

CRESCENTA VALLEY WATER DISTRICT

2700 Foothill Boulevard
La Crescenta, California

Agenda for the
Regular Meeting of the Board of Directors
of the Crescenta Valley Water District
to be held on Tuesday, August 13, 2024, at 7:00 p.m.

Posted: Friday, August 9, 2024 at 5:00 p.m.

This meeting will be conducted in person at the address listed above. Members of the public may also participate virtually by using a touchtone phone. You may select any of the following phone numbers (there are more than one for increased reliability during this time of increased phone traffic)

(669) 900-6833

(346) 248-7799

(929) 205-6099

(253) 215-8782

(301) 715-8592

(312) 626-6799

Then, enter Access Code: 863 5793 2939

Those members of the public who are able to and would like to additionally participate through computer may access the Zoom audio & video conferencing tool available at the following link:

<https://us02web.zoom.us/j/86357932939>

If there is a disruption of service, this meeting will continue without remote participation. The remote participation option is provided as a convenience to the public and is not required.

Public comment may be made either by emailing comments ahead of the meeting or by speaking over the phone. Emailed comments will be sent to the Board of Directors prior to the meeting and posted on the District's website. Comments may be sent to customer service, at (818) 248-3925 or customerservice@cvwd.com by 3pm on August 13, 2024.

Any person may make a request for a disability-related modification or accommodation needed for that person to be able to participate in the public meeting by contacting the District by phone or in writing at the above email address. Requests must specify the nature of the disability and the type of accommodation requested. A telephone number or other contact information should be included so that District staff may discuss appropriate arrangements. Persons requesting a disability-related accommodation should make the request with adequate time before the meeting for the District to provide the requested accommodation.

Any written materials distributed to the Board in connection with this agenda will be made available at the same time for public inspection at the District office located at the above address and posted on the District's website.

Call to Order and Determination of Quorum

Pledge of Allegiance

Adoption of Agenda

Public Comments

At this time, the public shall have an opportunity to comment on any non-agenda item relevant to the subject matter jurisdiction of the Board. This opportunity is non-transferable, and speakers are limited to one three-minute (3) comment. Under the provisions of the Brown Act, the Board is prohibited from taking action on items not listed on the agenda, except under certain circumstances.

Foothill Municipal Water District Report

1. Report on activities at Foothill Municipal Water District.

Consent Calendar

1. Consideration and approval of the Minutes of the Adjourned Regular Board Meeting on July 23, 2024.

Action Calendar

The public shall have an opportunity to comment on any action item as each item is considered by the Board. This opportunity is non-transferable, and speakers are limited to one two-minute (2) comment.

1. **2024 Recycled Water Feasibility Study (Study)** - Consideration and motion to authorize the award of a contract to John Robinson Consulting, Inc. for \$377,520 (\$363,000 with a 4% contingency of \$14,520) to perform all work associated with the study.
2. **Project Partners Drafting Services** - Consideration and motion to authorize the General Manager to enter an agreement with Project Partners, Inc. to provide drafting services starting August 2024 at a cost not-to-exceed \$98,800.

Information Items

Written Communications to District/Board of Directors

General Manager's Report

Attorney Report

Reports of Committees

- Engineering Committee
- Finance Committee
- Employee Relations Committee
- Policy Committee
- Community Relations/Water Conservation Committee

- Emergency Planning Committee
- Technology Committee
- Ad Hoc Committee - PFAS

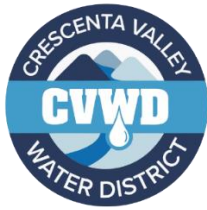
Directors' Oral Reports – Reports on issues, meetings, or activities attended by Directors.

Board Members' Request for Future Agenda Items

Closed Session

Adjournment

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CRESCENTA VALLEY WATER DISTRICT
ADJOURNED REGULAR MEETING, BOARD OF DIRECTORS
July 23, 2024

Pursuant to the order of the Board of Directors of the Crescenta Valley Water District made at the Adjourned Regular Meeting on June 25, 2024, an Adjourned Regular Meeting was held on July 23, 2024, at 7:00 p.m. at the District office at 2700 Foothill Blvd., La Crescenta, California and through audio and video conference. A call-in number was clearly noted on the meeting Agenda, posted in accordance with the Brown Act, with President Sharon Raghavachary presiding.

At roll call, the following Directors and staff members were present or online:

Directors:

James D. Bodnar
Kerry D. Erickson (absent)
Jeffery W. Johnson
Sharon S. Raghavachary
Jennifer T. Valdez

Attorney:

Reid Miller

General Manager:

James Lee

**Interim Director of Finance
and Administration:**

Arturo Montes

**Director of Engineering
and Operations:**

Carla Dillon

Staff Members:

Tessa Allmon, Customer Service Lead
Patrick Atwater, Regulatory & Public Affairs Manager
Kellen Boyce, System Operations Manager
Pam Leddy, Administrative Assistant
Adam Sutphin, Senior Management Analyst
Darlene Telles, Operations & Maintenance Manager

Guests:

Frank Colcord, Foothill Municipal Water District
Sanjay Gaur, Water Resources Economics, LLC

PLEDGE OF ALLEGIANCE

Ms. Dillon opened the meeting by leading the Directors and staff in reciting the Pledge of Allegiance.

ADOPTION OF AGENDA

It was moved by Director Bodnar, seconded by Director Johnson, and carried by a 4-0 vote that the Agenda for the Adjourned Regular Meeting of July 23, 2024, be adopted.

AYES: **Director Bodnar**
 Director Johnson
 Director Raghavachary
 Director Valdez

ABSENT: **Director Erickson**

NOES: **None**

PUBLIC COMMENTS – No public comments.

FOOTHILL MUNICIPAL WATER DISTRICT REPORT – No report

CONSENT CALENDAR

It was moved by Director Johnson, seconded by Director Valdez, and carried by a 4-0 vote to approve the Minutes of the Regular Board Meeting held on June 25, 2024, ratify the June 2024 Board Compensation, and to ratify the disbursements for May 2024 and June 2024 which consisted of:

Payment of demands against the Crescenta Valley Water District on or before May 2024, the same having been approved by the General Manager, and heretofore paid, are to be ratified and approved subject to audit, in the aggregate sum of Two-Million, Two-Hundred Eighty-Three Thousand, Eight-Hundred Forty-Eight Dollars and Thirty-Seven Cents (\$2,283,848.37), which is composed of the individual items set forth herein.

Payment of demands against the Crescenta Valley Water District on or before June 2024, the same having been approved by the General Manager, and heretofore paid, are to be ratified and approved subject to audit, in the aggregate sum of One-Million, Three-Hundred Fifty-Nine Thousand, Eighty-Seven Dollars and Eighty-Six Cents (\$1,359,087.86), which is composed of the individual items set forth herein.

AYES: **Director Bodnar**
 Director Johnson
 Director Raghavachary
 Director Valdez

ABSENT: **Director Erickson**

NOES: **None**

ACTION CALENDAR

Water and Wastewater Rate Study – Mr. Montes said that a water-based rate study and wastewater rate discussion was introduced at the Board Workshop on November 8, 2023 to revisit the District’s current “inclining tiers” rate structure. Mr. Montes stated the importance of complying with the State’s increasing and anticipated conservation mandates, and collecting sufficient revenues. Mr. Gaur of Water Resources Economics provided a Power Point presentation of “Water Budget-Based Rate Study & Wastewater Rate Study” highlighting the policy overview, rate study process, scope of services, schedule, and next steps. Mr. Gaur provided a proposal for Water Budget-Based Rate Study and Wastewater Rate Study. Director Bodnar emphasized the importance of relaying the rate study information to CVWD customers by providing multiple workshops on the budget-based rates.

Following discussion:

It was moved by Director Bodnar, seconded by Director Johnson, and carried by a 4-0 vote to authorize the General Manager to award a contract for the completion of a water budget-based rate study and wastewater rate study to Water Resources Economics (WRE) at a cost of \$112,460 and establish a contingency amount of \$11,246 (10% of contract) to cover the cost of unforeseen or additional work.

AYES: **Director Bodnar
Director Johnson
Director Raghavachary
Director Valdez**

ABSENT: **Director Erickson**

NOES: **None**

Rules and Regulations Updates – Mr. Montes shared that at the July 9, 2025 Finance Committee meeting, staff identified the following sections of the District’s Rules and Regulations that require updating. 1) Section 8.03: The Bill Assistance Program – update income tables to reflect current Federal guidelines, 2) Appendix E: Rates and Charges for Water Service – remove columns for FY 22 and 23 rates and include a column for FY 25 rates at 0% increase, 3) Appendix H: Rates and Charges for Sewer Services – remove columns for FY 22 and 23 rates and include column for FY 25 rates at 0% increase. Mr. Montes provided redlined versions of Appendix E, Appendix H, Section 8.03 of the Rules and Regulations, and the Bill Assistance Program form for review.

Following discussion:

It was moved by Director Johnson, seconded by Director Valdez, and carried by a 4-0 vote to adopt changes to the District’s Rules and Regulations Section 8.03 The Bill Assistance Program, Appendix E: Rates and Charges for Water Service, Appendix H: Rates and Charges for Sewer Service, and the Bill Assistance Program form.

AYES: **Director Bodnar**
 Director Johnson
 Director Raghavachary
 Director Valdez
ABSENT: **Director Erickson**

NOES: **None**

Adoption of FY 2024-25 Pay Schedules for CalPERS Compliance – Mr. Montes stated that the California Code of Regulation, Section 570.5 requires pay schedules to be approved and adopted by the Board of Directors on an annual basis. Mr. Montes presented the pay schedules which include the negotiated adjustment of three percent effective for the July 1, 2024 to June 30, 2025 fiscal year for the AFSCME and Management staff.

Following discussion:

It was moved by Director Bodnar, seconded by Director Johnson, and carried by a 4-0 vote to adopt the current pay schedule to include a three percent adjustment for fiscal year 2024-25.

AYES: **Director Bodnar**
 Director Johnson
 Director Raghavachary
 Director Valdez

ABSENT: **Director Erickson**

NOES: **None**

INFORMATION ITEMS – July 18, 2024, “CV Weekly on the Move”, “Mathews: A Stormwater Project Makes Too Much Sense” “Annual Water Quality Report – Reporting Year 2023”, “PFAS Update – July 23, 2024”

WRITTEN COMMUNICATIONS TO DISTRICT – None

GENERAL MANAGER – Mr. Sutphin reported that 100% of CVWD staff has successfully completed the Workplace Violence Prevention plan. Mr. Lee announced that the El Sereno in-house pipeline replacement project has been successfully completed. Ms. Telles provided highlights of the June 2024 Field Maintenance and Operations Report. Ms. Dillon provided highlights of the June 2024 Engineering Report noting that the June water production was 108 MG (58%/42% split) Ms. Dillon provided the Carl Moyer and DROPS grants which were awarded in June. Mr. announced that the following employees have work anniversaries in July, Morgen Durose – 23 years, Christina Kopelman – 18 years, and Wayne Boyce – 7 years.

ATTORNEY REPORT – No report.

REPORTS OF COMMITTEES

Engineering and Operations Committee – Director Bodnar reported that the Committee had not met; however, a meeting will be scheduled as needed.

Finance Committee – Director Raghavachary reported that the Committee had met on July 9, 2024 and discussed cost/fee escalators for FY 2024-25, water and wastewater rate study, and the FY 2024-25 pay schedule. A meeting will be scheduled as needed.

Employee Relations Committee – Director Valdez reported that the Committee had not met; however, a meeting will be scheduled as needed.

Policy Committee – Director Bodnar reported that the Committee had not met; however, a meeting will be scheduled as needed.

Community Relations/Water Conservation Committee – Director Raghavachary reported that the Committee had not met; however, a meeting will be scheduled as needed.

Emergency Planning Committee – Director Bodnar reported that the Committee had met on July 2, 2024 and discussed planning for the District’s “Imagine a Day Without Water, and emergency preparedness. A meeting will be scheduled as needed.

Executive Committee – Director Raghavachary reported that the Committee had met on June 13, 2024. A meeting will be scheduled as needed.

Technology Committee – Mr. Lee reported that the Committee had not met; however, a meeting will be scheduled as needed.

Ad Hoc PFAS Committee – Director Raghavachary reported that the Committee had met on July 2, and 11, 2024. A meeting will be scheduled as needed.

DIRECTORS’ ORAL REPORTS

Director Bodnar – Reported that he had recently traveled to Alaska and noted the amount of rainfall that Alaska receives. Mr. Bodnar shared that he had attended an AWWA webinar “Water, Wildfires, and Wisdom”.

Director Erickson – No report

Director Johnson – No report

Director Raghavachary – No report

Director Valdez – No report

BOARD MEMBERS REQUESTS FOR FUTURE AGENDA ITEMS - None

CLOSED SESSION – No reportable action.

ADJOURNMENT

There being no other business to come before the Board, at 8:24 p.m., the meeting was adjourned to August 13, 2024, at 7:00 p.m.

APPROVED

Sharon S. Raghavachary
President

Arturo Montes
Board Secretary

CRESCENTA VALLEY WATER DISTRICT

BOARD OF DIRECTORS - STAFF REPORT

Action Item No. 1
August 13, 2024

To: Honorable President and Members of the Board of Directors
From: Carla Dillon, P.E. – Director of Engineering & Operations
Subject: 2024 Recycled Water Feasibility Study, Project M-1081

ACTION ITEM:

2024 Recycled Water Feasibility Study (Study)– Consideration and motion to authorize the award of a contract to John Robinson Consulting, Inc. for \$377,520 (\$363,000 with a 4% contingency of \$14,520) to perform all work associated with the study.

BACKGROUND:

CVWD has studied conjunctive use and recycled water several times throughout its history, always striving for new and inventive ways to reduce wastewater treatment costs and provide for sustainable ground water into the future. The following is a brief synopsis of projects undertaken by Staff to assess options:

- Recycled Water Feasibility Study (2005) – Study to determine the cost benefit of connecting to a new recycled water source at Los Angeles/Glendale Water Reclamation Plant (LAGWRP).
- Conjunctive Use Study (2005) – First development of CVWD’s Groundwater model. The study provided cost analysis for a variety of recharge alternatives in the Verdugo basin.
- Preliminary Feasibility Study to Use Recycled Water at Two Strike Park (2015) – Cost analysis of an MBR facility at Two Strike Park to be used for irrigation.
- Recycled Water Project Re-Evaluation (2016) – Explored additional recycled water users for the Two-Strike MBR project from 2015. Investigated regional partnerships for use of recycled water.

In 2022, CVWD issued an RFP for a Wastewater Master Plan (WWMP). When developing this RFP, staff sought to expand the wastewater master plan to include a recycled water feasibility study. This came after receiving larger than usual invoices from the City of Los Angeles Bureau of Sanitation (BOS) for wastewater treatment, capital, and operations and maintenance costs. An initial RFP was created to perform the work. After discussing the budget for the RFP with the firm selected to perform the WWMP, Kennedy-Jenks, staff brought the scope of work of the Recycled Water Feasibility Study to the Engineering Committee in October 2022. While the committee expressed interest, the cost to perform the Study was unbudgeted and too high at the time. In early 2023, staff used the RFP generated for the Engineering Committee to apply for grant funding through the State Water Resources Control Board (SWRCB).

Additionally, the new Direct Potable Reuse (DPR) framework issued by the SWRCB in December 2023 has opened new opportunities for CVWD. Not only would it be a measure to combat costs from BOS, but the treated wastewater could also be used to recharge the Verdugo Basin and provide for more sustainable groundwater supplies into the future.

Imported water costs continue to rise at historic rates, with future uncertainty with both the State Water Project and Colorado River due to climate change. New local supplies, such as recycled water, provide an alternative, potentially lower cost source than increasingly expensive imported supplies.

DISCUSSION:

After applying for a grant in early 2023, staff followed up several times with the SWRCB. In early March 2024, CVWD was notified of an anticipated award of a \$150,000 grant. The grant agreement was provided to District staff in July 2024.

The last comprehensive recycled water feasibility study was performed 20 years ago. Since, new technologies have become available, and DPR has changed the regulatory landscape to allow for a ground water recharge option. To deploy new projects under the DPR framework, CVWD's groundwater model would need to be updated to prove that any potential contaminants that exist after the wastewater treatment process do not show up in our downstream production wells.

A wastewater hydraulic model was developed as part of the WWMP to identify areas within the collection system that are nearing their design capacity. This model can also be used to ensure that new developments do not add wastewater contributions that could necessitate capital improvement projects. Finally, it is a useful tool to help determine advantageous locations to build new wastewater projects.

The Study would utilize both the hydraulic and groundwater models to generate three locations that would have the greatest cost benefit for the District based on historic costs paid to BOS. It would also ensure that the alternatives selected would be far enough from groundwater sources to prevent water quality issues from developing.

The Study will provide the foundation for future grant funding sources such as the Water Infrastructure Finance and Innovation Act (WIFIA). After soliciting proposals, holding a pre-proposal meeting with attendees from eight engineering firms, the District received one proposal. The proposal from John Robinson Consulting, Inc. includes a highly qualified team with expertise from WSP and Kennedy Jenks. Staff negotiated the fee proposal to ensure the best value for the District.

FUNDING AVAILABILITY:

The Study will be funded under the Administration and Consulting budget for FY 24/25; \$380,000 has been allocated. The grant funds totaling \$150,000 are expected 6-9 months after successful completion of the Study.

RECOMMENDATION:

Staff recommends awarding a contract to John Robinson Consulting, Inc. to provide the expertise to provide the 2024 Recycled Water Feasibility Study.

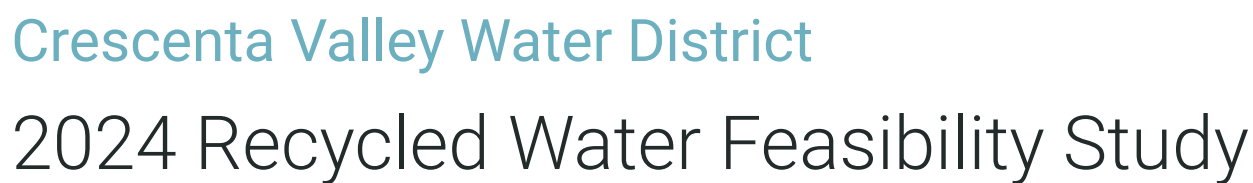
Prepared by:



Carla Dillon
Director of Engineering & Operations

Attachment:

1. 2024 Recycled Water Study – Proposal



July 5, 2024

 Kennedy Jenks



July 5, 2024

Mr. Brook Yared, Engineering Manager
Ms. Carla Dillon, Director of Engineering and Operations
Crescenta Valley Water District
2700 Foothill Boulevard
La Crescenta, CA 91214

Subject: **Proposal for the 2024 Recycled Water Feasibility Study (Project M-1081)**

Dear Mr. Yared and Ms. Dillon,

Crescenta Valley Water District ("CVWD" or "District") seeks a knowledgeable and responsive consultant to assess the feasibility of a recycled water project to treat and reuse wastewater flows generated within CVWD's service area. Through this study, we will help CVWD explore potential cost savings, environmental benefits, and the viability of implementing a recycled water project. Our Team, led and managed by John Robinson Consulting, Inc. (JRC) and completed with Kennedy/Jenks Consultants, Inc. (KJ) and WSP USA (WSP), offers CVWD the following benefits:

A Proven Approach that Brings Insight into Comprehensive Program Implementation

JRC and KJ bring combined overarching expertise to conduct a comprehensive Recycled Water Feasibility Study (Study) and empower CVWD with the knowledge needed to make informed decisions. We understand all the components and how to put them together. Our proposed Project Manager, **John Robinson**, brings over 30 years of technical and management support for preliminary design through construction for projects for recycled water program management. He completed the grant funding for this project, which obtained \$150,000 from the State Water Resources Control Board's (SWRCB's) Division of Financial Assistance (DFA) Water Recycling Funding Program. This grant matches up to \$150,000 and requires the draft and final documents to be reviewed and approved by SWRCB DFA staff.

Our team members have successfully applied the proposed study approach for siting studies, alternative evaluations, and feasibility studies for over 30 clients in Southern California and many more throughout the state. We can translate this experience to align with your objectives and to efficiently identify the costs, constraints, and opportunities for a wide range of siting alternatives. We can anticipate future obstacles, regulatory requirements, and operational considerations unique to your project that may influence siting. **The benefit to CVWD is the ability to produce a succinct and justifiable Recycled Water Feasibility Report that the public and other stakeholders can align with. CVWD can use the Study to obtain funding for future planning, design, and potential construction, saving time and money on future work.**

Leveraging our Understanding of your Wastewater System to Efficiently Evaluate Your Options

Our proposed Deputy Project Manager, **Paul Chau (KJ)**, is intimately familiar with CVWD's wastewater system, facilities, and hydraulic and operational challenges from his work on your Wastewater Master Plan. He also brings extensive recycled water planning experience, including multiple feasibility studies and designs for non-potable and potable reuse systems. **Paul's in-depth understanding of your systems allows our team to ramp up quickly and narrow our focus on the key issues he understands will be important in considering potential wastewater treatment options such as indirect potable reuse, groundwater recharge, and direct potable reuse.**

A Holistic Approach to Groundwater Management Integration

WSP prepared and calibrated a groundwater flow model of the CVWD Verdugo Basin, which was then used to evaluate potential recharge operations within the basin. WSP is the only firm with this modeling experience and will utilize the same staff to share knowledge and ramp up quickly. In addition, WSP is familiar with the groundwater management structure (ULARA). **WSP's knowledge of your groundwater system allows our team to utilize existing tools to understand the synergies between multiple groundwater management activities. We can start immediately updating CVWD's existing groundwater model to identify potential water quality impacts and permitting requirements.**

We look forward to working with CVWD on this exciting project. Please contact John Robinson at (626) 375-9389 with any questions regarding our proposal. John Robinson, as our Project Manager, is the responsible representative for our Team and will remain responsible and in charge of all duties from contract negotiations through project completion. Should John be unable to continue with this project, Paul Chau, as our Deputy Project Manager, will become the primary representative. We acknowledge receipt of "Addendum No. 1 for Project M-1081" which is signed and provided in Appendix E.

Very truly yours,

John Robinson Consulting, Inc.



