during call years. **Table 23** provides the deliveries to each agency for TAKE-8.

Table 23
TAKE OPTION 8 DELIVERIES TO EACH AGENCY (TAFY)

Agency	Call Year	Non-Call Year
Metropolitan Water District	10,000	-
CVWD and FWC	30,000	
TOTAL	**40,000**	

Note: [1]Water supplied from the WFA Agua de Lejos WTP.

TAKE Option 8 includes construction or use of the following facilities, shown on **Figure 9**:

- Component A – Groundwater Extraction and Blending
  - 17 extraction wells
  - 6 miles of 12- to 36-inch collector pipelines
  - 5 MG Storage Tank #1
- Component B – Delivery to Hydraulic Elevations Above the Blending Reservoir
  - Potable Water Pump Station #1: 5,300 HP, 11,300 gpm firm capacity, 558 ft TDH
  - MWD Booster Pump Station: 650 HP
  - 6.3 miles of 48-inch northern pipeline
  - Proposed 24-inch turnout to FWC Highland Zone
  - Proposed 48-inch turnout to CVWD Zone III
  - Proposed 24-inch turnout to Rialto Pipeline
- Component C – Delivery to Hydraulic Elevations Below the Blending Reservoir
  - 2 miles of 36-inch potable southern pipeline
  - 0.7 miles of 24-inch potable pipeline to FWC Jupiter Zone F17 Tank (HGL 1,103 ft)
- Component D – Delivery to member agencies via In-Lieu Local (Example Projects)
  - None
- Existing Facilities
  - Member agency wells

All facilities in TAKE Option 8 would be operated to deliver 40,000 AFY to the Rialto Pipeline, CVWD, and FWC during call years. The facilities would operate as a complete in-lieu to deliver 30,000 AFY to CVWD and FWC. The following discusses call year operation. The operation of the TAKE-8 components would be as follows:

- Component A – Groundwater Extraction and Blending
  - The extraction wells, collector pipes, and Storage Tank #1 would extract and blend 50,000 AFY (about 31,000 gpm) of groundwater.
- Component B – Delivery to Hydraulic Elevations Above the Blending Reservoir
  - Storage Tank #1 would serve as a forebay for Potable Water Pump Station #1. Pump Station #1 would deliver 40,000 AFY combined of water to Rialto Pipeline, CVWD Zone III, FWC Highland Zone, through a proposed network of 24- to 48-inch pipelines.
- Component C – Delivery to Hydraulic Elevations Below the Blending Reservoir

- Water would flow by gravity from north to south in a pipeline with a size between 24- and 36-inch; The volume of water that would flow by gravity under this option is anticipated to be 5,000 AFY of water would flow by gravity from Storage Tank #1 South to turnout to FWC's Jupiter Zone F17 tank member agencies along a proposed 24-inch southern pipeline. Coming from an HGL of 1,100 in Storage Tank #1, an in-conduit hydropower facility may be appropriate at some turnout locations, but not at others.

3.11 CHINO BASIN PROGRAM CONVEYANCE FACILITIES

This section presents the conveyance approach and assumptions for both the PUT and TAKE options. This section includes:

- General criteria and alignment assumptions
- Recycled water conveyances
- Purified water conveyance
- Brine conveyance
- Potable water conveyance

Note that some conveyance facilities are discussed under the Subsections 3.9, Chino Basin Program PUT Facilities and 3.10 Chino Basin Program TAKE Facilities; however, these facilities are summarized below for continuity under conveyance facilities.

3.11.1 General Criteria and Alignment Assumptions

In general, all proposed conveyance pipelines will be aligned through the public Right-of-Way (ROW) and properties owned or to-be acquired by IEUA to reduce the number of easements required for construction and maintenance. Parallel alignments through ROWs governed by the California Department of Transportation (Caltrans) will also be avoided (though not excluded from consideration) to reduce permitting efforts. Constructing in areas requiring additional permitting will be considered to avoid known utility conflicts and/or narrow segments of road, or to shorten the length of the overall alignment.

Many existing utilities could conflict with proposed conveyance pipelines, potentially leading to increases in construction time and cost. It is assumed that each stretch of public ROW will include at least one local water main and services, one local sewer main and laterals, local communication and electricity facilities in a duct bank, and one local gas distribution main and services. In addition, regional facilities have been mapped in to **Figure 10** identify larger utility conflicts, including the following:

- Large water transmission mains operated by MWD, San Gabriel Valley Municipal Water District, and CDA
- IEUA sewer trunk lines and force mains
- IEUA recycled water pipelines fuel transmission lines
- Groundwater recharge basins
- Natural gas transmission and distribution pipelines
- Regional brine transmission lines
- Regional storm drainage facilities
- Properties owned by the Southern California Edison Company (Edison)

While avoiding all utility conflicts is not feasible, all conveyance pipelines will be aligned to avoid

known parallel utility conflicts with as many existing regional utility facilities as possible. Pipelines may be aligned through utility conflicts if alternatives to avoid utilities require excessive increases in pipe length, excessive segments that require horizontal directional drilling to construct, or acquisition of easements that are considered more costly and challenging than avoiding the utility. Lots owned by Edison that cannot be purchased outright by IEUA are also not being considered due to Edison's "No Permanent Facility" clause in its Transmission Line Right of Way Constraints and Guidelines.

3.11.2 Tertiary Recycled Water Conveyance

IEUA owns and operates a recycled water distribution system with five pressure zones to serve recycled water customers and deliver recycled water to recharge basins for groundwater replenishment. The proposed AWPFs are to be placed along existing recycled water mains; therefore, no additional recycled water facilities will be required to move recycled water from IEUA's existing system to the AWPFs. However, due to the demand of the AWPFs on the existing recycled water system, IEUA will be receiving additional supply from Rialto WWTP and WRCRWA. Both new recycled water supply sources will require a pump station and pipeline to connect into the existing recycled water system. The assumptions and criteria for these recycled water pipelines and pump stations are listed below and in **Table 24**, below.

- Total dynamic head (TDH) required of pump stations to pump water into the existing recycled water system was calculated by the existing hydraulic model
  - The existing model uses the Hazen Williams equation used to determine friction head loss within pipelines
- Trenchless technologies will be required at freeway, flood channel, and railroad crossings
  - Jack and bore for lengths less than 500 feet
  - Horizontal directional drilling for lengths exceeding 500 feet

Table 24
TERTIARY RECYCLED WATER PUMP STATION AND PIPELINE DESIGN CRITERIA AND PLANNING ASSUMPTIONS

Parameter	Criteria	Units	Demand Condition
Maximum System Velocity	5	fps	Constant Flow
Pipe Material, Diameter ≥ 16 in	Steel	-	-
Pipe Material, Diameter < 16 in	Unspecified	-	-
Hazen Williams Coefficient	120	-	-
Minor Losses (% of friction losses) (bends, valves, etc.)	5	%	-
Low water level plant and booster pump stations	20 ft below grade	-	-
Motor Efficiency	75	%	-
Pump Efficiency	93	%	-
Total Pump Station Efficiency	70	%	-

Purified Recycled Water Pipeline Alignment Assumptions

Connection from the Rialto WWTP

The connection from the Rialto WWTP is assumed to connect to IEUA's recycled water system near RP-4 within the 1158 pressure zone (HGL 1158 ft, typically). In scenarios with the AWPF

located at RP-4, the pipeline connection from the Rialto WWTP will directly feed the AWPF. In order to make the connection near RP-4, the supply pipeline is required to cross the Union Pacific Railroad and Interstate 10. It is assumed that the pipeline will require jack-and-bore to cross both the railway and the freeway.

Connection from Western Riverside County Regional Wastewater Authority (WRCRWA)
The connection from WRCRWA to the IEUA recycled water system is assumed to connect within the 930-pressure zone near the 930/800 pressure reducing valve. This connection will allow the supplemental supply from WRCRWA to offset demands in the southern pressure zones where the highest agricultural demands exist and make available IEUA supply normally used to meet these demands to feed the AWPF. Due to limitation in how water can move between pressure zones, a connection to the 800-pressure zone would not allow for a maximum benefit of the new supply source. A connection within the 1158 pressure zone would allow the new supply to directly feed the AWPF if located near RP-1, but will also require about two additional miles of pipeline than a connection to the 930-pressure zone, making this connection cost prohibitive.

3.11.3 Recycled Water Conveyance

The purified water distribution system consists of pump stations and pipelines. The treatment plant pump stations deliver water to injection wells and lower elevation recharge basins. Additional booster pump stations are required to deliver purified water to higher elevations and more distant recharge basins.

Pipelines
Purified water would be routed from the AWPF's located at RP-4 to injection wells located within the Chino Basin. Pipeline design criteria established for the purified water system in addition to the overall pipeline design criteria (**Table 24**) are shown in **Table 25**.

- Hazen Williams equation used to determine friction head loss within pipelines
- Trenchless technologies will be required at freeway, flood channel, and railroad crossings
  - Jack and bore for lengths less than 500 feet
  - Horizontal directional drilling for lengths exceeding 500 feet
- Pressure reducing valves will be included at each injection well to decrease head to the required residual pressure to feed the wells.

Table 25
PURIFIED RECYCLED WATER PIPELINE DESIGN CRITERIA AND PLANNING ASSUMPTIONS

Parameter	Criteria	Units	Demand Condition
Hazen Williams Coefficient	120	-	-
Maximum System Velocity	5	fps	Constant Flow
Pipe Material	Steel	-	-
Minor Losses (bends, valves, etc.)	5	%	-
Residual Head required at Injection Wells	10	psi	-
Low water level plant and booster pump stations	20 ft below grade	-	-
Motor Efficiency	75	%	
Pump Efficiency	93	%	
Total Pump Station Efficiency	70	%	-

Pump Stations

The proposed conveyance routings will require pump stations to deliver water to the injection wells in the event that an option including the recharge basins is selected. Only one pump station would be required to pump water from the AWPF to the conveyance pipeline to the injection wells. Design criteria for these pump stations is included in **Table 25**.

If a PUT option is developed that includes using recharge basins for groundwater replenishment of purified water, an additional pump station would be required to convey purified water to the northern recharge basins including Lower Day, Etiwanda Debris, and San Sevaine. The purified water conveyance system could be extended from the injection wells to Victoria, Hickory, and Banana recharge basins without an additional pump station (i.e., the purified water pump station could pump to the injection wells and these three recharge basins).

3.11.4 Brine Conveyance

RO concentrate created at IEUA's RP-4 AWPF and brine concentrate from the example In-Lieu Local project for the City of Chino Hills wellhead treatment facility will be disposed of into the existing NRWS via the nearest existing manhole. The following assumptions were made to complete this phase of design:

- Hazen Williams equation used to determine friction head loss within pipelines
- RO concentrate will have sufficient pressure to deliver water from treatment plant to brine line discharge
- Jack and bore required at freeway crossings

Table 26
BRINE PIPELINE DESIGN CRITERIA AND PLANNING ASSUMPTIONS

Parameter	Criteria	Units	Demand Condition
Hazen Williams Coefficient	120	-	-
Maximum System Velocity	5	fps	Constant Flow
Pipe Material	High Density Poly Ethylene (HDPE)	-	-
Minor Losses (bends, valves, etc.)	5	%	-

Pipelines

The RP-1 brine pipeline connection will connect into the NRWS pipeline via a pipeline parallel to the recycled water conveyance line also exiting the plant. The HDPE brine line will require one jack-and-bore trenchless crossing under the 60 freeway.

The RP-4 brine pipeline will connect into the NRWS pipeline via a pipeline on the southeastern side of the existing facility. No trenchless crossings are required for this pipeline.
The brine pipeline for the example In-Lieu Local project included for the City of Chino Hills wellhead treatment facility would connect into the IEBL via a pipeline on the southern side of the facility. The HDPE brine line would require one jack and bore trenchless crossing under the 71 Highway and Chino Creek.

Table 27
RP-4 BRINE PIPELINE DESIGN CRITERIA AND PLANNING ASSUMPTIONS

Parameter	Diameter (in)	Approximate Length (ft)	Maximum Elevation (ft)
RP-4 Brine Line	8	1,400	1,084

AWPF at RP-4

For a product water capacity of 15 TAFY, approximately 1.03 MGD of brine concentrate will require disposal. The elements of the proposed connection are as follows:

- Connection
  - Brine concentrate will be conveyed through a 1,400-foot 8-inch HDPE brine line using residual pressure from the RO system. The residual pressure is projected to be a maximum of 80 psi and would be reduced using a control valve. It is assumed that the brine concentrate would be discharged from an RO concentrate air gap.
  - The new brine line would exit the southeast side of the AWPF and connect to existing manhole EINL- 008 on the NRWS pipeline, located on Etiwanda Avenue between Wells Street and 6th Street.
  - No trenchless crossings would be required for this brine line.
- Capacity
  - At the proposed connection, the existing NRWS pipeline is a 15-inch vitrified clay pipe (VCP) with a capacity of 7.1 cfs (4.6 MGD).
  - The current flow at this location is 20,000 gallons per day (gpd) and the purchased capacity is 21,600 gpd.
  - It has been verified that the existing NRWS infrastructure would be able to accommodate the brine stream at the point of connection and downstream.
  - 2,603 NRWS CUs would need to be purchased
- Hydraulics
  - At the proposed connection, flow would transition from pressurized to gravity.

The brine disposal for the AWPF at RP-4 is summarized in **Table 28** and shown in **Figure 11**.

Table 28
RP-4 AWPF BRINE FACILITIES

Parameter	Description
Brine Stream Characteristics	
Flow	1,027,300 gpd
Chemical Oxygen Demand (COD)[3]	262 ppd[1], dry
Total Suspended Solids (TSS)[3]	1 ppd, dry
Connection	
Disposal System	NRWS Pipeline
Pipeline	1,400 ft (8-inch)
No. of Crossings	None
NRWS CUs Required	2,603
Capacity	
NRWS Pipeline Capacity	4.6 MGD (15-inch)
Current Flow	20,000 gpd

Parameter	Description
Purchased Capacity	21,600 gpd
Hydraulics	
Design Velocity	5 fps[2]

Notes: [1]ppd = pounds per day
[2]fps: feet per second
[3]Values are estimates

New IEBL Connection

The CBP may include groundwater wellhead treatment facilities that could generate brine. Two example In-Lieu Local projects were included in the TAKE options for the City of Chino Hills and the City of Chino. The City of Chino Hills wellhead treatment facility would require a new connection to the IEBL. **Table 29** provides a summary of the proposed example In-Lieu Local project for the City of Chino Hills and the corresponding product water capacity for each TAKE option.

Table 29
CBP TAKE OPTION WELLHEAD TREATMENT FACILITY CAPACITY

TAKE 1	TAKE 3	TAKE 7	TAKE 8
-	6,000 AFY	-	-

CBP TAKE Option 3, assume that one of the wellhead treatment facilities is located at the City of Chino Hills Booster 9. For a product water capacity of 3,000 AFY, approximately 4,900 gpd of brine concentrate will require disposal. The size and alignment for the proposed brine line is the same for TAKE Option 3. The elements of the proposed connection are as follows:

- Connection
  - Brine concentrate would be conveyed through a 6,800-foot 8-inch HDPE brine line.
  - The new brine line would exit the south side of the facility and connect to existing manhole SST-018 on the IEBL, located at the intersection of Eucalyptus Avenue and Monte Vista Avenue.
  - To cross the 71 Highway and Chino Creek, approximately 300 feet of the brine line would need to be installed using jack and bore.
- Capacity
  - At the proposed connection, the existing IEBL pipeline is a 12-inch VCP with a capacity of 3.5 CFS (2.3 mgd).
  - The current flow at this location is 22,000 gpd and the purchased capacity is 43,000 gpd.
  - It has been verified that the existing IEBL infrastructure would be able to accommodate the brine stream at the point of connection and downstream.
  - One Agency Capacity Unit (CU) would need to be purchased for TAKE Options 3, 4c, and 6b.
- Hydraulics
  - Constant flow through the brine line is not feasible since a very small pipe diameter is needed to meet the velocity design criteria. To promote full pipe flow, a pressure sustaining valve is recommended at the connection to the IEBL.
  - At the proposed connection, flow will transition from pressurized to gravity.

The brine disposal for the City of Chino Hills wellhead example In-Lieu Local project is summarized in **Table 30** and shown in **Figure 12**.

Table 30
EXAMPLE IN-LIEU LOCAL PROJECT (CITY OF CHINO HILLS WELLHEAD TREATMENT FACILITY) BRINE DISPOSAL

Parameter	Description
Brine Stream Characteristics	
Flow	4,900 gpd
COD[1]	10 ppd, dry
TSS[1]	1 ppd, dry
Connection	
Disposal System	IEBL
Pipeline	6,800 ft (8-inch)
No. of Crossings	1 (Jack and bore 300 ft beneath Highway 71 and Chino Creek)
NRWS CUs Required	1
Capacity	
NRWS Pipeline Capacity	1.9 MGD
Current Flow	22,000 gpd
Purchased Capacity	43,000 gpd
Hydraulics	
Design Velocity	5 fps

Notes: [1]Values are estimated

Scaling Prevention and Mitigation Strategies

Scaling occurs when minerals precipitate out of a liquid stream and form deposits on surfaces within treatment processes or downstream distribution systems. Calcium carbonate and sulfate scales are the most common types of scale resulting from RO and IX systems. If not properly managed, scale can reduce capacity, cause water quality fluctuations, diminish treatment results, or lead to failure of piping and equipment. For applications susceptible to scaling, a water quality analysis should be performed, and an action plan implemented to minimize the effects of scaling on the system.

The scaling process starts with nucleation, which is the early stages of crystal formation. Subsequent crystal formation will quicken once nucleation has started. Nucleation can only occur in saturated or supersaturated solutions. There are two types of nucleation:

- Homogenous nucleation
  - Crystal growth within a solution. Clusters of ions, known as seed crystals, can form and grow until they are large enough to precipitate out of the solution, forming scale deposits.
  - More likely to occur as the degree of supersaturation increases.
  - Typically prevented by adding scale inhibitors (inhibits nucleation), distorting agents (alters and weakens crystal structure), and dispersants (cause crystals to repel each other).
- Heterogenous nucleation

- Crystal growth on an existing surface. The interaction between the solution and the existing surface will form seed crystals and lead to scale deposits.
- More likely to occur at irregularities on the existing surface such as pipe joints, defects, valves, and meters.
- Typically prevented by altering the physical properties of the piping or equipment. Minimizing homogenous nucleation will also reduce heterogenous nucleation by maintaining a smoother pipe free of scale deposits.

RO systems typically inject scale inhibitors upstream of the treatment process to facilitate a higher recovery rate; thus, it is expected that the brine concentrate from the proposed AWPF(s) would be supersaturated. Brine concentrate from the IX system at the City of Chino Hills wellhead treatment facility is expected to be saturated since scale inhibitors are typically not injected upstream of the treatment process.

Table 31
FACTORS AFFECTING SCALING POTENTIAL

Parameter	Description	Mitigation Strategy
Treatment Recovery Rate	For RO systems, higher recovery rates will lead to brine with higher salt concentrations since less water is wasted.	Confirm that anti-scalant residuals are present in RO system brines.
Degree of Saturation	Higher degrees of saturation will increase the rate of homogenous and heterogenous nucleation.	Inject scale inhibitors or dispersants to prevent crystal growth, or inject distorting agents so that scale is easier to clean.
pH	The solubility of carbonate increases with acidity.	Lower the pH to reduce the scaling potential in the brine line (through chemical injection)
Alkalinity	Results from the presence of hydroxides, carbonates, and bicarbonates.	Reduce the alkalinity to directly reduce the scaling potential (acid addition).
Physical Properties of Interacting Surfaces	Roughness, shape, and material of the piping or equipment can catalyze heterogenous nucleation	Select materials resistant to scale, minimize irregularities, and frequently perform maintenance.
Flow Regime	Free water surfaces will lead to scaling at the interacting surface. Free water surfaces will also experience evaporation, causing the salt concentration to increase.	Brine conveyance pipelines should be designed to promote full pipe flow.

Conclusion

Heterogenous nucleation is more likely to occur than homogenous nucleation in brine conveyance pipelines. The most economical strategies for preventing scale are physical properties and flow regime. The following should be considered:

- HDPE is recommended because the pipe interior is smooth.
- The fusion-weld beads resulting from HDPE installation should be removed from the interior using a mandrel.
- The pipeline design should promote full-pipe flow. Air release valves are likely needed and should be easily accessible and resistant to scale. To promote full-pipe flow, a pressure sustaining valve could be used at the connection to the North NRWS or IEBL.
- The velocity should not exceed 5 fps because turbulent flow will induce scaling.

Chemical treatment and pH adjustment should also be considered. Since RO systems utilize scale inhibitor upstream of the process, it is a feasible option to inject additional scale inhibitor into the brine concentrate leaving the system. Since IX systems do not utilize scale inhibitors, it would be more economical to inject sulfuric acid into the brine concentrate to dissolve calcium carbonate by suppressing the pH. A water quality analysis for the brine concentrate is recommended to determine the optimal strategy to prevent scaling.

It is recommended that the brine lines are inspected regularly as a preventive measure. If scale formation is detected, then cleaning through chemical treatment (acid) should be undertaken before scaling becomes extensive. Long radius bends should be installed to facilitate pipe pigging in the future, if required. Additionally, installing parallel brine lines at each facility is recommended to allow for continuous operation during maintenance. The second brine line would be drained and flushed when not in use.

3.11.5 Potable Water Conveyance

The potable water conveyance system will consist of extraction wells, a reservoir, pump stations, pipelines, and turnouts to member agencies and/or MWD. In general, the extraction wellfield will deliver potable water to a reservoir which will be used for blending and to break head between high and low HGL zones where potable water will be delivered. The reservoir will have two outlets – one directly into a proposed transmission main to deliver water to lower HGL member agencies, and one into the suction side of a proposed potable booster pump station to deliver water to higher HGL member agencies and/or into the Rialto Pipeline.

Pipelines and Pump Stations

For TAKE options that include both MWD Pump Back and In-Lieu CBP, regional potable water facilities will be joined and used for both purposes to reduce costs. For instance, if water is to be pumped back to MWD at CB-7 and also delivered to CVWD at the Lloyd W. Michael WTP (about a half mile away from CB-7), a single pump station and pipeline with capacity for both deliveries would be installed to convey water from the extraction wellfield to the general area near CB-7 and Lloyd W. Michael WTP at which point the pipeline would diverge to two smaller diameter pipelines to deliver water to each turnout.

The assumptions and criteria for the potable water pipelines and pump stations are listed below and in **Table 32**.

- Hazen Williams equation used to determine friction head loss within pipelines
- Pump suction side HGL set to 10 ft above ground elevation for pump stations with an open-atmosphere forebay
- Trenchless technologies will be required at freeway, flood channel, and railroad crossings
    - Jack and bore for lengths less than 500 feet
    - Horizontal directional drilling for lengths exceeding 500 feet
- For pre-delivery TAKE options, pump stations and pipelines are sized based on their call year design flowrate.