John Robinson
Project Manager

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Appendix A - Resumes

Appendix B - Scope of Services to Update Groundwater Model and Evaluate Movement of Injected Treated Water

Appendix C - SWRCB Water Recycling Program Funding Guidelines

Appendix D - SWRCB's Recommended Preliminary Report Outline

Appendix E - Addendum Acknowledgement



Kennedy Jenks

Achieve Your Goals With Our Proven Team of Experts

Our Team combines key staff from JRC, KJ, and WSP - firms you know and trust with an in-depth understanding of your enterprise. Our Team consists of leaders in the recycled water industry, who have successfully worked with CVWD. We will collaborate with your staff to investigate treatment and conveyance options, vet alternatives, and identify a recycled water road map to create a local, sustainable, cost-effective supply for your service area. We will deliver a successful project by:

- ▶ **Producing a comprehensive Study** to obtain funding for future planning, design, and construction, reducing costs for your rate payers.
- ▶ **Evaluating your options** to reduce or eliminate the conveyance and treatment costs paid to the City of Los Angeles.
- ▶ **Leveraging** technical, regulatory and institutional knowledge to consider all aspects of your recycled water program.

Building the Dream Team

Our Team provides industry-leading technical expertise, in-depth knowledge of your systems, and a collaborative approach to help CVWD make an informed decision. Our team has extensive experience working with your potential stakeholders and partners, including City of LA, Foothill MWD, Glendale, and Pasadena.

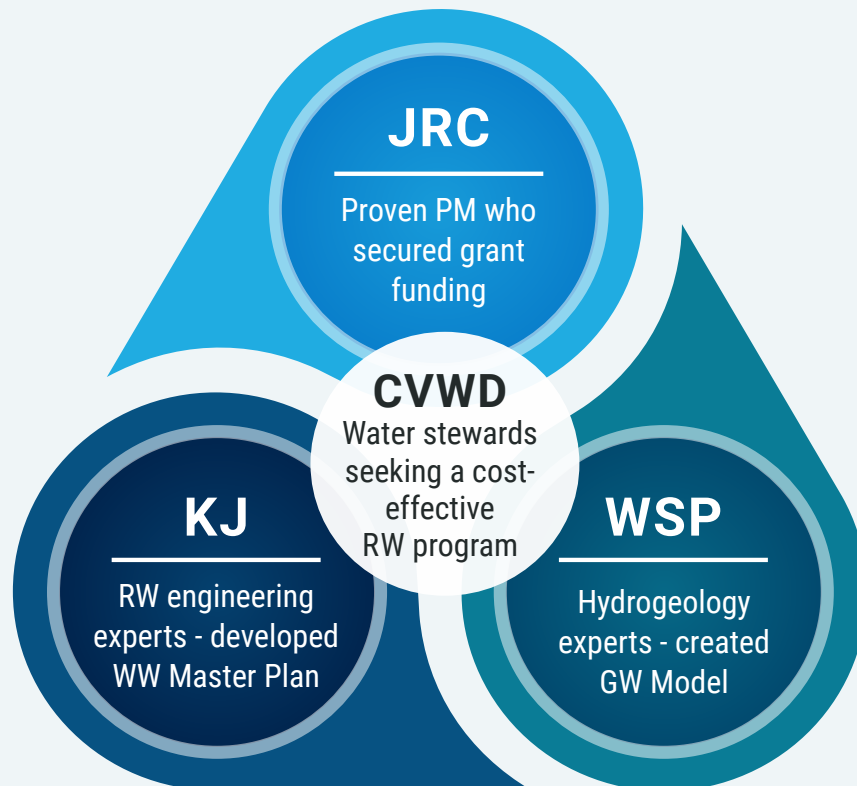


Figure 1. CVWD's goals will be met with the combined strengths of each teaming partner.

JRC Provides Recycled Water Leadership and Management to Navigate the District's Wastewater Treatment Options



JRC is a Los Angeles County-based firm established in 2013 by its namesake, John Robinson, who has worked with multiple municipalities in southern California on wastewater, recycled water, and water reuse projects for over 30 years. **JRC provides the following services enhanced by years of experience and insight to find holistic and sustainable solutions that best fit the District's goals for wastewater treatment and disposal options:**

- Evaluation of recycled water infrastructure system components
- Identification and assessment of recycled water customers
- Conversion plans for recycled water customers
- Calculation of existing and future recycled water demands
- Implementation plans for recycled water infrastructure
- Concept development and master plans for groundwater recharge
- Life-cycle economic evaluations of proposed facilities for cost-effectiveness
- Assessment of wastewater and advanced water treatment technologies
- Permitting and guidance for regulatory compliance and approval, including California's Division of Drinking Water (DDW) Title 22 regulations
- Grant/loan identification and application assistance
- Owner's representation and program/project management

Proven Experience

JRC has implemented Recycled Water Programs as a Project Engineer or Project Manager for Central Basin Municipal Water District (MWD), Jurupa Community Services District, Inland Empire Utilities Agency, Upper San Gabriel Valley MWD, and West Basin MWD.

45 FEASIBILITY STUDIES / MASTER PLANS

- Water
- Wastewater
- Recycled Water

\$200 MILLION IN GRANT AND LOAN FUNDING

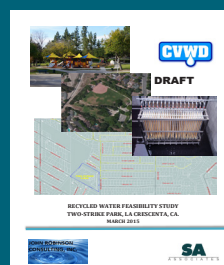
in the last 15 years

550+ CONVERSIONS

for Recycled Water Customers

2,000 DEMAND AND CONVERSION ASSESSMENTS

for Recycled Water Customers





Kennedy/Jenks Consultants, Inc. (KJ)

Since the 1930s, KJ has been committed to water recycling, when they completed the first-ever water recycling facility at Golden Gate Park. **Combining infrastructure engineering expertise with visionary conceptual recycled water planning, KJ provides the CVWD with economically viable solutions that meet existing regulatory requirements while considering emerging contaminant regulations.**

KJ's water recycling services include all aspects of facilities planning and siting studies, predesign, final design, and construction support, including alternative project delivery. In the past five years, KJ's engineers have participated in the planning of several of California's largest recycled water projects, pilot tested a variety of emerging membrane treatment and disinfection technologies, and designed more than 500,000 lineal feet of pipelines, as well as dozens of pump stations and treatment and storage facilities for both non-potable and potable reuse projects (**Figure 2**).



Figure 2. CVWD will receive practical approaches to evaluating options that best suit its wastewater treatment and disposal needs, benefiting from KJ's recycled water experience.

What KJ Brings

Since KJ's founding in 1919, their engineers have pioneered industry-leading recycled water and waste systems throughout California. In the past 10 years, KJ successfully delivered:

\$2 BILLION+

Planning and design of recycled water infrastructure

75+ RECYCLED WATER PROJECTS

Including treatment plants, storage tanks/reservoirs, booster pump stations, cross connection, and backflow prevention systems

750+ CONVERSIONS

For new recycled water customers

100% REGULATORY APPROVAL

For all use types under California's DDW Title 22 and Groundwater Recharge Regulations for Indirect Potable Use



WSP USA Inc. (WSP)

WSP is one of the world's leading engineering and environmental professional services firms, providing lasting solutions in the energy, water, environmental, and transportation markets. WSP offers a broad range of expertise, including engineers, geologists, hydrogeologists, GIS analysts, and decision analysts. **As shown by WSP's work developing CVWD's Verdugo Basin Groundwater Model, their modelers have multi-disciplinary experience in simulating surface/subsurface flow and transport of water and contaminants:**

- Data compilation and visualization
- Development of conceptual models
- Development and calibration of regional and local-scale groundwater models, including subbasins
- Rendering of detailed documentation and technical support of models
- Evaluation of treated water transport and effects from groundwater usage under several demand and supply scenarios
- Model calibration techniques include parameter estimation and uncertainty analysis (PEST)

What WSP Brings

WSP brings in-depth insight into CVWD's groundwater model from their work developing the Verdugo Basin Groundwater Model.

Verdugo Basin is a steeply dipping groundwater basin with substantial runoff and recharge from the surrounding mountains that is delayed by several months. There are a few potential areas, mostly located at the base of the Verdugo Mountains, where imported surface water or advanced recycled water could be infiltrated or injected into the aquifer's system.

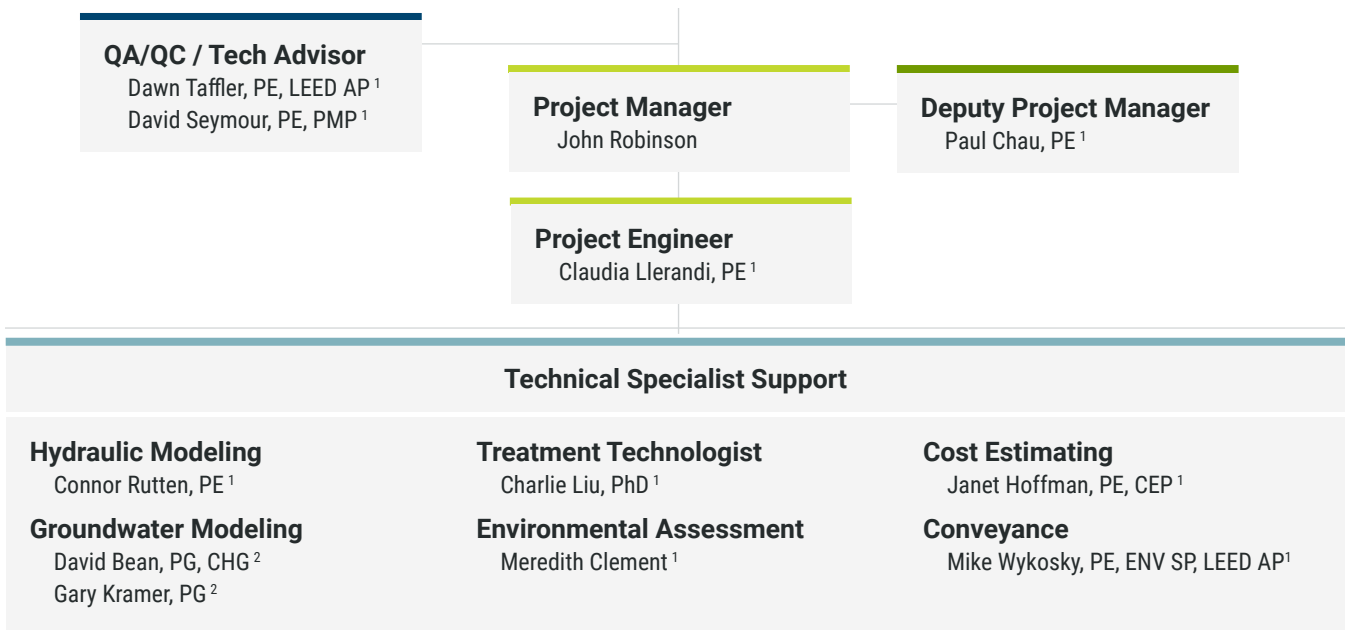
Informed Guidance from a Dedicated Team Who Knows Your System

JRC, KJ, and WSP have formed an exclusive teaming relationship to provide CVWD with a highly qualified team ready to exceed your planning expectations. We have selected the right technical experts with local knowledge gained by leading similar studies throughout California. We will thoroughly analyze potential treatment and reuse options for wastewater flows within CVWD's service area, aiming to reduce conveyance and treatment costs while considering environmental sustainability. Our team members have focused their careers on evaluating and implementing recycled water projects. They will provide CVWD with the right balance of in-depth local knowledge of your stakeholders, extensive recycled water technical expertise, a holistic program perspective, and a comprehensive understanding of local, regional, and statewide water resource issues. This team can efficiently and effectively execute all aspects of your Study.

Benefits of Our Team

- Familiar, proven, and trusted team able to ramp up quickly
- Comprehensive recycled water program implementation expertise
- In-depth first-hand knowledge of your wastewater and groundwater systems

Crescenta Valley Water District



LEGEND : ¹ KJ ² WSP

“John’s thoroughness, initiative and willingness to work with my office and staff, member agencies, local contractors, regional civic and elected leaders and the numerous regulatory agencies that provide oversight to these varied and diverse projects has contributed immensely to their success.”

- **Reymundo Trejo**, Former Assistant General Manager and Chief Engineer, Upper San Gabriel Valley Municipal Water District

“Paul, this is the third or fourth project that we have now completed together, and each one has been a pleasure! Your attention to detail and technical skills are simply the best in the business!! Thank you!!! Looking forward to working with you and the rest of the KJ team in the future.”

- **Jeff Kirshberg, PE, PhD**, Water Resources Manager, Rancho California Water District



Years of Experience
30

Education
BS, Civil Engineering,
California State
University, Long Beach,
1993

John Robinson Project Manager

WHY JOHN: John will leverage his familiarity with CVWD's goals and his expertise supporting technical and managerial aspects of recycled water programs from preliminary design through construction to help make an informed decision.

Specific Qualifications

- Project Manager for multiple recycled water treatment projects within the last 18 months.
- Completed over 550 recycled water customer conversions, and 2,000 recycled water customer conversion assessments.
- Assisted clients to obtain over \$200M in grants and loans in the last 12 years.
- Provides reclamation system hydraulic modeling and intimately involved with regulatory and permitting agencies.

Relevant Experience

- **Recycled Water Implementation Plan**, Inland Empire Utilities Agency | *Project Manager. Developed a 10-year recycled water project implementation approach and methodology; sized for build-out demands; evaluated life-cycle costs.*
- **Recycled Water Demonstration Project**, Foothill Municipal Water District | *Owner's Engineer. Project captures, treats and recycles local sewage water, stormwater, and irrigation runoff for groundwater recharge to increase local water source reliability and reduce need for imported water.*



Years of Experience
17

Education
BS, Environmental
Engineering and
Science, 2006

MS, Civil and
Environmental
Engineering, 2007

**Licenses/
Registrations**
Professional
Engineer - Civil -
California (75784)

Paul Chau, PE Deputy Project Manager (KJ)

WHY PAUL: Paul's diverse experience with wastewater and recycled water planning, groundwater facilities, and previous work with CVWD will provide efficient execution and comprehensive knowledge of project opportunities.

Specific Qualifications

- Contributed to over 20 feasibility studies and designs for non-potable reuse systems, surface spreading groundwater recharge, injection groundwater recharge, and surface water augmentation.
- Develops comprehensive alternatives evaluations that include facility siting, conveyance options, alternative treatment and disposal systems, and comparisons of the benefits and limitations of the various reuse opportunities.

Relevant Experience

- **Glenarm MBR WWTP Feasibility Study**, Pasadena Water & Power | *Project Manager. Developed feasibility study to implement an MBR wastewater treatment plant at the Glenarm Power Plant.*
- **Recycled Water Resources Plan (RWRP)**, Rancho California Water District | *Project Engineer. Developed a RWRP to explore the feasibility of non-potable expansion and potable reuse opportunities.*



Years of Experience

24

Education

BS, Civil and Environmental Engineering, 1998

MS, Civil and Environmental Engineering, 2000

Licenses/

Registrations

Professional Engineer - Civil - California (65754)

Leadership in Energy and Environmental Design (LEED), US Green Building Council

Dawn Taffler, PE, LEED AP QA/QC / Technical Advisor (KJ)

WHY DAWN: Dawn specializes in recycled water and water supply planning and will provide technical guidance, strategic advice, and participate in quality reviews. She will support the team in identifying and evaluating opportunities that maximize beneficial reuse cost-effectively.

Specific Qualifications

- Contributed to or led over 30 Recycled Water Master Plans; many required comprehensive treatment, conveyance, and discharge evaluations.
- Served as a liaison between engineering, public, institutional, and environmental teams and as a facilitator to drive alignment for transparent screening processes.
- Served on the WateReuse California Board of Directors for eight years and led KJ's Recycled Water and One Water practice areas for 14 years.

Relevant Experience

- **RWRP, Rancho California Water District | Project Manager.** Developed a RWRP to explore the feasibility of non-potable expansion and potable reuse opportunities.
- **SF-Peninsula Regional PureWater Project Basis of Design Report, Multiple Northern California Municipalities | Project Manager.** Preliminary engineering for a regional potable reuse project to resolve multiple water supply and wastewater issues while realizing the benefits of shared infrastructure, asset recovery, economies of scale, and a more competitive strategy to pursue funding.



Years of Experience

21

Education

BS, Civil/Environmental Engineering, 2003

Licenses/Registrations

Professional Civil Engineer Hawaii (PE-16905) Washington (44270) Texas (146740)

Project Management Professional, Project Management Institute

David Seymour, PE, PMP QA/QC / Technical Advisor (KJ)

WHY DAVID: David specializes in planning, financial analysis, and design of satellite treatment facilities and reclaimed water treatment facilities. He brings invaluable insight into treatment processes to help CVWD understand potential wastewater treatment technologies and options.

Specific Qualifications

- Considered one of KJ's top wastewater treatment experts; specializes in wastewater treatment facility planning, design, and performance optimization.
- Experience with planning and financial analyses for constructing satellite treatment plants versus continued treatment at a regional facility.
- Experience designing reclaimed water facilities in California.
- Specializes in wastewater treatment plant (WWTP) design and has worked at over 40 different plants ranging in size from 0.5 mgd to 300 mgd.

Relevant Experience

- **Wastewater Reclamation Facility (WWRF) Options Study, City of Scotts Valley | Technical Advisor.** Assessed long-term alternatives for the WWRF, including improving the plant, sending flow to another facility, or constructing a satellite facility for recycled water; the City chose the latter option and KJ is designing.
- **Western Slopes WWTP Feasibility Study, City of Tacoma | Project Manager.** Assessed feasibility of upgrading and restarting the mothballed WWTP, evaluated needed improvements, costs, and compared them to ongoing expenses for conveying wastewater to the Chambers Creek Regional WWTP.



Years of Experience
10

Education
BS, Chemical Engineering, 2010
MS, Civil and Environmental Engineering, 2013

Licenses/ Registrations
Professional Engineer - Civil - California (86734)

Claudia Llerandi, PE Project Engineer (KJ)

WHY CLAUDIA: *Brings in-depth knowledge of recycled water planning drivers and considerations, including planning for future unknowns, such as climate change.*

Specific Qualifications

- Extensive experience developing feasibility studies for utilities to plan for and maximize recycled water as a local, sustainable water supply.
- As the Project Manager for large, recycled water programs she understands the complexity and challenges of implementing these programs.
- As Secretary of the Northern California Chapter of WaterReuse, she stays up-to-date on recycled water programs, regulations, and findings by actively engaging with agencies implementing such projects.

Relevant Experience

- **Westside Recycled Water Program**, San Francisco Public Utilities Commission | *Program Manager. Led recycled water program implementation; managed feasibility plans, permitting, design and construction of improvements; supporting the commissioning of the new advanced recycled water treatment facility.*
- **Recycled Water Feasibility Study**, Santa Cruz | *Project Manager. Led the water supply augmentation plan emphasizing recycled water as a key component to enhance the City's resilience against climate change and droughts.*



Years of Experience
8

Education
BS, Civil Engineering, 2016
MS, Civil and Environmental Engineering, 2017

Licenses/ Registrations
Professional Engineer - Civil - California (92734)

Connor Rutten, PE Hydraulic Modeling (KJ)

WHY CONNOR: *Connor worked with Paul on CVWD's wastewater model; he brings insight into your systems and is able to ramp up quickly to promote project efficiency.*

Specific Qualifications

- Specializes in hydraulic modeling, master planning, and resiliency planning; developed, calibrated, and analyzed multiple hydraulic models for use with siting and feasibility studies and facility designs.
- Able to analyze challenges from design and constructability view resulting in practical and applicable solutions.
- Experience with geospatial analysis, master planning, and resiliency planning.

Relevant Experience

- **2023 Wastewater Master Plan**, CVWD | *Deputy Project Manager. Built and calibrated the wastewater hydraulic model and used the model to corroborate both known and unknown system deficiencies to help inform project prioritization.*
- **Recycled Water Strategic Plan and Facilities Master Plan**, Eastern Municipal Water District | *Project Engineer. Developed hydraulic analysis to evaluate potable reuse options; generated GIS maps for spatial analysis and evaluated conveyance alternatives for each treatment site.*



Years of Experience
8

Education
PhD, Civil and Environmental Engineering, 2021

Charlie Liu, PhD **Treatment Technologist (KJ)**

- Experience evaluating, testing, implementing, and operating diverse treatment technologies to achieve regulatory requirements and water quality objectives.
- Expertise in the treatment and analysis of per and polyfluoroalkyl substances (PFAS); serves as KJ's National PFAS Lead and is a member of KJ's Applied Research Group.
- Performs recycled water planning, treatment, water quality evaluation, and start-up/operation.

Relevant Experience

- **Westside Recycled Water Treatment Facility**, SFPUC | *Water Quality and Engineering*
- **Tertiary Recycled Water Truck Fill Station Feasibility Study**, Central Marin Sanitation Agency | *Project Engineer*



Years of Experience
26

Education
BS, Environmental Policy, Analysis and Planning, 1996

Meredith Clement **Environmental Assessment (KJ)**

- Expertise with water planning projects and environmental compliance documentation, including California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).
- Experience identifying potential CEQA considerations and requirements and performing environmental and public health risk assessments.

Background and Unique Qualifications

- **Alternative Fuel Receiving Facility**, Encina Wastewater Authority | *CEQA Compliance*
- **State Water Interconnection Study**, City of San Buenaventura | *CEQA Project Manager*



Years of Experience
42

Education
MS, Geophysical Sciences, 1981

David Bean, PG, CHG **Groundwater Modeling (WSP)**

- Experience includes field investigations; monitoring, extraction and water supply well installation; aquifer testing and data analysis; database design and management; statistical data analysis; report preparation; and regulatory agency interaction.
- Used MODFLOW to develop and calibrate a basin-scale groundwater flow model of the Verdugo Basin for CVWD which was then used to evaluate potential recharge operations.

Background and Unique Qualifications

- **Groundwater Recharge Feasibility Study**, CVWD | *Lead Modeler*
- **Groundwater Remediation Model**, Confidential Client | *Lead Modeler*



Years of Experience
34

Education
BS, Geology, 1989

Gary Kramer, PG **Groundwater Modeling (WSP)**

- Experience collecting and evaluating hydrogeologic and groundwater chemistry data, developing site and regional scale conceptual hydrogeologic models, and groundwater numeric modeling.
- Extensive knowledge of the geology of the San Joaquin Valley and has performed work on several regional scale projects on the west side of the Valley.

Background and Unique Qualifications

- **Verdugo Basin Groundwater Model**, CVWD | *Associate Hydrogeologist*
- **Broad Creek #2 Injection Feasibility Evaluation**, Midway-Sunset Valley | *Principal Hydrogeologist*

Project Understanding

CVWD is interested in evaluating alternatives for capturing wastewater generated within the service area and utilizing it to develop a new local water supply. This initiative aims to save costs by avoiding wastewater conveyance and treatment costs from the City of Los Angeles and avoiding potable water imported supply costs.

Project Approach

CVWD Will Receive a Cost-Effective and Sustainable Implementation Strategy That Meets your Goals

We have tailored our proven approach to developing wastewater and reuse strategies to meet the District’s needs. This approach will allow CVWD to evaluate all possible alternatives efficiently and arrive at a cost-effective, justifiable, and implementable set of recommendations. **Figure 3** describes our approach from start to finish, highlighting key action items to execute each step of the analysis by developing a final report. We will develop and screen alternatives and drive alignment amongst decision-makers to identify a recommended project concept that is realistic and cost-effective.

Tailoring a Proven Approach to Drive Alliance on a Cost-Effective and Sustainable Implementation Strategy

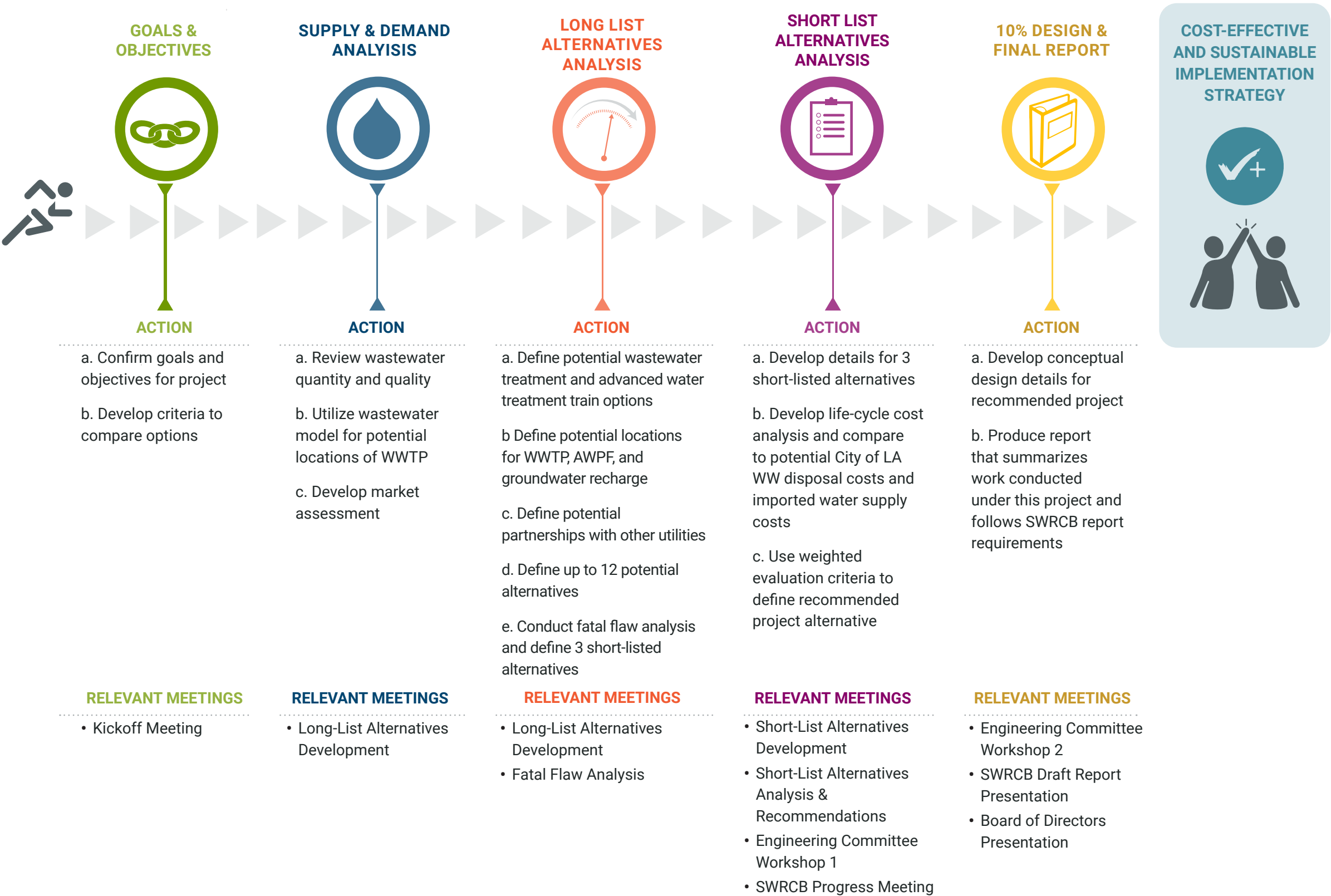


Figure 3. Comprehensive and efficient approach will allow the District to analyze the world of options and develop a recommended project on schedule.

Applying a Screening Methodology for Effective Alternative Analyses

As previously shown in [Figure 3](#), our approach incorporates meetings and workshops used to derive input from staff and stakeholders to develop criteria for evaluating potential strategies and solutions of suitable wastewater treatment and disposal alternatives. Our proven screening methodology ([Figure 4](#)) will guide and inform CVWD of the level of effort and timing for alternatives that are right for you and your stakeholders providing a cost-effective strategy for the future.

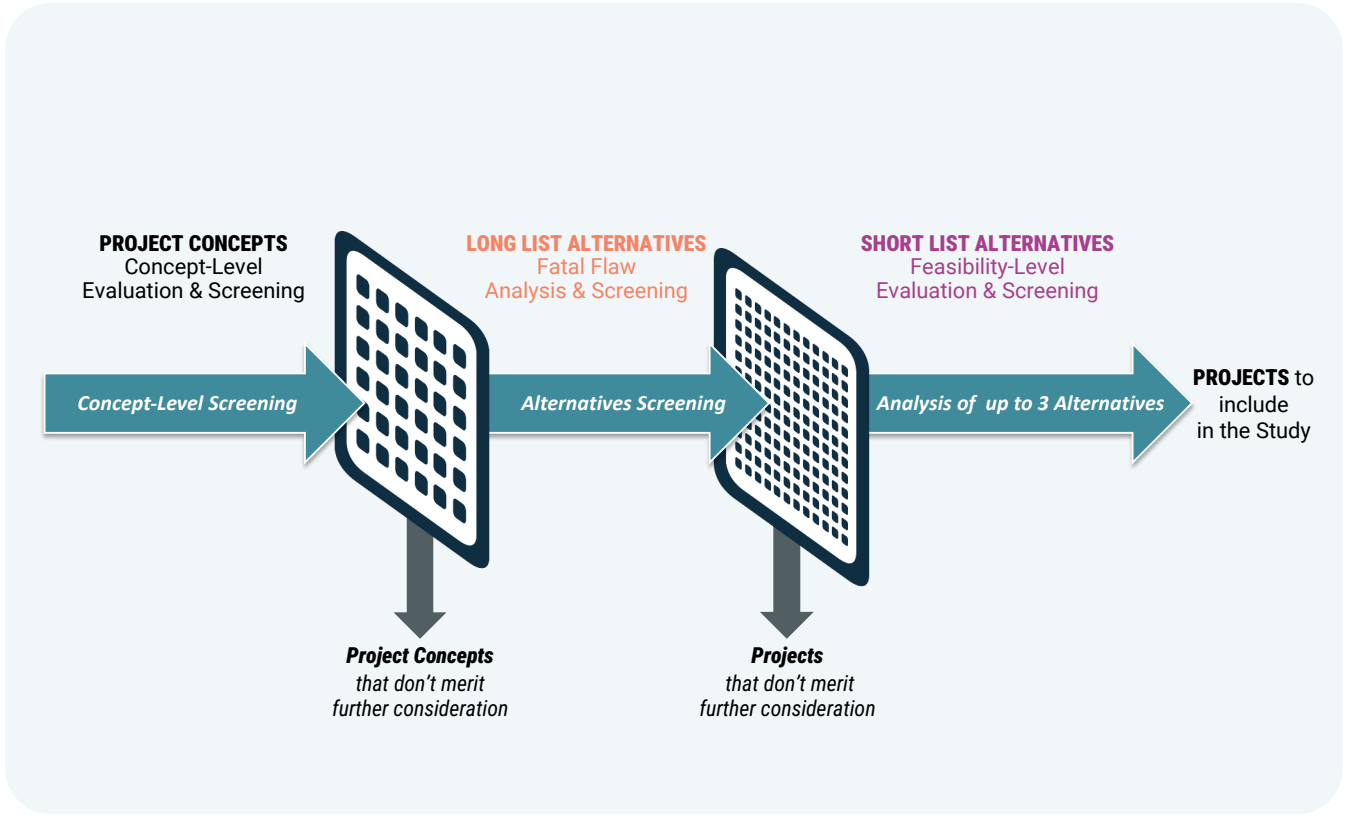


Figure 4. Proven Screening to Apply the Right Level-of-Effort at the Right Time. A transparent decision process will be used to vet project concepts, identify a long list of projects, and develop a short list of up to three (3) project alternatives for a feasibility-level evaluation. The outcome will be the selection of multi-beneficial, cost-effective projects.

Decision Making Made Easy Through a Visual Scorecard Approach

Our approach involves using a ranking matrix ([Figure 5](#)) with weighted criteria for both **Long-List and Short-List Evaluations**. These criteria encompass economic, environmental, and social values, integrating quantitative results with qualitative considerations. We'll collaborate closely with CVWD to align the criteria weighting and scoring guidance with your concerns and priorities.

Figure 5. (Right) This example illustrates weighted ranking results colored to show the gradient from the highest ranking (1) to lowest ranking (7) alternatives, respectively.

Example Ranking Results	RANKING by Weighted Category				TOP Scoring Alternatives Selected Projects
	Lowest Cost	Maximizes Water Supply	Most Local Control	Easiest to Implement	
Alternative 1	1	1	2	1	✓
Alternative 2	3	2	3	4	✓
Alternative 3	5	5	4	2	
Alternative 4	7	6	5	6	
Alternative 5	2	4	1	3	✓
Alternative 6	4	3	7	5	
Alternative 7	6	7	6	7	

Leveraging our Team’s Recent Relevant Experience will provide CVWD with the Best Set of Recommendations

The RFP identified twelve key elements of the technical study. The table below describes our proposed approach for each element and the associated benefits to the District.

Technical Study Element	Team’s Approach	Benefit to the District
1 Identify potential wastewater treatment technologies and options.	In addition to identifying industry-proven technologies for domestic wastewater treatment (MBR) and advanced recycled water treatment (MF/RO, UV/AOP), we will provide recommendations to mitigate PFAS contamination of the groundwater basin. This is straightforward if advanced recycled water treatment is utilized, as RO will remove PFAS; however, if the District is interested in pursuing alternatives that consider the use of tertiary recycled water, extra consideration will be required to include technologies such as ion exchange or granular activated carbon to the recycled water treatment train for removal of PFAS.	✓ Water treatment goals will be met by leveraging the team’s extensive wastewater and recycled water treatment experience. In addition, KJ has extensive experience developing PFAS treatment plants, including active facilities for Orange County Water District and Santa Clarita Valley Water District.
2 Explore advanced treatment options to ensure that PFAS and other emerging contaminants of concern do not pollute downstream groundwater production.		
3 Update CVWD’s existing Groundwater Model to identify any potential water quality impacts and permitting requirements.	WSP will update the groundwater model to existing conditions. As part of the preliminary alternatives analysis, WSP will identify the general regions where recharge facilities can be sited to meet regulatory requirements for travel time between recharge facilities and extraction wells. For the short-list alternatives analysis, the model will be utilized to determine water quality impacts and confirm travel times will meet regulatory requirements.	✓ WSP will be able to hit the ground running with no learning curve based on their previous experience constructing the District’s groundwater model in 2005 and recent model update. Meeting groundwater recharge regulatory requirements is a key issue, and having a team that is well-versed in your groundwater model is a great start to meeting this challenge.
4 Perform a preliminary siting study to evaluate potential sites for alternative wastewater treatment systems.	Our team will build upon the District’s previous work evaluating sites at Two Strike Park and Descanso Gardens and identify other potential sites, such as the Glenwood Treatment Plant, to identify and evaluate potential sites for the wastewater treatment system. We will utilize the wastewater collection system model that KJ recently constructed to identify locations that can provide the most potential supply and require the least amount of pumping for the District.	✓ Based on our team’s experience working on the Two Strike Park wastewater treatment evaluation and the Wastewater Master Plan, we can hit the ground running and efficiently evaluate potential sites for the District.
5 Evaluate potential uses of advanced treated tertiary recycled water effluent for application within CVWD’s service area or other benefits to CVWD via regional stakeholder partnerships such as groundwater recharge.		
6 Identify potential stakeholders and partnerships that would impact project implementation and/or project costs.	Our team has working relationships with many of the District’s neighboring utilities , allowing us to bring forth partnering concepts for the District to consider. An example of a potential partnership with Pasadena Water & Power (PWP) is provided in Figure 7 on page 14.	✓ Partnerships can yield cost and risk-sharing benefits for the District.
7 Identify potential CEQA considerations and requirements, including a cursory environmental and public health risk assessment.	As part of the preliminary alternatives analysis, we will identify potential CEQA considerations requiring a higher level of effort coordination , including areas with sensitive species, California Department of Fish and Wildlife jurisdiction, or Federal waterways.	✓ As part of a comprehensive alternatives analysis process, the District will be able to weigh potential significant CEQA challenges as one of many factors that will determine the recommended project.
8 Determine the impacts on CVWD personnel and permit certification requirements (i.e., additional staff and certification training).	Operating a wastewater treatment plant and potentially an advanced water purification facility will significantly impact the District’s personnel and certification requirements. We will analyze two alternatives: (1) additional District staff to operate the treatment facilities and (2) outsourcing the operation of the treatment facilities to a third party. The costs, benefits, and drawbacks of upgrading operator certifications vs outsourcing operation will be provided.	✓ The District will receive a preliminary analysis of the potential staffing options that can be utilized to make future staffing decisions and budgeting.
9 Develop multiple alternatives, a minimum of three, to consider (including status quo) to collect, treat, dispose, or reuse treated wastewater effluent, including preliminary design drawings.	Utilizing the two-step analysis approach described earlier in the Approach section that includes (1) a fatal flaw analysis of initial concepts and a preliminary evaluation of a long list of alternatives and (2) further evaluation of a short list of alternatives, our team will provide the right level-of-effort at the right time.	✓ The District will be able to efficiently evaluate a world of options and develop a recommended project using a suite of weighted criteria customized to the District’s goals and objectives. KJ has utilized this same transparent and justifiable screening approach numerous times with great success for many clients.
10 Perform a life-cycle economic evaluation to derive a preliminary recommendation based on cost and project impact.	The District will be provided with a unit cost cash flow projection that will compare the recommended project to the District’s baseline wastewater and imported water costs. See details below.	✓ Clearly identify the long-term cost benefits of the project to drive alignment from stakeholders for the recommended project.
11 Perform a preliminary environmental assessment and ten percent design on the selected design alternative.	The District will be provided with a 10% design document that can be utilized for further implementation , including the development of CEQA documents, partner agreements, external funding applications, budget planning, and final design and construction. See element 7 above for identification of CEQA considerations.	✓ The District will be provided with a baseline design document that can be used as a launching point for project implementation.
12 Determine a preliminary project implementation schedule.	An implementation schedule will be provided for the recommended project to identify key milestones, critical path items, and off-ramp options.	✓ The schedule will provide the District with a roadmap for implementing the schedule that will allow the District to plan and budget appropriately while also understanding where to focus your efforts at any given time.

Developing a Cost Analysis that Clearly Identifies the Benefits of the Recommended Project to Align Stakeholders

Demonstrating project cost-effectiveness will be key to how the District can align stakeholders and customers to support the recommended project. For a significant investment like this project, it will be important to show how the project cost will compare to the baseline costs, City of LA wastewater disposal costs, and Foothill MWD imported water costs over the next several decades. As shown in **Figure 6**, it is likely that the project will not compare favorably to the baseline alternatives under current conditions but will look like a much more favorable long-term investment if the historical increases in the baseline costs (8-10% per year) continue on trend for the foreseeable future. We are very familiar with crafting a compelling cost narrative and will help the District shape the message for the recommended project.

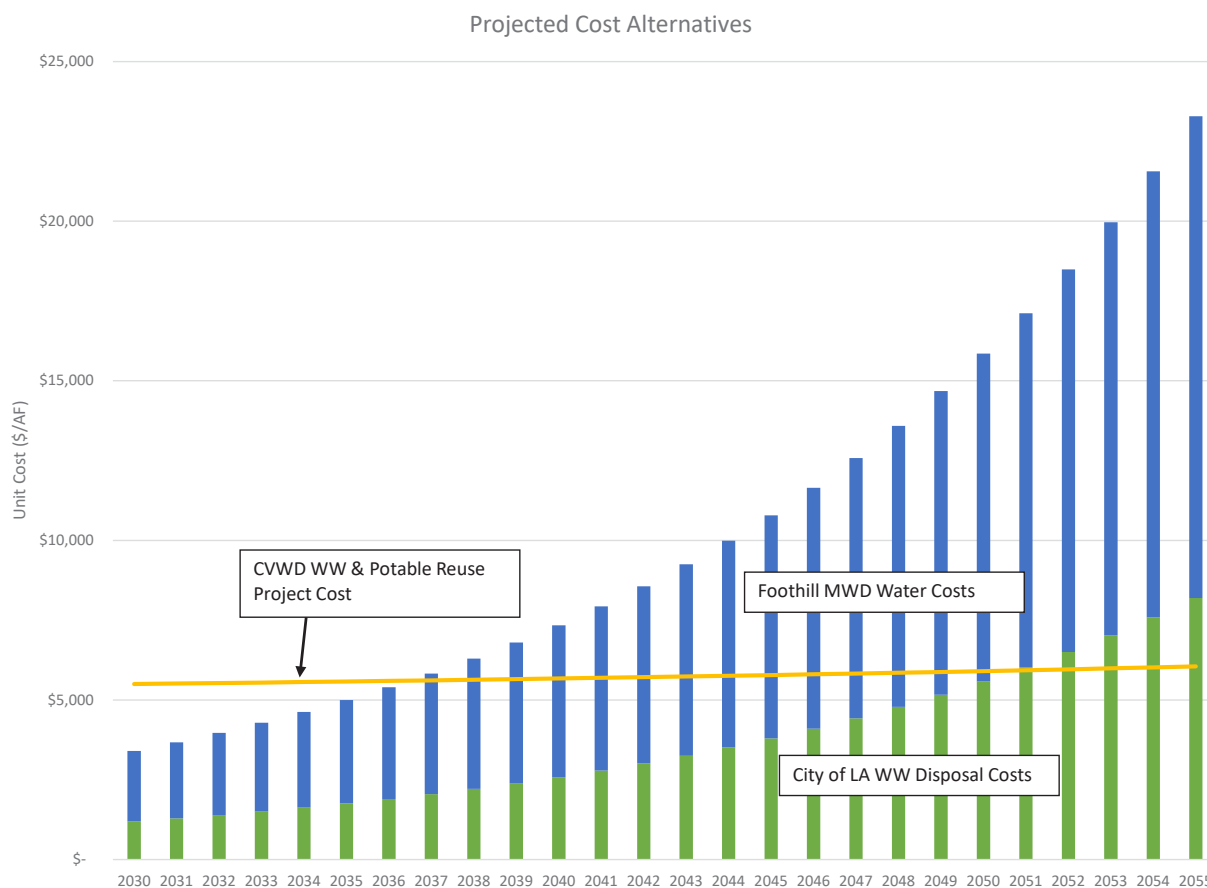


Figure 6. Future Unit Cost Analysis clearly identifies the benefits of the recommended project to drive alignment for the District's stakeholders.

Developing Regional Partnerships May Yield Cost and Risk Benefits for the District

The District is interested in exploring partnerships for the project, which can provide benefit by sharing costs and risks with another utility. Additionally, the unit costs of the project would likely decrease with greater capacity due to economies of scale. One potential partner for the District is Pasadena Water & Power, which has recycled water rights at the LA-Glendale Water Reclamation Plant and can wheel water through Glendale Water & Power's recycled water system. KJ conducted a preliminary concept of this potential partnership, as summarized in **Figure 7** (next page). Glendale's recycled water system and the District's wastewater collection system are relatively close to each other, as shown in **Figure 8** (next page), which will help facilitate defining potential locations for shared facilities. This concept could also easily incorporate Glendale Water & Power participation in the project.

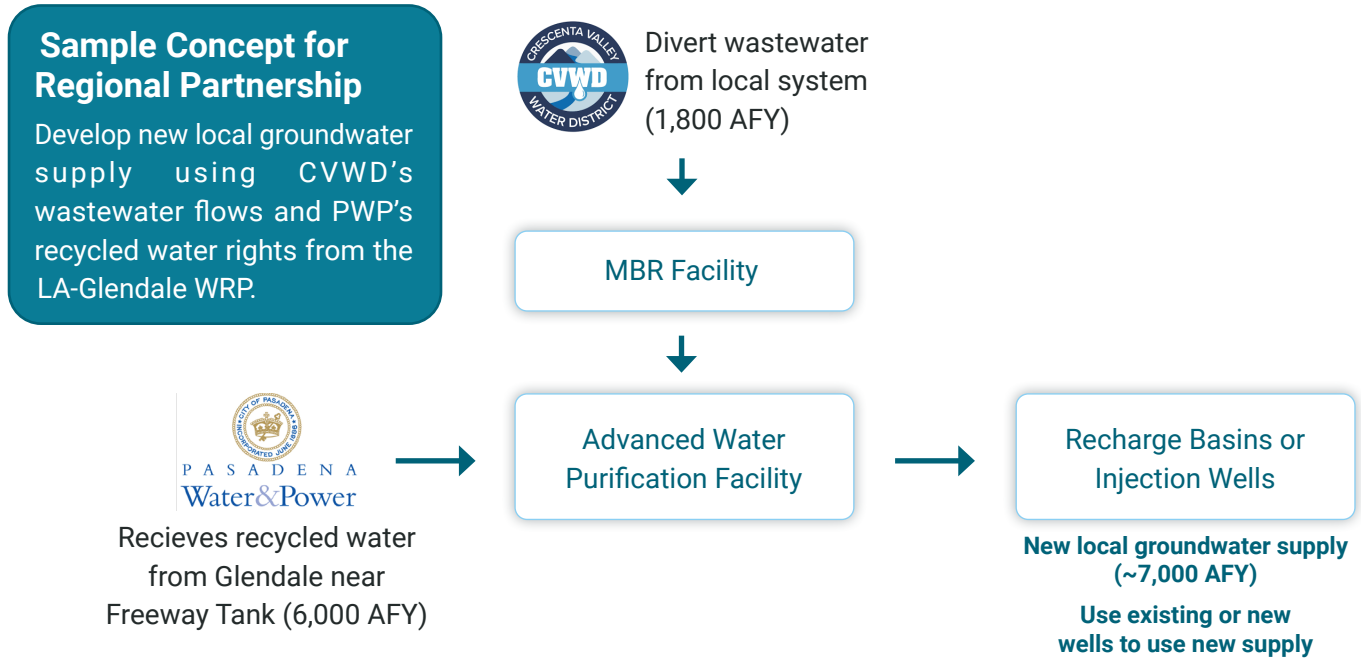


Figure 7. Potential partnership with Pasadena Water & Power may yield cost and risk-sharing benefits for the District. KJ has served as an on-call engineer for Pasadena for the last four years.