Table 32
POTABLE WATER PIPELINE AND PUMP STATION DESIGN CRITERIA AND PLANNING ASSUMPTIONS

Parameter	Criteria	Units	Demand Condition
Maximum System Velocity	5	fps	Constant Flow

Parameter	Criteria	Units	Demand Condition
Pipe Material, Diameter ≥ 16 in	Steel	-	-
Pipe Material, Diameter < 16 in	Unspecified	-	-
Hazen Williams Coefficient	120		-
Minor Losses (% of friction losses) (bends, valves, etc.)	5	%	-
Motor Efficiency	75	%	
Pump Efficiency	93	%	
Total Pump Station Efficiency	70	%	-

In-Conduit Hydropower Facilities

In-conduit hydropower facilities may be considered in locations of the potable water distribution system where the system pressure needs to be reduced and energy can be produced. Due to the various pressure zones that the regional potable system will be pumping into, it is likely that in some cases a single pump station may deliver water to multiple local pressure zones with different HGLs, and in-conduit hydropower facilities may be appropriate to recapture some of the energy used to lift the water to the higher HGL. This would only be appropriate where the energy loss from pumping water to an HGL and then attempting to recover it with a hydropower facility would be less costly than to build a second pump station and pipeline to deliver water to the lower HGL without any unnecessary additional lift.

Locations ideal for in-conduit hydropower generations should have an available pressure between 25 and 260 psi. The power output at the facility will depend on the available head and flow rate. Three types of in-line hydropower facilities were identified for the CBP:

1. Pump Turbines. A pump turbine is a centrifugal pump running in reverse and is a typically used in small output applications less than 300 kW. Economically, these start to make sense with a minimum power output of 50 kW. They work best with stable and relatively constant flow rates.
2. In-line Francis Turbines. Francis type turbines are the most widely used in-line hydraulic turbines. In-line Francis Turbines can be dropped into an existing PRV location. Unlike pump turbines, Francis Turbines can operate over a wide flow range. These typically have an efficiency of 70-75%. Economically, installation of a Francis Turbine makes sense in locations that can generate 150 kW or greater.
3. Custom Francis Turbines. A custom Francis Turbine has a higher efficiency, typically 80-85%, and are generally installed in locations that can produce much high power 500 kW or greater. These can also cover a wide range in flow.

Under the Federal Power Act, non-federal hydropower resources are regulated under the Federal Energy Regulatory Commission (FERC). FERC issues three types of authorizations: conduit exemptions, 10-megawatt exemptions, and licenses. FERC approval is required to construct and operate small/low-impact hydropower projects while assuring adequate protection of environmental resources. The FERC Small/Low Impact Hydropower Projects program is intended for small projects that would results in minor environmental effects, such as projects that involve little change to water flow and use and are unlikely to affect threatened and endangered species. The CBP would likely be classified as a small/low-impact hydropower project or would qualify for a conduit exemption as all proposed hydropower generation would be from in-conduit turbines.

Blending and Storage Reservoir
A single reservoir is proposed near the extraction wellfield to allow for blending of groundwater and serve as a forebay for the pump station. The proposed reservoir near the extraction wellfield should provide a retention time of approximately three hours from the extraction wellfield for adequate blending. The reservoir was sized at 5 MG for TAKE options.

The location for a potential reservoir site was determined through identifying land in the Chino Basin near the extraction wellfield suitable for reservoir construction. A GIS shapefile of parcels in San Bernardino County provided by the Assessor's Office was used to identify potential reservoir sites with the following attributes for use in developing the TAKE options:

- Undeveloped parcels.
- Parcels located at the intersection of streets. These sites would provide for easy access to the site during construction, maintenance, and rehabilitation activities.
- Parcels greater than one acre for a 2.5-MG reservoir and greater than 1.75 acres for 5-MG reservoir.
- Parcels not planned for development (such as the former Empire Lakes Golf Course site).
- Parcels with a vacant land use designation.

3.12 SUMMARY OF FACILITY CONSTRUCTION AND OPERATIONS

The CBP would, as stated under Subsection 3.4, Program Objectives, be developed to provide flexibility to regional and local water operations, particularly during future extended droughts expected as climate change continues to impact California. The Program would enhance both the SWP and the Central Valley Project for the betterment of operations, environment, resilience, and reliability. This section of the Project Description is intended to outline operational and construction scenarios for the specific types of facilities and/or improvements that could result from the implementation of the CMP.

The implementation of the facilities proposed as part of the CBP consists of construction and operation of the various facilities that will be summarized below. These potential facilities are separated into four project categories: (1) Project Category 1: Well Development (Injection wells, extraction wells, etc.); (2) Project Category 2: Conveyance Facilities and Ancillary Facilities; (3) Project Category 3: Groundwater Storage Increase; and, (4) Project Category 4: Advanced Water Purification Facility and Other Water Treatment Facilities. Below are general descriptions of the facilities and operations proposed as part of the CBP. The Project Categories below each reflect a combination of the TAKE Options, as IEUA is considering four TAKE Options—TAKE 1, TAKE 3, TAKE 7, and TAKE 8—in combination with PUT Option 5. Each Project Category has been formed utilizing the greatest number, intensity, lengths, and capacities for each type of facility proposed under the TAKE options. For example, the pipeline lengths and sizes considered under Project Category 2 represent the option(s) that would require the greatest pipeline length to achieve that "Component" of the CBP.

Project Category 1: Well Development (Injection Wells, Extraction Wells, Etc.)
The CBP would ultimately install several wells and utilize one or up to four existing wells in order to facilitate project operation as follows:

- 16 injection wells (12 duty, 4 standby)
- The CBP would install a maximum of 17 extraction wells.
- 4 monitoring wells
- Use of existing wells including the following:
    - Use of existing Rialto Pipeline

- Use of up to 9 existing member agency wells
- Use of existing Agua de Lejos WTP Clearwell (HGL 1,632 ft)
- Use of existing Lloyd Michael WTP Clearwell

Project Category 2: Conveyance Facilities and Ancillary Facilities

The CBP would ultimately install a total of about 30 miles or 158,400 lineal feet (LF) of various types of pipelines. Potential alignments include a mix of the following:

- TAKE 1: 9 miles of 12- to 36-inch collector pipelines
- TAKE 1: 5 miles of 54-inch potable northern pipeline
- TAKE 3: 9 miles of 12- to 42-inch collector pipelines
- TAKE 3: 8 miles of 16- through 48-in potable northern pipeline
- TAKE 3: 4 miles of 12- through 24-inch potable southern pipeline
- TAKE 3: In lieu Brine Disposal IEBL 6,800 ft 8" pipeline, possible jack and bore across 300 ft under Hwy 71 and Chino Creek
- TAKE 7: 7 miles of 36- to 72-inch e/w WFA pipeline
- TAKE 7: 4.5 miles 24-inch e/w FWC pipeline
- TAKE 7: 4.5 miles 54- to 72-inch & 36-inch CVWD/MWD pipeline
- TAKE 7: 0.3 miles 54- to 72-inch MWD pipeline
- TAKE 8: 6.3 miles of 48-inch CVWD pipeline
- TAKE 8: 7 miles of 24-inch FWC-1 pipeline
- TAKE 8: 0.7 miles of 24-inch FWC-2 pipeline
- TAKE 8: 0.8 miles of 24-inch MWD pipeline
- TAKE 8: 36-inch JCSD 2 miles
- PUT 5: 7.1 miles of 8- to 30-inch pipeline for purified water conveyance
- PUT 5: 1,400 ft (8' pipeline) NRWS brine conveyance; NRWS Capacity Units required 2,603

The CBP would install a circular, prestressed tank storage reservoir with a maximum capacity of 5 MG with possible and in-conduit hydropower facility.

The CBP would install up to 4 pump stations serving various PUT and TAKE facilities. One pump station would serve PUT facilities, while up to three pump stations would support TAKE facilities. The breakdown of the types of pump stations include a mix of the following:

- PUT 5: Pump station at RP-4 1,500 HP
- TAKE 1: Pump Station with a max 9,300 HP, and a max of 31,100 gpm, 823 ft TDH
- TAKE 3: Potable Water Pump Station #1: 7,000 HP, 23,300 gpm firm capacity, 823 ft TDH
- TAKE 7: WFA Booster at 1,700 HP
- TAKE 7: FWC Booster at 300 HP
- TAKE 7: CVWD/MWD Booster at 4,800 HP
- TAKE 8: Booster Station #1 at 5,300 HP
- TAKE 8: MWD Booster at 650 HP

The CBP would install a maximum of 6 that would be between 12" and 72" in size turnouts in support of TAKE facilities within IEUA's service area. Possible turn out locations may or may not include the following:

- to FWC Highland Zone (and optional hydropower facility)
- to CVWD Zone III (and optional hydropower facility)
- to the Rialto Pipeline
- to Agua de Lejos clear well (Upland and MVWD)

- to TVMWD Miramar WTP clear well (HGL 1,630ft)

Project Category 3: Groundwater Storage Increase[14]

As discussed under Subsection 3.3.1, Chino Basin Groundwater, the proposed CBP requires an increase the Safe Storage Capacity of the Chino Basin in order to accommodate the additional managed storage to accommodate the CBP above the existing Safe Storage Capacity (700,000 AF through June 30, 2030, and to 620,000 AF from July 1, 2030 through June 30, 2035). As such, As such, the CBP would contemplate a tiered increase in Safe Storage Capacity that would accommodate CBP storage requirements as well as Watermaster stakeholder storage requirements as follows: the CBP proposes an increase in Safe Storage Capacity up to 720,000 AF from July 1, 2030 through June 30, 2042, and to 580,000 AF from July 1, 2042 through June 30, 2048, with the Safe Storage Capacity decreasing to 500,000 AF thereafter. The storage increase would accommodate the CBP during its 25-year planning horizon (while the Proposition 1 WSIP water exchange commitment is fulfilled), and any future required increase in storage that may be necessary to accommodate the increased recharge and extraction capacities provided by CBP infrastructure would be addressed in future CEQA documentation. This proposed tiered increase would supersede the Safe Storage Capacity that was approved in March of 2021 by the IEUA Board and subsequently approved by the CBWM in May 2021.

Project Category 4: AWPF and Other Water Treatment Facilities

This Project Category contemplates the AWPF at RP-4, which will be constructed to utilize an MF/RO/UV-AOP treatment train and will ultimately have a capacity 15,000 AFY. Additionally, the CBP may install up to 3 wellhead treatment facilities at a location that has yet to be selected up to 3,000 AFY each, with no more than 6,000 AFY treated in total through biological or other wellhead treatment mechanisms (treatment mechanisms are discussed in further detail TM1, which is provided as Appendix 1 to the 2022 CBP FPEIR).

Operational Scenarios

Operational Scenarios are provided above under Subsections 3.9 Chino Basin Program Put Facilities, 3.10 Chino Basin Program Take Facilities, and 3.11 Chino Basin Program Conveyance Facilities. Operational scenarios are repeated and condensed under this section.

[14] Refer to the footnote presented under Subsection 3.5.2 as it relates to Groundwater Storage. The CBP proposed Safe Storage Capacity was evaluated throughout the 2022 CBP FPEIR. The CBP contemplated a tiered increase in SSC in the Chino Basin of up to 720,000 AF from July 1, 2030 through June 30, 2042; to 580,000 AF from July 1, 2042 through June 30, 2048; and 500,000 AF thereafter. This proposed tiered increase in Chino Basin SSC would supersede the SSC approved by the Watermaster in 2021. If and when the CBP is approved, IEUA would approach the Watermaster to approve the SSC required to support the CBP based on the findings in this RDPEIR. Based on the findings in the 2022 CBP FPEIR, the Groundwater Storage Increase to meet CBP operational requirements would not result in any significant adverse impacts to the environment, and this finding was not challenged in the City of Ontario's legal challenge.

Regardless, in 2024 the Chino Basin Watermaster and IEUA published and processed the Optimum Basin Management Plan Update (OBMPU) Subsequent Environmental Impact Report (SEIR). The Final version of this SEIR was certified in 2024 and was not legally challenged. Relying on the 2023 Storage Framework Investigation (SFI), which provided a technical analysis of Storage and Recovery Programs considered by the CBW, the SEIR included the following: use of storage space by members up to 700,000 AF, and conjunctive-use by Storage and Recovery Programs from 700,000 AF up to 900,000 AF. This decision enabled expansion of the SSC up to 900,000 AFY going forward from 2024 and beyond. IEUA has retained the analysis of the 700,000 AFY Safe Storage Capacity in this RDPEIR, but adequate SSC, and more, to cover the CBP required storage capacity has already been authorized through the SSC increase approved by the Chino Basin Watermaster, relying on the OBMPU PEIR.

No further footnotes describing the SSC context will be provided in this RDPEIR analysis.

Possible operational scenarios are provided as part of the discussion of each type of facility. The future modes of operation (activities) are provided to enable evaluation of the direct and indirect environmental impacts that could result from CBP implementation.

Construction Scenarios
Secondarily, as part of this summary of all facilities, estimated construction scenarios are provided as part of the discussion of each type of facility. The purpose of the following general construction scenarios is to assist the reviewer to understand how the proposed facilities will be installed, the amount of time required for their construction, and potential direct and indirect environmental impacts. This information also provides essential data for making the program air quality impact forecasts using the most current CalEEMod emission forecast model.

For some of the facilities anticipated by the CBP, the types, configuration and exact location of future specific projects that may be constructed in support of the CBP have not been determined. However, there are several specific projects and scenarios that have been identified at a sufficient level of detail that a location has been pinpointed in which a specific project will be developed. Ultimately, it is possible to foresee most of the infrastructure that is likely to be constructed and to project the reasonably foreseeable direct and indirect impacts that would result from construction and operation of the infrastructure. Impacts associated with specific future projects could be evaluated in second-tier CEQA evaluations to determine if the actual impacts fall within the impacts forecast by this analysis, or require subsequent CEQA evaluations and determinations. These evaluations would be conducted under CEQA Section 21166 and Sections 15162 and 15168 of the State's CEQA Guidelines.

Alternative Energy Sources
Current renewable on-site generation at RP-4/IERCF (these two facilities share the same Southern California Edison's meter) is about 20%. In addition to the 1 MW wind turbine and 1.5 MW battery at RP-4, additionally, there is a potential for use of a 2.5 MW solar at the IERCF. As the proposed project has not undergone site specific design, at this time, alternative energy options would be explored when design has been further specified. Additionally, the proposed project, while energy intensive, would constitute a reduction in energy required to transfer water from MWD in the Sacramento Delta to IEUA's service area through creating an expanded source of water within the Chino Basin.

3.12.1 Project Category 1: Well Development and Monitoring Devices

Operational Scenario: Wells
The CBP anticipates the installation of up to 37 new wells, (16 injection wells (12 duty, 4 standby), 17 extraction wells, 4 monitoring wells). The Injection wells will recharge up to 15,000 AFY per year, while the new extraction wells will pump up to 50,000 AFY of water from the Basin in call years, or 10,000 AFY in non-call years (only 7.5 call years are anticipated over a 25-year period). After the 25-year period in which the CBP would be active, IEUA member agencies could utilize the water purified at the AWPF in the amount of 15,000 AFY.

The 16 injection wells would have a maximum operational capacity of 830 gpm each.

The 17 extraction wells would have a maximum operational capacity of 2,000 gpm each.

The 4 monitoring wells will be visited by a field technician on a monthly to quarterly frequency. There is negligible energy consumption in obtaining groundwater levels from a monitoring well.

The 9 existing extraction wells would be assumed to operate in a similar manner, on average, to the new proposed extraction wells discussed above.

Construction Scenario: Wells

Installation of the 37 new wells could occur over a period of 3 years, with 12 wells being installed each year to coincide with the opening year (2028) of the AWPF. Thus, for analysis purposes it is assumed that a maximum of 12 wells per year may be developed. The depth of a new wells could range between 500 and 1,500 feet. The average area of disturbance of a well site is anticipated to be half an acre or less. Development of up to 12 new wells during a given year will require the delivery and set up of the drilling rig at each site. It is anticipated these wells will be drilled at different times and the drilling equipment will be transported to and from the sites on separate occasions. For the purposes of this evaluation, it is forecast that delivery of the drilling equipment 12 times in a year will result in 12 50-mile round-trips for the drill rigs.

Injection well development has essentially the same construction impacts as production well development. The primary physical difference between injection and production wells is that different valve options are installed according to the type of well.

It is anticipated that about five persons will be on a given well site at any one time to support drilling a well: three drillers, the hydrologist inspector, and a foreman. Daily trips to complete the well will average about 15 roundtrips per day, which at various points of construction will include: two roundtrips for drill rigs; between 6 and 12 roundtrips for cement trucks; about 5 trips to deliver pipe; and about 10 trips per day for employees.

For analysis purposes it is assumed that each well would be drilled using the direct rotary or fluid reverse circulation rotary drilling methods. The average area of disturbance of each well site is estimated to be one-half an acre or less. Access to the drilling site for the drilling rig and support vehicles would be from adjacent roadways. Typically, well drilling requires only minimal earth movement and/or grading.

The drilling and development of each well will require drilling to—in most cases—between 250 and 1,500 feet below ground surface (bgs). The proposed schedule for constructing each well would be as follows: drilling, construction, and testing of each well would require approximately six weeks to complete (about 45 days, of which 15 to 20 days would include 24-hour, 7-day a week drill activity). For planning purposes, a construction and testing schedule duration of 60 days per well is assumed to account for unforeseen circumstances (e.g., extreme weather, equipment breakdowns, etc.) that could affect the drilling and testing schedule. The well casings are expected to be welded and it will be assumed that well development and installation will require a two week use of a diesel generator.

The borehole for the well would be drilled using at least two separate drilling passes. The first pass, or pilot borehole, would be drilled using a 17.5-inch diameter bit to an estimated maximum depth below the ground surface, which would correspond to the top of the consolidated bedrock in the area, or a depth selected by the project hydrologist/hydrogeologist. Upon completion of the geophysical logs, the pilot borehole would be enlarged (reamed) to a diameter of 24 inches to approximately the same depth to accommodate the well casing, screen and filter pack.

Once each well is constructed it would immediately be developed through a process of swabbing and airlifting. During this process, drilling fluids and suspended sediment would be removed from

the well. After the drilling fluids are removed along with most of the suspended sediment, the well would be further developed through pumping.

The use of existing wells is not anticipated to require construction beyond that which is described under Subsection 3.12.1.4, Advanced Water Purification Facility and Other Water Treatment Facilities, as several of these wells would require wellhead treatment in order to become operational in support of the CBP.

3.12.2 Project Category 2: Conveyance Facilities and Ancillary Facilities

Operational Scenario: Pipelines, Booster Pumps, Water Storage Tank, Brine Disposal, Etc.
Pipelines and Turnouts: Once a pipeline or turnout is installed, operations do not require any visits unless unforeseen circumstances arise that would require maintenance or repair of the pipelines. In the event of routine maintenance one vehicle trip per maintenance event would be required.

Brine Disposal: The proposed AWPF and wellhead treatment facilities would generate greater brine disposal within IEUA's service area than that which is generated at present. The additional brine stream flow from the AWPF at RP-4 would be 1,027,300 gpd, with a chemical oxygen demand of 262 pounds per day (ppd) and total suspended solids, dry (TSS) of 1 ppd, dry. The additional brine stream flow from the AWPF at RP-4 would be 1,027,300 gpd, with a chemical oxygen demand (COD) of 262 ppd and TSS of 1 ppd, dry. The brine stream flow from the AWPF would ultimately need to be treated at Los Angeles County Sanitation Districts (LACSD) through the Joint Outfall System (JOS) or at the Orange County Sanitation District (OCSD). Additional energy similar to that which would be generated by the AWPF commensurate with the amount of brine generated by the operation of these new IEUA facilities (about 1,150 AFY).

Pump Stations: Pump stations that are incorporated into the project will be operated to convey the water, the capacity and amounts of water pumped varies depending upon the CBP scenario that is ultimately selected. A total of 4 pump stations will be installed.

It is assumed that the three TAKE Pump stations would range between 650 HP to 9,300 HP, with the booster pumps averaging 4,200 HP each.

The PUT pump station would operate at 1,500 HP.

Water Storage Tank: Once the reservoirs are installed, operation of the reservoirs would not require any shifts or employees as they will be monitored and controlled remotely. Scheduled maintenance visits to each reservoir site will occur in the future with one trip per maintenance event. Reservoirs typically do not directly consume energy as water or recycled water is pumped into reservoirs directly from wells or through booster pump stations.

Construction Scenario: Pipelines
An estimated 30 miles or 158,400 LF of pipeline may be installed in support of CBP. The maximum pipe length that would be installed in a single year would be 100,000 LF. Installation of 158,400 LF of pipeline could occur over a period of 3 years, with 53,000 LF being installed each year to coincide with the opening year (2028) of the AWPF.

It is forecast that most of the pipe will range from 10-inch to 48-inch diameter. It is assumed that an underground utility installation team can install an average of 200-400 LF of pipeline per day. A team consists of the following:

- 200-400 feet of pipeline installed per day
- 1 Excavator
- 1 Backhoe
- 1 Paver
- 1 Roller
- 1 Water truck
- Traffic Control Signage and Devices
- 10 Dump/delivery trucks (40 miles round trip distance)
- Employees (14 members per team, 40-mile round-trip commute)

The emissions calculations are based upon the above assumptions for each pipeline installation team. Typically, up to 800 feet of pipeline trench could be excavated, the pipe installed, backfilled, and compacted each day during pipeline installation in undeveloped areas whereas only 400 ft per day can be installed in developed roadways. In either case equipment would be operated for roughly the same portion of the day and daily equipment emissions would be the same, except, that undeveloped areas would not require pavement removal and reinstallation.

It is assumed that three teams will be installing pipelines for a maximum total of 1,200 LF per day (400 x 3 = 1,200 LF). It is assumed that the proposed pipeline installation will occur for a maximum of 260 days in one calendar year.

Ground disturbance emissions assume roughly half an acre of land would be actively excavated on a given day. It is anticipated that installation of pipeline in developed locations will require the use of a backhoe, crane, compactor, roller/vibrator, pavement cutter, grinder, haul truck and two dump trucks operating 6 hours per day; a water truck and excavator operating 4 hours per day and a paving machine and compacter operating 2 hours per day. Installation of pipeline in undeveloped locations would require the same equipment without the paving equipment (cutter, grinder, paving machine). Depending on the pipe size, the trenches may vary in depth and width. A 12” pipeline may have a depth of about 6” and 4” in width. A 72” pipeline may have a depth of about 10” and 10” in width.

The pipelines that would be installed in support of CBP are anticipated to use push-on joints (e.g., gasketed bell-and-spigot) that do not require welding or, where the sizing is greater than 24” cement mortar lined and coated (CML&C) welded steel pipe is preferred. However, the Contractor may occasionally use a portable generator and welder for equipment repairs or incidental uses.

Construction Scenario: Turn Outs

Turnout structures are provided to deliver water from the main canal to the water user via a pipeline or other means. The type of turnout structure and its design requirements are primarily dependent on its location. It is anticipated that installation of a maximum of 6 turnouts that would be between 12” and 72” in size would require a similar team of workers to that of pipeline installation. Installation of 6 turnouts that would be between 12” and 72” in size could occur over a period of 2 years, with 3 turnouts being installed each year to coincide with the opening year (2028) of the AWPF.

A team of turnout installers would consist of the following:

- 1 Excavator
- 1 Backhoe
- 1 Paver
- 1 Roller
- 1 Water truck
- Traffic Control Signage and Devices
- 10 Dump/delivery trucks (40 miles round trip distance)
- Employees (14 members per team, 40-mile round-trip commute)

The emissions calculations are based upon the above assumptions for each turnout installation team. It is assumed that one team will be installing turnouts at a given time and that each turnout would require 180 days to be fully installed.