Figure 8. Glendale's and the District's systems are close to each other, which will help facilitate identifying locations for shared facilities.

Scope of Services

The following table provides a summary of the tasks and deliverables included in the Scope of Services:

Task	Deliverables
Task 1. Supply & Demand Analysis	- Data tables describing wastewater flow and quality characteristics (PDF). - GIS maps describing recycled water market assessment (PDF).
Task 2. Long-List Alternatives Development and Fatal Flaw Analysis	- One (1) table and up to two (2) figures will be developed to describe the initial alternatives (PDF). - The fatal flaw analysis will be summarized in a table (PDF).
Task 3. Short-List Alternatives Analysis	- A one-page project sheet will be developed for each alternative, which will consist of tables, figures describing alternatives, and engineers' opinion of probable costs. - The alternatives ranking analysis will be summarized in a table (PDF).
Task 4. Updated Groundwater Model and Recycled Water Model Simulations	Technical Memorandum – Model Update and Evaluation of Injected Recycled Water Travel Times and Flow Paths.
Task 5. Report Preparation	- Administrative Draft Report (PDF). - Draft Report (PDF). - Final Report (PDF, 3 hard copies).
Task 6. Project Management, QA/QC, and Meetings	Meeting agendas, materials, and notes (PDF).
Task 7. 10% Design Documents	10% design document (PDF).

Scope of Services

Task 1. Supply & Demand Analysis

Task 1.1 Wastewater Flow Analysis

The Team will utilize data from the Wastewater Master Plan project currently under development by KJ to determine available current and future wastewater flows for the alternatives under evaluation for this Study. Dry weather and wet weather flows will be identified for 2025 and 2045 conditions.

Task 1.2 Wastewater Quality Characterization

It is assumed that wastewater quality information is not available for the Study. Typical industry standards for urban wastewater will be utilized for the purposes of defining potential treatment systems with a focus on Los Angeles-Glendale Wastewater Treatment Plant since that is the discharge location for CVWD's wastewater. The Project will evaluate CVWD data for

water quality characteristics of the nitrate system treatment brine that is disposed to the wastewater collection system.

Task 1.3 Recycled Water Market Assessment

As required by the SWRCB report requirements, a market assessment will be provided for the potential recycled water supply. It is assumed that the market assessment will be focused on potable reuse applications, such as groundwater recharge, direct potable reuse, and sales to other utilities. The five largest potential non-potable reuse customers will be identified based on water billing data provided by CVWD. It is assumed that an extensive non-potable recycled water piping network connecting dozens of customers will not be evaluated.

Deliverable:

- Data tables describing wastewater flow and quality characteristics (PDF).
- GIS maps describing recycled water market assessment (PDF).

Task 2. Long List Alternatives Development and Fatal Flaw Analysis

Task 2.1 Long List Alternatives Development

Up to 6 project alternatives will be developed for the purposes of treatment and reuse of wastewater flows generated within CVWD's service area. The project alternatives may include the following potential concepts:

- Centralized or decentralized wastewater treatment for recycled water irrigation reuse
- Centralized wastewater and advanced water purification treatment for groundwater recharge
- Centralized wastewater treatment for recycled water sales to other utilities
- Nitrate treatment plant brine separation and treatment for irrigation or potable use
- Status quo – do nothing

The Team will coordinate with CVWD on the development of the project alternatives. Conceptual treatment technologies, design capacities, and project locations will be provided. Potential permitting issues and requirements will be identified. Potential stakeholders and partnerships that would impact project implementation and/or project costs will be identified. Potential CEQA considerations and requirements will be identified. An order-of-magnitude cost estimate, in \$10M increments, will be developed for each alternative.

For Status Quo project alternative, the Team will determine estimated cost projections for wastewater treatment rates from the City of Los Angeles and imported water rates (MWD) in order to provide comparisons for other alternative lifecycle costs.

Task 2.2 Fatal Flaw Analysis

A fatal flaw analysis will be conducted on the long list alternatives with input from CVWD staff based on technical, institutional, regulatory, and financial criteria. The fatal flaw analysis will develop a short list of up to three (3) project alternatives for further analysis.

Deliverable:

- One (1) table and up to two (2) figures will be developed to describe the initial alternatives (PDF).
- The fatal flaw analysis will be summarized in a table (PDF).

Task 3. Short List Alternatives Analysis

Task 3.1 Short List Alternatives Development

The alternatives that are short-listed from the fatal flaw analysis will be further developed and will include the following:

- Facility sizing,
- General site layouts,
- AACE Class 5 Opinion of Probably Cost of Construction will be provided for up to three (3) alternatives;
- The cost impacts of each alternative will be summarized in a life cycle cost analysis that considers project capital and O&M costs, revenue generation, potable water cost offset, and wastewater disposal cost offset. The Team will review the City of Los Angeles Agreement, including universal terms and specific terms, and provide recommendations in anticipation of contract renewal in 2030;
- Quantification of potential recharge for each alternative and the associated equivalent water supply (i.e. estimate groundwater recovery);
- Identification of potential impacts and mitigation measures for each alternative to the regional salt and nutrient management plan in association with the Basin Plan;
- The Team will for the alternatives include a sensitivity analysis on impact of climate change and drought (e.g. scenario with limited groundwater availability, limited imported water availability, and resulting cost impacts/alternative rankings);
- JRC will identify and provide a list of potential state and federal grant and low-interest loan funding programs for each alternative;

- A high-level staffing analysis will be provided for each alternative, which will identify the required number of staff and certifications to operate the new facilities. The Team will utilize Section 64413.1 – Classification of Water Treatment Facilities to determine staffing requirements for each alternative because the proposed alternative technology for recycled water will be similar/comparable to drinking water;
- A preliminary project implementation schedule and project delivery method will be identified for each project alternative;

Deliverable:

- A one-page project sheet will be developed for each alternative, which will consist of tables, figures describing alternatives, and engineers' opinion of probable costs.

Task 3.2 Short List Alternatives Analysis

The short-list alternatives will be ranked based on a set of weighted evaluation criteria developed with CVWD staff, which may include cost impact, regulatory requirements, institutional challenges, sustainability, and construction factors. With input from CVWD staff, one or more alternatives will be recommended for further implementation.

Deliverable:

- The alternatives ranking analysis will be summarized in a table (PDF).

Task 4. Updated Groundwater Model and Recycled Water Model Simulations

WSP will lead this task, building on prior Verdugo Basin (Basin) work. WSP will evaluate conditions in the Basin related to the possible injection of treated wastewater into the Basin with eventual extraction as groundwater using CVWD and potentially City of Glendale wells. This task will be performed for use by CVWD to allow modeling “runs” to evaluate the injection and extraction permitting needs for discussion with relevant regulatory agencies. Important considerations for injection and extraction of treated water into a groundwater system include injection locations, depth of injection,

groundwater mounding and potential impacts to overlying structures, injection flow rates, volumes of injected water, mixing of injected water with local groundwater, and travel times for injected water to reach extraction wells where water would be extracted and used for potable purposes.

WSP will update the 2005 CVWD groundwater model to evaluate groundwater conditions and recharge related alternatives. The model will be updated to year 2022 conditions.

Refer to **Appendix B** for the full scope of services for the updated groundwater model and recycled water modeling, including:

Task 4.1 Update Groundwater Flow Model

Task 4.2 Model Simulations

Task 4.3 Technical Memorandum – Model Update and Evaluation of Injected Recycled Water Travel Times and Flow Paths

Deliverable:

- Technical Memorandum – Model Update and Evaluation of Injected Recycled Water Travel Times and Flow Paths.

Task 5. Report Preparation

Work under all previous tasks will be summarized in a report that meets the requirements of the SWRCB Water Recycling Program Funding guidelines (detailed in **Appendix C**). A preliminary outline of the report, following the SWRCB's recommended outline, is also provided as part of this proposal (**Appendix D**).

Task 5.1 Administrative Draft Report Preparation

The Administrative Draft Report shall include drawings, maps and graphics, reflecting the information gathered and prepared. The report shall be provided to CVWD staff for review.

Task 5.2 Draft Report Preparation

The Draft Report shall be prepared incorporating comments on the Administrative Draft Report. The report shall be provided to SWRCB for review.

Task 5.3 Final Report Preparation

A Final Report shall be prepared incorporating comments on the Draft Report.

Deliverable:

- Administrative Draft Report (PDF).
- Draft Report (PDF).
- Final Report (PDF, 3 hard copies).

Task 6. Project Management, QA/QC, and Meetings

Task 6.1 Project Management

Project management activities will be performed to maintain the project schedule and budget, and communicate progress and issues with CVWD staff. Invoices will be prepared and submitted to CVWD on a monthly basis.

Task 6.2 QA/QC

Quality assurance and quality control (QA/QC) reviews will be performed throughout the course of this Project. Work products will be reviewed prior to submittal to CVWD.

The Team will conduct an in-house concepts and criteria review (C&CR) meeting early in the project to obtain focused technical input from senior staff based on their experience from other similar projects. This C&CR meeting allows senior staff not directly involved in the project to provide technical review and input into the key aspects of the project. It helps address opportunities for design improvements and potential future challenges before expending effort on detailed design activities.

Task 6.3 Meetings and Workshops

The Team will attend an in-person one-hour kickoff meeting with CVWD staff. An agenda, meeting materials, and meeting notes will be prepared.

The Team will attend up to four (4) in-person one-hour milestone meetings with CVWD staff to cover the following topics:

- Long-list alternatives development
- Fatal flaw analysis
- Short-list alternatives development
- Short-list alternatives analysis and recommendations

An agenda, meeting materials, and meeting notes will be prepared for the milestone meetings.

The Team will:

- Attend up to two (2) in-person workshop meetings CVWD's Engineering Committee.
- Prepare and present one (1) formal in-person presentation to CVWD's Board of Directors.
- One virtual progress meeting and one virtual draft report presentation with SWRCB staff

Deliverable:

- Meeting agendas, materials, and notes (PDF).

Task 7. 10% Design Documents (Optional)

Given that the recommended Project is not yet defined, we propose to provide a placeholder scope of work and budget for this task. It is difficult to provide any design work plan without understanding the treatment technologies, locations, and facilities involved. Once a recommended project is defined, we will negotiate a scope of work and budget with the District.

It is anticipated that the 10% design will define the following elements:

- Project site area
- Final site grading
- Wastewater treatment facility design criteria, including:
 - » Facility location
 - » Treatment process
 - » Required booster pump stations

- » Design capacity for clearwell
- » PFAS treatment, if required
- » General layout of treatment facilities
- » Space required for future facilities
- Advanced water treatment facility design criteria, including:
 - » Facility location
 - » Treatment process
 - » Required booster pump stations
 - » Design capacity for clearwell
 - » General layout of treatment facilities
 - » Space required for future facilities
 - » Brine disposal
- Conveyance systems for wastewater and recycled water design criteria, including:
 - » Pipeline sizes and alignments
 - » Pump station capacities and locations
- Recharge facilities design criteria, including:
 - » Injection well location, size, and capacity (if needed)
 - » Well site locations and footprint
 - » Backwash facilities
 - » Percolation basin location, size, and capacity (if needed)

- Electrical service requirements
- O&M access, including complete ingress and egress and on-site mobility
- Aesthetic site enhancements

The 10% design will include a set of preliminary drawings. The anticipated drawing list consists of:

- General site plan
- Site sections
- Process Flow Diagram

Deliverable(s):

- 10% design document (PDF).

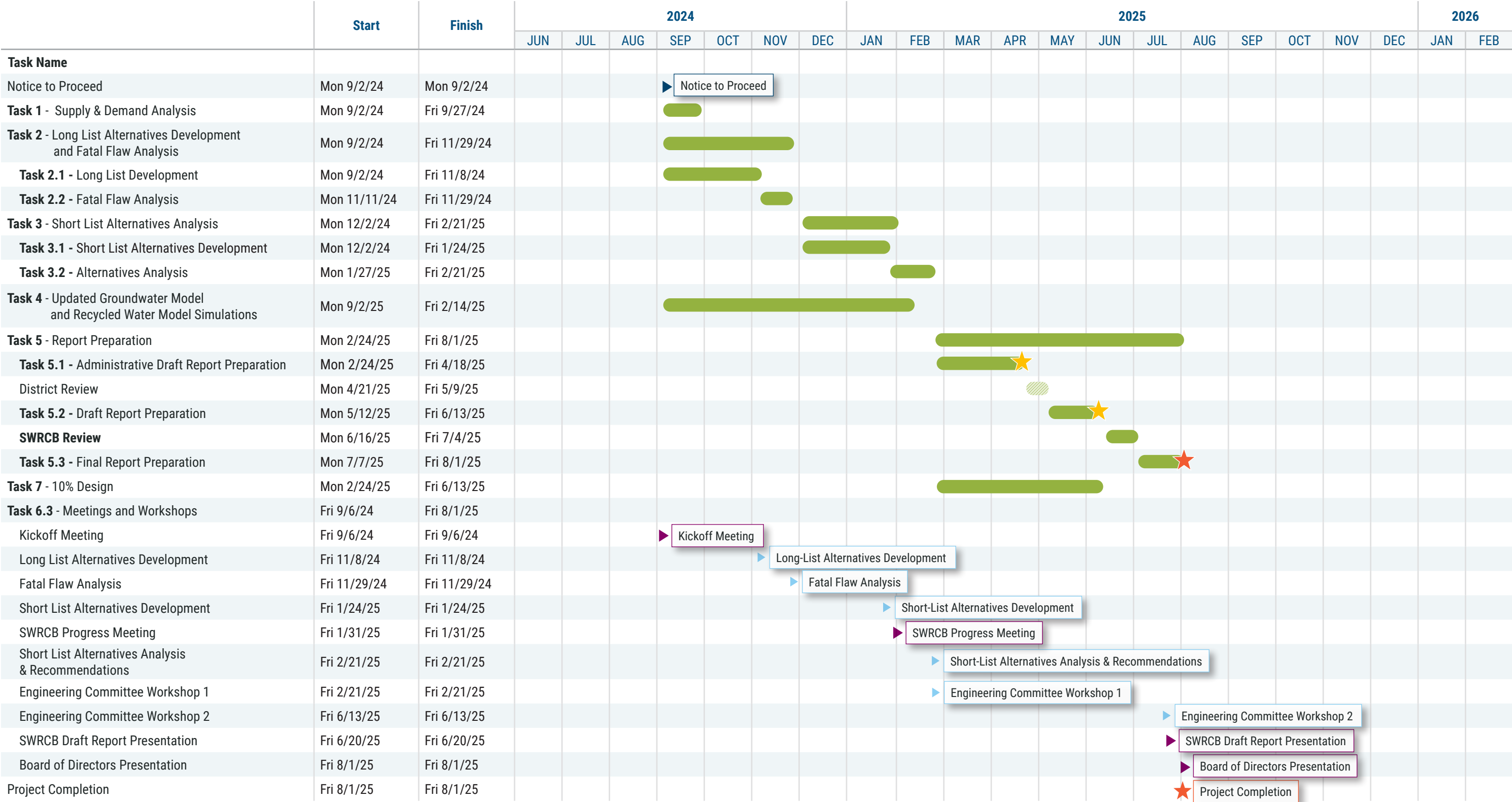
Proposed Professional Services Agreement Revision

For Article 3, we propose adding the following sentence after the first sentence:

However, CONSULTANT shall not be responsible for delays caused by events that are beyond the reasonable control of CONSULTANT including without limitation, events of war, floods, labor disputes, earthquakes, epidemics, pandemics, adverse weather conditions not reasonably anticipated, and acts of God.

H | Project Schedule

Below is the proposed 2024 Recycled Water Feasibility Study schedule, which will meet the District’s requirement to complete the project within 240 days. This schedule is contingent upon receiving the SWRCB review within four weeks of submittal.



LEGEND

▶ One Day

■ Multiple Days

★ Draft Deliverable

★ Final Deliverable

▶ Meeting

▶ Workshop

Attachment B - Proposal Fee Estimate (1)(2)

	Project Manager John Robinson	KJ									Total Hours	KJ			WSP (2)			Total Labor	Total Expenses	Total Labor + Subs + Expenses
		Eng-Sci-9	Eng-Sci-8 Dawn T.	Eng-Sci-7 Paul C. David S.	Eng-Sci-6 Claudia L.	Eng-Sci-5 Connor R., Kajori P.	Eng-Sci-4	Eng-Sci-3	Eng-Sci-2	Project Assistant		Labor	ODCs	ODCs Markup	Labor	ODCs	ODCs Markup			
Classification:											Hours	Fees	Fees	5%	Fees	Fees	5%			
Hourly Rate:	\$165	\$320	\$305	\$285	\$260	\$240	\$220	\$200	\$180	\$130										
Task 1. Wastewater Characterization																				
1.1 Wastewater Flow Analysis	8			4		12					24	\$4,020		\$0	\$0		\$0	\$5,340	\$0	\$5,340
1.2 Wastewater Quality Characterization	8			4	8	12					24	\$6,100		\$0	\$0		\$0	\$6,100	\$0	\$6,100
1.3 Recycled Water Market Assessment	8		2	4	12	16					34	\$8,710		\$0	\$0		\$0	\$8,710	\$0	\$8,710
Task 1 - Subtotal	24	0	2	12	20	40	0	0	0	0	82	\$18,830	\$0	\$0	\$0	\$0	\$0	\$20,150	\$0	\$20,150
Task 2. Long-List Alternatives Development and Fatal Flaw Analysis																				
2.1 Long-List Alternatives Development	28		2	14	14		6	36			100	\$16,760		\$0	\$0		\$0	\$21,380	\$0	\$21,380
2.2 Fatal Flaw Analysis	28		2	10	6			24			70	\$9,820		\$0	\$0		\$0	\$14,440	\$0	\$14,440
Task 2 - Subtotal	56	0	4	24	20	0	6	60	0	0	170	\$26,580	\$0	\$0	\$0	\$0	\$0	\$35,820	\$0	\$35,820
Task 3. Short-List Alternatives Analysis																				
3.1 Short-List Alternatives Development	24		2	40	30	10		80			186	\$38,210		\$0	\$0		\$0	\$42,170	\$0	\$42,170
3.2 Short-List Alternatives Analysis	58		2	8	12	4		32			116	\$13,370		\$0	\$0		\$0	\$22,940	\$0	\$22,940
Task 3 - Subtotal	82	0	4	48	42	14	0	112	0	0	302	\$51,580	\$0	\$0	\$0	\$0	\$0	\$65,110	\$0	\$65,110
Task 4. Updated Groundwater Model and Recycled Water Model Simulations																				
Three tasks supporting Updated Groundwater Model and Recycled Water Model Simulations	0			0			0				0	\$0		\$0	\$121,103		\$0	\$121,103	\$0	\$121,103
Task 4 - Subtotal	0	0	0	0	0	0	0	0	0	0	0	\$0	\$0	\$0	\$121,103	\$0	\$0	\$121,103	\$0	\$121,103
Task 5. Report Preparation																				
5.1 Admin Report Preparation	30			16	16	16		100			178	\$32,560		\$0	\$0		\$0	\$37,510	\$0	\$37,510
5.2 Draft Report Preparation	20			8	8	8		60			104	\$18,280		\$0	\$0		\$0	\$21,580	\$0	\$21,580
5.3 Final Report Preparation	10			4	4	4		30			52	\$9,140		\$0	\$0		\$0	\$10,790	\$0	\$10,790
Task 5 - Subtotal	60	0	0	28	28	28	0	190	0	0	334	\$59,980	\$0	\$0	\$0	\$0	\$0	\$69,880	\$0	\$69,880
Task 6. Project Management, QA/QC, and Meetings																				
6.1 Project Management			2	48						12	62	\$15,850		\$0	\$0		\$0	\$15,850	\$0	\$15,850
6.2 QA/QC	20		16	16							52	\$9,440		\$0	\$0		\$0	\$12,740	\$0	\$12,740
6.3 Meetings and Workshops											0							\$0		\$0
Kickoff and Milestone Meetings (5)	20			10	4	4		12			50	\$7,250	\$250	\$13	\$0		\$0	\$10,550	\$263	\$10,813
Engineering Committee, Board, and SWRCB Meetings (5)	6			20				24			50	\$10,500	\$150	\$8	\$0		\$0	\$11,490	\$158	\$11,648
Task 6- Subtotal	46	0	18	94	4	4	0	36	0	12	214	\$43,040	\$400	\$20	\$0	\$0	\$0	\$50,630	\$420	\$51,050
All Tasks Total	268	0	28	206	114	86	6	398	0	12	1316	\$200,010	\$400	\$20	\$121,103	\$0	\$0	\$362,693	\$420	\$363,113

Attachment B - Proposal Fee Estimate (1)(2)

	Project Manager John Robinson	KJ									Total Hours	KJ			WSP (2)			Total Labor	Total Expenses	Total Labor + Subs + Expenses
		Eng-Sci-9	Eng-Sci-8 Dawn T.	Eng-Sci-7 Paul C. David S.	Eng-Sci-6 Claudia L. Eng-Sci-5 Connor R., Kajori P.	Eng-Sci-4	Eng-Sci-3	Eng-Sci-2	Project Assistant	Labor		ODCs	ODCs Markup	Labor	ODCs	ODCs Markup				
Classification:											Hours	Fees	Fees	5%	Fees	Fees	5%			Fees
Hourly Rate:	\$165	\$320	\$305	\$285	\$260	\$240	\$220	\$200	\$180	\$130										
Task 7. 10% Design (Optional)																				
10% Design	40			40	40	40	50	100	200		470	\$98,400		\$0	\$0		\$0	\$105,000	\$0	\$98,400
Task 7 - Subtotal	40	0	0	40	40	40	50	100	200	0	470	\$98,400	\$0	\$0	\$0	\$0	\$0	\$105,000	\$0	\$98,400

(1) JRC does not mark up subconsultant invoices
(2) Refer to Attachment B for compensation breakdown for WSP

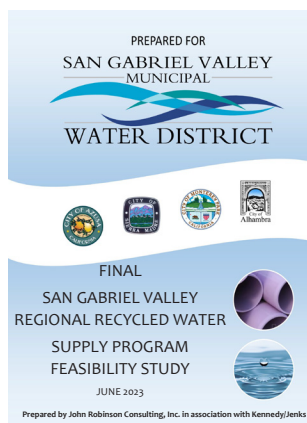
CVWD Will Benefit From Our Team’s Wisdom Gained on Similar Projects

The table below lists similar siting and alternative evaluations performed by our team throughout California, demonstrating our team’s experience and qualifications are responsive to your needs. For many of these projects, our team members performed planning services in the initial program phases and continued to provide design, permitting, and construction support services through implementation. Showcase projects performed in the last five years are described in this section and are comparable in quality and scope to that specified in this RFP.

★ = Highlighted Project

Client	Project	Similarity to Your Project										
		Master Plan / Feasibility Study	WW Treatment Evaluation	Advanced Treatment Evaluation	Groundwater Modeling	WW Treatment Siting	Potable Reuse Regional Partnerships	CEQA Environmental Preliminary Assessment	Staffing Impacts	Alternatives Analysis	Lifecycle Cost Analysis	Implementation Schedule
★ Upper San Gabriel Valley Municipal Water District	Recycled Water Master Plan	X	X	X	X	X	X	X		X		X
★ Inland Empire Utilities Agency	Recycled Water Implementation Plan	X	X	X	X	X		X	X	X	X	X
★ Rancho California Water District	Recycled Water Resource Plan	X	X	X	X		X	X	X	X		X
★ Las Virgenes Municipal Water District	Pure Water Project Title XVI Feasibility Study	X		X			X	X		X	X	X
★ City of Scotts Valley	Wastewater Reclamation Facility (WRF) Improvements Study	X	X			X		X		X	X	X
★ Padre Dam Municipal Water District	East County Advanced Water Purification Program	X	X	X		X	X	X	X	X	X	X
★ Crescenta Valley Water District	Verdugo Basin Groundwater Model		X		X		X			X		
★ Coachella Valley Water District	Groundwater Model for SGMA Compliance	X	X		X	X	X			X		
Central Basin Municipal Water District	Recycled Water Master Plan	X					X	X	X	X	X	X
West Basin Municipal Water District	Recycled Water Master Plan	X	X	X		X	X	X	X	X	X	X
Foothill Municipal Water District	Recycled Water Feasibility Study	X	X	X		X		X	X	X	X	X
Descanso Gardens Foundation	Recycled Water Preliminary Design Report		X	X		X		X	X		X	X
Clarmount College	Recycled Water Feasibility Study	X	X	X		X		X	X	X	X	X
Jurupa Community Services District	Recycled Water Strategic Plan	X					X	X	X	X	X	X
County of Kauai	Wailua Wastewater Treatment Plant Alternatives Analysis and Preliminary Design	X	X			X				X	X	X
County of Maui	Wailuku-Kahului WWRF Facility Plan	X	X			X				X	X	X
Rancho California Water District	Recycled Water Resource Plan	X		X	X		X	X	X	X	X	X
Eastern Municipal Water District	Recycled Water Master Plan	X	X	X			X			X		X
Elsinore Valley Water District	IPR Feasibility Study	X	X	X	X	X	X	X	X	X		X
Palmdale Water District	Littlerock Creek Groundwater Recharge and Recovery Project Feasibility Study	X	X	X			X			X	X	X
SCV Water (formerly Castaic Lake Water Agency)	2016 Recycled Water Master Plan	X	X	X	X	X	X	X	X	X		X
San Elijo Joint Powers Authority	Advanced Water Treatment Design and Project Delivery			X				X	X		X	X
Monterey One Water	Pure Water Monterey Groundwater Replenishment Program			X	X		X	X	X	X	X	X
City of Santa Cruz	Regional RW Facilities Planning Study and SWRCB Grant	X	X	X	X	X	X	X	X	X		X
Scotts Valley Water District	Groundwater Replenishment Reuse Facilities Planning Study at Hansen Quarry	X	X	X	X	X	X	X	X	X		X
Soquel Creek Water District	IPR/DPR Conceptual-Level Alternatives Analysis	X	X	X		X	X	X	X	X		X
San Francisco Public Utilities Commission	Potable Reuse Exploratory Partnership	X	X	X	X		X	X	X	X		X
San Francisco Public Utilities Commission	Eastside Recycled Water Feasibility Study	X	X				X	X		X		X
San Francisco Public Utilities Commission	Westside Recycled Water Alternatives Analysis, Public Outreach Workshops and Design	X	X	X			X	X		X		X
Santa Clara Valley Water District	Advance Treated Recycled Water Feasibility Study	X	X	X	X	X	X	X	X	X		X
North Bay Water Reuse Authority	Title XVI Feasibility Study - Phase 2 Recycled Water Program	X	X				X	X		X		X
City of Santa Rosa	Incremental Recycled Water Program - Discharge Compliance	X	X	X			X	X	X	X	X	X
City of American Canyon	Potable Reuse - Supplemental Water Supply Evaluation	X	X	X		X	X	X		X		X
North Hollywood OU	Basin scale model of San Fernando Valley to evaluate pump & treat options	X	X	X	X		X	X		X		X
Broadway-Pantano WQARF	Evaluated 26 alternatives for remediation of groundwater impacted with landfill VOCs	X		X	X		X	X		X	X	
Valley Water - Broad Creek 2	Evaluate potential loctions for disposal of produced water	X	X		X					X		

Recycled Water Master Plan | Upper San Gabriel Valley Municipal Water District (USGVMWD), El Monte, CA



Relevant Team

- John Robinson (Principal)
- Paul Chau (Project Engineer)

The Project Team, led by John Robinson, prepared a Recycled Water Master Plan for the CBMWD, the San Gabriel Valley Municipal Water District (SGVMWD), and the USGVMWD, covering an area of over 30 cities. The team updated the list of potential recycled water customers for CBMWD and created a list for the western half of the SGVMWD and USGVMWD service areas. The list of potential customers included many irrigation customers but also expanded to include many industrial customers. After completing the development of a potential customer list, our team developed several alternatives for potential pipeline routings to serve the customers.

The team used hydraulic modeling to size pipelines, pump stations, and reservoirs. After completing the model and proposed facilities, they performed an economic evaluation, ranking and phasing the facilities based on cost-effectiveness and potential return. The project resulted in a phased recommendation for expanding the recycled water system, including interconnections among three regional agencies.

Concept Development Plan for Advanced Water Reuse. In 2008, John Robinson's team developed a concept plan in collaboration with the USGVMWD, the Water Replenishment District of Southern California, and the Los Angeles County Sanitation Districts. The plan evaluates regulatory requirements, effluent data, and membrane technologies. It proposes a process train of microfiltration or ultrafiltration, followed by reverse osmosis and advanced oxidation. The goal is to produce 46,000 acre-feet/year of highly treated water for groundwater discharge, replacing depleted sources.

City of Industry Recycled Water Project – Phase IIB. The Team provided engineering design services for recycled water distribution facilities to serve existing landscape irrigation in the cities of West Covina, Walnut, and portions of Los Angeles County, with recycled water to substitute for other scarce, potable sources. Up to 3,700 acre-feet/year would be provided via 12.4 miles of 24-inch through 6-inch pipelines buried in existing streets.

Relevant Project Features

- Planning document for advance treatment from Los Angeles County Sanitation Districts' San Jose Creek Water Reclamation Plant.
- Evaluation of the groundwater basin for groundwater spreading or injection of recycled water.

BENEFIT TO CVWD: This project utilized the same grant funding source that CVWD is using and allowed USGVMWD to obtain additional funding to advance the design of an advanced recycled water treatment system for groundwater recharge.

Recycled Water Implementation Plan | Inland Empire Utilities Agency, Chino, CA



Relevant Team

- John Robinson
(Team Lead/Principal)

The project team, led by John Robinson, developed IEUA's Recycled Water Implementation Plan. The team developed the overall project approach and methodology, coordinated project tasks with IEUA, and provided the technical content of the report. As part of the approach, the team developed a 10-year implementation plan based on hydraulic modeling performed in InfoWater.

The IEUA service area encompasses 242 square miles in the southwestern corner of San Bernardino County and is projected to develop significantly in the next 25 years. The Recycled Water Implementation Plan provides an overview of IEUA's recycled water supplies, existing and estimated recycled water demands, and a recommended regional backbone system to distribute recycled water throughout the service area.

The proposed backbone system is sized for build-out demand conditions, delivers recycled water to all IEUA's member agencies, and is selected based on life-cycle cost evaluations. The proposed system goal was to serve the maximum number of potential recycled water customers while meeting the pressure criteria and selecting the most cost-effective alignments to avoid significant utility conflicts where possible.

The proposed recycled water system aims to serve over 2,000 users, with a demand increase from 7,900 to 93,000 acre-feet/year. It includes seven pressure zones, 110 MG of reservoir storage, 13 booster stations, and 35 regional pipelines. The 10-year implementation plan has a \$200M capital cost, with a total cost of \$325M for full build-out.

In addition to the implementation plan, the team designed four pipelines, a pump station, and reservoir projects. Later, the design component expanded to six projects, including program management services and the development of a customer geodatabase. The work required a strong client/consultant partnership for detailed designs of major backbone facilities in heavily populated areas. Thorough knowledge of recycled water customer locations and demands was essential. The service area includes the Cities of Rancho Cucamonga, Ontario, and Montclair, California.

Relevant Project Features

- Planning document for advance treatment from wastewater treatment plants (WWTP) to support groundwater spreading or injection of recycled water.
- Evaluation of the Chino Basin groundwater basin for groundwater spreading or injection of recycled water.

BENEFIT TO CVWD: *This project utilized the same grant funding source as CVWD is using. It allowed IEUA to obtain additional funding to advance the design of an advanced recycled water treatment system for groundwater recharge at Regional Plant No. 5.*

Recycled Water Resources Plan | Rancho California Water District, Temecula, CA



KJ | Kennedy Jenks

Relevant Team

- Dawn Taffler
(Project Manager)
- Paul Chau
(Project Engineer)

KJ developed a Recycled Water Resources Plan (RWRP) to explore the feasibility of non-potable expansion and potable reuse opportunities to provide the District with a clear and concise strategy for utilizing its available recycled water supplies.

The project included evaluating facility sites and 18 sub-alternatives against a set of defined objectives and screening criteria. KJ developed a defensible and justifiable approach for project selection through a collaborative process that solicited buy-in from decision-makers early in the project. A grounded assessment of potential institutional, regulatory, and permitting challenges that may arise contributed to creating a realistic road map for implementation. Life cycle unit costs, qualitative considerations, and a financial plan model tool were used to understand the cost impacts and benefits of the recommended projects.

Dawn Taffler and Paul Chau provided the right level of detail for the engineering, operational, financial, and executive management teams to make critical decisions. The RWRP was completed on time and within budget, receiving minimal comments from District staff and unanimous approval from the Board of Directors.

Relevant Project Features

- Recycled water alternatives analysis
- Advanced water treatment technology evaluation
- Advanced water treatment siting study
- Potable reuse groundwater recharge evaluation
- Lifecycle cost analysis

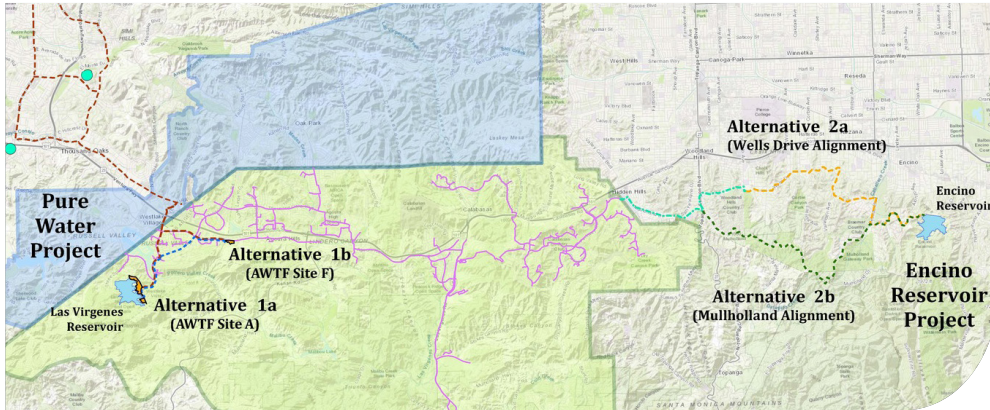
“ This is the best planning document I have ever had the privilege to collaborate on!! While no one can predict what any group of elected officials will do these days, I am excited to bring this to our E&O committee next week. Thanks again (to the entire KJ team) for all the hard work.”

- Jeff Kirshberg, PHD, PE

Water Resources
Manager, Rancho
California Water District

BENEFIT TO CVWD: *This project is very similar in scope to the District's Project and KJ utilized the same alternatives analysis approach to great success.*

Pure Water Project Title XVI Feasibility Study | Las Virgenes Municipal Water District (LVMWD), Calabasas, CA



Relevant Team

- Dawn Taffler (Project Manager)
- Paul Chau (Project Engineer)

KJ prepared a Title XVI Feasibility Study (Title XVI FS) that met all requirements for a Bureau of Reclamation WaterSMART Grant and received approval in under three weeks without the need for any clarifications or additional information.

KJ has a long history supporting LVMWD's water supply planning and design efforts. Our team developed LVMWD's 2015 Urban Water Management Plan, which provided an overview of its water supply portfolio and ability to meet future demands. We also led the development of LVMWD's Potable, Recycled Water, and Wastewater Master Plans (2014 Updates), which have directly influenced the capital infrastructure planning efforts. Building on this important work, KJ was selected to lead the Pure Water Project Las Virgenes Title XVI Feasibility Study (FS). The Title XVI FS focused on evaluating facility siting and conveyance alternatives to convey tertiary, purified, and brine water to and from a new AWTF for a surface water augmentation project. The alternatives evaluation also included an assessment of the Encino Reservoir Project to increase recycled water storage and a "No Project" alternative requiring significant additional treatment to maintain discharges to Malibu Creek.

Relevant Project Features

- Recycled water alternatives analysis
- Advanced water treatment technology evaluation
- Advanced water treatment siting study
- Lifecycle cost analysis

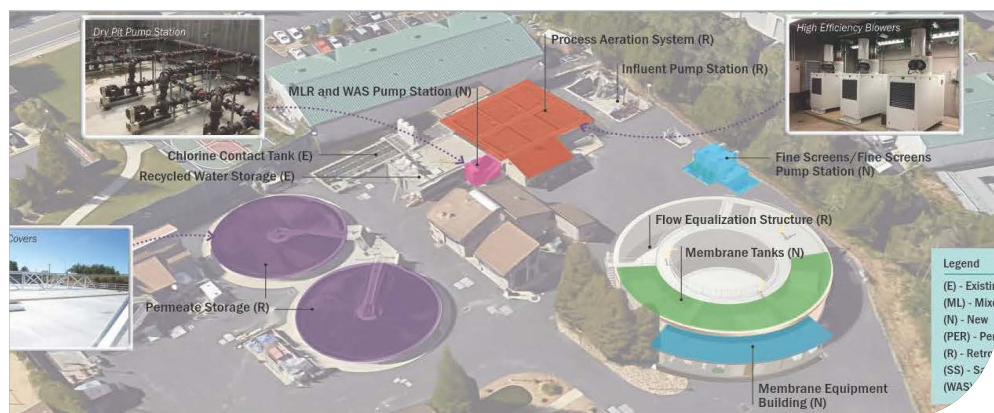
BENEFIT TO CVWD: Similar to the District's Project, KJ conducted a successful potable reuse feasibility study that met all the requirements of the funding agreement. In fact, the Bureau of Reclamation considers this study to be one of the best Title XVI studies to ever be produced and is regularly utilized as a guide for other studies.

“The KJ Team, led by Dawn Taffler and Paul Chau, did an awesome job to get our Pure Water Las Virgenes - Triunfo Title XVI Feasibility Study approved by the Bureau of Reclamation without a single comment. The Study will provide us with a solid foundation supporting future actions such as securing funding, informing environmental documents, and supporting public outreach efforts.”

- David R. Lippman, PE

Director of Facilities and Operations, Las Virgenes Municipal Water District

Wastewater Reclamation Facility (WRF) Improvement Studies | City of Scotts Valley, CA



Relevant Team

- Dawn Taffler
(Project Manager)
- David Seymour
(Technical Advisor)

The City of Scotts Valley (City) operates its Wastewater Reclamation Facility (WRF) to treat local wastewater, produce recycled water for the Scotts Valley Water District (SVWD), and provide secondary effluent to Pasatiempo Golf Club for non-potable uses. The WRF experiences recurring treatment process upsets, which have hindered the City's ability to produce recycled water.

- In 2016, KJ performed a **Secondary Process Evaluation of the WRF**, which concluded that the upsets may be contributable to the fact that when the WRF is being operated year-round to remove nitrogen, it reaches its treatment capacity and cannot accommodate additional waste loading.
- In 2018, KJ conducted a follow-up study, **Membrane Bioreactor (MBR) Analysis for Secondary Process Upgrade**, that developed a concept for retrofitting the WRF with MBR technology to resolve recurring secondary process upsets, improve recycled water production capacity and reliability, and accommodate increasing loading due to population and/or commercial growth within the WRF's service area while continuing to provide for nitrogen removal.
- In 2022, KJ completed a **WRF Options Study**, which identified and evaluated long-term options for improvements to the WRF to achieve the City's treatment, recycled water, and sustainability goals. Four WRF options, with a variety of sub-options and siting considerations, were analyzed using a two-step screening approach to drive alignment amongst staff, leadership, and the City council.

KJ is currently leading the preliminary design for an MBR Package Plant at the WRF, based on the implementation of the preferred project from the WRF Options Study. This work entails a deeper dive into package plant vendor options and facility siting evaluations, further defining design criteria, and developing a 10% design and cost estimate to support vendor pre-selection and field investigation for the next phase.

Relevant Project Features

- Wastewater treatment technology evaluation
- Wastewater treatment siting study
- Recycled water production

“ I first want to thank you (Kennedy Jenks) so much on helping keep Scotts Valley moving forward with a concrete plan on the future of the plant. Finally, we see progress and it really happening.”

- Kati King

Lab Manager and Prior
Division Manager
Scotts Valley WWTP

BENEFIT TO CVWD:

Similar evaluation of wastewater treatment options, siting considerations and a two-step screening approach to identify a preferred project to improve treatment and recycled water production.

East County Advanced Water Purification Program | Padre Dam Municipal Water District, Santee, CA



KJ | Kennedy Jenks

Relevant Team

- Dawn Taffler (Technical Advisor)
- Paul Chau (Project Engineer)
- David Seymour (Wastewater Technical Advisor)

Using adaptive management strategies, KJ provided planning, engineering, and program management services for this innovative \$600M potable reuse program in partnership with the Padre Dam Municipal Water District and its East County Partners (Helix Water District, County of San Diego, City of El Cajon, and Padre Dam). We authored the 2016 East County Regional Potable Reuse Planning Study, which identified the feasibility of the East County Advanced Water Purification Program. We designed the AWP demonstration project, which has been utilized to facilitate regulatory approvals and promote outreach. Additionally, the study prepared for expanding the water reclamation facility, constructing a new advanced water treatment facility, solids handling facilities, conveyance elements, brine disposal facilities, and pursuing energy recovery opportunities.

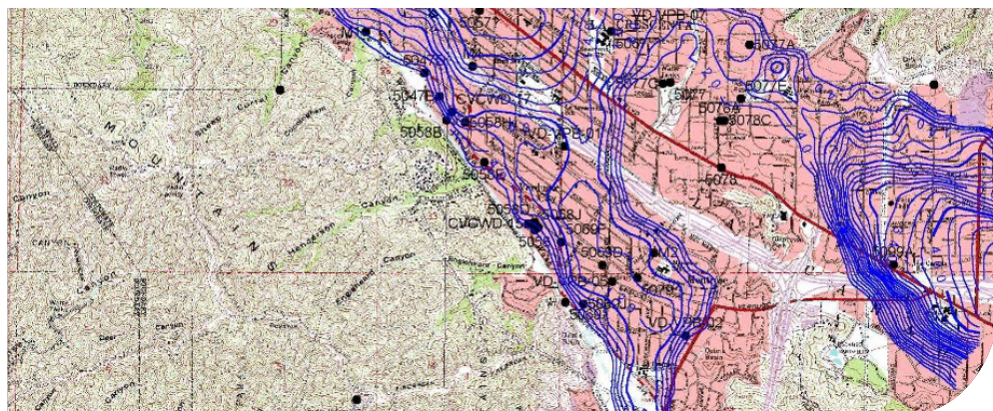
KJ prepared a comprehensive alternatives feasibility study that analyzed alternatives for providing up to 15 mgd of potable reuse water for groundwater recharge and surface water reservoir augmentation to provide a new local water supply source, funded partly by an SWRCB Recycled Water Planning Grant. Additionally, we led the design for the advanced water treatment demonstration facility, which is capable of producing 100,000 gpd of MF/RO product water and Advanced Oxidation Process, meeting regulatory requirements for groundwater recharge and recovery.

Relevant Project Features

- Wastewater treatment technology evaluation
- Wastewater treatment siting study
- Advanced water treatment evaluation
- Potable reuse alternatives analysis
- Recycled water groundwater recharge analysis
- Lifecycle cost analysis
- Program staffing evaluation

BENEFIT TO CVWD: Similar to the District's project, KJ evaluated both wastewater and advanced recycled water treatment options for Padre Dam to develop a set of recommended projects that has turned into the East County Advanced Water Purification Program.

Verdugo Basin Groundwater Model | Crescenta Valley Water District, Crescenta Valley, CA



Relevant Team

- David Bean (Lead Modeler)
- Gary Kramer (Hydrogeologist)

CVWD retained WSP to prepare and calibrate a groundwater flow model of the Verdugo Basin. The basin is a small, steeply dipping alluvium-filled valley nestled between the San Gabriel Mountains to the northeast and the Verdugo Mountains to the southwest. A preliminary water budget was prepared, and the groundwater flow model was calibrated to static water level elevation data from monitoring and municipal wells.

During model calibration, it was discovered that mountain front recharge played a greater role in the basin water balance than previously thought. A significant lag time had been observed between precipitation events and groundwater level recovery in the aquifer. By delaying mountain front recharge for approximately 25 months following significant precipitation events and spreading the recharge over a longer period of time, a significant improvement in model calibration was obtained. Furthermore, during model calibration, it became apparent that a flow barrier of some sort was necessary to maintain groundwater levels in the upper part of the basin. The addition of a horizontal flow barrier along the trace of the hypothesized Park Avenue Fault greatly improved the model calibration.

The model simulated the period from June 1981 - December 2015 using 415 monthly stress periods. Inflow to the model was primarily via 16 mountain front recharge reaches and 12 intermittent streams, and the Verdugo Wash. Outflow was primarily via 20 municipal water supply wells and stream discharge from the lower Verdugo Wash. The model was calibrated to over 4,140 water level observations in 67 monitoring and water supply wells. The model has been utilized to evaluate potential artificial recharge scenarios and optimize well field operations with available groundwater supplies. The model was also used to evaluate the fate of septic system (nitrate) impacted groundwater within the basin.