Ground disturbance emissions assume roughly a quarter acre of land would be actively excavated on a given day. It is anticipated that installation of pipeline in developed locations will require the use of a backhoe, crane, compactor, roller/vibrator, pavement cutter, grinder, haul truck and two dump trucks operating 6 hours per day; a water truck and excavator operating 4 hours per day and a paving machine and compacter operating 2 hours per day. Installation of turnout in undeveloped locations would require the same equipment without the paving equipment (cutter, grinder, paving machine). The contractor may occasionally use a portable generator and welder for equipment repairs or incidental uses.

Construction Scenario: Pump Stations

Pump stations are required to pump water from areas at a lower elevation within the Basin, to areas located at a higher elevation. The total number of pump stations to be constructed in support of the CBP is anticipated to be 4.

It is forecasted that, at each site, no more than 0.5 acre will be actively graded on a given day for site preparation of each pump station. Construction of each pump station will require the delivery and installation of equipment and materials. It is anticipated that grading activities will occur over a 5-day period and this phase of construction will result in 6 truck trips on the worst-case day with an average round trip of 20 miles delivering construction materials and equipment (concrete, steel, pipe, etc.). Installation of the pump station will require the use a crane, forklift, backhoe and front loader operating 4 hours per day. Calculations assume five workers will each commute 40 miles round-trip to the work site.

Each pump station is assumed to be housed within a block building, and will require a transformer to be installed to handle the electric power delivered to the pumps. The proposed pump station building may include a pump room, electric control room, odor control facilities, chemical tanks, and storage room. Construction of the pump station would involve installation of piping and electrical equipment, excavation and structural foundation installation, pump house construction, pump and motor installation, and final site completion.

The pump stations proposed are anticipated to be located at sites that have permanent power available for construction, as such a generator is not anticipated to be required for welding required to construct the pump stations.

Construction Scenario: Water Storage Tank

One 5 MG storage tank is anticipated to be required in support of the CBP. The new tank would be designed in accordance with the California Building Code (CBC), the Occupational Safety and Health Administration (OSHA), American Concrete Institute (ACI), and AWWA's design standards. AWWA's design standards require that reservoirs be operated at fill levels below their maximum physical height in order to prevent roof damage which may be caused by a "sloshing wave" during a seismic event. As a result, the usable capacity of the new reservoir will be reduced from its physical capacity by approximately 30% to 5 MG.

Grading: During mass grading of the site an assumed 5,000 cubic yards (CY) of selected materials will be imported as an engineered backfill. This material will be delivered by trucks to the site in the amount of about 300 trips, assuming 50 trips maximum per day to and from the site, with a

roundtrip length of no more than 50 miles. Fine grading of the site will be completed after the reservoir and piping are installed. It is assumed that a maximum of five to twelve workers will be on the site during grading, which would take place for about 10 days.

Foundation Construction: Following mass excavation, the tank foundation will be installed. The foundation will consist of concrete/steel/aggregate. It is assumed that a maximum of five to twelve workmen will be on the site during foundation construction for a maximum of about 25 days.

Tank Construction: The new 5 MG storage tank will be constructed in the following fashion: floor; walls and columns; roof; prestressing; and appurtenances. It is assumed that a maximum of 12 employees will be on the site during reservoir construction for a maximum of about 50 days.

Overall, reservoir construction is anticipated to require about 3 months from start to finish.

3.12.3 Project Category 3: Groundwater Storage Increase

The CBP proposes the expansion of the Safe Storage Capacity from 700,000 AF through June 30, 2030, and to 620,000 AF from July 1, 2030 through June 30, 2035 up to 720,000 AF from July 1, 2030 through June 30, 2042, and to 580,000 AF from July 1, 2042 through June 30, 2048, with the Safe Storage Capacity decreasing to 500,000 AF thereafter. Generally, this expansion would not result in any visible above ground impacts; however, in order to ensure safe storage capacity within the Chino Basin, the facilities outlined herein (as part of 3.12 Summary of Facility Construction and Operations) are intended to support this expansion.

3.12.4 Project Category 4: AWPF and Other Water Treatment Facilities

Operational Scenario: AWPF and Wellhead Treatment Facilities
Please refer to **Exhibits 10, 11 and 12**, which depict the proposed modifications to RP-4 to enable the installation of the AWPF.

The Operational Scenario for the 15,000 AFY AWPF at RP-4 is discussed in detail under Subsection 3.9.3. Refer specifically to **Table 12** (description of redundancy requirements) and Table 13 (sizing assumptions for the AWPF).

The example Operational Scenarios for the wellhead treatment at is discussed in detail under Subsection 3.10.4, In-Lieu CBP and In-Lieu Local. Refer Specifically to **Table 19**.

According to the IEUA FMP, over the course of the next 15 years, IEUA intends to procure 100 percent of its electricity needs from carbon neutral sources, so in that period of time IEUA will slowly begin to use less carbon sourced energy for greater operational demands.

Construction Scenario: Advanced Water Purification Facility
The installation of the AWPF at RP-4 would require approximately 12 months to construct. It is anticipated that the AWPF would be operational by 2028. The construction of the 15,000 AFY advanced water purification facility would consist of site clearing, grading, construction of facilities, installation of equipment, and site completion. Construction equipment would include the following: one bull dozer or motor grader, backhoes, loaders, dump trucks, crew trucks, concrete trucks, cranes, personal vehicles, compactor, delivery trucks, and a water truck. It is anticipated that the maximum number of construction personnel at a site on any given day will be 20 persons. The maximum number of truck deliveries is forecasted at 15 per day at 40-miles round-trip per

day of construction. Materials and equipment would be delivered to the site including piping, building materials, concrete forms, roofing materials, HVAC equipment, pumps, diffusers, screens, belt presses, and screw presses.

Construction Scenario: Wellhead Treatment Facilities

The CBP envisions constructing up to 3 wellhead treatment facilities located in the vicinity of multiple wells at existing member agency wells. The area expected to be disturbed by the construction of the proposed treatment facilities would be less than 3 acres for each site. A regional groundwater treatment facility would will range from about 1 acre to 2 acres in size per facility. Construction of water treatment facilities may involve site demolition; site paving; site prep/grading; excavation and installation of yard pipes; installation of treatment facilities; site finishing (landscaping, misc. curb/cutter, etc.); site drainage (above and below grade).[15] Construction equipment would include the following: one bull dozer or motor grader, backhoes, loaders, dump trucks, crew trucks, concrete trucks, cranes, personal vehicles, compactor, delivery trucks, and a water truck. It is anticipated that the maximum number of construction personnel at a site on any given day will be 10 persons. The maximum number of truck deliveries is forecasted at 10 per day at 40-miles round-trip per day of construction. Each wellhead treatment facility will require about 6-months to construct, with both treatment systems assumed to potentially occur within the same year. The operational year is anticipated to coincide with the opening year (2028) of the AWPF.

3.13 ENTITLEMENTS, APPROVALS AND OTHER AGENCY PARTICIPATION

Implementation of future individual project(s) in accordance with the CBP may require a variety of approvals from other agencies. This section summarizes agency approvals that have been identified to date. This list may be expanded as the environmental review proceeds. Consequently, it should not be considered exhaustive.

- Notice of Intent (NOI) to the SWRCB for a NPDES general construction stormwater discharge permit. This permit is granted by submittal of an NOI to the SWRCB, but is enforced through a Storm Water Pollution Prevention Plan (SWPPP) that identifies construction best management practices (BMPs) for the site. In the project area, the Regional Board enforces the BMP requirements described in the NPDES permit by ensuring construction activities adequately implement a SWPPP. Implementation of the SWPPP is carried out by the construction contractor, with the Regional Board and county providing enforcement oversight.

- The project may include the potential discharge of fill into or alterations of “waters of the United States,” “waters of the State,” and stream beds of the State of California. Regulatory permits to allow fill and/or alteration activities due to project activities such as pipeline installation are likely be required from the Army Corps of Engineers (ACOE), the Regional Board, and California Department of Fish and Wildlife (CDFW) over the life of the OBMPU. A Section 404 permit for the discharge of fill material into “waters of the United States” may be required from the ACOE; a Section 401 Water Quality Certification may be required from the Regional Board; a Report of Waste Discharge may be required from the Regional Board; and a 1600 Streambed Alteration Agreement may be required from the CDFW.

[15] Please refer to the discussion of the construction scenario for conveyance facilities for a depiction of the construction associated with installation of pipeline that may be associated with the proposed regional groundwater treatment facilities.

- The U.S. Fish and Wildlife Service (USFWS) and/or CDFW may need to be consulted regarding threatened and endangered species documented to occur within an area of potential impact for future individual projects. This could include consultations under the Fish and Wildlife Coordination Act.

- Land use permits may be required from local jurisdictions, such as individual cities and the two counties (Riverside and San Bernardino).

- Air quality permits may be required from the South Coast Air Quality Management District (SCAQMD).

- Encroachment permits may be required from local jurisdictions, such as individual cities, California Department of Transportation (Caltrans), the two counties (Riverside and San Bernardino), Flood Control agencies, and private parties such as Southern California Edison, The Gas Company, or others such as BNSF Railway Company.

- Watermaster has a separate approval process for the Storage and Recovery Application including material physical injury analysis and consistency with the court approved management agreements within the Chino Basin.

- SWRCB will be a responsible agency if permits or funding are requested from the State Revolving Fund Program or SWRCB's Division of Drinking Water. Additionally, water supply connection permits will be required from DDW upon connecting an agency supply to a new source of supply.

- The SWRCB will also be a responsible agency for the wastewater change petition for the Change of Use proposed by this project.

This is considered to be a partial list of other permitting agencies for future CBP future individual projects.

3.14 AREAS OF KNOWN CONTROVERSY

1. Unused recycled water supplies
2. Regional benefits vs benefits of participating agencies (cost related)
3. Groundwater storage/storage and recovery program

Unused Recycled Water Supplies
In FY 2020/2021, an average of 56,150 AFY of recycled water supply was produced at IEUA's water recycling plants. Of which, 19,534 AFY was used as recycled water direct use and 16,253 AFY was used through surface spreading for groundwater recharge. The remaining supply of 20,364 AFY was discharged as effluent to the Chino Creek and Cucamonga Creek, which eventually reaches the Santa Ana River. IEUA recycled water is used by its Regional Contract Agencies (RCAs) as direct use and are allocated pro-rata shares of the recycled water that is recharged. Some of the RCAs do not utilize all the available recycled water supply for direct use due to a lack of potential customer uses, facilities, and funding opportunities. This unused recycled water supply makes up the plant effluent that is discharged. With the Chino Basin Program, a portion of the unused recycled water supply that is currently discharged would be dedicated by participating RCAs as the source water for the advanced water purification facility

(AWPF). As the interest in maximizing the use of available recycled water continues to grow, there are issues of concern as to how the remaining available supplies are put to use.

Regional and Participating Agency Benefits
The CBP offers both regional benefits and participating agency benefits through the operation of the CBP facilities. Regionally, the construction of the AWPF by 2028 reduces the risk of salinity non-compliance, which will allow for the continued use of recycled water for direct use and surface spreading recharge within the Chino Basin. As drought conditions occur, advanced treatment of recycled water will ensure permit compliance. For the participating agency benefits, the CBP facilities will create new local water supplies, diversify their water portfolio, and provide resilience during imported water supply interruptions. The investments by the participating agencies in the water supply reliability provides indirect benefits to the rest of the water agencies within the Chino Basin in developing their enhanced local supply and reducing demands on imported water during periods of shortages and/or outages. The allocation of the costs to the regional benefits that would result from CBP implementation and to participating agencies remains a topic that continues to evolve.

Groundwater Storage/Storage and Recovery Program
With the CBP facilities, groundwater storage of advanced treated recycled water will be achieved through injection wells. Storage capacity in the Chino Basin will be acquired through a Storage and Recovery Program application administered by the Chino Basin Watermaster. The amount of storage anticipated for the CBP is up to 150,000 AF above the baseline storage assumed in the Chino Basin. This additional storage will require an increase in the current Safe Storage Capacity, which will accommodates both CBP storage requirements as well as the needs of Watermaster stakeholders. The Storage and Recovery Application for the CBP will identify mitigation measures that would protect the Basin from Material Physical Injury (MPI), and would ensure that Hydraulic control is maintained. IEUA will be required to adhere to these mitigation measures in order to carry out CBP operations within the Basin. The Chino Basin's capacity for groundwater storage has become an important resource for long-term supply planning for the Basin stakeholders, and the development of this resource to facilitate Storage and Recovery Programs remains a topic of interest.

3.15 CEQA RESPONSIBLE AGENCIES

Table 33 depicts the many agencies that may be responsible agencies under CEQA as they are stakeholders of the overall Chino Basin Program.

Table 33
CBP WORKGROUP STAKEHOLDERS

Stakeholder	Retail Member Agencies[1]	IEUA Member Agency	Wastewater Contract Agency[1]	Chino Basin Appropriative Pool[2]	Other
Chino Basin Water Conservation District					✓
Chino Basin Watermaster					✓
Chino Desalter Authority (CDA)					✓
City of Chino	✓	✓	✓	✓	
City of Chino Hills	✓	✓	✓	✓	
City of Fontana		✓	✓	✓	
City of Montclair		✓	✓		

Stakeholder	Retail Member Agencies[1]	IEUA Member Agency	Wastewater Contract Agency[1]	Chino Basin Appropriative Pool[2]	Other
City of Ontario	✓	✓	✓	✓	
City of Pomona				✓	
City of Upland	✓	✓	✓	✓	
Cucamonga Valley Water District (CVWD)	✓	✓	✓	✓	
Fontana Water Company (FWC)	✓			✓	
Jurupa Community Services District (JCSD)				✓	
Metropolitan Water District (MWD)					✓
Monte Vista Water District (MVWD)	✓			✓	
San Antonio Water Company (SAWCO)	✓			✓	
Three Valleys Municipal Water District (TVMWD)					✓
Water Facilities Authority (WFA)		✓			✓
West Valley Water District (WVWD)				✓	✓
Western Municipal Water District (WMWD)					✓

Notes: [1]Source: IEUA-WFA Final 2015 Urban Water Management Plan (Arcadis, June 2016).
[2]Source: Appropriative Pool Committee, Calendar Year 2019.

3.16 NOTICE OF PREPARATION COMMENTS ON THE PROJECT DESCRIPTION

No comments were received at the scoping meeting held for the proposed Project. Four comment letters specific to the Project Description were received during the Notice of Preparation Comment Period. These are:

Comment Letter #1 from California State Water Resources Control Board, Division of Drinking Water (DDW) (dated 10/11/21) states:

- *DDW would like to see the following addressed in the EIR:*
  - *Include a list of all the water systems within the Project, the water system's number, and water system components that will be added to each system that will trigger a drinking water supply permit amendment.*
  - *Include a description of these new or modified components of the Project in enough detail to determine if a new water supply permit or permit amendment will be required.*
  - *Provide a project site map that includes all new or modified water system components with the water system they belong to.*
  - *Include the State Water Resources Control Board, Division of Drinking Water, in any list of agencies that will be approving a permit, and the drinking water permit(s) mentioned under any list of permits needed.*

Comment Letter #5 from the City of Ontario (dated 10/14/21) states:

- *The Project Description should include the following:*
  - *Describe the Agency participation and financing for the Program and expand on how it is anticipated that the program will be paid for at a local level.*
  - *Describe the administration of performance criteria during call years for participating and non-participating agencies, including limitations on access to imported water for either participating or non-participating agencies.*

  - *Identify the sources and supply of recycled water to be treated and pledged to the program, and include a description of the Project's compliance with participating agency's Right to First Purchase of treated wastewater per the Regional Sewerage Contract*
- *The City of Ontario believes that the program objectives should be modified as follows:*
  - *Objective 3, which states "Develop infrastructure that addresses long term supply vulnerabilities" should be removed and replaced with the City's proposed objective 7*
  - *Objective 4 should be revised to state "provide a **local** source of water…"*
  - *Objective 5 should be revised to state "Enhance recharge **(injection wells and/or recharge basins)** and…"*
  - *Objective 6 should be revised to state "Develop a solution to produce environmental benefits by enhancing local supply and reducing reliance on important water"*
  - *Proposed Objective 7, which the City proposes should replace Objective 3 states "Develop local water resources by utilizing recycled water locally in the Chino Groundwater Basin to meet the current and future needs of a growing region"*
  - *Proposed Objective 8 states "Minimize the need for additional infrastructure by optimizing existing infrastructure"*
  - *Proposed Objective 9 states "Comply and be consistent with the Regional Sewerage Contract, including but not limited to compliance with each Contracting Agency's Right of First Purchase of treated wastewater"*

Comment Letter #6 from the California Department of Fish and Wildlife (CDFW) (dated 10/14/21) states:

- *CDFW attached notable goals, objectives, and performance monitoring and asks that IEUA keep these in mind when preparing the EIR.*
  - *Approximately 70% of the supply is of local origin coming from local groundwater, local precipitation and surface flows, and recycled water Maintain reliable and resilient water supplies and reduce dependency on imported water.*
  - *Manage at the watershed scale for preservation and enhancement of the natural hydrology to benefit human and natural communities.*
  - *Preserve and enhance the ecosystem services provided by open space and habitat within the watershed.*

Comment Letter #7 from the Orange County Water District (OCWD) (dated 10/14/21) states:

- *OCWD states that it believes that IEUA must divert 17,000 AFY of tertiary recycled water to the Santa Ana River (SAR) or its tributaries above the Prado Dam.*
- *OCWD relays support for IEUA's effort to utilize wastewater to meet growing demands and reduce independence on imported water, while also complying with the Basin objective for TDS.*
- *OCWD states that the EIR should discuss and quantify the change in the amount of imported water to Southern California during an average year and over the 25-year lifespan of the CBP that would result from its implementation.*

Responses to these comments can be found in Subsection 2.2.1 in the Introduction provided as Chapter 2 to this RDPEIR. Additionally, most responses point to text that can be found in this Chapter, the Project Description.