Relevant Project Features

- Developed CSM and water budgets
- Created a new MODFLOW model
- Incorporated mountain front recharge
- Evaluated four potential recharge scenarios

BENEFIT TO CVWD: *With our previous experience on the District's groundwater model, we will be able to hit the ground running on updating the model and using it to evaluate key regulatory requirements for groundwater recharge with recycled water.*

Groundwater Model for SGMA Compliance | Coachella Valley Water District, Coachella Valley, CA



Relevant Team

- David Bean (Lead Modeler)

For this project, WSP updated and recalibrated a 2010 model of the Upper Coachella Valley as part of an Alternative Plan Update to the existing Alternative Plan under Sustainable Groundwater Management Act (SGMA) requirements. The Upper Coachella Valley consists of several groundwater subbasins (SB) separated by faults. Subbasins in the 2010 model included the northern portions of the Mission Creek SB and Indio SB. Updates to the model included converting the model to MODFLOW-NWT, expanding the model grid to include the previously excluded Indio Hills in the Mission Creek SB and Desert Hot Springs SB, and updating the model through 2019.

WSP also updated the model with time-variable estimates of mountain front recharge derived from the USGS Basin Characterization Model instead of the previously assumed constant mountain front recharge. The model was also updated from 2009 through 2019 with available pumping data, intentional recharge data, and return flows estimates. The model was recalibrated to available groundwater level observations from 1936 through 2019 using a combination of trial and error methods and parameter estimation and uncertainty analysis (PEST). The recalibrated model will be utilized to evaluate the potential for undesirable effects from continued groundwater use under several water demand and supply forecast scenarios, including the effects of climate change.

Relevant Project Features

- Water Resources Reporting
- Groundwater Modeling
- Supply and Demand Projections
- Evaluation of Transport of Tertiary Treated Water

BENEFIT TO CVWD: WSP's experience with developing a basin scale model of the Mission Creek Basin for an Alternative Plan for SGMA compliance provided them with valuable insight in estimating mountain front recharge and runoff into the basin from the surrounding mountains using the USGS BCM which can be directly applied to the CVWD model update.

Firm	Project Name	Reference Contact	Client, Address
	Recycled Water Master Plan	Tom Love General Manager and Chief Engineer tom@usgvmwd.org (626) 443-2297	Upper San Gabriel Valley Municipal Water District 11310 Valley Blvd. El Monte, CA 91731
	Recycled Water Implementation Plan	Sylvie Lee Former Manager of Planning with Inland Empire Utilities Agency, now with Three Valleys MWD slee@tvmwd.com (909) 293-7028	Inland Empire Utilities Agency 6075 Kimball Ave. Chino, CA 91708
 Kennedy Jenks	Recycled Water Resources Plan	Jeff Kirshberg Director of Planning kirshbergj@ranchowater.com (951) 296-6973	Rancho California Water District 42135 Winchester Rd. Temecula, CA 92590
	Water Reclamation Facility Improvements Study	Katie King Lab Manager and Prior Division Manager, Scotts Valley Wastewater Treatment Plant kking@scottsvally.gov (831) 438-0732	City of Scotts Valley, 70 El Pueblo Rd. Scotts Valley, CA 95066
	Verdugo Basin Groundwater Model	Brook Yared, MS, PE Engineering Manager byared@cvwd.com (818) 248-3925	Crescenta Valley Water District 2700 Foothill Blvd. La Crescenta, CA 91214
	Groundwater Model for SGMA Compliance	Zoe Rodriguez del Rey Water Resources Manager (760) 398-2661, ext. 2389	Coachella Valley Water District 75-515 Hovley Lane East Palm Desert, CA 92211

Crescenta Valley Water District
2024 Recycled Water Feasibility Study (Project M-1081)

Appendix A | Resumes

John Robinson

Project Manager



PROFESSIONAL SUMMARY

John Robinson has over 30 years of environmental engineering experience focused exclusively on water reclamation, wastewater engineering, and wastewater master plan projects for municipalities in California and Arizona. He has been the Principal-In-Charge or Project Manager for infrastructure projects that include feasibility/master studies and planning, preliminary and final design, bidding, construction management, and commissioning. His project experience includes 15 new water reclamation and wastewater facilities, four groundwater treatment projects, 300 miles of sewer, potable water, and recycled water pipeline designs, 15 pump stations, 12 groundwater wells, ten reservoirs, and 45 master plans for water, sewer, and recycled water.

TOTAL YEARS OF EXPERIENCE

31

EDUCATION

BS, Civil Engineering,
California State
University, Long
Beach, 1993

PROJECT EXPERIENCE

Recycled Water Demonstration Project, Foothill Municipal Water District (FMWD), La Cañada Flintridge, CA | *Owner's Engineer*

Mr. Robinson assisted in obtaining Department of Water Resources Proposition 84 of \$1.48M. He coordinated with the application consultant and Foothill MWD staff to develop all sections of the application and complete the review of the application before submission to the DWR. Mr. Robinson made all the presentations to the Greater Los Angeles Steering Committee for the application. The project was an innovative plan to capture, treat, and recycle local sewage water, stormwater, and irrigation runoff for groundwater percolation (recharge). The project aimed to help increase local water source reliability while decreasing FMWD's need for imported water. The project was to be funded 50 percent from DWR Proposition 84 Round 2 funding. The project is to connect to an 18-inch sanitary sewer pipeline owned and operated by the Los Angeles Sanitation District for the raw supply. Then, a 300,000 gallons per day Membrane Bioreactor (MBR) treatment plant is planned to be placed at the La Canada United Methodist Church, which will be discharged into a groundwater infiltration gallery underneath athletic fields at La Canada High School.

Groundwater Reliability Improvement Program (GRIP) Conceptual Level Study, Water Replenishment District (WRD), Upper San Gabriel Valley Municipal Water District (USGVMWD), County Sanitation District of Los Angeles County (CSDLAC), CA | *Program Manager*

Mr. Robinson served as project manager and was responsible for the development of a Conceptual Level Study on the advanced water treatment plant (AWTP) and distribution of product water to spreading basins. The Conceptual Level Study evaluated the San Jose Creek Water Reclamation Plant design flow, effluent withdrawal, and site constraints. The study also evaluated property ownership and coordination, project water distribution, and financial analysis. Mr. Robinson's responsibilities included overall project management, meeting coordination, budget, and Partnership coordination. Mr. Robinson's responsibilities also included the evaluation of multiple technologies, including microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV), for further treatment of Title 22 recycled water for discharge into the San Gabriel River.

Biological Nitrate Removal Treatment for Well No. 2, Crescenta Valley Water District | Owner's Engineer

Served as the representative for the bidding, construction, permitting, construction management, and grant administration of the biological nitrate removal treatment project for Well No. 2 located at Ordunio Reservoir. The project consists of a new 150 gpm submersible pump and motor for Well No.2, onsite piping, a chlorine feed system using sodium hypochlorite (NaOCl), a biological nitrate removal treatment facility (by APT Water), an upgrade of two existing booster pumps, installation of a masonry or pre-fabricated operations building, installation of a "carport" type building over the concrete pad for the nitrate removal facility, water, sewer, and gas services, electrical and telemetry system (SCADA), pavement and other onsite improvements. Mr. Robinson managed the Contractor, Construction Support Services consultant, and Construction Manager during the bidding and construction and assisted the District with the permit to operate amendment application of Well No. 2 through the State Water Resources Control Board Division of Drinking Water (SWRCB DDW). Mr. Robinson obtained all the permits for the project located in the City of Glendale, as well as the Glendale Fire Department and SoCal Gas Company. Mr. Robinson is coordinating with the City for the Department of Water Resources Proposition 84, Round 4 (Drought Round) funding of approximately \$0.5M, as well as assisting staff in the daily inspection of the facility that is being constructed as a part of a design/build.

San Jose Creek Water Reclamation Facility Effluent Treatment Feasibility Study, Upper San Gabriel Valley Municipal Water District (USGVMWD), El Monte, CA | Program Manager

Served as project manager and was responsible for the evaluation of applicable regulations, pollutant identification, and project feasibility, which included cost components, cost estimates, cost analysis, and Triple Bottom Line cost-benefit analysis. Responsibilities also included the evaluation of multiple technologies, including microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV), for further treatment of Title 22 recycled water for discharge into the San Gabriel River. The AWTF evaluation included evaluating the pollution prevention program and layout of a 12-mgd facility in limited space at the San Jose Creek Water Reclamation Facility.

Terminal Island Treatment Plant (TITP) Evaluation, City of Los Angeles Bureau of Engineering, Los Angeles, CA | Project Engineer

Served as the recycled water evaluation leader during the project, which included conducting a series of public workshops with interested stakeholders to evaluate the TITP facility regarding costs, operation, and long-term compliance with future treatment options and permitting requirements. Responsibilities also included the evaluation of multiple technologies, including microfiltration (MF), reverse osmosis (RO), and ultraviolet (UV), for further treatment of Title 22 recycled water for discharge into the Los Angeles Harbor.

Recycled Water Customer Implementation, Jurupa Community Services District, City of Jurupa Valley, CA | Project Manager

Mr. Robinson, in conjunction with his sub-consultant prepared the following for Jurupa Community Services District's Recycled Water Customer Implementation: 1) Title 22 Engineering Report with cross-connection testing requirements; 2) Recycled Water Rules, Regulations and Standard Details with all the cross-connection testing requirements; 3) Recycled Water User Manual for the recycled water customers; 4) Mandatory Use Ordinance; and Recycled Water training for JCSD and Corona Norco Unified School District. The Project Team prepared recycled water retrofit plans for thirty-one (31) medians/parkways, eight (8) Parks, and eight (8) schools. The recycled water retrofit plans required preliminary cross-

Paul H. Chau, PE

Deputy Project Manager

PROFESSIONAL SUMMARY

Paul Chau is a civil and environmental engineer with extensive experience in recycled water and potable reuse projects. He has produced feasibility studies and designs for non-potable reuse systems, surface spreading groundwater recharge, injection groundwater recharge, and surface water augmentation. In addition, he has extensive master planning and hydraulic modeling experience for recycled water, water distribution, and sewer collection systems. Paul and Dawn worked together to successfully complete the Rancho California Water District Recycled Water Resource Plan and Santa Clarita Valley Water Agency Recycled Water Master Plan. These projects included comprehensive alternatives evaluations that included facility siting, conveyance options, and screening to compare the benefits and limitations of the various opportunities to expand reuse.

TOTAL YEARS OF EXPERIENCE

17

EDUCATION

BS, Environmental Engineering and Science, University of California, Los Angeles, 2006

MS, Civil and Environmental Engineering, Stanford University, 2007

REGISTRATIONS

Professional Engineer - Civil - California (75784)

PROJECT EXPERIENCE

2023 Wastewater Master Plan, Crescenta Valley Water District, La Crescenta, CA | *Project Director*

Developed the District's 2023 Wastewater Master Plan. Performed an in-depth Business Risk and Vulnerabilities Assessment for each component of the District's wastewater collection system, developed a complete asset register, and prioritized system improvement projects based on the criticality of the asset and the likelihood of failure.

Pure Water Project Title XVI Feasibility Study, Las Virgenes Municipal Water District, Calabasas, CA | *Project Engineer*

The Las Virgenes - Triunfo Joint Powers Authority (JPA) is implementing the Pure Water Program, which will provide a new water supply for the region with a surface water augmentation project that will provide advanced water treatment of recycled water with a 6-mgd treatment plant. The product water will supplement the Las Virgenes Reservoir. As part of the feasibility study, Paul confirmed sizing requirements for the advanced water treatment plant with a monthly analysis of recycled water supplies and demands, developed pipeline alignments, evaluated supplemental supply from stormwater and brine concentration, and provided updated cost estimates. The project was funded by the Bureau of Reclamation and was approved without comment, a rare feat.

Glenarm MBR WWTP Feasibility Study, Pasadena Water & Power, Pasadena, CA | *Project Manager*

KJ developed a feasibility study for constructing a new MBR wastewater treatment plant at the Glenarm Power Plant, which would capture the City's wastewater flows prior to entering LACSD's system. A project concept, site layout, conceptual drawings, and lifecycle costs were provided. The plant would produce recycled water for use at the power plant and nearby art college.

Recycled Water Resources Plan, Rancho California Water District, Temecula, CA | *Project Engineer*

Leading engineering evaluations for a Recycled Water Resources Plan (RWRP) that provides the District a clear and concise strategy for utilizing its available recycled water supplies. Work

includes a detailed market assessment for expanding non-potable reuse based on cost-effective analysis and assessment of demineralization to facilitate reuse low TDS-limited basins. Potable reuse alternatives for groundwater replenishment, conjunctive use of a nearby reservoir, direct potable reuse, and live stream discharge are being evaluated on an equal basis to compare against non-potable expansion. Work will be presented through four workshops to drive alignment amongst the District Board of Directors, staff, and stakeholders, such that the preferred alternative is supported with confidence and can move towards the next steps to implementation efficiency.

Recycled Water Master Planning, Santa Clarita Valley Water Agency, Santa Clarita, CA |
Project Engineer

Led the engineering team for Prop 84-funded Recycled Water Plan to investigate non-potable reuse, groundwater recharge, surface water augmentation and direct potable reuse for CLWA and the four retailers in the region. Responsibilities including leading project oversight and QA/QC of the hydraulic modeling development. Included alternative analysis and facility siting considerations for 14 sub-alternatives, including evaluation of conveyance requirements and costs.

East County Regional Water Reuse Program Facilities Planning Study, Full Advanced Water Treatment Demonstration Project, Padre Dam Municipal Water District, Santee, CA | *Project Engineer*

Provided engineering services for a feasibility study evaluating several options to develop a potable reuse water supply. Five project alternatives were considered, including various facility sites and conveyance options for distribution network expansion, indirect potable reuse via groundwater recharge and recovery in the Santee Basin, and lake augmentation potable reuse. Proposed facilities included a new wastewater treatment plant, advanced water treatment plant, conveyance facilities, including pumps, pipes, diversion structures, and injection wells. Responsible for developing project concepts, performing treatment process analysis, evaluating facility sizing and layout requirement, estimating costs, and performing alternatives analysis.

Advanced Water Purification Facility (AWPF) and Pump Station Project, Monterey One Water, Monterey, CA | *Project Manager*

Responsible for leading the design team for the injection well facilities, which include two deep injection wells, one vadose zone well, and four monitoring well clusters. Monterey One Water (formerly Monterey Regional Water Pollution Control Agency) and Monterey Peninsula Water Management District have partnered to create Pure Water Monterey, a \$115M groundwater replenishment project. The program entails collecting six different wastewater sources, providing conventional tertiary wastewater treatment, advanced water treatment, and injection well facilities. The injection wells will store highly purified recycled water from the advanced water treatment facility in the local groundwater basins.

Indirect Potable Reuse (IPR) Title XVI Feasibility Study, Elsinore Valley Municipal Water District, Lake Elsinore, CA | *Project Engineer*

Led the development of a feasibility study to explore advanced treatment options to utilize available recycled water for indirect potable reuse (IPR). Alternatives included surface spreading, subsurface injection, and surface water augmentation. The project evaluated various facility sites, conveyance requirements, and other project components to identify a preferred alternative. Other project components included groundwater modeling, treatment analysis, regulatory and environmental compliance strategies, and cost estimating.

Dawn T. Taffler, PE, LEED AP

QA/QC / Technical Advisor

PROFESSIONAL SUMMARY

Dawn Taffler has 24 years of experience providing project management, technical engineering, regulatory support, management, and documentation for various multi-disciplinary water resources engineering projects. A recognized specialist in recycled water and water supply planning, Dawn brings practical engineering solutions to watershed-wide challenges and serves as a liaison between engineering, public, institutional, and environmental teams to successfully integrate all elements of a One Water program. Dawn has contributed to or led the development of over fifty water supply diversification studies, many of which included consideration of non-potable and potable reuse studies. She has served as a Board Member at Large for WateReuse California from 2017 to 2023 and was recently appointed to the WateReuse Pacific Northwest Section Board of Directors, serving in the Secretary role.

TOTAL YEARS OF EXPERIENCE

24

EDUCATION

BS, Civil and
Environmental
Engineering,
University of Illinois,
Champaign-Urbana,
1998

MS, Civil and
Environmental
Engineering,
University of
California, Berkeley,
2000

REGISTRATIONS

Professional Engineer -
Civil - California
(65754)

CERTIFICATIONS

Leadership in Energy and
Environmental Design
(LEED), US Green
Building Council

MEMBERSHIPS / AFFILIATIONS

WateReuse Association,
Pacific Northwest
Section - Board

PROJECT EXPERIENCE

Recycled Water Resources Plan, Rancho California Water District, Temecula, CA | *Project Manager*

Led a multi-discipline engineering team to develop an RWRP that provided the District with a clear and concise strategy for utilizing its available recycled water supplies and meeting regulatory requirements. Work included a detailed market survey, assessing demineralization for reuse low TDS-limited basins and exploring potable reuse alternatives, including groundwater replenishment and conjunctive use. Dawn presented the technical work with a transparent scoring, weighting, and ranking alternatives evaluation approach at four workshops, successfully aligning the Board of Directors, staff, and stakeholders on a preferred set of projects.

SF-Peninsula Regional PureWater (SPRP) Project Basis of Design Report (BODR), Silicon Valley Clean Water, Redwood City, CA | *Project Manager*

Led a multi-disciplined team to provide preliminary engineering for a regional effort to resolve multiple water supply and wastewater issues while realizing the benefits of shared infrastructure, asset recovery, economies of scale, and a more competitive strategy to pursue funding. The SPRP Parties include the Bay Area Water Supply and Conservation Agency, Cal Water, San Francisco Public Utilities Commission, Silicon Valley Clean Water, the City of San Mateo, Redwood City, and the Mid-Peninsula Water District. Dawn led the first three phases of the project, which explored different types of potable reuse and identified institutional frameworks to execute the program. In 2023, KJ developed a BODR to support the development of a "CEQA Ready" project at a suitable level for comparison with other alternative regional water supply projects. The project includes reservoir water augmentation and direct potable reuse via treated water augmentation for local drinking water distribution systems. Major facilities designed at a 10% level include a new Advanced Water Purification Facility, conveyance infrastructure, brine for discharge via an outfall, upgrades to accommodate purified water augmentation, and an operational strategy to meet demands and align with broader regional water system operations. All work has been provided to KJ on a sole source basis, recognizing the high-quality performance of the team and the ability to drive alignment and maintain the group's momentum.

Member 2023 to present.

WaterReuse Association
CA Section - Board
Member at Large
2017 - 2023; Liaison
to the Board 2015-
2017; Committee
Chairs 2012 to
present; Conference
Co-Chair 2009.

WaterReuse Association,
Northern CA Chapter -
President, 2013-2014;
Vice President, 2011-
2012; Program Co-
Chair, 2009-2010

Pure Water Project Title XVI Feasibility Study (FS), Las Virgenes Municipal Water District, Calabasas, CA | *Project Manager*

Led an FS under the US Bureau of Reclamation WaterSMART grant for Pure Water Las Virgenes, a potable reuse project to further treat available recycled water from the Tapia Water Reclamation Facility at a new Advance Water Treatment Plant (AWP) and convey purified water to Las Virgenes Reservoir for later use as drinking water. The study provided Las Virgenes with a solid foundation supporting future actions such as securing funding, informing environmental documents, and supporting public outreach efforts. The Title XVI FS was approved by the Bureau of Reclamation without a single comment. **Dennis Wolfe, USBR Southern CA Area Office Area Engineer, noted that the Reclamation team accepted the study without the need for any clarifications or additional information, which does not happen very often.**

Recycled Water Distribution Study, Eastern Municipal Water District, Perris, CA | *Project Manager*

Led the development of a Recycled Water Distribution Planning Study to provide a roadmap to EMWD staff, management, and the Board for managing new development that meets Strategic Plan objectives, identifies capital needs and funding requirements, and recommends associated policy updates. Work included pipeline modeling, alignment, cost evaluations, and a comprehensive review of the District's Recycled Water Ordinance, Mandatory Use Policy, and Fees needed to support distribution system expansion. The project was completed on time and under budget and ultimately conveyed the message to staff, executive management, and the Board of Directors that... "In PRINCIPLE, we are all in this together. In POLICY, we can develop an equitable approach to cost sharing. Through FEES, we are able to implement".

Santa Cruz Recycled Water Planning Studies, Santa Cruz, CA | *Project Manager*

Dawn has worked closely with the Santa Cruz Water Department and their regional stakeholders over the past 16 years to investigate supplemental water supply alternatives to meet the region's needs. In 2008, she led a Supplemental Supply Evaluation Study as part of KJ's work as the Desalination Program Technical advisor to take the first comprehensive look at reuse options in the region. In 2016, she secured a SWRCB Grant and led a multi-disciplinary team to develop a Regional Recycled Water Facilities Planning Study to investigate non-potable and potable reuse alternatives. Dawn facilitated workshops with over a dozen project stakeholders to rank a list of over 60 project component options to a short list of 8 project alternatives and select a preferred alternative based on regulatory, technical, financial, and institutional screening criteria. Dawn continues to support the City on a Phase 2 Recycled Water Feasibility Study and their broader Water Supply Augmentation Implementation Plan to compare recycled water alternatives against other water supply options given concurrent projects in the region.

Santa Monica Recycled Water Master Plan (RWMP), Santa Monica, CA | *Project Manager*

Led a team of engineers and modelers to develop an RWMP to connect the dots between the City's existing systems, facilities in construction, and new facilities needed to achieve the water self-sufficiency goals by establishing a road map to optimize the use of the future recycled water resources and potentially exploring regional partnership opportunities. Efforts included a comprehensive assessment of supplies and demands for non-potable and potable reuse, the development of a baseline hydraulic model, and the development of infrastructure design criteria. The outcome of the study is a 10-year Capital Improvement Plan to guide the planning of capital investments in future recycled water infrastructure development. **The project was completed on time and under budget and received the AAES 2024 Grand Prize in Planning Award.**

David A. Seymour, PE, PMP

QA/QC / Technical Advisor

PROFESSIONAL SUMMARY

David's professional career has focused on wastewater treatment plant design, and he has worked at over 40 different wastewater treatment facilities in Washington, Oregon, California, and Hawaii. These facilities range in size from 0.5 MGD to 300 MGD, and he has served in a variety of roles on these projects including project manager, project engineer, process lead, and technical advisor. David's relevant experience includes planning, financial analysis, and design of satellite treatment facilities and reclaimed water treatment facilities.

TOTAL YEARS OF EXPERIENCE

21

EDUCATION

BSCE, University of Washington, 2003

REGISTRATIONS

Professional Civil Engineer

Hawaii (PE-16905)

Washington (44270)

Texas (146740)

CERTIFICATIONS

Project Management Professional, Project Management Institute

MEMBERSHIPS / AFFILIATIONS

Water Environment Federation (WEF) Pacific Northwest Clean Water Association, Member

PROJECT EXPERIENCE

WRF Options Study, City of Scotts Valley, Scotts Valley, CA | *Technical Advisor*

The City was experiencing treatment process upsets at its 1.5-MGD Wastewater Reclamation Facility (WRF) due to suspected high-strength discharges. Upon reviewing plant data, KJ discovered that the treatment plant was operating at capacity, and capital improvements were needed to mitigate the upsets and handle future additional loading. Due to the high cost associated with the improvements, the City asked KJ to evaluate alternatives and identify the most cost-effective approach. Alternatives included improving the plant in place, mothballing the plant and sending flow to another regional treatment plant, and constructing a satellite treatment facility to offload flow from the plant and produce recycled water. The City elected to construct a satellite treatment facility, which KJ is currently designing.

Reclaimed Water Disinfection, Storage, and Pumping Facility, Silicon Valley Clean Water, Redwood City, CA | *Project Team Member*

KJ led planning, design, and construction of a reclaimed water facility including: rehabilitation of existing dual media filters for production of reclaimed water, installation of a chloramination system and contact tanks to meet Title 22 disinfection requirements, a 14-MGD booster pump station with hydropneumatic surge tanks, a 4.4-MG pile-supported concrete storage reservoir for recycled water, and over 80,000 linear feet of 8- to 30-inch recycled water distribution piping. David assisted with the design of the recycled water pump station and surge tank facilities. His work included the preparation of hydraulic calculations for the distribution pumps and recycled water distribution system, selecting and specifying pumps, pump layout, layout of the surge tanks, and development of the pump control strategy.

Hi-Desert Water Reclamation Facility, Hi-Desert Water District, Yucca Valley, CA | *Process Engineer*

David collaborated with a team to provide planning, design, and construction support services for a greenfield 1.0-mgd average dry weather flow WRF. The new facility included influent pumping, equalization, coarse screening, grit removal, fine screening, aeration basins and membrane tanks, UV disinfection, aerobic sludge storage tanks, and dewatering. David led the process and hydraulics design of the facility, including sizing of the equalization tank, process tanks, and major process mechanical equipment (pumps, blowers, etc.) and preparing process and hydraulic models to simulate plant operation. The project was delivered in a design-build partnership with WM Lyles for approximately \$32M.

Evaluation of Alternative Treatment Processes at the Piru Wastewater Treatment Plant, County of Ventura, Ventura, CA | *Project Engineer*

This project involved an alternatives evaluation for upgrading a 0.5 MGD wastewater plant to perform nutrient removal and produce recycled water. The project included identification and discussion of alternative treatment approaches to a cost-prohibitive \$17M MBR upgrade that was previously proposed, designed, and bid by another consultant. David evaluated alternative upgrade approaches and recommended conversion to an extended aeration system. The County accepted the recommendation, re-bid the project for \$13M, and an oxidation ditch was built at a 25% cost savings to the County as compared to the originally contemplated MBR.

Water Recycling Facility for the City of Fillmore, Design-Build-Operate Project, American Water Operations and Maintenance, Fillmore, CA | *Design Engineer*

This work included design and construction of a new 2.4 MGD membrane bioreactor (MBR) WWTP using a design build operate contracting process with American Water. The process is designed for near complete removal of BOD5 and TSS and an effluent TN of less than 10 MG/L. The design featured influent flow equalization with the construction of a single-cell rectangular 0.3-MG covered and ventilated tank. David led the process and hydraulics design of the facility, including sizing of the equalization tank, process tanks, and major process mechanical equipment (pumps, blowers, etc.) and preparing process and hydraulic models to simulate plant operation.

Brightwater Reclaimed Water Project, King County, Woodville, WA | *Project Manager*

King County Wastewater Treatment Division operates a 29 mgd average dry weather flow membrane bioreactor (MBR) facility called Brightwater in Woodinville, Washington. Since Brightwater came online in 2011, WTD has had 300-800 outages per year in its reclaimed water system. David led a team to evaluate alternatives that provide a more reliable reclaimed water supply. Improvements include the installation of a new 11.6 mgd UV disinfection facility with closed-vessel UV units, a chloramination building, and a 1,000,000-gallon reclaimed water storage tank.

Ventura MBR/UV & Reclaimed Water Upgrades, City of San Buenaventura, Ventura, CA | *Design Manager*

This project is expanding and replacing the existing aeration tanks and secondary clarifiers with an MBR process to improve treated water quality, increase treatment capacity to 11 mgd average dry weather flow, and replace aging infrastructure. Improvements include new fine screens, aeration basins, membranes, chemical facilities, odor control, and replacement of the reclaimed water disinfection system. David is serving as the design manager for a team of over 30 staff and 6 sub-consultants to design the estimated \$200M project.

Western Slopes WWTP Feasibility Study, City of Tacoma, Department of Public Works, Tacoma, WA | *Project Manager*

The City was interested in studying the feasibility of upgrading and restarting the operation of the Western Slopes Wastewater Treatment Plant, a facility that has been mothballed for over 20 years since the service area was re-routed to the Chambers Creek Regional WWTP. The study examined the improvements to the collection and treatment system necessary to reinitiate operation, provided an opinion of probable costs for constructing the improvements, and discussed significant permitting requirements. The cost of improvements was compared to the ongoing costs and planned capital improvement projects associated with continuing to convey wastewater from the Western Slopes to Pierce County's Chambers Creek Regional WWTP.

Claudia Llerandi, PE

Project Engineer

PROFESSIONAL SUMMARY

Claudia Llerandi is a Professional Civil Engineer in California with 10 years of consulting experience in planning, permitting, designing, and constructing water and wastewater treatment systems, pump stations, and conveyance systems. Claudia focuses on planning, permitting, designing, and implementing recycled water projects to develop local, sustainable water supply alternatives that are adaptable to climate change. Claudia has been the Project Manager for significant recycled water programs, including the Westside Recycled Water Program for the San Francisco Public Utilities Commission (SFPUC). Claudia has been a lead member of WaterReuse for over 7 years.

TOTAL YEARS OF EXPERIENCE

10

EDUCATION

BS, Chemical Engineering, Simon Bolivar University, 2010

MS, Civil and Environmental Engineering, University of California, Davis, 2013

REGISTRATIONS

Professional Engineer - Civil - California (86734)

PROJECT EXPERIENCE

Alternatives Evaluation for Continued and Expanded Recycled Water Use, Scotts Valley Water District, Pasadena, CA | Project Engineer

Developed a feasibility study for Scotts Valley Water District to compare alternatives for recycled water use. The alternatives evaluated included three local and three regional projects. Alternatives included options to supply the District customers with recycled water for nonpotable demands, or to develop an advanced water treatment facility to produce purified water for groundwater augmentation. The evaluation included developing conceptual schematics, defining the facilities required, estimating the treatment capacity, capital, and operational costs, and scoring and ranking the project alternatives based on a set of criteria and goals defined with SVWD.

City of Crescent City Feasibility Study for Recycled Water (as a sub-consultant), Stover Engineering, Crescent City, CA | Project Manager

Prepared a Recycled Water Feasibility study to evaluate feasible alternatives for the City of Crescent City to produce and use recycled water as an alternative water supply. Alternatives to be evaluated included non-potable recycled water reuse for irrigation and industrial effluent reuse for irrigation. The evaluation included developing conceptual schematics, defining the facilities required, estimating the treatment capacity, capital, and operational costs, and scoring and ranking the project alternatives based on the criteria and goals defined by the City.

On-Site Non-Potable Water Reuse Strategy, City of Sacramento, Sacramento, CA | Project Engineer

Evaluated the feasibility of implementing dual plumbing systems as part of a non-potable water reuse strategy for the City. Work included support for preparing an ordinance to pre-plumb new commercial (non-residential) developments with dual plumbing for future installation of onsite non-potable water reuse systems. KJ assessed facilities (e.g. pipelines, appurtenances, and treatment), costs, permitting requirements, staff resources, and other considerations to implement an onsite water reuse strategy. Included a workshop series to develop a scope, vision, and objectives for the City's Onsite Water Reuse Strategy in the context of the City's broader One Water Vision. The findings will be summarized in an Onsite Water Reuse Dual-Plumbing Study (Study) for the City to use to support the development of a new dual plumbing ordinance.

Westside Recycled Water Project - Recycled Water Permitting Support, San Francisco Public Utilities Commission, San Francisco, CA | *Project Manager*

Project Manager for the Westside Recycled Water Program. Responsible for preparing Task Orders, overall contract management, general communication with SFPUC, and providing responsive support to project teams to facilitate Program completion. Responsible for leading SFPUC through the startup of the new Recycled Water Treatment Facility, developing operations and maintenance plans and standard operating procedures, and providing training for system operators. Supported SFPUC with permitting required to obtain approval from regulatory agencies for recycled water production, delivery, and use at customers' sites. Permitting support included preparing the Irrigation System Retrofit Report, assistance with updating the Title 22 Engineering Report, and application for a permit under the Recycled Water General Order with the Regional Water Quality Control Board. Supervised the development of retrofit design plans and led the team to implement the retrofits and cross-connection testing efforts at Golden Gate Park, as planned recycled water customer. Prepared an overall system operations plan that included guidelines and strategies for the operation of the Recycled Water Treatment Facility, the recycled water distribution system, and the retrofitted irrigation systems at the customer sites. Developed customer irrigation demand analyses and led the development of the hydraulic model to evaluate the capacity of the Recycled Water System to serve additional future recycled water customers.

Santa Cruz Regional Recycled Water Facilities Planning Study (RWFPS) Phase 2, Santa Cruz Water Department, Santa Cruz, CA | *Project Engineer*

Responsible for developing a Water Supply Augmentation Implementation Plan to evaluate the feasibility for the City Water Department to use alternative water sources to augment their existing water supply portfolio to increase the City's resiliency to drought and future impacts on water availability. Alternate sources considered include excess surface water used for aquifer storage recharge, recycled water, purified water, and desalination. Recycled water alternatives evaluated included non-potable recycled water reuse for irrigation, potable purified water reuse for surface augmentation, groundwater augmentation, or direct potable reuse. The evaluation included defining treatment and conveyance infrastructure requirements, estimating the treatment capacity, capital and operational costs, energy use, and greenhouse gas emissions, and scoring and ranking the project alternatives based on the criteria and goals the stakeholders defined. Alternatives were evaluated based on capacity to reliably augment the City's water supply portfolio under changing climate conditions and multiyear drought events.

San Francisco Westside Recycled Water Irrigation Project, San Francisco Public Utilities Commission, San Francisco, CA | *Project Manager*

Specialized Engineering Services for Recycled Water Projects, developing a regulatory strategy and appropriate permitting documents; field investigation and ground-truthing of existing irrigation systems, identifying system repairs that could provide operational benefits, and devising an approach for completing Title 22/17 irrigation system retrofits.

Connor J. Rutten, PE

Hydraulic Modeling

PROFESSIONAL SUMMARY

Connor Rutten is a civil engineer with project experience in wastewater lift station design, rehabilitation, construction, hydraulic modeling, master planning, and resiliency planning. His planning experience includes developing population and demand projections, identifying and evaluating Capital Improvement Program (CIP) projects, and developing budgetary cost estimates. He has also developed, calibrated, and analyzed several wastewater models using SewerGEMS and InfoSewer/InfoSWMM. His lift station experience includes developing civil/mechanical design drawings, preparing contract documents and specifications, and providing inspection services during construction. Connor's range of project experience, from hydraulic modeling to design/construction, offers a unique skill set capable of understanding system hydraulics on a larger scale and knowing how to construct and implement proposed solutions tangibly.

TOTAL YEARS OF EXPERIENCE

8

EDUCATION

BS, Civil Engineering,
University of
California, Los
Angeles, 2016

MS, Civil and
Environmental
Engineering, Stanford
University, 2017

REGISTRATIONS

Professional Engineer -
Virginia (0402060970)

Professional Engineer -
Civil - California
(92734)

MEMBERSHIPS / AFFILIATIONS

American Water Works
Association Water
Environment
Federation

PROJECT EXPERIENCE

2023 Wastewater Master Plan, Crescenta Valley Water District, La Crescenta, CA | Deputy Project Manager / Hydraulic Modeler

KJ is working with Crescenta Valley Water District (District) to develop their 2023 Wastewater Master Plan. KJ performed an in-depth Business Risk and Vulnerabilities Assessment for each component of the District's wastewater collection system, developed a complete asset register, and prioritized system improvement projects based on the asset's criticality and the likelihood of failure. Connor built and calibrated the wastewater hydraulic model and used the model to corroborate both known and unknown system deficiencies to help inform project prioritization. Connor developed project costs for each identified system improvement and compiled the study results into the 2023 Wastewater Master Plan.

Indirect Potable Reuse (IPR) Title XVI Feasibility Study, Elsinore Valley Municipal Water District, Lake Elsinore, CA | Project Engineer

KJ is developing advanced treatment options to make the RWRF effluent suitable for various IPR uses. Alternatives include surface spreading, subsurface injection, and surface water augmentation. KJ will prepare a Draft IPR Feasibility Report that will be prepared following the BOR's "Reclamation Manual Directives and Standards" (WTR 11-01), including introductory information, a statement of problem and needs, water reclamation and reuse opportunities, a description of alternatives, economic analysis; selection of the proposed Title XVI Project; environmental consideration and potential effects; legal and institutional requirements; financial capability of the Project sponsor; and research needs. Applicable financing mechanisms such as state/federal grants, State Revolving Fund loans, etc. will be discussed.

Recycled Water Strategic Plan and Facilities Master Plan, Eastern Municipal Water District, Riverside County, CA | Project Engineer

Performed facility siting analysis for possible locations of the Eastern Municipal Water District's water and wastewater treatment plants. Generated GIS maps for spatial analysis. Worked closely with the engineering team to evaluate conveyance alternatives for each treatment site.

City of Crescent City Feasibility Study for Recycled Water (as a sub-consultant), Stover Engineering, Crescent City, CA | *Hydraulic Modeling*

KJ updated Crescent City's Infowater hydraulic model as an all-pipe one. Connor was the task lead for updating the model, including water meter geocoding, demand allocation, and model calibration based on available SCADA data. The updated model was used to inform the City of optimally operating its system to minimize wear and tear on the City's facilities. A storage evaluation of the system was also performed to verify that the City has adequate fire flow storage and peak hour storage. Based on discussions with City staff and the findings of the hydraulic and storage analyses, KJ developed CIP projects for the City to improve system performance and reduce operational risk.

CLWTP Alternatives Feasibility, Elsinore Valley Municipal Water District, Canyon Lake, CA | *Project Engineer*

KJ was tasked by Elsinore Valley Municipal Water District (EVMWD) to perform a feasibility study to evaluate planning level alternatives for the proposed Phase 1 Master Plan improvements to the Canyon Lake Water Treatment Plant (CLWTP or plant) due to the subsequent detection of per- and polyfluoroalkyl substances (PFAS) in Canyon Lake. This feasibility study assisted with verifying that the recommended improvements to the CLWTP are advanced in a cost-effective and timely manner while ensuring that PFAS treatment can be effectively included in the treatment facilities at the CLWTP. The study included evaluating existing and future water supply sources versus projected demands, evaluating various water treatment processes, and developing high-level cost estimates for each of the proposed alternatives.

Water Supply Alternatives Study, Calleguas Municipal Water District, Thousand Oaks, CA | *Project Engineer*

KJ prepared the Water Supply Alternatives Study for Calleguas Municipal Water District (District), which evaluated and screened 116 alternative water supply scenarios to supplement the District's water supply in an outage. KJ provided engineering and hydraulic modeling services to evaluate the capacities of several alternatives to determine their hydraulic feasibility. The hydraulic model was also used to determine required pipe sizing/lengths and pump sizes and develop high-level cost estimates for the proposed facilities.

Las Posas Replacement Water Study, Calleguas Municipal Water District, Moorpark, CA | *Project Engineer*

KJ provided CMWD and Fox Canyon Groundwater Management Agency engineering services to perform the Study, which comprised fourteen individual studies, each evaluating a water supply alternative. KJ developed key criteria to assess each project alternative. Results of this Study found that opportunities to diversify the Basin's water supply are regionally accessible within supply types, including stormwater, treated brackish water, imported water, and recycled water, as well as invasive vegetation removal. Factors impacting the overall feasibility of an evaluated alternative include capacity and capital costs per project and potential limitations on supply availability such as water rights, agency terms, hydrological availability, drought, and other limitations. The results also found advantages and disadvantages for each project, which are similar within a specific supply type.

Charlie Liu, PhD, EIT

Treatment Technologist

PROFESSIONAL SUMMARY

Dr. Charlie Liu is the Deputy Water Treatment Practice Lead at KJ, and the National PFAS Lead at KJ. He has extensive experience in the selection of treatment technologies for purified and recycled water to meet diverse water quality goals. He is familiar with California regulations governing recycled water and purified water quality the understands the various treatment technologies necessary to meet water quality goals. Dr. Liu is also an expert in PFAS treatment, regulations, and occurrence. He has published and co-authored several peer-reviewed journal articles on PFAS remediation and has exceptional technical writing and communication skills.

TOTAL YEARS OF EXPERIENCE

8

EDUCATION

BS, Chemical Engineering,
University of California
San Diego, 2015

MS, Civil and Environmental
Engineering, Colorado
School of Mines, 2019

PhD, Civil and Environmental
Engineering, Colorado
School of Mines, 2021

REGISTRATIONS

Engineer-in-Training

MEMBERSHIPS / AFFILIATIONS

American Water Works
Association Reuse
and Desal Committee,
PFAS Regulatory
Committee

American Water Works
Association, Rocky
Mountain Section
Member

Water Environment
Federation Member

PROJECT EXPERIENCE

Westside Recycled Water Treatment Facility, San Francisco Public Utilities Commission, San Francisco, CA | *Water Quality and Engineering Support*

Provide operator training sessions for water quality, sample collection for compliance, RO system operation, UV system operation, and alarms and controls. Support start-up activities for MF, RO, and UV at a 4 MGD recycled water facility. Assess technologies for recycled water quality targets, including salinity reduction and nutrient removal.

Potable Reuse Exploratory Plan Concept Study, San Francisco Public Utilities Commission, San Francisco, CA | *Water Quality Engineer*

Evaluated nutrient removal technologies for ammonia and phosphorous based on regional water quality goals and regulatory guidelines. Further evaluated breakpoint chlorination as a technology to remove ammonia and coordinated with SFPUC on utilization of existing infrastructure for breakpoint chlorination. Supported basis of design report for the project. Evaluated the impact of recycled water discharge on existing permits.

Tertiary Recycled Water Truck Fill Station Predesign Feasibility Study, Central Marin Sanitation Agency, San Rafael, CA | *Project Engineer*

Advised Agency on sampling campaign and critical water quality constituents to analyze based on recycled water quality goals. Evaluated treatment technologies that meet water quality goals while leveraging existing infrastructure to save costs. Performed predesign evaluation for MF-RO-Cl₂ treatment system, including design criteria, blending, treatment system sizing, site layout considerations, waste disposal, recycled water conveyance, and capital/O&M costs. Several operating strategies for cost saving include recycled water blending, recycled water storage sizing, and site layout/system design to allow for future capacity expansions.

City of Crescent City Feasibility Study for Recycled Water (as a subconsultant), Stover Engineering, Crescent City, CA | *Technical Advisor*

Provided guidance on technology selection (MF, UV, chlorine disinfection), water quality parameters that will impact treatment, alternatives analysis, and design criteria.

Rocky Mountain Water
Environment
Association Member

WaterReuse Member (CA
& CO)

Title 22 Recycled Water Engineering Report Update, Marin Municipal Water District, Corte Madera, CA | *Project Engineer*

Reviewed existing Title 22 reports and summarized existing recycled water infrastructure including recycled water producers and distributors. Revise Title 22 report based on California Division of Drinking Water requirements.

Title 22 Recycled Water Engineering Report Update, Leprino Foods Company, Lemoore, CA | *Project Engineer*

Updated previous Title 22 engineering report for using recycled water for irrigation. Increased discharge volume to 7 MGD, increased irrigation land, and added irrigation for different crops for canning purposes

Valley Water – Purified Water Title 22 Report Support, Santa Clara Valley Water District, Santa Clara, CA | *Project Engineer*

Reviewed and created framework for Title 22 report for Santa Clara Valley Water District regional purified water facility

Pilot-Scale Comparison and Remediation of PFAS By Granular Activated Carbon (GAC) and Anion Exchange Resins (AER), City of Fountain, Fountain, CO | *Research Lead*

Assessed remediation of PFASs in groundwater by four GAC and three AER products over two 7- and 13-month-long pilot-scale assessments. Additionally, assessed and compared remediation of PFAS in groundwater by one GAC and three IX products.

Well 56 PFAS Treatment Design, Eastern Municipal Water District, Perris, CA | *Project Engineer*

Performed alternatives analysis and basis of design for a 1000 GPM PFAS Treatment system

Tarrant County Water Supply Project PFAS Piloting Design, Trinity River Authority, Arlington, TX | *Project Manager*

Perform pilot-scale assessment for PFAS treatment in a 100 MGD surface water treatment plant. Perform alternatives analysis for PFAS treatment and determine life cycle costs associated with pilot-scale testing performance.

Lake Cachuma Microfiltration Treatment Plant, County of Santa Barbara, San Diego, CA | *Project Engineer*

Reviewed major equipment and design for a non-transient non-community water microfiltration system in Lake Cachuma. Also, led reviews and revised drawings for 100% design.

Meredith E. Clement

Environmental Assessment

PROFESSIONAL SUMMARY

Meredith Clement has over 26 years of environmental consulting experience on projects throughout California, with emphasis within Southern California and Ventura County. Over the past 20 years, she has worked on more than 20 Urban Water Management Plans, authoring the 2015 and 2020 UWMPs for Ventura Water, Ventura County Waterworks District 8, and numerous others. Meredith has special expertise with water planning projects, urban planning, grant and loan funding for infrastructure, and environmental compliance documentation, including the California Environmental Quality Act (CEQA) and the National Environmental Policy Act (NEPA).