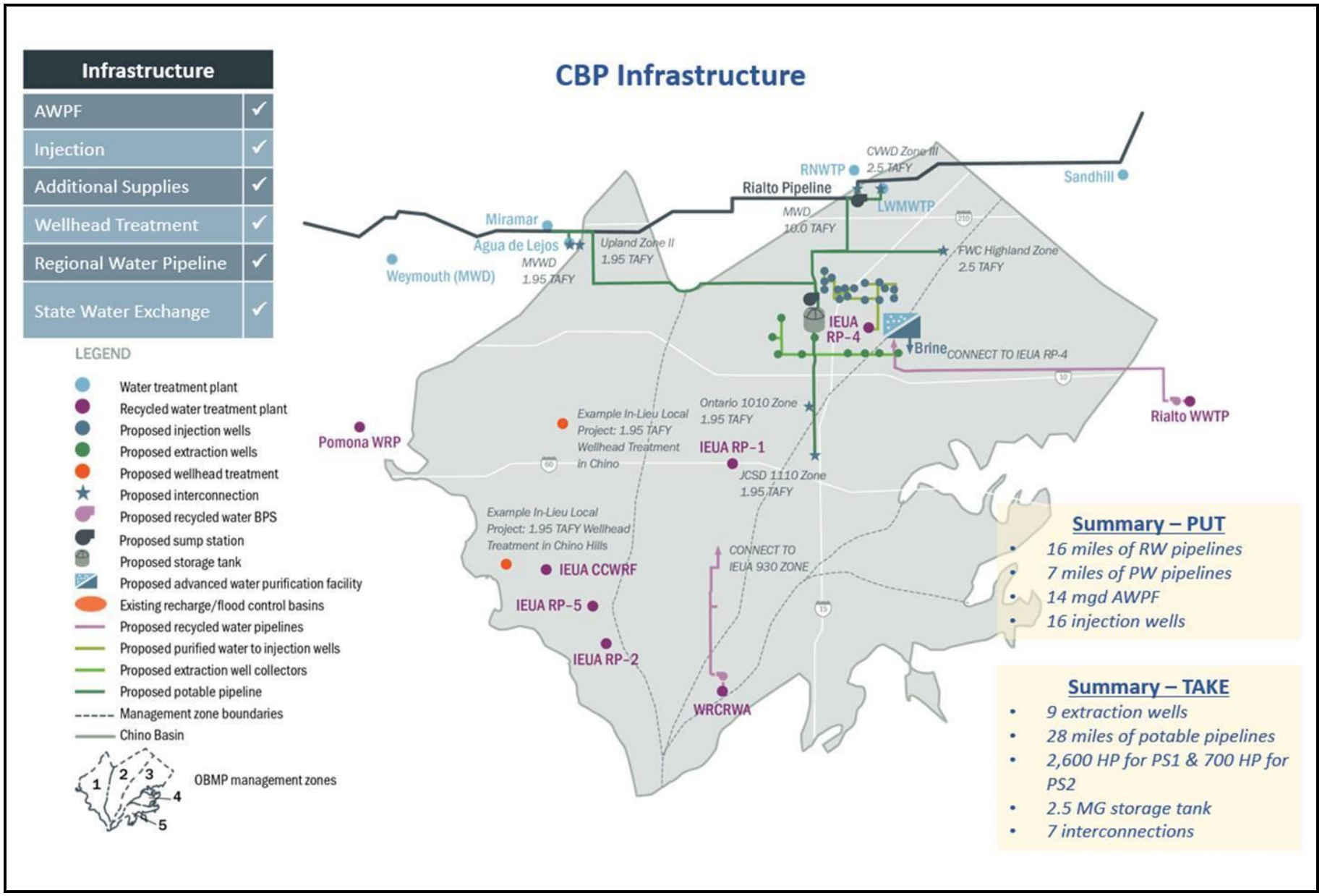


FIGURE 1

Tom Dodson & Associates
Environmental Consultants

CBP Infrastructure

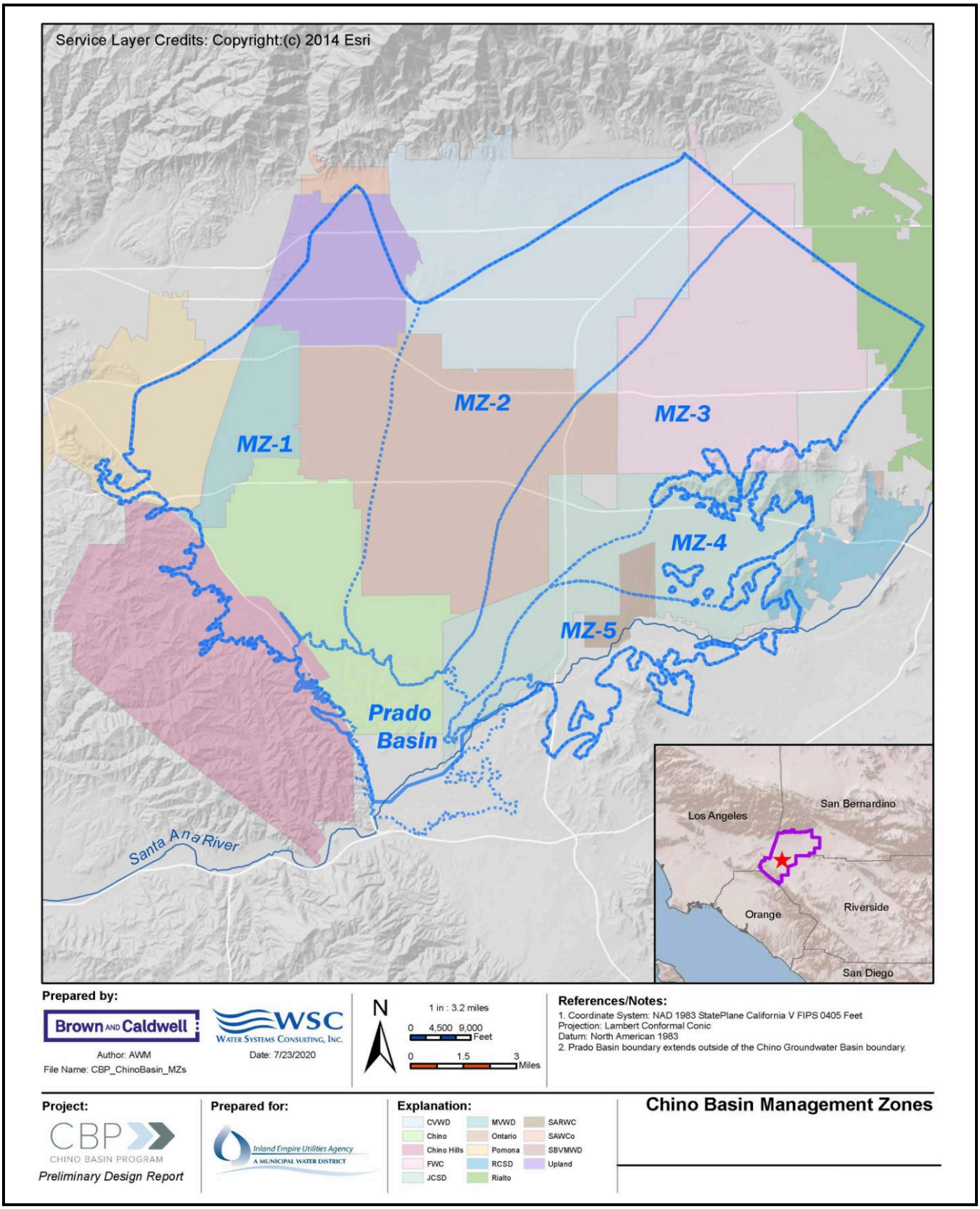


FIGURE 2

Tom Dodson & Associates
Environmental Consultants

Chino Basin Management Zones

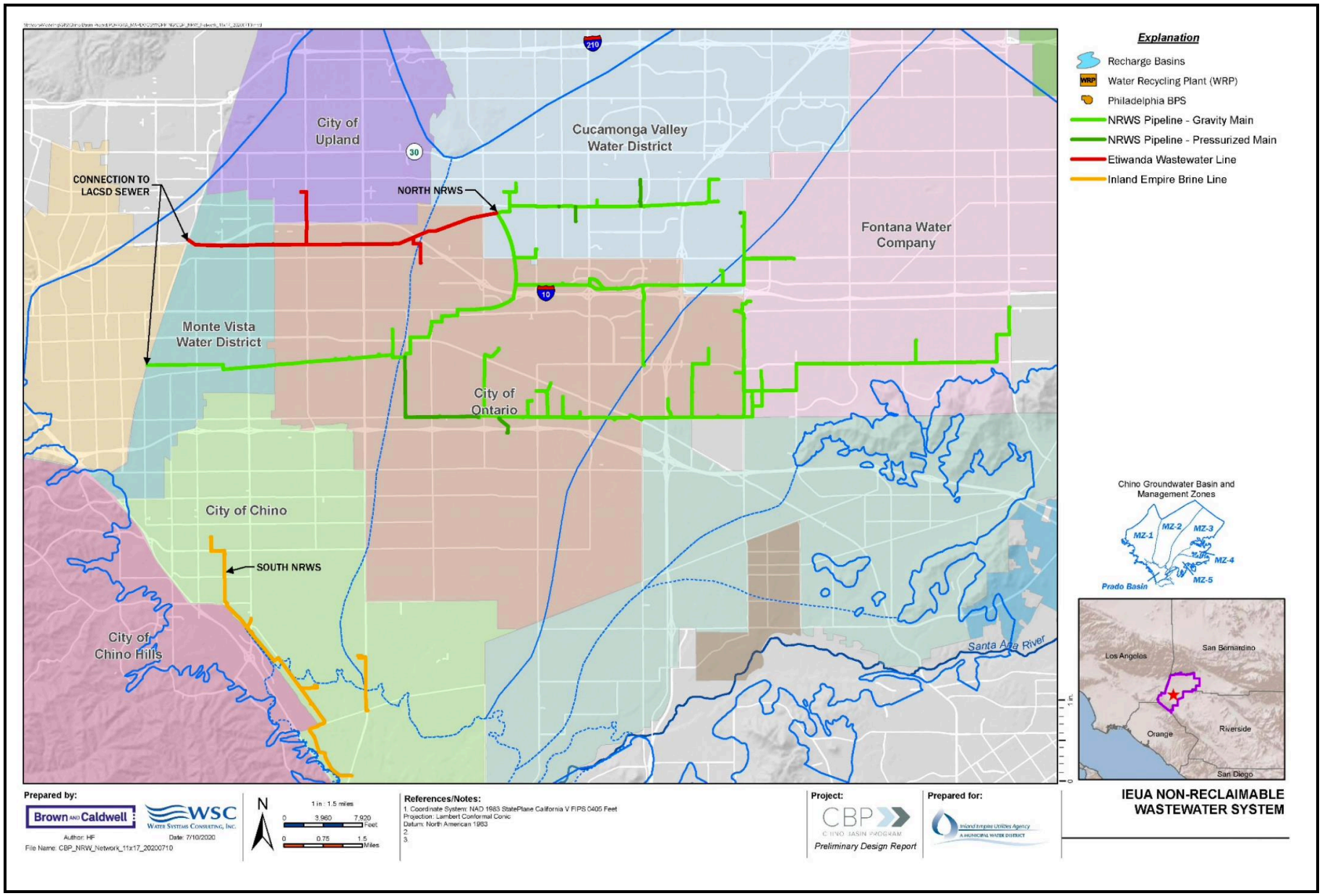


FIGURE 3

Tom Dodson & Associates
Environmental Consultants

IEUA Non-Reclaimable Wastewater System

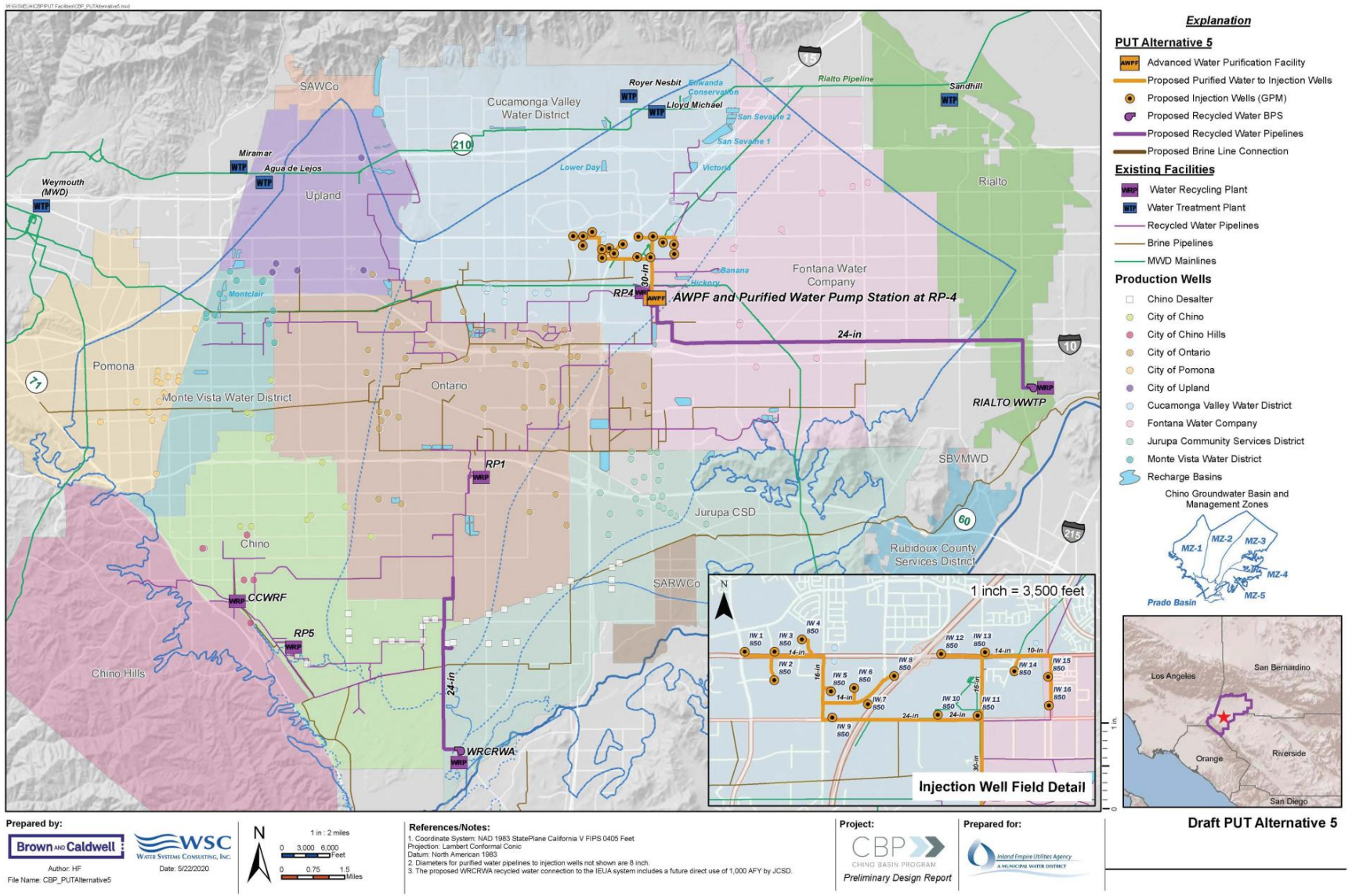


FIGURE 4

Tom Dodson & Associates
Environmental Consultants

PUT Option 5 Map

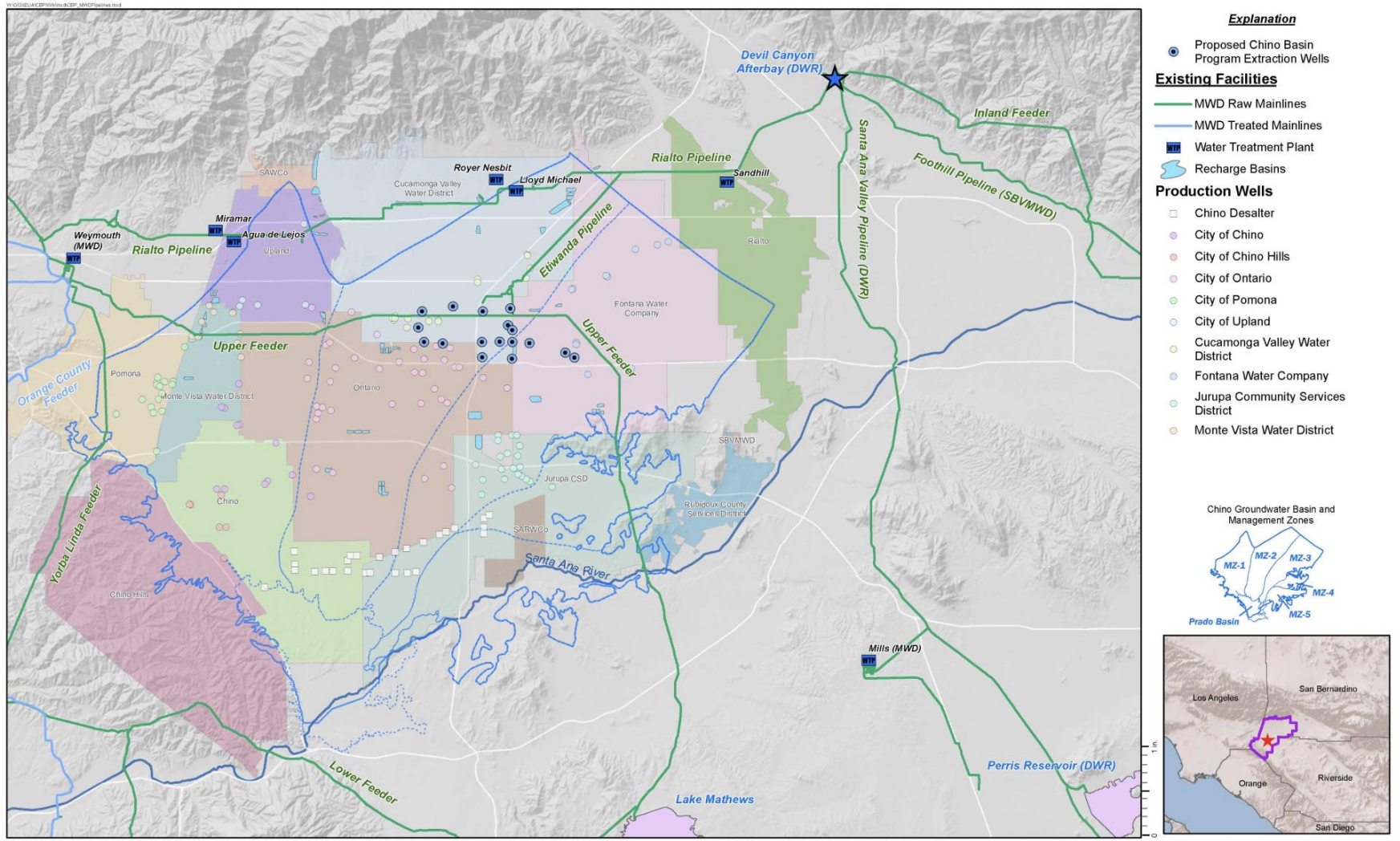


FIGURE 5

Tom Dodson & Associates
Environmental Consultants

Regional MWD Facilities

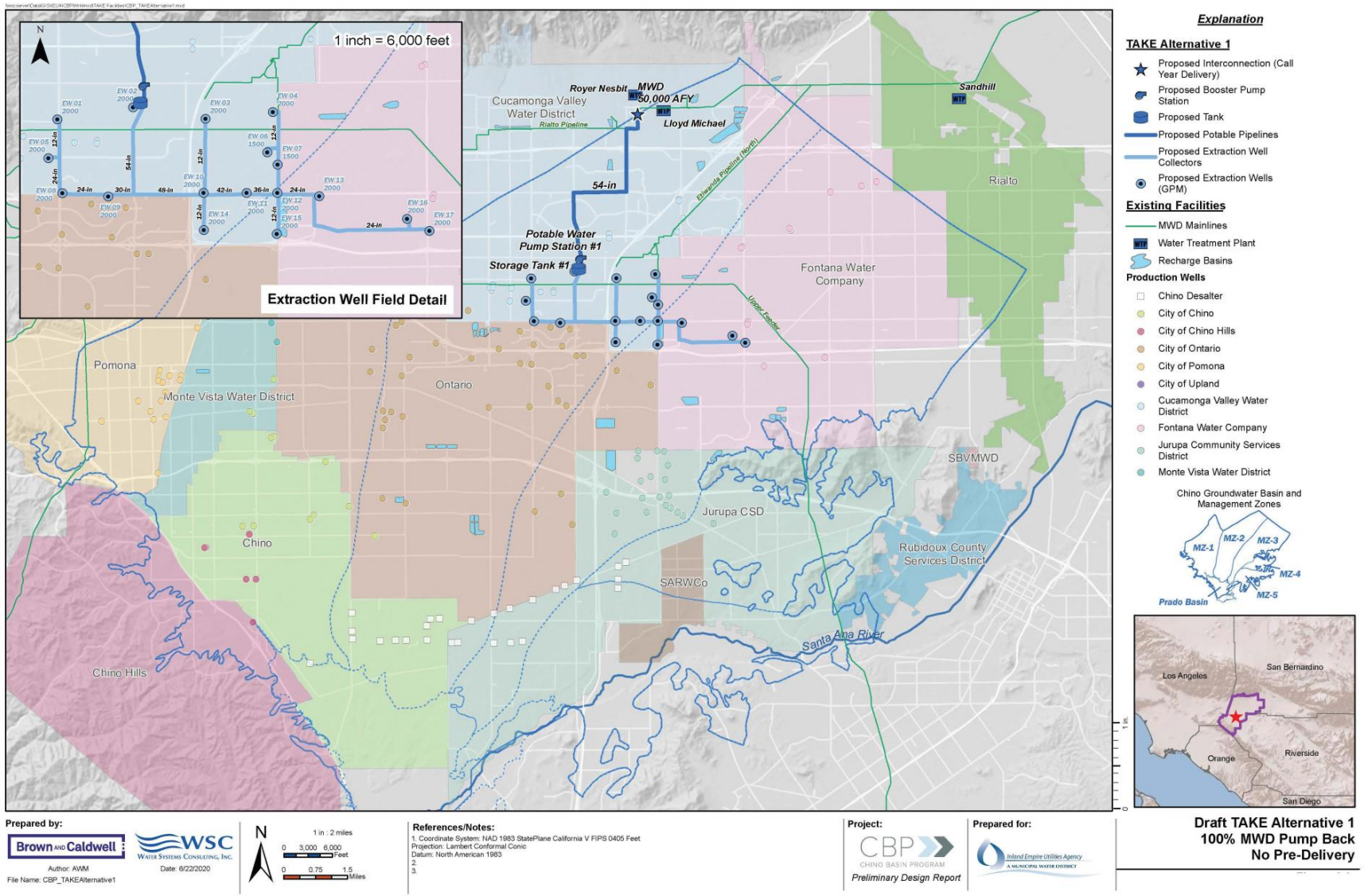


FIGURE 6

Tom Dodson & Associates
Environmental Consultants

TAKE Option 1 100% MWD Pump Back, Standard Delivery

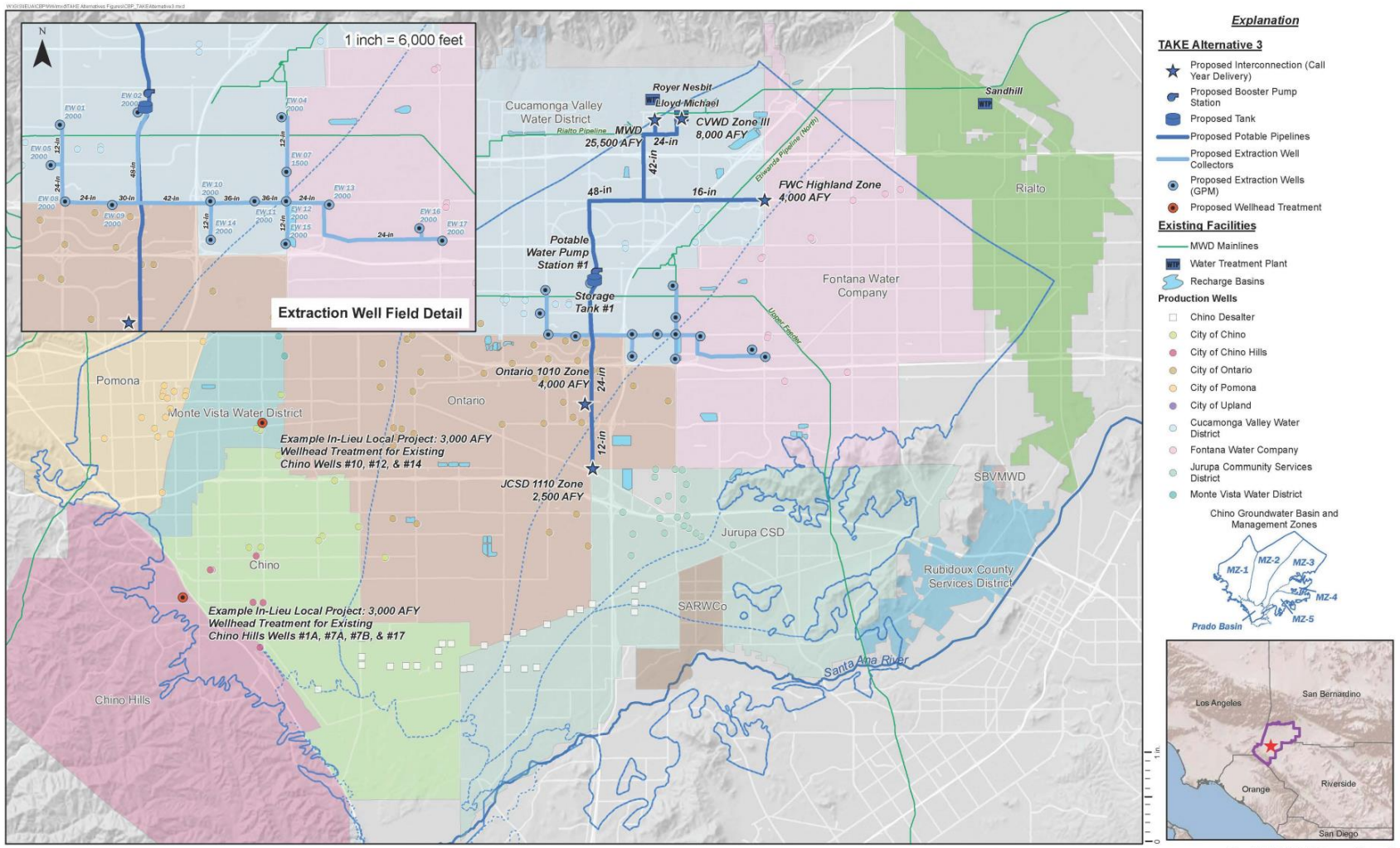


FIGURE 7

Tom Dodson & Associates
Environmental Consultants

TAKE Option 3 Partial MWD Pump Back and Partial In-Lieu, Standard Delivery

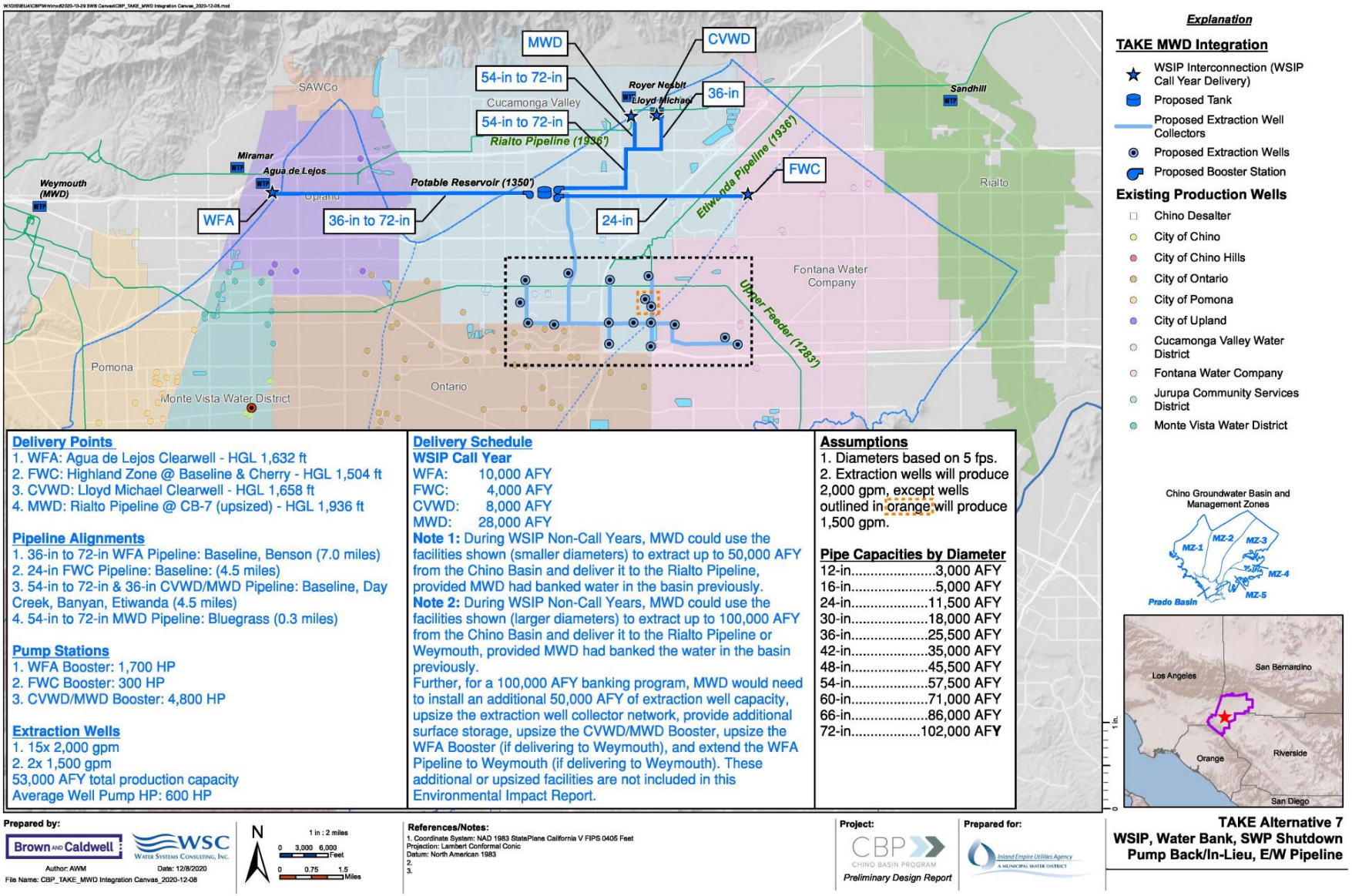


FIGURE 8

Tom Dodson & Associates
Environmental Consultants

TAKE Option 7 WSIP, Water Bank, SWP Shutdown Pump Back / In-Lieu, E/W Pipeline

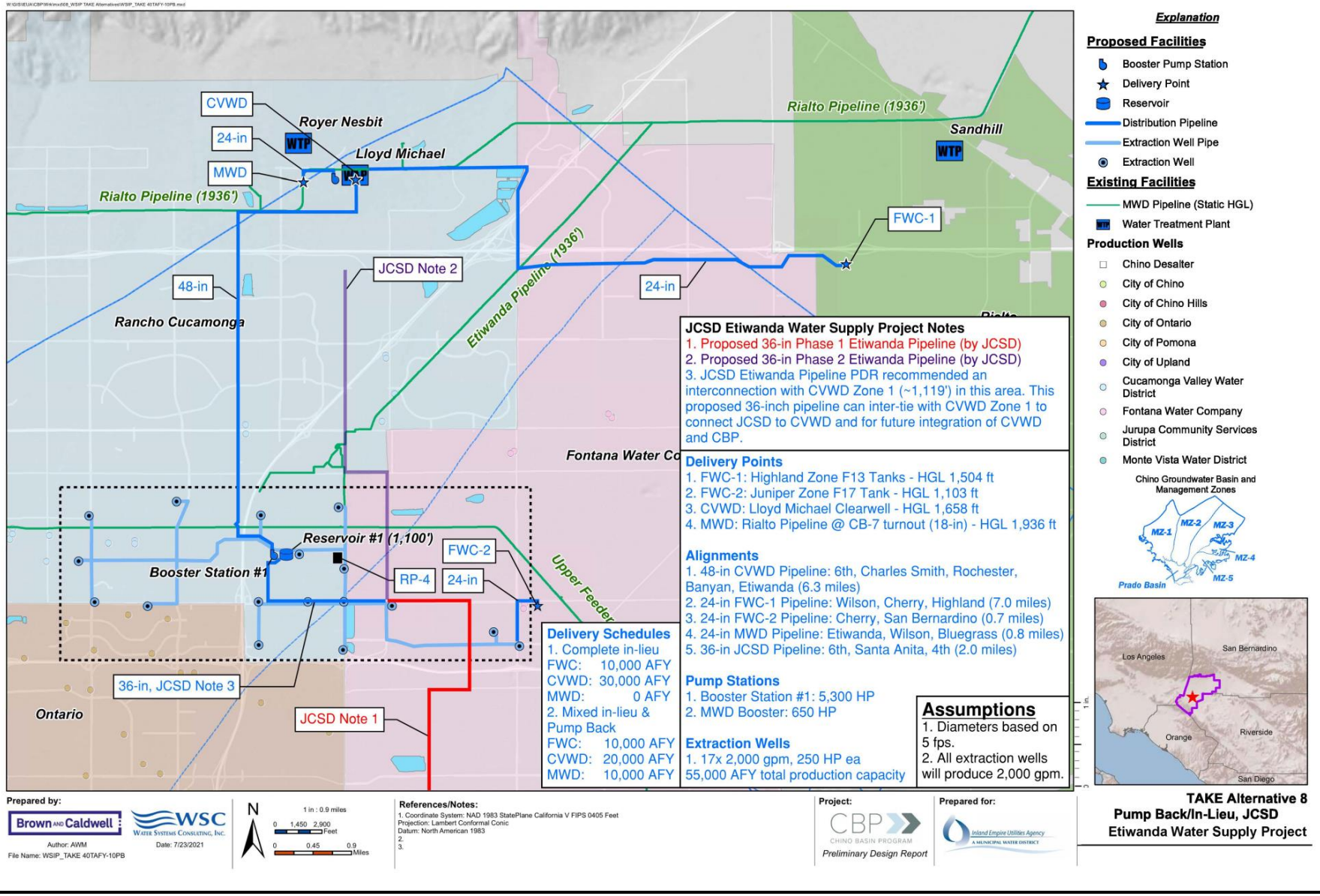


FIGURE 9

Tom Dodson & Associates
Environmental Consultants

TAKE Option 8 Pump Back / In-Lieu, JCSD Etiwanda Water Supple Project

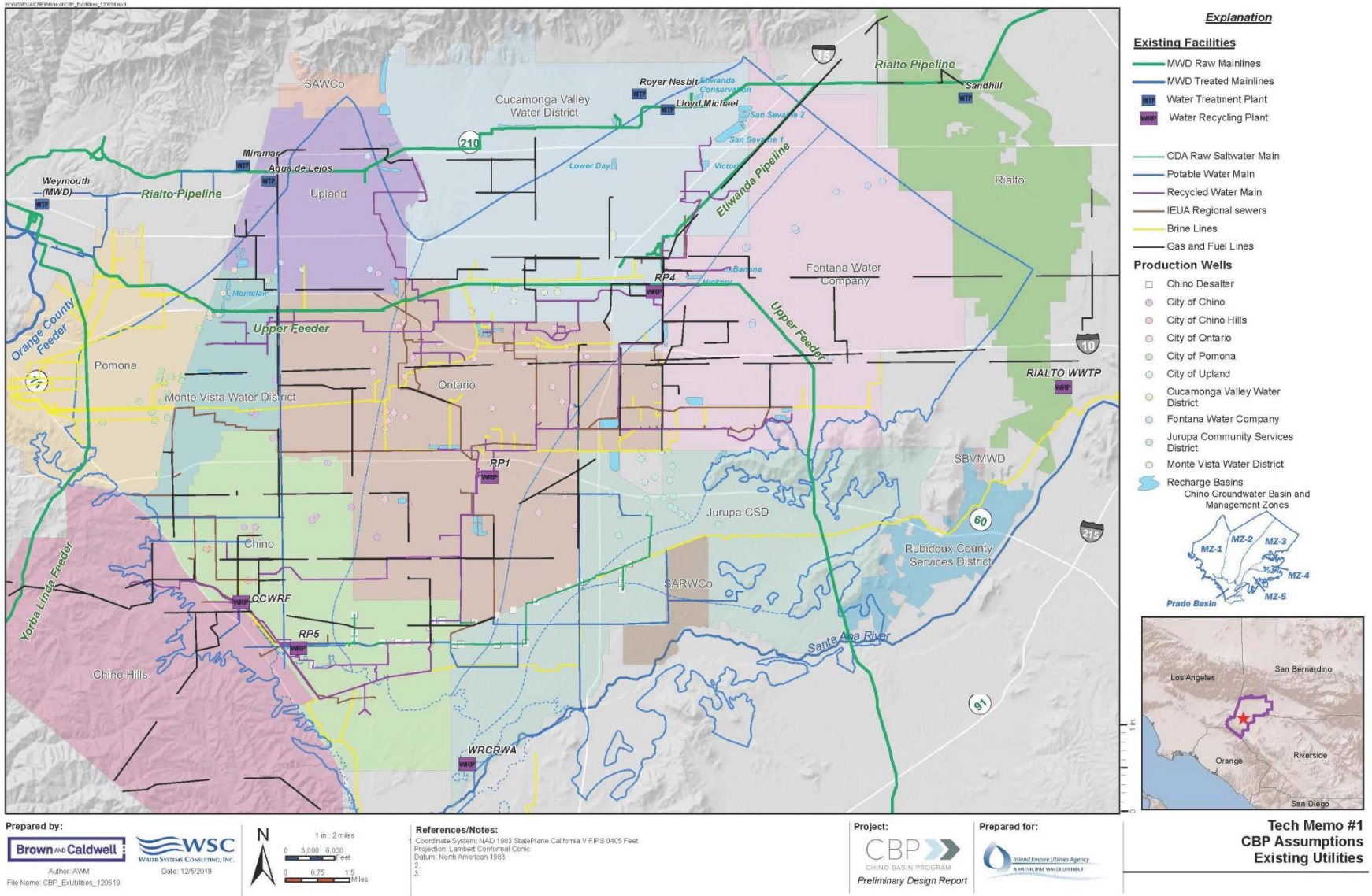


FIGURE 10

Tom Dodson & Associates
Environmental Consultants

Existing Utilities Map

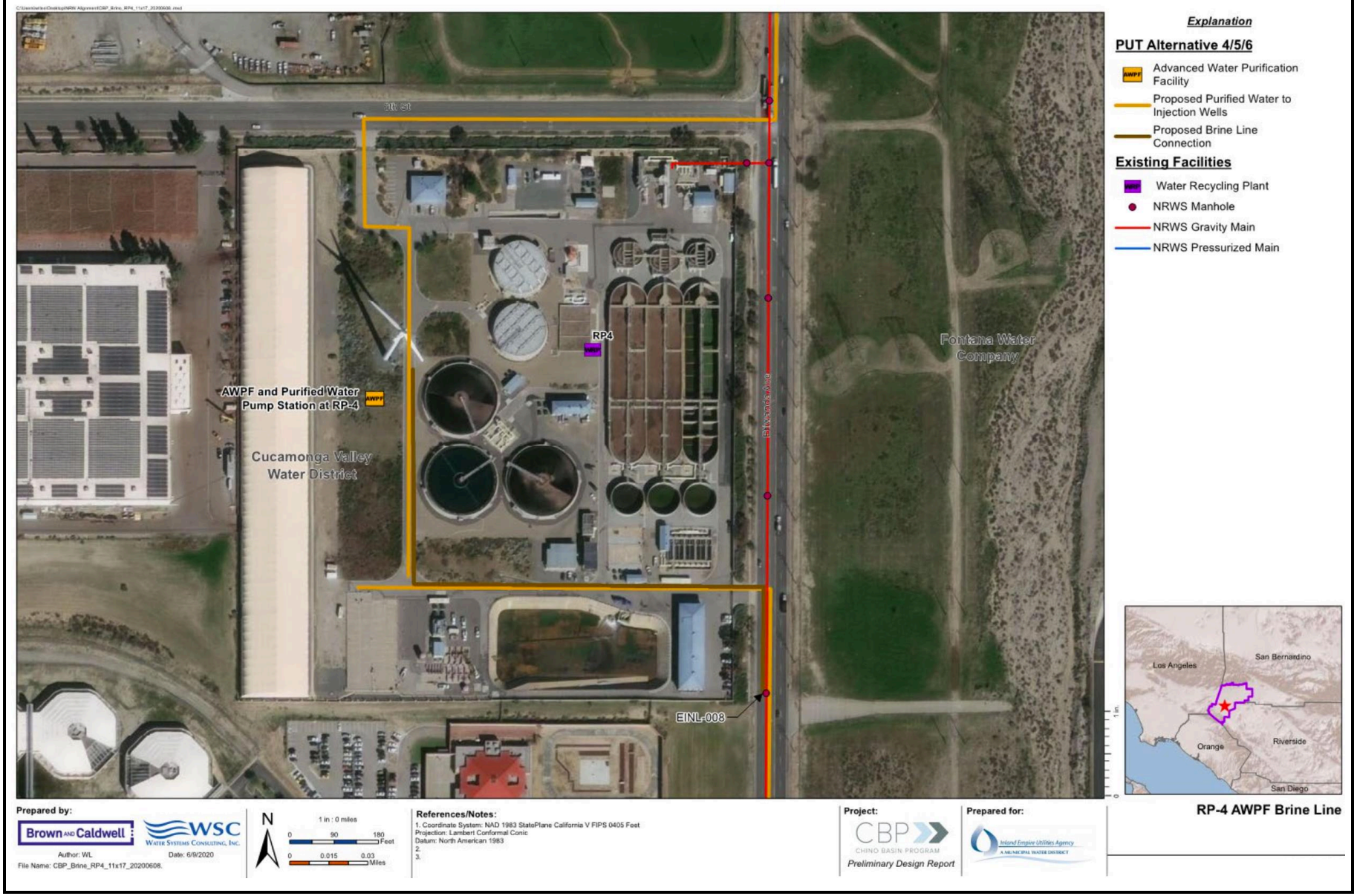


FIGURE 11

Tom Dodson & Associates
Environmental Consultants

RP-4 AWPF Brine Line



FIGURE 12

Tom Dodson & Associates
Environmental Consultants

City of Chino Hills Wellhead Treatment Facility Brine Line

APPENDIX 3

San Bernardino Valley Municipal Water District Memo

MEMORANDUM

September 21, 2026

To: Adham Almasri
Advanced Water Treatment Program Manager
Inland Empire Utilities Agency

From: Joanna Gibson
Executive Director, Upper Santa Ana River Habitat Conservation Plan
San Bernardino Valley Municipal Water District

Upper Santa Ana River Habitat Conservation Plan Effects Analysis and Conservation Strategy, in Support of IEUA's Wastewater Change Petition to the State Water Resources Control Board and Covered Activity IEUA.4, Inland Empire Utilities Agency Recycled Water Project

Mr. Almasri,

At your request, and in support of the Inland Empire Utilities Agency's (IEUA) wastewater change petition to the State Water Resources Control Board (State Water Board), I am providing this memorandum regarding IEUA's recycled water project, presented in the Chino Basin Program (CBP) Environmental Impact Report (EIR), State Clearinghouse No. 2021090310, which is addressed as Covered Activity IEUA.4, Inland Empire Utilities Agency Recycled Water Project, in the Upper Santa Ana River Habitat Conservation Plan (Upper SAR HCP or HCP). The purpose of this memorandum is to describe the comprehensive effects analysis and Conservation Strategy developed under the HCP, and to convey that both have continued to be refined and strengthened since the draft HCP was first published in 2021.

By way of background, IEUA is one of eleven water agencies that are applicants to the in-development Upper SAR HCP, which is now in the final stages of review with the United States Fish and Wildlife Service (USFWS). The Upper SAR HCP is a regional, comprehensive program that provides a framework to protect, enhance, and restore habitat for a suite of species, while streamlining permitting for projects (Covered Activities) listed in the HCP. Since the draft HCP was published in 2021, San Bernardino Valley Municipal Water District (Valley District), the lead agency for the Upper SAR HCP, and the HCP applicants have conducted substantial additional research and analysis, including refined surveys and assessments of sensitive species and their habitats, an updated effects analysis, and continued development of a comprehensive, watershed-wide Conservation Strategy for the upper Santa Ana River. The HCP is intended to meet federal permit issuance criteria under Section 10(a)(1)(B) of the Federal Endangered Species Act, which requires that an applicant, to the maximum extent practicable, minimize and mitigate the impacts of the taking authorized under the permit. Upon finalization of the HCP, it is anticipated that the applicants to the HCP will receive a Section 10(a)(1)(B) Incidental Take Permit (ITP) to provide authorization for take of species (or impacts for plants) from implementation of Covered Activities.

The Covered Activities addressed by the Upper SAR HCP are broad in scope. As defined in the HCP, Covered Activities include the construction of new or expanded facilities, operations and maintenance activities associated with existing and new facilities, and the implementation of conservation actions, including without limitation:

- Water reuse projects
- Groundwater recharge
- Wells and water conveyance infrastructure
- Solar energy development
- Habitat improvement, management, and monitoring
- Routine operations and maintenance

IEUA's recycled water project (Covered Activity IEUA.4) falls within the water reuse projects category — one of the Covered Activities of eleven water agencies, spanning all of these project types, that the HCP's effects analysis and Conservation Strategy are designed to comprehensively address.

Upper SAR HCP Effects Analysis

The HCP's effects analysis is comprehensive in scope and rigor. It evaluates the estimated impacts of all Covered Activities identified in the HCP — including Covered Activity IEUA.4 — on the HCP's 21 Covered Species and their habitats across the HCP's approximately 880,380-acre Planning Area in the upper Santa Ana River watershed, using watershed-scale modeling tools such as the Upper Santa Ana River Integrated Model. The analysis addresses a broad range of potential impact mechanisms, including effects on streamflow hydrology, groundwater dependent ecosystems, and habitat availability and connectivity, and evaluates these effects cumulatively across all Covered Activities rather than on a project-by-project basis. This comprehensive, watershed-wide approach allows the HCP to account for the full range of potential impacts associated with Covered Activities, including IEUA's recycled water project, more thoroughly than a project-specific environmental review could achieve on its own.

Upper SAR HCP Conservation Strategy

The Conservation Strategy incorporated into the near-final Upper SAR HCP was developed to minimize and mitigate, to the maximum extent practicable, the estimated impacts of Covered Activities on Covered Species and their habitats, consistent with the mitigation standard set forth in the U.S. Fish and Wildlife Service's Habitat Conservation Planning Handbook and Section 10(a)(2)(B) of the Federal Endangered Species Act. Because the Conservation Strategy is implemented on a regional, watershed-wide scale to mitigate the effects of all Covered Activities proposed by the eleven HCP applicants, it achieves a level of habitat protection, restoration, and long-term stewardship that no single Covered Activity or individual applicant could achieve on its own. The centerpiece of this regional approach is a Preserve System of a minimum of 1,960.4 acres, assembled from multiple Preserve Units across the watershed and permanently protected and managed for the benefit of Covered Species. The Conservation Strategy is designed not only to offset the estimated impacts of Covered Activities to the maximum extent practicable, but also to provide

meaningful conservation measures — including assembly of the Preserve System, habitat restoration and enhancement, and long-term monitoring and adaptive management — that have the potential to contribute to the recovery of Covered Species in the upper Santa Ana River watershed over the term of the Permit.

IEUA has been, and continues to be, an active partner in development of the Upper SAR HCP and its Conservation Strategy. Implementation of Conservation Strategy mitigation measures is already underway and is being successfully carried out ahead of anticipated impacts, consistent with the HCP's stay-ahead approach to mitigation. More specifically, IEUA, along with other HCP applicants with Covered Activities affecting hydrology, will contribute to over 200 acres of riparian, wetland, and stream mitigation, and long-term monitoring and adaptive management of riparian and wetland habitat along areas of the Santa Ana River upstream of Prado Dam.

Conclusion

In summary, IEUA's recycled water project, as Covered Activity IEUA.4, is comprehensively addressed within the Upper SAR HCP's watershed-wide effects analysis and is supported by a Conservation Strategy that minimizes and mitigates, to the maximum extent practicable, the associated impacts on Covered Species and their habitats. This regional mitigation approach is far more comprehensive than any single Covered Activity or applicant could achieve independently, and implementation of its conservation measures is already underway and being successfully carried out.

Please feel free to reach out if you have any questions or require further clarification.

Best regards,

Joanna Gibson
Executive Director
Upper Santa Ana River HCP

Inland Empire Utilities Agency
A MUNICIPAL WATER DISTRICT

2B

Date: November 4, 2026

To: The Honorable Board of Directors **From:** Kevin Alexander, General Manager

Committee:

Staff Contact: Elaine Jeng, Deputy General Manager

Subject: Approve Master Services Contract Amendment for Consulting Program Management and Owner Engineering Services

Executive Summary:

The services provided by the Consulting Program Management/Owner's Engineer (PM/OE) will continue to support the capital delivery and implementation of the Chino Basin Program (CBP). In July 2023 Jacobs Engineering Group, Inc. (Jacobs) was awarded a contract to provide PM/OE services through July 2025. The contract was later extended in November 2025 for one year. This amendment to the contract will allow Jacobs to continue to provide the foundational resources and subject matter experts needed to advance the planning of CBP's projects under the wastewater compliance facilities and the regional recycled water program's facilities. Additionally, the amendment will eventually allow Jacobs to provide the needed resources for implementation of future full-scale projects if the direction is approved by the Board. Service areas include program management, program controls, engineering and project management, contract support, construction management, environmental and regulatory compliance planning, and public outreach support. The proposal includes ten subconsultants (half of which are small businesses), for approximately 23% of the fee. Staff negotiated the scope of services and confirmed the total fees of $10,987,137 for Consulting PM/OE services from November 2026 through November 2028 utilizing the labor rates and mark-ups under the initial contract in addition to a 3% annual cost of living adjustment.

Staff's Recommendation:

Staff recommends that the Board:

1. Approve a master services contract amendment with Jacobs Engineering Group, Inc. for the consulting program management and owner engineering services for the Early Engineering for Recycled Water Facilities Project, No. EN25022, Early Engineering for Advanced Water Purification Facilities Project, No. EN25070, Purified Water Conveyance Project, No. EN28004, Advanced Water Purification Facility Project, No. EN28007, Replenishing Facilities Project, No. WR23001, and Recycled Water Interconnection to the City of Rialto Project, No. WR23002, for a not-to-exceed amount of $10,987,137, increasing the contract amount from $15,565,731 to $26,552,868; and
2. Authorize the General Manager to execute the contract amendment, subject to non-substantive changes.

Budget Impact *Budgeted (Y/N):* Y *Amendment (Y/N):* N *Amount for Requested Approval* 10,987,13

Account/Project Name: EN25070/Early Engineering for Advanced Water Purification Facilities,

EN25022/Early Engineering for Recycled Water Facilities, EN28004/Purified Water Conveyance, EN28007/Advanced Water Purification Facility, WR23001/Replenishing Facilities, WR23002/Recycled Water Interconnection to the City of Rialto

Fiscal Impact (explain if not budgeted):

The project for Early Engineering for Advanced Water Purification Facilities has an approved Fiscal Year (FY) 2026/27 budget of $11,000,000 and an approved total project budget of $45,200,000 in the Regional Wastewater Capital Fund (10900). This action is covered by the approved budget. The funding sources for the project include grants, connection fees, property taxes, and reserves.

The project for Early Engineering for Recycled Water Facilities has an approved FY 2026/27 budget of $11,000,000 and an approved total project budget of $23,000,000 in the Recycled Water Fund (10600). This action is covered by the approved budget. The funding sources for the project include recycled water rates and property taxes.

The project for Purified Water Compliance has a FY 2026/27 budget of $0 and an approved total project budget of $39,000,000 in the Recycled Water Fund (10600). This action will not use funding from this project until the FY2027/28 budget is approved. The funding sources for the project include recycled water rates and property taxes.

The project for Advanced Water Purification Facilities has a Fiscal Year (FY) 2026/27 budget of $0 and an approved total project budget of $231,500,000 in the Regional Wastewater Capital Fund (10900). This action will not use funding from this project until the FY2027/28 budget is approved. The funding sources for the project include grants, connection fees, property taxes, and reserves.

The project for Replenishing Facilities has a FY 2026/27 budget of $0 and an approved total project budget of $142,000,000 in the Recycled Water Fund (10600). This action will not use funding from this project until the FY2027/28 budget is approved. The funding sources for the project include recycled water rates and property taxes.

The project for Recycled Water Interconnection to the City of Rialto has a FY 2026/27 budget of $0 and an approved total project budget of $125,000,000 in the Recycled Water Fund (10600). This action will not use funding from this project until the FY2027/28 budget is approved. The funding sources for the project include recycled water rates and property taxes.

Regional Sewerage *Technical Committee (Y/N):*

Policy Committee (Y/N):

Prior Board Action:

On November 19, 2025, the Board of Directors approved a master services contract amendment to Jacobs Engineering Group, Inc. for the not-to-exceed amount of $6,451,926 increasing the total contract value to $15,565,731.

On July 19, 2023, the Board of Directors approved a master services contract for the consulting program management and owner engineering services to the Jacobs Engineering Group, Inc. for the Early Engineering for Recycled Water Facilities, Project No. EN25022, and Early Engineering for Advanced Water Purification Facilities, Project No. EN25070, for the not-to-exceed amount of

$9,113,805.

Aligns with Strategic Goal:

Goal 1. Water Supply Reliability: Provide a reliable and economical water supply that meets the evolving needs of the region.

Environmental Determination:

Not Applicable

Environmental Determination Text:

Not Applicable

Attachments:

Attachment 1 - PowerPoint
Attachment 2 - Contract Amendment

CBP

CHINO BASIN PROGRAM



Approve Master Services Contract Amendment for Consulting Program Management and Owner Engineering Services

Adham Almasri, P.E., PMP, Advanced Water Treatment Program Manager

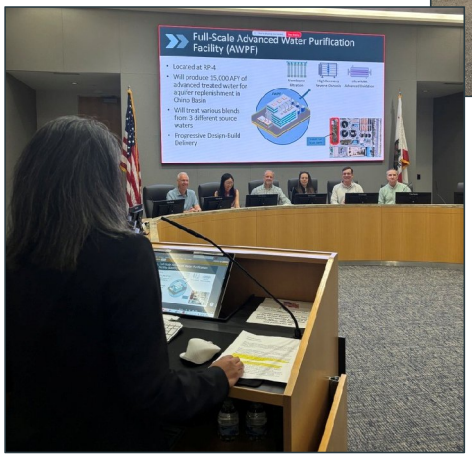
November 2026

Consulting Program Manager/Owner's Engineer Services

- Consulting Program Manager/Owner's Engineer (PM/OE) Duties:
  - Program Implementation and Management
  - Program Controls
  - Engineering and Project Management
  - Contract Support, Project Packaging, and Land Acquisition
  - Construction Management and Inspection Services
  - Environmental Studies and Regulatory Compliance
  - Public Outreach and Stakeholder Engagement

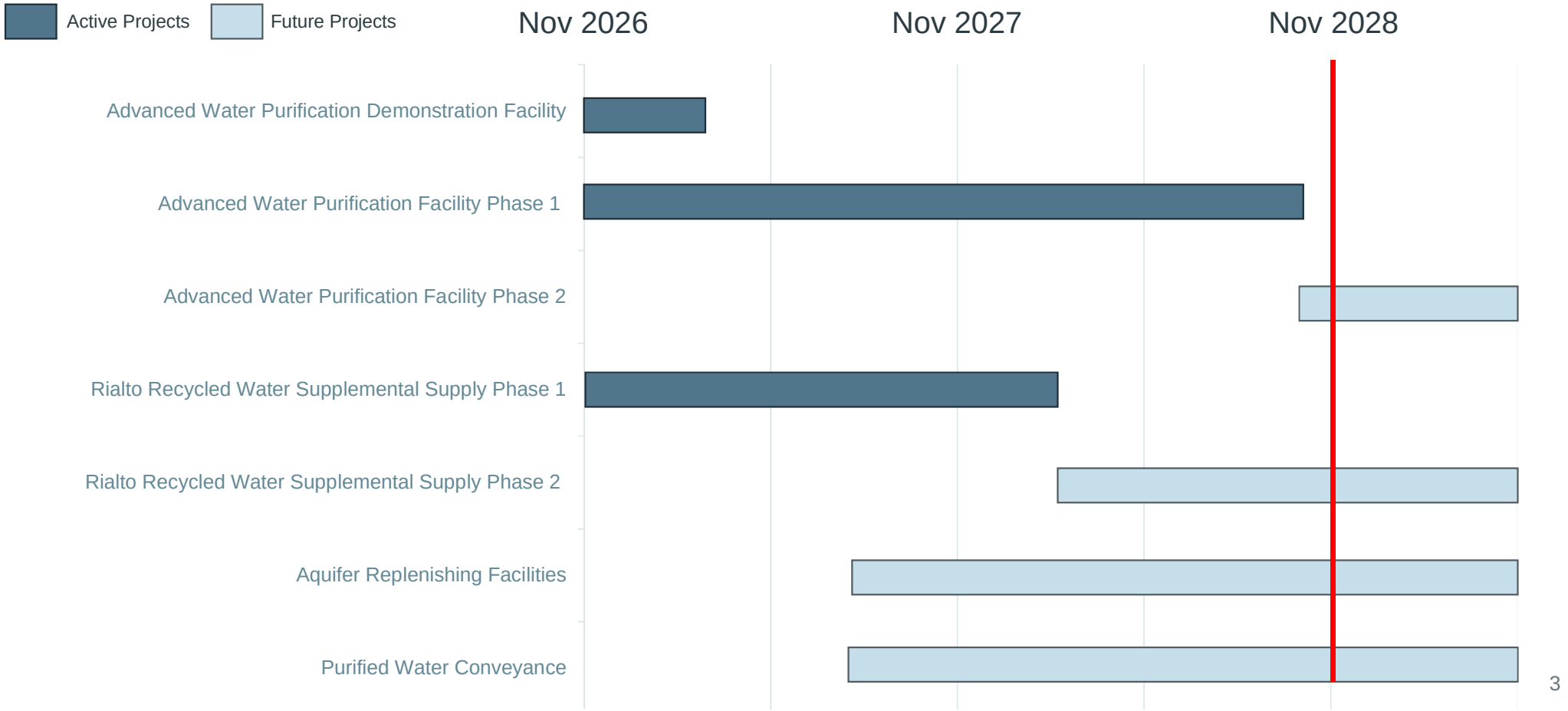


Congresswoman Norma Torres Check Presentation



Jacobs staff presenting at National Water Research Institute Panel

Scope of Services



Contract Amendment

- July 2023: Contract award for two-year term for not-to-exceed amount of $9,113,805
- November 2025: Amendment for one-year term for not-to-exceed amount of $6,451,926
- Amendment fees estimated for upcoming two-year period for a not-to-exceed amount of $10,987,137
- Original labor rates with 3% cost of living adjustment
- Includes ten subconsultants (half of which are small businesses), for approximately 23% of the fee



Potholing along Etiwanda Ave


Construction at Demonstration Facility

Projects' Budget and Schedule

Project Milestone	Date
Contract Amendment	November 2026
Contract Amendment End Date	November 2028

Description	Estimated Cost
PM/OE Services - Jacobs Contract Amendment	**$10,987,137**
Early Engineering for Recycled Water Facilities (EN25022)	$1,829,356
Early Engineering for Advanced Water Purification Facilities (EN25070)	$4,944,212
Purified Water Conveyance (EN28004)	$1,221,404
Advanced Water Purification Facility (EN28007)	$549,357
Replenishing Facilities (WR23001)	$1,221,404
City of Rialto Supplemental Supply (WR23002)	$1,221,404
Total Amendment Cost:	**$10,987,137**
Current Project Budget (EN25022):	**$23,000,000**
Current Project Budget (EN25070):	**$45,200,000**
Current Project Budget (EN28004):	**$39,000,000**
Current Project Budget (EN28007):	**$231,500,000**
Current Project Budget (WR23001):	**$142,000,000**
Current Project Budget (WR23002):	**$125,000,000**

Staff Recommendation

1. Approve a master services contract amendment with Jacobs Engineering Group, Inc. for the consulting program management and owner engineering services for Early Engineering for Recycled Water Facilities, Project No. EN25022, Early Engineering for Advanced Water Purification Facilities, Project No. EN25070, Purified Water Conveyance, Project No. EN28004, Advanced Water Purification Facility, Project No. EN28007, Replenishing Facilities, Project No. WR23001, and Recycled Water Interconnection to the City of Rialto, Project No. WR23002, for a not-to-exceed amount of $10,987,137, increasing the contract amount from $15,565,731 to $26,552,868; and
2. Authorize the General Manager to execute the contract amendment, subject to non-substantive changes.

This item aligns with Strategic Goal(s): Goal 1. Water Supply Reliability

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MASTER SERVICES CONTRACT AMENDMENT NUMBER: 4600003420-005

FOR

CONSULTING PROGRAM MANAGEMENT AND OWNER ENGINEERING SERVICES

THIS MASTER SERVICES CONTRACT AMENDMENT FIVE is made and entered into this ____ day of _____, 2026, by and between the Inland Empire Utilities Agency, a Municipal Water District, organized and existing in the County of San Bernardino under and by virtue of the laws of the State of California (hereinafter interchangeably referred to as "IEUA" and "Agency") and Jacobs Engineering Group Inc. of Dallas, Texas (hereinafter referred to as "Consultant"), for professional engineering consulting services, shall revise the Contract as herein amended:

REVISE SECTION 4, SCOPE OF WORK AND SERVICES, ADDING A PARAGRAPH, TO READ: Consultant's additional services and responsibilities shall include and be in accordance with Consultant's Proposal, **Exhibit A,** which is attached hereto, referenced herein, and made a part hereof.

REVISE SECTION 5, TERM OF CONTRACT AND OPTION, ADDING A PARAGRAPH, TO READ: With the execution of Contract Amendment Number 4600003420-005, the termination date of this Contract shall be extended to November 3, 2028; unless agreed to by both parties, reduced to writing, and amended in this Contract.

REVISE SECTION 6, COMPENSATION, ADDING A PARAGRAPH, TO READ: In accordance with this Contract Amendment, Agency shall pay Consultant a **NOT-TO-EXCEED MAXIMUM of $26,552,868.00** for all services provided. This represents an increase of **$10,987,137.00** per Consultant's Proposal, **Exhibit A**, dated September 22, 2026, and as approved by SAP Purchase Requisition 10075702.

INLAND EMPIRE UTILITIES AGENCY: (A Municipal Water District)		**JACOBS ENGINEERING GROUP INC.:**
_____	_____	Signed by: Cory Hooper 319FEA82792A4D6... _____ 10/22/2026
Kevin L. Alexander	(Date)	Cory Hooper (Date)
General Manager		SVP Operations, California, Americas

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Exhibit A

Docusign Envelope ID: 80998203-1985-8D20-80BC-D7ED698BED4F

Jacobs

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Suite #500
Irvine, CA 92612

www.jacobs.com

September 22, 2026

Adham Almasri, PE, PMP
Principal Engineer
Inland Empire Utilities Agency (IEUA)
6075 Kimball Avenue HQ-B
Chino, CA 91708

Subject: Amendment to Program Management/Owner Engineering Services for Chino Basin Program: Put Facilities

Dear Mr. Almasri,

We are delighted to continue supporting IEUA as the Program Manager/Owner's Engineer (PgM/OE) for the Chino Basin Program (CBP). We have reviewed the program schedule, planned work, and met with IEUA staff to update our scope of work to extend our support of IEUA over the next two years. We are pleased to submit a scope of work and not to exceed time and material (T&M) estimate to amend our current Agreement No. 4600003420. We request an increase of $10,987,137 and an extension of time to November 3, 2028.

Summary of estimated fees for period of performance from November 2026-November 2028 is:

2026-2028 PM/OE Summary	Totals
Task 1. Program Implementation Management	$ 1,966,356
Task 2. Program Controls	$ 1,348,700
Task 3. Engineering and Project Management	$ 5,360,472
Task 4. Contract Support, Project Packaging, Land Acquisition	$ 262,670
Task 5. Construction Management and Inspection Services	$ 1,424,611
Task 6. Environmental Studies and Regulatory Compliance	$ 650,985
Task 7. Public Outreach and Stakeholder Engagement	$ 792,308
Task 8. Additional IEUA Support	$ 181,036
SUBTOTAL	$ 11,987,137
Estimated Remaining Budget as of November 4, 2026 in Contract:	$ (1,000,000)
Total 2026-2028 Amendment	$ 10,987,137

Our team is excited to continue supporting project management of all the CBP projects, program controls, procurement support, grant support, permitting and environmental tracking, and public outreach. Our scope of work also includes 10 subconsultants for approximately 23% of the value

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of the amendment. From the contract initiation in July 2023, we have maintained our rate classifications and original rates, with the agreed upon 3% cost of living rate increase that is updated each Jan. 1st. We will continue to respect these classifications and rates, and kindly request a reclassification of four team members, who have had significant promotions over the past 3 years and have brought significant value to this program.

Jacobs Staff	July 2023 - Oct 2026 Original Classification	Nov 2026 - Nov 2028 Updated Classification	Justification
Renee Groskreutz	Principal Professional 1-PMO	Principal Professional 2-PMO	Renee was proposed as Deputy Program Manager and maintained lower rate for past 3 years; she has been performing as Jacobs Program Manager.
Tyler Kirkendall	Project Professional 1	Sr. Professional 2	Tyler has taken increasing levels of responsibilities and has been recognized for his work at CBP and other projects with a large promotion.
Quentin Clark	Principal Professional 1	Principal Professional 2-PMO	Quentin has significantly progressed the Rialto and starting the Purified water Conveyance as PM and has received a promotion.
Rich Sturn	Principal Professional 1	Principal Professional 2-PMO	Richard has performed as both the PM for wells the CM for monitoring wells and has received a promotion.

Please note that we continue to offer our proposal "PMO" rate for the Principal Professional 1 and 2, which is a discounted rate for those who charge more than 50% of their time to CBP.

We are committed to bringing you the right resources and solutions to support successful implementation of your program. Should you need more information, please contact us: Renee (903.216.8479, renee.groskreutz@jacobs.com) or Rich (213.500.2333, rich.nagel@jacobs.com).

Sincerely,

Jacobs Engineering Group Inc.

Renee Groskreutz, PE
Program Manager

Cory Hooper
SVP Operations, California, Americas

Attachment: Jacobs Amendment 4600003420-005

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Task Order Proposal

Contract: Recycled Water System Expansion-Chino Basin Program	**MSA Name:** PM/OE Master Services Contract **MSA Contract ID#:** 4600003420-05
Supplier: Jacobs Engineering Group	**Amendment Period of Performance:** November 4, 2026-November 3, 2028

Task Order Name: Program Implementation

Scope of Work

The purpose of this contract amendment is for Jacobs Engineering Group (Jacobs) to continue to provide Consulting Program Management/Owner's Engineer (Consulting PM/OE) services for IEUA's Recycled Water System Expansion (Program). This Program is the collective regional projects that make up the PUT side of the Chino Basin Program (CBP). Jacobs will continue supporting IEUA with implementation and capital delivery of the Program by providing the foundational resources needed. Resources include staff, subject matter experts, and program controls to ensure all major components of the program including:

- Advanced Water Purification Facility (AWPF)
- Advanced Water Purification Demonstration Facility (AWPDF)
- Recycled Water (RW) conveyance projects
- Aquifer Replenishing (AR) facilities,
- Purified Water Conveyance
- Take Facilities support and coordination, as needed

These projects will be designed, constructed, and commissioned in accordance with IEUA's guidelines and Program goals. This task order will cover a period of performance from November 2026 through November 2028. The high-level definition of this scope of work includes the following tasks. The level of effort is based on an estimate of full-time equivalents (FTE)s to support IEUA, FTE assumes 40 working hours per week, and 2000 hours per year (allowing 2 weeks off for holidays and vacation)

This Task Order includes the following main tasks:

1. Program Management and Administration
2. Program Controls
3. Engineering and Project Management
4. Contract Support and Project Packaging
5. Construction Management
6. Environmental and Regulatory Compliance
7. Public Outreach Support
8. IEUA Support of NWRI Panel and Other Studies

The following general assumptions apply to all tasks described below, while additional task-specific assumptions and deliverables are noted with each task description.

- The fee proposal is based on a two calendar year duration.
- IEUA will make its facilities and data accessible to the Jacobs team, as required and appropriate for Jacobs to complete our project activities.

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- All deliverables will be provided in electronic format.
- Deliverables and Program documentation will be uploaded to MS Teams Program folder or via CIPO for project specific documentation. Each document will be submitted with appropriate file convention.
- Jacobs has included hours and cost for each deliverable to have internal Quality Assurance and Quality Control (QA/QC) review and to have a Quality Manager to ensure consolidated and clear set of comments will be provided to PDB and Design Teams.
- The program will be managed while working closely with IEUA's staff especially the Advanced Water Treatment Program Manager under a hybrid PMO. Core leadership (Consultant Program Manager and Project Managers) will attend meetings in person (as appropriate), while the remaining team members will primarily attend meetings virtually, as feasible. The team will visit IEUA headquarters or project sites as requested.
- As part of the PM/OE scope, Jacobs will provide engineering support to facilitate consistency in design and provide technical guidance to IEUA on Program-related projects, activities, and planning. This includes review of design deliverables (by others) for conformance with the Program objectives and criteria. Jacobs does not assume professional liability for other Design Consultants' calculations or design decisions.
- The cost estimates developed for the pilot AR facility will be consistent with Class 1 estimates as defined by the Estimate Classification system of the American Association for the Advancement of Cost Engineering International (AACE International). Additional cost estimates to validate RFDs or check Contractor estimates will be developed as required by IEUA.
- This scope has been developed using our best judgement, however there may be a need to hold additional workshops that have not been identified in this scope, nor in the workplan. The scope, schedule, and budgets will be actively managed and monthly progress reports will be prepared and shared with IEUA to stay within the agreed upon not to exceed budget.
- IEUA acknowledges and agrees that in the performance of the Services, Jacobs may utilize its proprietary data, concepts, methods, techniques, processes, protocols, ideas, inventions, know-how, trade secrets, algorithms, software, works of authorship, software and hardware architecture, databases, tools, other background technologies and standards of judgment that Jacobs developed or licensed from third parties prior to the Effective Date (the "Pre-Existing Technology"). Subject to the terms and conditions of the Agreement, Jacobs hereby grants to IEUA a non-exclusive, non-transferable, royalty-free license under Jacobs' Intellectual Property Rights to utilize the Pre-Existing Technology for the purpose of IEUA's Project. IEUA shall not, and shall not allow any third party to: (i) modify or otherwise create derivative works of the Pre-Existing Technology; (ii) use the Pre-Existing Technology for any other purpose, other than the IEUA Project; (iii) make, have made, use, reproduce, license, display, perform, distribute, sell, offer for sale, service, support, or import any product that incorporates, embodies and/or is based upon the Pre-Existing Technology; (iv) sublicense, distribute or otherwise transfer to a third party any of the Pre-Existing Technology by itself or as incorporated into software or hardware; or (v) reverse engineer, disassemble, decompile or attempt to derive the source code or underlying ideas or algorithms of the Pre-Existing Technology. Any additional use of the Pre-Existing Technology shall require a separate written license agreement.

Task 1 – Program Management and Administration

Our team will provide a streamlined, Consultant PM/OE core leadership team, who will be the principal points of contact for IEUA, and who will provide clear team direction, communications, and continuity for implementing inter-related tasks as the program advances from concept through completion. The Jacobs Team will maintain the core leadership team and Program Management Plan

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(PMP) in Task 1 for the duration of the Program. The existing PMP will be updated as the program evolves and transitions from design to construction focused activities.

The following will be the components of this task:

- **Program management:** The Objective is to provide leadership, management and direction on all aspects of delivery to achieve IEUA's objectives throughout the life of the program.
- **Continued Chartering and Partnering:** The Jacobs team will prepare for and participate in chartering and partnering workshops with each Progressive Design Builder Team and Design Team that supports the program. Jacobs will support partnering efforts with the PDB teams and participate in partnering meetings and drive accountability and collaboration to drive solutions and project-first mentality for each project. Quarterly Program updates, monthly PDB partnering surveys, and Quarterly Partnering Executive meetings will continue to be supported.
- **Interested Parties and Ad hoc Meetings**: As needed, Jacobs will support CBP Interested Parties and Ad hoc meetings which occur on a quarterly basis.
- **Quality Management:** Jacobs will continue to implement the quality management system developed in the Program Management Plan (PMP) to manage quality at the Program and individual project levels. Jacobs will maintain the Design Management Plan that describes required activities of the design engineers, including QC processes, independent reviews, and collecting, organizing, and responding to review comments. A Construction Management Plan will be developed that clearly describes construction management processes related to QA and oversight of the PDB and construction contractors, prior to construction activities, and will be consistent with IEUA expectations and updated for risk profile for collaborative delivery and traditional delivery, respectively.
- **Asset Management Support:** Jacobs will support new projects content to the IEUA Asset Management Plan (AMP), including documentation of level of service, key performance indicators, and asset data such as capacity changes, asset summaries, and criticality scores. Provide new assets details and process flow details to assist in updating all relevant AMP sections and figures, including development of new sections for advanced treatment and pure water recharge facilities. Jacobs will guide the PDB to be consistent with IEUA's preventive maintenance approach and build out failure modes, work plans, and optimized preventative maintenance schedules for each asset and have this uploaded to CMMS. Jacobs will review and provide comments to Contractor's recommendations on Critical Spare Parts, consumables, and long lead replacements.
- **CBP Leadership Support:** At the discretion of IEUA Program Management and IEUA Senior Leadership Team (SLT), Jacobs will plan, participate, and/or facilitate strategy sessions to support the success of the CBP. Jacobs will engage its senior executive leaders and resources as appropriate and required to recommend alternatives and support IEUA in implementing proactive communications (internally and externally) and create sustainable transparent solutions. This task will also encourage supporting regional, state, and national conference abstracts, presentation development, and presentations to best support raising additional positive awareness of CBP.

Activities

This task includes:

- Communication, internal and external coordination, progress reports, strategic forecasting, and work planning.
- Attendance at a series of workshops, prepare detailed workplans for each task.
- Document the final decisions from IEUA, PM/OE, PDB, Design Consultants, and Contractors discussions regarding scope for each project, risks, cost validation, and provides a history of the program evolution.

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- Integrate IEUA design guidelines into design review protocols.
- Maintain and update PMP which will map and integrate with IEUA's processes and be available to IEUA staff and Jacobs Team. Jacobs will provide limited access, as coordinated and agreed with IEUA, to future design consultants, contractors, interested parties to encourage consistent delivery and clear communication throughout the life of the program.

Resources

The following roles will be provided under this task:

- ***Program Manager Advisor (1.0 FTE):*** Jacobs Program lead and Advisor to IEUA's Advanced Water Treatment Program Manager, IEUA's Senior Engineer, and IEUA's Associate Engineers.
- **Deputy Program Manager** (**0.5 FTE**): Jacobs Deputy Program Manager will support the Program Manager Advisor and all of IEUA's Program Management Team (PMT).
- ***Quality Manager and Support (0.1 FTE)***: Confirms all QA is performed on all projects and that comments and responses are consolidated, clear, and resolved.
- ***Asset Mgmt. Lead (0.05 FTE)***: Supports IEUA Asset Management team in incorporating new assets (MF, UVAOP, AR wells) into IEUA's system. Confirming that O&M expectations are met through the life of the program.
- ***Program Support (0.05 FTE):*** Provides overall program support and coordination of all services, meetings, and workplans to support the Program team.
- ***Staff Engineer (0.5 FTE):*** Provides program support and following up on details, coordination of meetings and meeting materials, support field investigations, coordination with O&M, trending water quality databases and sampling efforts, and general technical support.

Jacobs will engage **Rich-Consulting** as needed, to support Task 1 delivery and specifically lead the Partnering sessions with the PDB teams.

Deliverables

- Weekly PMT coordination meetings.
- Monthly progress report for Senior Leadership.
- Monthly invoice and progress report on Jacobs' activities.
- Provide guidance and support efforts and needs of the Program Team.
- Review Program Team deliverables prior to submission to IEUA.
- Workshop Agenda, presentation materials, meeting minutes and decisions
- Quarterly Implementation Workshops
- Initial Partnering Sessions and continued quarterly partnering check-ins
- Asset Management Project Closure Workbook for each project and corresponding documentation and support

Assumptions

IEUA will provide the following roles to support this task and the Program:

- Advanced Water Treatment Program Manager
- Senior Engineer
- Associate Engineers (2)
- Program Administrative Assistant

Task 2 - Program Controls

The Jacobs team will maintain a Program Controls System to deliver the Program, including cash flow projections, development and updates of a master schedule, budgets and expenditures, risk management, change management and a document management system. Regular project and program reviews will be conducted to review schedule, budget, cost, forecasting, resources and risks/opportunities. The following will be the components of this task:

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- **Controls Management**: Jacobs will coordinate with the project managers (PMs), eventual construction managers (CMs) to update, manage, and report schedule, budget and risk changes and requests to understand the impact to the Program.
- **Program Schedule:** Schedule management will include assessment and management to inform input on constraints, considerations, and forecasting. This will include the critical path schedule analysis, float analysis, resource leveling, cash flow and alternatives analysis.
- **Cost Reviews and Cost Estimating:** The objective of this task is to validate costs and to provide cost estimating as part of the early design phases and throughout the program. The Jacobs Team will prepare independent cost estimates for projects at various stages of design, as needed. The Jacobs team will review project budgets to determine budgeting needs for all Program and project delivery elements. Cost estimates will be prepared using typical soft costs from similar IEUA projects and Jacobs' Parametric Cost Estimating System. This information will feed into the cost-loaded master schedule. The Jacobs team will also evaluate allocated contingencies for each project. The existing Operating Cost model will be updated at major design deliverables to be consistent with PDB estimates and scope of facilities. The PDB's cost models will be reviewed and commented on at BODR, 30%, and 60% design levels and the GMP cost will be reviewed.
- **Value Engineering:** Jacobs will provide resources to review design packages for all projects and provide value engineering ideas and review cost estimates associated with VE ideas.
- **Resource Management**: Based on cost-loaded resource-loaded schedule, coordinate with O&M, Conveyance, Facilities, GWR staff to develop a clear staffing plan to support the new CBP facilities. Leveraging the cost-loaded schedule and comparable IEUA projects, Jacobs will identify scope and timing of required staff to support the construction, commissioning, and start-up phases of the individual projects under the Program. Specifically, Jacobs will provide recommendations on timing to onboard O&M staff, train, and confirm certification requirements to be prepared for operating the new AWPF.
- **Finance and Funding Management**: The objective is to support IEUA efforts in identifying, tracking and proactively managing funding applications and deadlines. Jacobs will support IEUA in tracking compliance with the grants and loans provisions during different phases of the projects and providing quarterly grants and loans progress update to the State and the lenders, in the specific format required.
- **Tailored Analytics and Comparative Techniques (TACT) Model:** Jacobs will develop the TACT model, which will include IEUA's overall CIP for real-time, visual, strategic decision making regarding CBP project implementation. The TACT model supports cost clarity with respect to project and program costs and affordability, timing of funding requirements and financial planning. The TACT model will be used to evaluate the cost-benefits of project sequencing options; demonstrate the feasibility of a compressed or extended program delivery timeline; calculate revenue shortfalls and impacts; manage risk and change management and provide support for bonds, grants, and low-interest loan programs. The TACT model will engage IEUA's finance department, and other interested IEUA groups so that appropriate criteria are modelled and aligned to ongoing rate study efforts.
- **Risk and Opportunity Management**: Jacobs will support continuous identification, analysis and proactive management and resolution of risk and opportunities. Jacobs will prepare Monte Carlo simulations on agreed upon risks to better quantify risk profile for the overall program. Jacobs will support consistent risk management across all projects under the Program. When needed, review estimates provided by the PDB to monetize the on-going risk items.
- **Performance Portal**: Develop and maintain a performance portal monthly that provides access to the program schedule, the individual project schedules, and cost budgets and monthly expenditures for each project and program.

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- **Change Management**: The benefits include establishing clear protocols, lines of authority and a system to evaluate change and how it may impact schedule, budget, and perception of the overall program. Maintain a change log of all requested changes on program and decisions on each request. Review each project decision log (maintained by others) to confirm the appropriate level of documentation of IEUA decisions. Prepare and maintain a decision log and change log for the overall Program.

Activities

The task includes:

- Monthly hybrid meetings to provide update on program progress, controls, and information needs.
- Update P6 on a monthly basis, provide reports, establish requirements for procurement, designers, and contractors' schedule requirements.
- Update overall cash flow projections and Program budget based on combination of all project estimates.
- Develop cost estimates for pilot well and update budgetary estimates for the new AR wells based on land improvements required.
- Evaluate Progressive Design Build (PDB) team's Early Work Packages (EWPs) and provide comments for IEUA's consideration.
- Support IEUA's funding applications with specific cash flow projections and schedule updates.
- Update Risk Register monthly and meet with project teams to status mitigation strategies. Establish Program contingencies based on risk model.
- Maintain Program change log, evaluate impacts of change.
- Maintain Program decision log.

Resources

The following roles will be provided under this task.

- ***Program Controls Lead (0.25 FTE):*** Manages all program controls activities and reporting.
- ***Scheduler (0.25 FTE):*** Manages critical path schedule for Program implementation. Works with project managers on schedule performance tracking. Reviews all designer and contractor schedules and provides comments.
- ***Cost Estimator - Cost (0.125 FTE)***: Manages costs related to Program implementation. Works with project managers on cost performance tracking and projections. Support IEUA in reviewing all open book cost estimates by the PDBs. The Cost Controller role will be to incorporate costs and provide cash flow projections to the Program as a whole and review cost estimates of individual projects (prepared by others).
- ***TACT Model Lead*** (**0.125 FTE**): Leads and manages the TACT model and team to develop, iterate, and inform strategies in cash flow.
- **Portal Development Lead (0.1 FTE):** Prepares the performance portal that captures the performance on schedule, budget, and scope as the program develops.
- ***Risk/Change Manager Advisor (0.16 FTE):*** Conducts risk workshops, maintains Program risk register, confirms that Project Managers are maintaining project risk registers, and communicates risk and works with Project Managers to address risk in contracts. Updates risk register monthly to reflect current projects and Program activities.

Jacobs will engage **KRD Management Consulting** to support this task.

Deliverables

- Coordination Meetings
- Monthly reports that provide a status update on all programmatic activities. Reports will

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include budget status at the programmatic level and for each project. Any significant variations from planned earned value (as exposed by the SPI and CPI parameters) will be reported, and recommendations for recovery will be identified. Reports will include a summary of the risk mitigation efforts, recommended adjustments to project budgets, or contingencies.

- Updates of the Program Master schedule and costs quarterly to track Program progress.
- Updated monthly Risk Register
- Decision Log, Change Log, Change Request Form saved on IEUA Teams
- Feedback on Open book Cost Estimate Reviews

Assumptions

- The Jacobs team assumes that P6 scheduling software will be used.
- Jacobs will use their Parametric Cost Estimating Software to develop detailed cost estimates, when requested.
- The need for change is documented as early as possible; and the change recognizes WBS, scope, cost and schedule alignment for all affected Program areas and projects and will follow appropriate authorization protocols.
- Individual Project Managers will work directly with designers and contractors to develop and update project-specific risk registers.

Task 3 – Engineering and Project Management

The Task 3 scope of work is organized by each of the PUT projects/facilities. The following will be the components of this task:

- **Task 3.1 - Advanced Water Purification Facility (AWPF)**: EN25070.00 - This task will include project management and leadership, technical review, support, and implementation of full scale AWPF. The focus for the next year will be the review of the PDB's detailed design development.
- **Task 3.2 – City of Rialto Supplemental RW Supply**: EN25022.01 This task will include project management and leadership, technical review, support, and development of all conveyance and pump station related project. This task will focus on the City of Rialto Recycled Water Supplemental Supply project implementation and detailed design development over the next 2 years.
- **Task 3.3 - Wells and Hydrogeology**: EN25022.02 This task will include project management and leadership, technical review, support, and development of all AR well and hydrogeology-related projects. This includes design and engineering services during construction of the pilot well, the technical components of the aquifer recovery RFP for design consultants, and the overall modeling to support the regulatory compliance of an IPR project.
- **Task 3.4 - Purified Water Conveyance:** EN25022.03 This task will include project management and leadership, technical review, support, and development of the scope and initial alignment to convey purified water to the anticipated new aquifer replenishing facilities to procure a design consultant for preliminary design report and detailed design of this project.
- **Task 3.5- Advanced Water Purification Demonstration Facility (AWPDF)**: EN25070.01 This will include the project management, leadership, technical review, and implementation of the AWPDF, test plan, coordination with the PDB on any design changes, engineering services during construction, and operational support during start-up and commissioning.
- **Task 3.6 – JCSD/WRCRWA RW Early Engineering:** EN25022.04 This task will include technical review, support, and feasibility analysis. Jacobs will support with the preparation of scope of work to bring on a design Engineer should the project move forward. However, it is

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anticipated that this project will be managed under IEUA CIP outside of the CBP program. This task will also include supporting water quality sampling program in IEUA's system to confirm feasibility of adding this additional source.

- **Task 3.7 – Extraction Facilities:** This task is to support and provide oversight and technical review of the existing or new extraction facilities and how they will impact the Title 22 Engineering Report for the IPR project. It does not provide the same level of Project Management day-to-day support that the other subtasks provide, because the Partnering Agencies will be responsible for implementation.

For each project, Primary Project Management responsibilities during the next year of the Program are detailed below:

- Scope, budget, schedule management and reporting
  - Review, manage and monitor design-builder or designer scope of work; monitor and track progress against scope of work and report progress monthly
  - Review, manage and monitor design-builder or designer budget; monitor and track project budgets and costs using Program tools; status project-level earned value progress and prepare EACs monthly; coordinate and facilitate value engineering reviews if needed
  - Develop and coordinate project level schedule; review, manage and monitor design-builder schedule; report status against schedule and provide monthly progress report
  - Coordinate with Program Controls to ensure the latest project information is reported monthly
- Risk management
  - Identify, develop, and maintain project level risks, definitions and assessments
  - Develop risk mitigation strategies
  - Coordinate with Risk Manager to provide risk updates to PMT
- Change management
  - Oversight and communication of project Decision Log
  - Negotiate and process consultant and contractor amendment requests; preparation of Change Request Form (CRF)
  - Control Scope by identifying and managing changes during design
  - Support development of materials for and presentation of CRFs to PMT
- Procurement, task order and contract management
  - Review of design-builder or designer proposed scope and fee
  - Administer and manage design-builder or designer (professional services) agreement
  - Preparation of contract amendments and change orders
  - Manage and approve design-builder invoices/payments
  - Resolution of design-builder contract issues/disputes
- Team leadership and management
  - Coordinate project involvement of Technical Advisors as appropriate
  - Coordinate and oversee design-builder or designer or other third parties during all phases
  - Inform PMT of progress and issues
  - Coordinate with other projects as needed
- Quality assurance
  - Verify design-builder implements quality control process
  - Confirm that designer builder has addressed review comments in subsequent deliverables

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  - Coordinate and facilitate constructability and O&M review workshops
  - Coordinate input/reviews by Program Technical Advisors of all engineering deliverables.
  - Review and verify that design-builder deliverables meet scope and contract requirements
  - Coordinate and facilitate deep dive reviews
- Coordination and management of interested parties engagement
  - Coordinate and facilitate IEUA Staff/O&M review workshops/meetings
  - Coordinate and facilitate engagement with utility companies
  - Coordinate and facilitate engagement with IEUA Groups
  - Coordinate project-related public outreach activities with IEUA
- Coordination and management of communications and meetings
  - Coordinate and facilitate regular design-build coordination/project status meetings
  - Prepare and distribute meeting notes for managed meetings
  - Inform project team of Program activities and decisions
  - Coordinate and facilitate responses to information requests from all parties including public
  - Participate in regular Project Manager/Engineering Delivery review meetings
  - Participate in Phase 1 PDB alternatives analysis and design development workshops
- Document and records management
  - Maintain project-level document management on CIPO
  - Design-builder deliverable management – Quality assurance, distribution and storage on CIPO

Specific Roles and Responsibilities anticipated for design services and start-up specific tasks:

Task 3.3 - Wells and Hydrogeology

The subtasks identified for the pilot well construction and testing are as follows:

Subtask 3.3A – Design of Pilot Well

Jacobs will complete the design of the pilot well based on information gathered from the drilling of the nearby monitoring well.

Subtask 3.3B –Monitoring Well As-Builts

Jacobs will prepare As-Builts for this project from the red-lines made on the Conformed Plan Set by the driller.

Subtask 3.3C – Engineering Services During Construction for Pilot/Monitoring Wells

Jacobs will provide the following support during construction of the monitoring and pilot wells:

- Shop drawing submittal review
- Respond to requests for information (RFIs)
- Issue engineering clarifications (as required)
- Support the coordination with IEUA O&M and facilities.
- On-site inspection services and construction management provided in Task 5 – Construction Services.

Subtask 3.3D – Start-up and Commissioning

Jacobs will develop a test plan and sampling plan for the water quality of the monitoring well and the drilling efforts for both the monitoring and pilot wells. Jacobs will support drilling efforts to obtain the necessary information to inform design and share that with the design Consultants for the other 8 wells.

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Task 3.5 - Advanced Water Purification Demonstration Facilities

The subtasks identified for the AWP Demonstration Testing are as follows:

Subtask 3.5A – AWPDF As-Builts

Jacobs will prepare the As-Builts for this project from the red-lines made on the Conformed Plan Set by the contractor. The design drawings will be modified by adding the field markups to prepare the ”As-Built” drawings. Field markups, or redlines, will be provided by the Contractor. Deliverable will be shared to CIPO and Teams and include the As-Builts drawings in CAD and PDF format.

No field verification or field measurements are assumed to be required by Jacobs to complete the record drawings, and it is assumed that all field markups will be provided by the Contractor. It is assumed the Contractor will provide consolidated and deconflicted field markups in the form of “red lines” for incorporation into the record drawings set.

Subtask 3.5B – Services during AWPDF Construction

Jacobs will provide the following support during construction of the AWPDF by the PDB:

- Shop drawing submittal review
- Respond to requests for information (RFIs)
- Issue engineering clarifications (as required)
- On-site inspection services and construction management provided in Task 5 – Construction Services.

Subtask 3.5C – Demonstration Start up and Commissioning Support

To kick-off the demo testing operations support, Jacobs will prepare for and attend one Demonstration Testing Chartering Session prior to the beginning of operations. The goals of the Demo Testing Chartering Session will be to align IEUA, the PDB, and Jacobs’ roles and expectations throughout the demonstration start-up, commissioning, and operation.

The Jacobs team will provide demonstration operational guidance, support, and review the following documents with support from the PDB team and equipment suppliers:

- Demonstration commissioning plan, which will address the following:
    - Equipment Installation and Demo Plant Setup
    - Confirm Operations and Calibrate Equipment
    - Establish Operating Procedures
    - Initial Start-up and Commissioning Operating Period
- Review PDB provided O&M manuals, developed from the equipment suppliers and support development of standard operating procedure (SOP) documents for key demo testing tasks.
- Finalize the Demonstration Testing Plan based on NWRI Independent Advisory Panel and PDB input on timing of tests and approach to maximize recovery.
- Prepare a clear Operations Plan for ongoing operations of the Demonstration Facility, with clear daily rounds, trouble-shooting, and data collection needs.
- On-site support by Trussell process lead during start-up and commissioning and early testing, and on-going trouble-shooting and data analysis and trending for the first year, and as needed through the contracted period.

Assumptions: For testing, IEUA will procure necessary laboratory equipment for set-up of a demo laboratory space to support testing. IEUA shall retain ownership of all laboratory equipment purchased for the demo testing. IEUA will also obtain chemicals and other consumable items to support the operation of the demo plant. IEUA will procure items necessary for any equipment that requires replacement during testing. IEUA will be responsible for all laboratory tests, including

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tested required to be performed by outside laboratories. IEUA will be responsible for all power and disposal costs. The AWPF PDB will be responsible for procuring all demo testing equipment, interconnecting the demo to the existing systems based on the final design documents. Following commissioning, demonstration operations will be led by IEUA, with support from Jacobs. Although collaboratively developed between Contractor, Equipment suppliers, and Jacobs; Jacobs will be responsible to communicate and enforce timing expectations for all documents development, draft and final submissions: SOP's, spare part lists, lab support plan, alarm functionality, Preventative Maintenance (PMs), O&M Manuals, Start-up and Commissioning Plans, and Demonstration Test plan. Training will be provided to IEUA Operations prior to turning over facility.

Resources

The following roles will be provided under this Task 3:
PMs:

- ***AWPF Project Manager (0.5 FTE)***
- ***AWPDF Project Manager (0.275FTE)***
- ***Conveyance Project Manager (0.5 FTE)***
- ***Aquifer Replenishing Facilities Project Manager (0.5 FTE)***
- ***WRCWRA/JCSD Project Manager (0.15 FTE)***
- ***Take Facilities (0.05 FTE)***

SMEs:

- ***AWPF SMEs and Discipline Design Leads (0.2 FTE)***
- ***AWPDF SMEs and Discipline Design Leads (0.2 FTE)***
- ***Conveyance SMEs and Discipline Design Leads (0.2 FTE)***
- ***Wells SMEs and Discipline Design Leads (0.2 FTE)***
- ***Aquifer Replenishing Optimization SME (0.2 FTE)***
- ***Start-up and Commissioning Support for Demonstration Facility (0.25 FTE)***

Jacobs will engage **Trussell Technologies, Scheevel Engineering, and Intera**, as needed, to support Task 3 delivery.

For **PDB Submittal Reviews**, Jacobs will engage additional Senior Design Engineers to provide review comments as needed; for estimating purposes, the following engineers are anticipated:
Paul Swaim (overall SME, UVAOP), Larry Schimmoller (overall AWPF), Mike Hwang (MF), Jim Lozier (RO), Ryan Campbell (chemical systems, process Mechanical), Gino Nguyen (civil),
Geoffrey Kirsten (architectural), Sterling Rose (structural), John Godak (building mechanical), Jim Landman (electrical), Brittany Moore (I&C), Ping Tian (geotechnical), Bill Fox (survey), Raheel Hussain (pump station design), Matt Franck (environmental compliance), Jordan Vazquez (conveyance, pipeline hydraulics).

Deliverables

- Provide timely review of all submittals by the PDB or Design consultant through CIPO.
- Provide additional technical review and memos to support and guide IEUA decision making.
- Management of design-builder or design consultant.
- Coordinate review of designer-build deliverables.
- Meet with design-builder at least weekly to review project progress.
- Provide information for monthly project performance and status updates to program controls, on a routine basis.

Assumptions

- Biweekly PM coordination meetings will be held virtually.

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- Monthly project progress reports will be provided using template provided.
- PMs will engage IEUA staff decisions on all fiscal decisions and will keep IEUA informed of all project progress, considerations, changes, and risks.
- CIPO is the preferred document management system by IEUA and will be used by each PM.
- SMEs will be engaged to provide consultation and support to the PMs, as needed.

Task 4 – Contract Delivery Support and Project Packaging

An important component of successful delivery will include supporting IEUA and proactively managing the contractual requirements and scope of the design and construction contractors as well as determining the appropriate delivery method for each project. The following will be the components of this task:

- Project Delivery Strategy and Management of Procurement: Scheduling and providing guidance on timing of procurement packages and approaches to streamline design, construction, and PDB delivery of packages.
- Review of GMPs and Amendment to PDB contract for Phase 2 work: Jacobs will support the CAP team in developing clear scope of work and negotiating the terms and requirements for the Phase 2 portion of the PDB contract.
- Support of Project Packaging: Each of the PMs will support the Program in identifying project specific requirements that legal counsel will need to incorporate into the contract language. We will support scoping of each project and the development of RFQ and RFP documents.
- ROW/Real Estate: The right of way requirements and schedule implication will be managed proactively. Epic Land Solutions will support identifying land use needs for wells and conveyance and anticipate opportunities and risks.

Activities

The task includes:

- Providing guidance on scheduling procurement packages and providing collaborative delivery best practices.
- Preparing project-specific contract documents (RFQs and/or RFPs) for consultants and contractors using approved IEUA developed standard documents.
- Reviewing contractor and consultant supplied RFQs/RFPs and assisting IEUA and legal counsel in making award recommendations.
- Review terms of the GMP and Phase 2 Contract for PDB contracts.
- Supporting land acquisition efforts and ROW needs.

Resources

The following roles will be provided under this task:

- ***Procurement Lead (0.05 FTE) –*** Responsible for working with PMs to consolidate scope requirements and incorporate into IEUA standard templates. Prepare draft and final and work with IEUA CAP to schedule and implement the procurement activities.
- ***Land Acquisition Lead (0.05 FTE)*** – Identify and manage easements, right of way, and land needs for the conveyance and well projects.
- ***Procurement SME (0.05 FTE)*** – Review overall procurement strategy and provide guidance to IEUA, as needed.

Jacobs will engage **Epic Land Solutions**, as needed to support Task 4.

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Deliverables

- Meetings with CAP and support of procurement reviews, interviews, and technical input.
- RFQ, RFP support

Assumptions

- Assumes developing clear scope of works, objectives, and timing.
- Assumes IEUA CAP team and IEUA engineer will process PR requests and OE will provide technical and strategy support.
- 3rd party legal counsel will be contracted directly with IEUA, as needed.

Task 5 –Construction Management and Operations Liaison

For the purposes of the 2026-2028 scope, it is assumed that field activities will be required to observe construction of the Demonstration Facility, pilot well, and initial field work for the early work packages (EWP)s of the PDB.

Inspection resources will be provided as well as early engagement of operations and maintenance.

- **Construction Management Services**: Jacobs will provide construction management services during the monitoring and pilot well implementation.
- **Inspection Services:** Jacobs will provide inspection services for AWPDF, monitoring well, and pilot well in the field and support daily logs in CIPO.
- **O&M Engagement and Support:** O&M reliability review of new assets. For consistency, develop O&M training and O&M Manual requirements for each new facility. The training and manuals will be the responsibility of the PDB or Contractor, but the requirements and expectations will be developed by OE. Apply IEUA maintenance planning process (under development) for new assets to identify preventive maintenance plans and recommended frequencies. Identify O&M resource needs based on guidelines from Engineering Design Standards. Increase in person support at AWPDF during start-up and commissioning to train O&M staff, troubleshoot issues, implement the Demonstration Test Plan, and fine tune the SOPs. Significant effort will be required to coordinate all the samples with the lab and support the team in Task 3.5C with in person coordination with O&M staff.

Resources:

The following roles will be provided under this task:

- ***Construction Manager (0.5 FTE):*** To participate in construction meetings and manage document reviews and approvals in CIPO for the Monitoring and Pilot Wells
- ***Construction Inspectors (1.0 FTE):*** To provide daily inspection reports and documentation on behalf of IEUA on field activities: Demonstration Facility, Pilot Well, Monitoring Well, potholing and boring
- ***O&M Liaison and Start-up and Commissioning Lead (1.5 FTE):*** To provide support and review of Contractor's tie-in plan and Commissioning plans.

Assumptions:

- Assumes full-time inspector for remaining AWPDF construction and start-up and commissioning, Monitoring Well and Pilot Well constructions, and early field investigations for Rialto conveyance and AWPF. This inspector will be shared amongst the projects and check on all projects, as needed.
- Detailed HSE plan will be prepared, reviewed, and submitted to IEUA prior to any staff in the field for each specific construction activity involving Jacobs staff.
- Other contractors and subconsultants will be responsible for their own HSE.
- All field activities will follow labor compliance requirements.

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- In person O&M support for start-up, commissioning, and implementing the test plan for the AWPDF will support and liaison with the efforts defined in Task 3.5C engineers effort.
- Inspector trailer and work space will be provided by IEUA (or Contractor), and required access to CIPO will be granted.
- Field Truck expenses and other specialty equipment for inspection will be covered by IEUA at direct cost basis.

Task 6 –Environmental - Regulatory

The following will be the components of the Environmental - Regulatory task:

- 1211 Petition: Jacobs will support IEUA in the process of responding to questions from the Wastewater Discharge Petition and monitoring IEUA and City of Rialto's petitions.
- Permitting Matrix: The Jacobs team will update and maintain the permitting matrix, as necessary. The matrix will include the required permits for all program elements, including agency contact information, required information and understanding of prerequisites, estimated permit acquisition timeframes, and anticipated permit application and any ongoing fees.
- Permit Applications: The Jacobs team will support IEUA in coordinating with interested parties and permitting agencies activities and tasks necessary to secure permits and approvals for the future construction and operation of CBP facilities. All construction related permits will be the responsibility of the Contractors.
- Environmental Liaison: It is understood that IEUA will continue to have Tom Dodson and Associates prepare documentation for compliance with the California Environmental Quality Act (CEQA). Jacobs will develop a process with IEUA to be able to collaboratively work with Tom Dodson and Associates so that there is a comprehensive CEQA compliance and regulatory strategy that supports funding, delivery, interested parties engagement and permitting activities. This effort will culminate in a tracking tool (excel spreadsheet) that tracks compliance and implementation of the contractors with MMRP.
- DDW/RWQCB Regulatory Engagement: The Jacobs team will engage regulators on a quarterly basis to establish trust and guidance throughout implementation of the PUT projects. This task includes preparation of required submittals and coordination with State Water Resources Control Board's (SWRCB) Division of Drinking Water (DDW) and the Santa Ana Regional Water Quality Control Board (RWQCB) in order to obtain regulatory concept approvals for the discharge of advanced treated water.
- Title 22 Draft Engineering Report: the Jacobs team will develop a draft Engineering Report with the help of the technical information from the AWPF PDB, and the input from the quarterly meetings. This engineering report will define the project scope, boundaries, and regulatory compliance approaches. It will include groundwater modeling and will identify major equipment manufacturers for the main treatment processes.
- Los Angeles County Sanitation District (LACSD) Coordination: The Jacobs team will continue to support IEUA in bimonthly meetings with LACSD to discuss brine flows and water quality considerations.
- Enhanced Source Control: The Jacobs team will work with IEUA and the City of Rialto to develop an Enhanced Source Control approach for both entities to meet the requirements established within Section 60320.206 of Title 22 of the California Code of Regulations.

Resources:

The following roles will be provided under this task:

- ***Regulatory Lead (0.2 FTE)*** – To coordinate all activities and confirm progress of all environmental and regulatory components of the program.

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- ***Environmental Liaison (0.1 FTE)*** – Provide the schedule roadmap between the EIR mitigation measures and each individual project to help interpret the environmental efforts by Tom Dodson & associates for implementation.
- ***Enhanced Source Control Support (0.06 FTE)*** – Support the review and enhancement of the source control program at IEUA and City of Rialto to meet the requirements for Indirect Potable Reuse.
- ***Section 1211 Petition (0.04 FTE)*** - Continue to advance the IEUA Section 1211 change petition, including resolution of agency comments.
- ***Title 22 Engineering Report Lead (0*.1 FTE**) – Lead the efforts to pull together the draft Engineering Report.

Jacobs will engage **Trussell Technologies** (T22 draft report) and Intera (modeling) as needed to support the Title 22 Engineering Report development. Jacobs will engage Scheevel Engineering to support the resolution of Draft 1211 petition comments.

Deliverables

- Update permitting matrix
- Preparation and submittal of permit applications with supporting documentation as indicated in the permit matrix for the CBP facilities, which are required. Requirements of permit applications will be identified for subsequent years with a clear implementation schedule and responsibilities.
- Prepare meeting materials and conduct quarterly workshops with regulators (DDW, RWQCB)
- Conduct coordination meetings and provide progress on regulatory components

Assumptions

- Jacobs will be responsible for tracking and implementing the permitting matrix, and for preparing permit applications as agreed upon with IEUA and within available task budgets. For those non-anticipated permits, Jacobs will provide a strategy and schedule to complete.
- Assumes IEUA will review and provide guidance on permit applications. IEUA will be responsible for all permit fees.
- Jacobs team will support IEUA in responding to comments and protests on the 1211 permit application.

Task 7 – Public Outreach

The following will be the components of this task:

- IEUA Support: Jacobs will provide support, scoping, and coordination for interested parties engagement efforts through the life of program, as needed and directed by External Affairs (EA).
- Messaging: Communications support includes key message development, graphics, branding, public education materials, social media, and raising awareness of CBP benefits by using a demonstration project to help the public understand and support the program. The outreach consultants will also serve as the in-person public engagement team, delivering messaging directly to the community at events, meetings, and interested parties presentations.

Activities

The task includes:

- Monitor and update CBP Website, CBP Informational Portal, and CBP Storymap.
- Support development of social media collateral for EA staff to post on social media
- Review and provide recommendations to existing Outreach Plan, refined list of interested parties (Internal/External)
- Lead coordination and outreach efforts to secure letters of support and testimonials for the program.

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- Support development of general and specific strategy for community and interested parties engagement in coordination with IEUA.
- Develop presentation materials for a roadshow and participate in town halls, events, meetings, university outreach, and engaging workshops to communicate to the region on the CBP.
- Serve as the primary, on-the-ground extension of IEUA at public events, community meetings, ribbon cuttings, roadshow efforts, and other engagements where CBP may benefit from increased public awareness and support. This includes actively coordinating with interested parties and the public, managing event planning and logistics, and presenting key messaging, under the direction and oversight of EA staff.
- Design and procure educational experience for AWPDF – including design, signage, and equipment necessary to host members of the public, key interested parties, and school age youth tours.
- Document project milestones through photo, video and content collection for use in outreach and reporting efforts.
- Support public outreach efforts for the City of Rialto Supplemental Recycled Water Supply project and communications with homeowners and local businesses.

Resources

The following roles will be provided under this task:

- ***Public Outreach Lead (0.5 FTE)*** – To coordinate all activities and confirm progress of all interested parties engagement and public outreach activities.

Jacobs will engage **Arellano Associates and Bodewell Group,** as needed to further support efforts.

Deliverables

- Organize and manage weekly check-in meetings with EA to discuss upcoming events, deliverables, and project updates.
- Develop and distribute a "project update" bulletin to be emailed quarterly
- Update templates for fact sheets, brochures, banners, and other collateral materials, as requested.
- Provide recommendations for updates to project web pages and manage CBP website, portal, and storymap.
- Develop and maintain internal and external presentation materials, where appropriate.
- Lead coordination and outreach to continue to secure letters of support and testimonials for the program.
- Develop and maintain fact sheet and frequently asked questions materials.
- Design and deliver educational materials, interpretive signage, and interactive displays for the AWPDF, supporting community tours and field trips.
- Develop additional outreach materials, tools, or digital content as directed by EA staff to support the programs evolving needs.
- Lead and support roadshow implementation to local townhalls, labor unions, higher education, healthcare organizations, and NGOs.

Assumptions

- IEUA will purchase printing services, mailing list, mailings, advertising and rental space
- Identify gaps and provide knowledgeable specialists to support efforts.
- EA staff will lead all public outreach and interested parties engagement, Jacobs team will coordinate the outreach activities, deliverables, and augment resources, as needed and within allowable budgets. At times, outreach consultants will serve as the primary, on-the-ground extension of IEUA staff when requested, under the direction of EA.
- Coordination meetings will be held weekly or as needed, depending on the phase and level of project activity.

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Task 8–IEUA Support and Requested Engineering Studies and BCEs

The following will be the components of this task:

- Water Quality Compliance Scenario Planning: Jacobs team will continue to support the scenario planning effort led by IEUA Water Resources Planning Group.
- IEUA Support of NWRI panel: Jacobs will provide additional engineering support as requested by IEUA to gather technical documents and summarize for NWRI review and comment. We will support the presentation of the documents, participation in meetings, and response to NWRI panel comments.
- BCE Evaluations: Jacobs will support additional business case evaluations (BCEs) requested by IEUA to support decision making.

Resources

The following roles will be provided under this task:

- ***PMs and SMEs*** – (0.2 FTE) – assumed number of hours to be shared by team members and tracked and reported as a separate task.

Jacobs will engage all our Team partners to support this task, as needed.

Fee

The total fee is based on the FTEs indicated in the SOW and summarized in Attachment A. We provide the estimate as a basis of how we developed the total not to exceed value, however our team will continue to collaborate with IEUA to prioritize and support program delivery.

Schedule

Jacobs will work with IEUA to meet all program schedule expectations. The period of performance extends Jacobs schedule from November 2026 to November 2028.

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IEUA Chino Basin Program - Jacobs Team

2026-2028 PM/OE Summary Table	
Task 1. Program Implementation Management	$ 1,966,356
Task 2. Program Controls	$ 1,348,700
Task 3. Engineering and Project Management	$ 5,360,472
Task 4. Contract Support, Project Packaging, Land Acquisition	$ 262,670
Task 5. Construction Management and Inspection Services	$ 1,424,611
Task 6. Environmental Studies and Regulatory Compliance	$ 650,985
Task 7. Public Outreach and Stakeholder Engagement	$ 792,308
Task 8. Additional IEUA Support	$ 181,036
Subtotal	$ 11,987,137
Estimated Remaining Value of Existing Contract as of 11/4/26:	$ (1,000,000)
Total 2026-2028 Amendment	$ 10,987,137

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IEUA CBP - Recycled Water Program Expansion

2026-2028- PM/OE Detailed Cost Estimate

	Rich Nagel	Renee Groskreutz	Jenifer Call	Tyler Kirkendall	Tia Balala	Eric Habermeyer	Mostafa Masoud	John DeWolf	Tat Au	Michael Manichich	Vlad Vlasov	Melanie Helmer	Tyler Kirkendall	Quentin Clark	Rich Sturn	Zita Yu	Monica Morales	Paul Swaim	Qinghan Wang	BJ Liechler	Mike Hwang	Design Discipline SME	Michelle Green	Alex Waite	Jenn Mendoza	Jimmy Nguyen	Josh Rosenberg	Alex Waite	Ruoren Yu	Matt Franck	George Valenzuela	Austa Parker	Natalie Monroe	Felicia Rubright	Katie Miller	Technical SMEs	Staff Professional Support	Technicians	KRD Consulting	Trussell	Schaenel Engineering	C-below	INTERRA	Epic Land Solutions	Arrellano	Public Education	Bodewell	Rich Consulting	Jacobs Labor Hours	Jacobs Labor Cost	Jacobs Expenses	Sub Cost	Markup on all Sub Costs	Total Cost
2026 Billing Rate	$328	$289	$170	$241	$142	$238	$274	$234	$238	$306	$241	$306	$241	$289	$289	$306	$198	$306	$234	$274	$274	$241	$306	$241	$208	$218	$218	$241	$241	$306	$170	$274	$191	$147	$98	$274	$208	$137	Subconsultants														
2027 Billing Rate	$338	$298	$176	$249	$147	$225	$283	$288	$226	$316	$249	$316	$249	$298	$298	$316	$197	$316	$288	$283	$283	$249	$316	$249	$215	$225	$225	$249	$249	$316	$176	$283	$197	$152	$102	$283	$215	$142																
2028 Billing Rate	$349	$307	$182	$257	$152	$232	$292	$298	$232	$326	$257	$326	$257	$307	$307	$326	$203	$326	$298	$292	$292	$257	$326	$257	$222	$232	$232	$257	$257	$326	$182	$292	$203	$157	$106	$292	$222	$147																
	Task 1-Program Administration						Task 2-Pgm Controls					Task 3-Engineering & Project Management											Task 4-Procurement			Task 5 - CM				Task 6-Compliance			Task 7-Public Outreach			Task 8-Additional Support																				
Task 1. Program Implementation Management																																																							
1.1 Program Management	160	3400	204	800	2000																																																		
1.2 Chartering and Partnering		50					50				50	50	50	50	50	50											50		50				50															75,000	550	$ 155,053	$ -	$ 75,000	$ 3,750	$ 233,803
1.3 Quality Management		75																																200	200															475	$ 73,993	$ -	$ -	$ -	$ 73,993
1.4 Asset Management						200																																														200	$ 45,468	$ -	$ -	$ -	$ 45,468
Task 01 Subtotal	**160**	**3525**	**204**	**800**	**2000**	**200**	**50**	**0**	**0**	**0**	**50**	**50**	**50**	**50**	**50**	**50**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**50**	**0**	**50**	**0**	**0**	**50**	**200**	**200**	**0**	**0**	**0**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 75,000	**7789**	**$ 1,887,606**	$ -	**$ 75,000**	**$ 3,750**	**$ 1,966,356**
Task 2. Program Controls																																																						
2.1 Controls Management							1950																																												1950	$ 557,712	$ -	$ -	$ -	$ 557,712
2.2 Program Schedule																																							170,000												0	$ -	$ -	$ 170,000	$ 8,500	$ 178,500
2.3 Cost Validation and Cost Estimating								500																																										500	$ 143,003	$ -	$ -	$ -	$ 143,003
2.4 TACT Model - Finance and Funding										500																																									500	$ 159,670	$ -	$ -	$ -	$ 159,670
2.5 Risk and Opportunity Management											580																																								580	$ 145,970	$ -	$ -	$ -	$ 145,970
2.6 Performance Portal									400																																										400	$ 90,935	$ -	$ -	$ -	$ 90,935
2.7 Change Management		75		200																																															275	$ 72,910	$ -	$ -	$ -	$ 72,910
Task 02 Subtotal	**0**	**75**	**0**	**200**	**0**	**0**	**1950**	**500**	**400**	**500**	**580**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	$ 170,000	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**4205**	**$ 1,170,200**	$ -	**$ 170,000**	**$ 8,500**	**$ 1,348,700**
Task 3. Engineering and Project Management																																																						
3.1 AWPF												1950	800				400	80		50	400																				300,000											3680	$ 1,089,636	$ -	$ 300,000	$ 15,000	$ 1,404,636
3.2 Conveyance and Pump Station														1950				120																							480,000											2070	$ 621,282	$ -	$ 480,000	$ 24,000	$ 1,125,282
3.3 Wells and Hydrology															1950																												80,000	120,000								1950	$ 586,962	$ -	$ 200,000	$ 10,000	$ 796,962
3.3A Design of Pilot Well																				300		350																														650	$ 173,887		$ -	$ -	$ 173,887
3.3C SDC - Monitoring Well																						150																100		200												450	$ 95,085		$ -	$ -	$ 95,085
3.4 Purified Water Conveyance															800																																					800	$ 240,805		$ -	$ -	$ 240,805
3.5 Demonstration Facility																1000																																				1000	$ 319,340	$ -	$ -	$ -	$ 319,340
3.5A 100% Drawings																						300																150		400												850	$ 175,871	$ -	$ -	$ -	$ 175,871
3.5B SDC - AWPDF																					100	150																			100,000											250	$ 66,351	$ -	$ 100,000	$ 5,000	$ 171,351
3.5C AWPDF Operations Support																					100																			675,000											100	$ 28,601	$ -	$ 675,000	$ 33,750	$ 737,351
3.6 JCSD/WRCRWA RW Early Engineering																	300																																			300	$ 59,701	$ -	$ -	$ -	$ 59,701
3.7 Take Facilities															200																																			200	$ 60,201	$ -	$ -	$ -	$ 60,201
Task 03 Subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1950**	**800**	**2750**	**2150**	**1000**	**300**	**400**	**200**	**300**	**250**	**1350**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**250**	**0**	**600**	$ -	**$ 1,075,000**	**$ 480,000**	**$ 80,000**	**$ 120,000**	$ -	$ -	$ -	$ -	$ -	$ -	**12300**	**$ 3,517,722**	$ -	**$ 1,755,000**	**$ 87,750**	**$ 5,360,472**
Task 4. Contract Support, Project Packaging, Land Acquisition																																																						
4.1 Project Delivery Strategy																							200																													200	$ 63,868	$ -	$ -	$ -	$ 63,868
4.2 Project Packaging																								200																													200	$ 50,334	$ -	$ -	$ -	$ 50,334
4.3 ROW/Real Estate																									200																												200	$ 43,468	$ -	$ 100,000	$ 5,000	$ 148,468
Task 04 Subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**200**	**200**	**200**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 100,000	$ -	$ -	$ -	**600**	**$ 157,670**	$ -	**$ 100,000**	**$ 5,000**	**$ 262,670**
Task 5. Construction Management and Inspection Services																																																					
5.1 Construction Administration																																																					0	$ -	$ -	$ -	$ -	$ -
L5.2G Prevailing Wage Inspection - AWPDF																										0	600																										600	$ 136,403	$ 30,000	$ -	$ -	$ 166,403
L5.26R Prevailing Wage Inspection - Rialto																										600	0																										600	$ 136,403	$ 30,000	$ -	$ -	$ 166,403
L5.27W Prevailing Wage Inspection - Wells																										2200	600																										2800	$ 636,546	$ 30,000	$ -	$ -	$ 666,546
5.3 O&M Engagement and Support																										0	0	400																										400	$ 100,669	$ -	$ -	$ -	$ 100,669
5.4 Field Start-up and Commissioning																												1250																										1250	$ 314,590	$ 10,000	$ -	$ -	$ 324,590
Task 05 Subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**2800**	**1200**	**1250**	**400**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**5650**	**$ 1,324,611**	**$ 100,000**	$ -	$ -	**$ 1,424,611**
Task 6. Environmental Studies and Regulatory Compliance																																																					
6.1 Permitting Matrix + Env. Liaison																														300	800																					1100	$ 238,205	$ -	$ -	$ -	$ 238,205
6.2 T22 Report																		40			40													40	40	40	20	20			250,000										240	$ 53,158	$ -	$ 250,000	$ 12,500	$ 315,658
6.3 1211 Application																															80																					80	$ 14,240	$ -	$ -	$ -	$ 14,240
6.4 Permit Application Support																															80																					80	$ 14,240	$ -	$ -	$ -	$ 14,240
6.5 Enhanced Source Control																																240																					240	$ 68,641	$ -	$ -	$ -	$ 68,641
Task 06 Subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**40**	**0**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**300**	**960**	**240**	**0**	**40**	**40**	**40**	**20**	**20**	$ -	**$ 250,000**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**1740**	**$ 388,485**	$ -	**$ 250,000**	**$ 12,500**	**$ 650,985**
Task 7. Public Outreach and Stakeholder Engagement																																																						
7.1 IEUA Public Outreach Support																																	1200															60,000		1200	$ 238,805	$ -	$ 60,000	$ 3,000	$ 301,805
7.2 Event, Meetings, Major Workshops																																	500														175,000			500	$ 99,502	$ -	$ 175,000	$ 8,750	$ 283,252
7.3 AWPDF Educational Support																																	250															150,000		250	$ 49,751	$ -	$ 150,000	$ 7,500	$ 207,251
Task 07 Subtotal	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**1950**	**0**	**0**	**0**	**0**	**0**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ 175,000	$ 150,000	$ 60,000	$ -	**1950**	**$ 388,058**	$ -	**$ 385,000**	**$ 19,250**	**$ 792,308**
Task 8. Additional IEUA Support - NWRI, BCE's, WQ																																																					
8.1 Water Quality Sampling Lead																												200																							200	$ 50,334	$ -	$ -	$ -	$ 50,334
8.2 NWRI Panel	20											20				20					40							80																								100	$ 29,676	$ -	$ -	$ -	$ 29,676
8.3 BCE Evaluations														150														80																								410	$ 101,025	$ -	$ -	$ -	$ 101,025
Task 08 Subtotal	**20**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**20**	**150**	**0**	**0**	**20**	**0**	**0**	**0**	**0**	**0**	**40**	**0**	**0**	**0**	**0**	**0**	**280**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**80**	**80**	**20**	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	$ -	**710**	**$ 181,036**	$ -	$ -	$ -	**$ 181,036**
PROGRAM TOTALS	**180**	**3600**	**204**	**1000**	**2000**	**200**	**2000**	**500**	**400**	**500**	**630**	**2020**	**1000**	**2800**	**2200**	**1070**	**300**	**440**	**200**	**300**	**290**	**1390**	**200**	**200**	**200**	**2800**	**1200**	**1580**	**400**	**350**	**960**	**240**	**2000**	**240**	**240**	**370**	**100**	**640**	**$ 170,000**	**$ 1,325,000**	**$ 480,000**	**$ 80,000**	**$ 120,000**	**$ 100,000**	**$ 175,000**	**$ 150,000**	**$ 60,000**	**$ 75,000**	**34,944**	**$ 9,015,387**	**$ 100,000**	**$ 2,735,000**	**$ 136,750**	**$ 11,987,137**