TOTAL YEARS OF EXPERIENCE

26

EDUCATION

BS, Environmental Policy, Analysis and Planning, University of California at Davis, 1996

MS, City and Regional Planning, California Polytechnic State University, 2000

MS, Transportation Engineering, California Polytechnic State University, 2000

MEMBERSHIPS / AFFILIATIONS

American Public Works Association (APWA), Member

Association of Environmental Professionals, Member

American Water Works Association (AWWA), Member

PROJECT EXPERIENCE

Alternative Fuel Receiving Facility, Encina Wastewater Authority, Carlsbad, CA | CEQA Compliance

Assisted with CEQA Compliance for a waste-to-energy project for the City of Carlsbad. The project involved developing RFQ and RFP documents, including all of the bridging (preliminary design and design criteria) documents, for a design-build contract (and waste hauler contract) to construct a 45,000 gallon per day alternative fuel receiving facility (FOG and other liquid food wastes) that would increase gas production in the treatment plant's digesters to help Encina achieve its goal of energy independence. KJ acted as the Owner's Representative during the design-build contract, responsible for design, submittal and RFI reviews, and construction observation. The project aims to implement the Energy and Emissions Strategic Plan recommendations, including a fats, oils and grease receiving station, emissions system improvements, and various energy efficiency measures throughout the treatment facility. The project was implemented in three phases, with the first phase being delivered through a design-build approach.

Waterline Interconnect Environmental Review, City of San Buenaventura, San Buenaventura, CA | CEQA Project Manager

Project Manager for preparation of an Environmental Impact Report evaluating the impacts of constructing an approximately seven-mile pipeline to deliver State Water Project water to the City of Ventura. The same pipeline would be an emergency interconnection to the Calleguas Municipal Water District. Specific environmental and permitting issues related to agricultural protection policies, endangered species, conflict with oil and gas wells, construction noise, and traffic.

State Water Interconnection Study, City of San Buenaventura, Ventura, CA | CEQA Project Manager

Project Manager for preparation of an Environmental Impact Report evaluating the impacts of constructing an approximately seven-mile pipeline to deliver State Water Project water to the City of Ventura. The same pipeline would be an emergency interconnection to the Calleguas Municipal Water District. Specific environmental and permitting issues related to agricultural protection policies, endangered species, conflict with oil and gas wells, construction noise, and traffic. Led the development of seven successful Integrated Regional Water Management Plan grant applications for funding under Proposition 50, Proposition 84, and Proposition 1. Prepared

the work plans, budgets, schedules, and cost-benefit analyses for 42 projects. Overall funding rounds Watershed Coalition of Ventura County projects awarded \$94.3 million in grants.

Lift Station #1 & Force Main, North of River Sanitary Dist. #1, Bakersfield, CA | CEQA Project Manager

Author of Mitigated Negative Declaration for installation of 4000 linear feet sewer force main, construction of a new sewer lift station, and demolition of obsolete lift station. Project challenges involved construction in residential and school areas, the presence of endangered species, and a river crossing involving equipment placement in the active waterway.

Addendum to the Rio Vista Water Treatment Plant Expansion Project EIR, Santa Clarita Valley Water Agency, Santa Clarita, CA | Permit Specialist

Provided CEQA compliance support for the Rio Vista Treatment Plant Expansion project.

Wastewater Regulatory Compliance Projects CEQA Documentation, Groveland Community, Groveland, CA | Permit Specialist

Provided CEQA compliance support for this WWTP project.

Santa Ana River Water Rights Application and Environmental Impact Report (EIR), SAIC-Science App International, San Diego, CA | Project Manager

For the Santa Ana River Water Rights Application and Environmental Impact Report (EIR). Managed water rights application materials and an EIR to support a project involving dam re-operation and raw water delivery infrastructure and associated a new water rights petition with the State Water Resources Control Board. Responsible for preparation of technical documentation for surface and groundwater models, preparation of a water availability analysis, in-stream flow feasibility analyses, the overall EIR, as well as project team coordination and client liaison.

Vail Lake Transmission Main and Pump Station Project, Rancho California Water District, Temecula, CA | Permit Specialist

Prepared CEQA documentation and assisted RCWD with environmental permitting for a proposed raw water transmission main and pump station in Pauba Canyon, Riverside County.

All-American Canal Drop 2 Reservoir, US Bureau of Reclamation, Yuma, AZ | Project Manager

Responsible for environmental permitting and preparation of an Environmental Assessment. The project involved assessing the construction and operation of an off-stream reservoir and associated facilities (canals, intake structures) adjacent to the lower Colorado River system. Specific project issues included the potential to disrupt access to private property, air quality impacts during construction, and the project's location within a sensitive biological species management area.

Salt & Nutrient Management Plan (SNMP) CEQA Documentation, Santa Clarita Valley Water Agency, Santa Clarita, CA | Permit Specialist

Provided CEQA compliance support for the Upper Santa Clara River Salt and Nutrient Management Plan project.

Janet L. Hoffman, PE, CEP

Cost Estimating

PROFESSIONAL SUMMARY

Janet Hoffman is a Certified Estimating Professional (CEP) and Mechanical Engineer with experience in the design and construction of public, industrial, and institutional facilities. She regularly provides detailed construction cost estimates at the planning level, conceptual, preliminary, interim, and final design levels design for municipal and industrial wastewater, stormwater, and railroad fueling projects. She can provide a clear Basis of Estimate reports and assessments and include the appropriate level of detail for allowances and contingency factors at differing design levels. Janet also has extensive experience in the construction industry, leading mechanical work on various building, process, and industrial projects. Her construction experience includes preparing bids, scheduling, budgeting, and cost forecasting, piping layouts, coordinating subcontractors, preparing submittals and O&M manuals, negotiating change orders and disputes, and starting up and commissioning systems using both the traditional design-bid-build and GC/CM contracting methods. She has the unique perspective of having experience working both on the contractor's side and as the engineer.

TOTAL YEARS OF EXPERIENCE

28

EDUCATION

BS, Mechanical Engineering,
University of Southern California, 1994

REGISTRATIONS

Professional Engineer - Mechanical - Washington (36133)

CERTIFICATIONS

AACE International / Certified Estimating Professional (CEP), AACE International (257340)

MEMBERSHIPS / AFFILIATIONS

Association for the Advancement of Cost Engineering International, Member

PROJECT EXPERIENCE

Pure Water Project Title XVI Feasibility Study, Las Virgenes Municipal Water District, Calabasas, CA | *Cost Engineer/Estimator*

The project involves performing a Feasibility Study (FS) under the US Bureau of Reclamation WaterSMART grant for Pure Water Las Virgenes, a potable reuse project to further treat available recycled water from the Tapia Water Reclamation Facility at a new Advance Water Treatment Plant (AWP) and convey purified water to Las Virgenes Reservoir for later use as drinking water. The Title XVI FS aims to identify and investigate opportunities and determine the feasibility of the JPA in reusing wastewater. The focus of the study is to present the preferred alternative for the future potential indirect potable reuse (IPR) effort describing the quantities, treatment processes, conveyance system, brine discharge, and reservoir augmentation system under the USBR reporting requirements.

Predesign Documents, East County Advanced Water Purification Program, Padre Dam Municipal Water District, Santee, CA | *Cost Engineer/Estimator*

The project includes assisting Padre Dam Municipal Water District to develop and implement its first-ever potable reuse program. The objective of the Program is to create a new source of local, reliable, and drought-proof water supply. Additionally, this Program will help the City of San Diego's Metropolitan Wastewater System by offloading wastewater flows to the Point Loma Wastewater Treatment Plant while reducing wastewater treatment and disposal costs for Padre Dam and other participating agencies. This project includes an alignment study and preliminary design of a 30-inch pipeline, approximately 10 miles long, that conveys purified water from a new advanced water purification facility to Lake Jennings for surface water augmentation.

Rainier Ridge Pump Station Facility Study, City of Auburn, Auburn, WA | *Cost Estimator*

Cost Estimator for replacement of the existing Rainier Ridge Lift Station. The project included a study of alternatives to replace the existing lift station. Replacement alternatives included options including rehabilitation of the existing facility, constructing a new facility on-site, and

relocation of the pump station to several nearby properties. The project also included hydraulic modeling of the downstream sewer to identify and remove capacity limitations.

Santa Cruz Regional Recycled Water Facilities Planning Study (RWFPS) Phase 2, Santa Cruz Water Department, Santa Cruz, CA | *Cost Engineer/Estimator*

KJ has worked closely with the City of Santa Cruz, Soquel Creek Water District, and regional stakeholders over the past nine years to investigate supplemental water supply alternatives to meet the regional needs as part of an alternatives investigation into options for indirect potable reuse through groundwater recharge of local aquifers and surface water augmentation at City-owned reservoirs.

Bunker Hill Conjunctive Use Project, San Bernardino Valley Municipal Water District, Redlands, CA | *Cost Engineer/Estimator*

KJ performed the preliminary design of the Bunker Hill Basin Conjunctive Use Project (CUP) to determine the physical systems necessary to enhance water supply reliability for the region and performed a cost allocation study to determine the equitable cost allocation of the CUP based on potential benefits received by the stakeholders and consisting of the following: evaluating various pipeline alignment alternatives to convey up to 80,000 AFY of extracted groundwater from the Bunker Hill Basin to the Texas Grove reservoir site, determining the project facilities and capital and operating costs of the CUP following the results of the hydrogeological analysis, developing a phasing plan for initial production of 40,000 AFY and ultimate production of 80,000 AFY, and consisting of up to 12 production wells, evaluating alternative cost allocation methodologies, and providing the framework for how the proposed CUP project costs will be allocated amongst the participants.

Temecula Valley Recycled Water Pipeline, Eastern Municipal Water District, Temecula, CA | *Cost Engineer/Estimator*

Assisted in preparing the preliminary design for 19,200-LF of a new 36-inch diameter recycled water pipeline to help the District maintain zero creek discharge and increase capacity in their recycled water transmission system. The project included an assessment of project area soil corrosivity to establish design criteria, analysis of alignment alternatives, geotechnical investigations for the final selected pipeline alignment, system hydraulic evaluation, surge analysis, traffic control study, and CEQA/NEPA support. Kennedy Jenks led the alternatives analysis through a series of workshops with District staff. The team also assessed bypass alignment options to connect an existing 24-inch diameter recycled waterline to an existing 36-inch diameter recycled waterline.

Solano Water Treatment Plant Design, Bidding Assistance Services, and Engineering Services during Construction (ESDC), University of California, Davis, Davis, CA | *Cost Estimator*

KJ partnered with the University of California, Davis (UC Davis) to prepare the Solano WTP Facilities Plan Report, in which the conceptual design for a new surface WTP on campus was developed. The WTP is to include a dedicated 12-inch 6,600 linear foot (LF) raw water pipeline from the existing 36-inch Solano Pipeline near the UC Davis Main Reservoir to the proposed WTP site, an associated pump station, surface WTP with an initial Phase 1 capacity of 0.9 million gallons per day (mgd), and a future Phase 2 capacity of 1.8 mgd.

Mike Wykosky, PE, ENV SP, LEED AP

Conveyance

PROFESSIONAL SUMMARY

Mike Wykosky, PE, ENV SP, LEED AP, is a motivated, energetic, and results-oriented leader who takes pride in providing exceptional client service by collaborating with internal and external team members. He has over 18 years of civil engineering experience and has worked on a variety of water/wastewater infrastructure, recycled water, site development, and construction support projects. Mike's focus on communication and organization results in consistent coordination with owners, contractors, and municipalities to ensure timely and cost-efficient project completion. Mike's strengths and experience include project management, client engagement, water/wastewater/recycled water infrastructure design, land development, planning, utility systems, public improvements, stormwater management, construction administration, and quality assurance/quality control.

TOTAL YEARS OF EXPERIENCE

22

EDUCATION

AAS, Surveying, Guilford Technical Community College, 1997

BS, Civil Engineering, Carnegie Mellon University, 2003

REGISTRATIONS

Professional Engineer - Civil - California (76078)

CERTIFICATIONS

Leadership in Energy and Environmental Design - Accredited Professional (LEED AP), U.S. Green Building Council

MEMBERSHIPS / AFFILIATIONS

WaterReuse Association, San Diego Regional Chapter, President - 2017

American Water Works Association,

PROJECT EXPERIENCE

Water Demand Offset Program, San Dieguito Water District, Encinitas, CA | *Project Engineer*

Evaluation of 11 sites within the San Dieguito Water District service area for conversion to recycled water. Scope included determining applicable uses for recycled water, estimating potential potable water offset by converting to recycled water, and preparing preliminary cost estimates. Assisted in the development of the developer offset fee to pay for the recycled water conversion projects.

Southern Wine Country Sewer Preliminary Design Services, Eastern Municipal Water District, Perris, CA | *Project Manager*

Preliminary and final design, bidding support services, and engineering services during construction for a gravity sewer solution to extend the District's collection system in the Temecula Wine Country Region. The goal of the project is to improve water quality by reducing the number of septic tanks currently leaching into a wellhead protection area and the region's groundwater basin. The project consists of two distinct pipeline reaches. The northern reach includes approximately 14,000 linear feet of 8-inch and 12-inch sewer mains, and the southern reach includes approximately 24,600 linear feet of 10-inch, 12-inch, and 15-inch sewer mains. The project also includes sewer laterals to adjacent property lines and pipe stub outs at manholes for future connection.

Well #17 Equipping Preliminary Design Report (PDR), City of Vacaville, Vacaville, CA | *Project Manager*

The City of Vacaville is constructing a new Well #17 and a new well building on a vacant site at the intersection of Alamo Drive and Snowy Owl Drive. KJ prepared a Basis of Design and a Preliminary Design Report, which was then retained by the City to complete the final design as a separate project. The site has manganese in the groundwater at a concentration of approximately 30 µg/L, which does not exceed the California Division of Drinking Water (DDW) secondary (MCL) for manganese of 50 µg/L (0.05 mg/L). To make sure the manganese levels remain under the MCL and in control, KJ designed the project siting and piping to accommodate the future addition of manganese treatment if required. The CMU well building has structural steel roof framing and contains a pump and control room, fluoride room, chlorine room, and a restroom. KJ helped the City to obtain a variance from DDW to allow the bathroom and a sewer

California-Nevada
Section, Member

California Water
Environment
Association, San
Diego Section,
Treasurer - 2015

American Society of Civil
Engineers, Pipeline
and Environmental
Group, San Diego
Section

lateral to be within 50 feet of the well. Well 17 also included the City's first submersible well pump at a new well installation. KJ is providing design, bidding assistance services, and engineering services during construction for the equipping of the well.

Evaluation and Preliminary Design for the Replacement of the Sunset Reservoir, Pasadena Water and Power, Pasadena, CA | *Deputy Project Manager*

KJ is preparing an alternatives analysis and preliminary design report for the replacement of the 121-year-old Sunset Reservoir, which is one of the largest reservoirs in the City's distribution and has a total storage volume of 15 MG. Primary objectives include identifying optimal storage volumes, performing a comprehensive evaluation of various replacement options using an analytical decision tool, and developing the final design of two new prestressed concrete reservoirs.

Recycled Water Market Outreach and Technical Assistance Program, San Diego County Water Authority, San Diego, CA | *Project Engineer*

Conducted site inspections of facilities proposing to convert to recycled water. Facilities included cooling towers for commercial buildings and irrigation systems for school sites. Prepared technical content for case studies, landscaping manuals, and technical guides for cooling tower conversions, street sweeping, alternative containers, and dual plumbing for commercial buildings and residential irrigation.

Alvarado 2nd Pipeline Replacement, City of San Diego, San Diego, CA | *Project Engineer*

Design of a potable water transmission main consisting of 4.25 miles of 48-inch welded steel pipe and 2 miles of 24-inch welded steel pipe with an underground pressure-reducing station, and design of a potable water distribution main consisting of 3.75 miles of 12-inch and 16-inch PVC pipe. Included environmental permitting, Caltrans coordination for three highway crossings, and coordination with the City's real estate group, operations and maintenance staff, and various on-going City projects. Transmission pipeline flow rate is 10,000 gpm. The project estimated construction cost is \$95 million. Design Engineer assisted with plans and specifications for the project, including steel pipe wall design thickness, live and dead load calculations including railroad crossing design, connection details, coordinated with Caltrans, MTS, and North County Transit for permits, and air release, vacuum valve, and blowoff calculations.

Twin Lakes Pump Station Pipeline, Las Virgenes Municipal Water District, Calabasas, CA | *Project Manager*

Project Manager for a new 0.75-mile, 16-inch PVC and steel pipeline and improvements at an existing pump station site within the City of Los Angeles. Improvements at the pump station include a new control valve, yard piping and suction header replacement, and relocation of a surge tank. Project included trenchless design of a Los Angeles County Flood Control District creek crossing and multiple easement acquisitions.

Pacific Beach Pipeline, City of San Diego, San Diego, CA | *Project Engineer*

Replacement of 7.6 miles of 8-inch to 24-inch water transmission/distribution lines and 1.6 miles of sewer gravity lines and force mains. Project involved multiple bridge crossings and trenchless railroad crossings, as well as coordination with federal, state, and local agencies.



David Bean, PG, CHG

Groundwater Modeling

PROFESSIONAL SUMMARY

Dave is a certified hydrogeologist with 38 years of experience conducting field investigations and managing projects. His experience includes field investigations, monitoring, extraction, and water supply well installation, aquifer testing and data analysis, database design and management, statistical data analysis, report preparation, and regulatory agency interaction. David also has extensive experience in applying analytical and numerical 2- and 3-dimensional (2D/3D) groundwater flow and contaminant transport models to evaluate the fate and transport of chemicals in groundwater. He has also used particle tracking models to optimize the zone-of-capture of remediation wells and evaluate the influence of municipal well fields and agricultural supply wells on the migration of contaminants in groundwater.

TOTAL YEARS OF EXPERIENCE

42

EDUCATION

MS, Geophysical Sciences, Georgia Institute of Technology, 1981

BS, Applied Biology, Georgia Institute of Technology, 1978

REGISTRATIONS

Professional Geologist - California (5618)

Certified Hydrogeologist - California (606)

CERTIFICATIONS

Troxler Nuclear Gauge

MEMBERSHIPS / AFFILIATIONS

Association of Ground Water Scientists and Engineers, Member

Groundwater Resources Association (GRA), Member

PROJECT EXPERIENCE

Groundwater Recharge Feasibility Study, Crescenta Valley Water District, Crescenta Valley, CA | *Lead Modeler*

Used MODFLOW to develop and calibrate a basin-scale groundwater flow model of the Verdugo Basin, located in Los Angeles County, California. The Verdugo Basin is a small, deeply dipping alluvium-filled basin with over 900 feet of vertical relief nestled between the Verdugo Mountains to the southwest and the San Gabriel Mountains to the northeast. The model simulates the period from June 1981 through December 2002 using 259 monthly stress periods. Inflow to the model was primarily via 16 mountain-front recharge reaches and 12 intermittent streams. Outflow was primarily via 19 municipal water supply wells and stream discharge from the Verdugo Wash. The model was calibrated to almost 3,000 water level observations in 19 monitoring and water supply wells within the basin. The model was used to evaluate potential recharge operations within the basin.

Groundwater Remediation Model, Confidential Client, San Fernando Valley, CA | *Lead Modeler*

Updated and re-calibrated the 2013 US EPA San Fernando Valley MODFLOW model, extending it through 2023 and revising the model layering from 4 to 11 layers to simulate more accurately a co-mingled volatile organic compounds (VOCs) plumes including PCE, TCE, and hexavalent chromium (CR6) in a multi-layered aquifer system beneath multiple industrial complexes and municipal well fields. The model's primary purpose was to evaluate the potential effects of revised remedial measures to contain and capture impacted water for treatment and reuse. Following model re-calibration, a 30-year forecast model was developed to evaluate the potential impacts of four alternative pumping scenarios on the co-mingled plume migration. The forecast simulations were evaluated using a combination of forward and reverse particle tracking, endpoint analysis, and probability of capture analyses. The simulation results indicated that one of the more aggressive remedial options would effectively contain and remediate the co-mingled VOC and Cr6 plumes while increasing the usable water supply by over 10,000 acre-feet per year. The model results were used to locate 3 new extraction wells capable of producing about 1,800 gpm each to act as a hydraulic barrier and prevent the migration of contaminated groundwater toward a municipal well field. The modeling effort was reviewed by

International Association
of Hydrologists (IAH),
Member

multiple stakeholders (municipal and industrial) under US EPA oversight. The updated model has been adopted by other parties for use in modeling the San Fernando Valley.

Equus Beds ASR Project, Wichita, KS | *Lead Modeler*

Updated and utilized a MODFLOW model of the Equus Beds aquifer to evaluate the suitability of 11 potential sites for aquifer storage and recovery (ASR) operations. The baseline model simulated 15 years of existing ASR operations. The water balance for the baseline model and the water balance for each potential site model were then calculated for 38 sub-areas in the model.

Groundwater Model for Sustainable Groundwater Management Act (SGMA) Compliance, Mission Creek Subbasin (Coachella Valley Water District, Desert Water Agency, and Mission Springs Water District), CA | *Lead Modeler*

Updated and re-calibrated a 2010 model of the Upper Coachella Valley as part of an Alternative Plan Update to the existing Alternative Plan under SGMA requirements. The Upper Coachella Valley consists of several groundwater subbasins separated by faults. Subbasins in the 2010 model included the northern portions of the Mission Creek Subbasin and Indio Subbasin. Updates to the model included converting the model to MODFLOW-NWT, expanding the model grid to include the previously excluded Indio Hills in the Mission Creek Subbasin and Desert Hot Springs Subbasin, and updating the model through 2019. The model was also updated with time-variable estimates of mountain-front recharge derived from the USGS Basin Characterization Model (BCM) instead of the previously assumed constant mountain-front recharge. The model was updated from 2009 through 2019 with available pumping data, intentional recharge data, and return flows estimates. The model was recalibrated to available groundwater level observations from 1936 through 2019 using a combination of trial-and-error methods, parameter estimation, and uncertainty analysis. The updated groundwater model was used to forecast future conditions based on proposed project and management actions, water demand forecast and replenishment supply availability, and a condition of climate change. The finding of this forecast indicated that the subbasin will meet its sustainability goals through the planning horizon of 2045, even under the conservative condition of climate change conditions, if the planned project and management actions are implemented.

Tulare Lake Subbasin SGMA Groundwater Model, Kings County, Hanford, CA | *Lead Modeler*

Developed a basin-scale surface water/groundwater flow model of the Tulare Lake subbasin and adjoining subbasins to evaluate the long-term sustainability of water supply in the subbasin. Based on the United States Geological Survey (USGS) Central Valley Hydrologic Model, the 3D groundwater flow model was used as the quantitative tool for developing a Groundwater Sustainability Plan (GSP) for the subbasin. Designated by the California Department of Water Resources (DWR) as critically in overdraft, the Tulare Lake subbasin completed its GSP and delivered it to DWR in January 2020 per the Sustainable Groundwater Management Act (SGMA) requirements. To support that effort, WSP delivered the preliminary model in June 2018. The preliminary model was updated with new information (e.g., land use, cropping, soils, well logs and groundwater levels, and surface water deliveries) through 2019 and subsequently recalibrated. The calibrated model was used as a basis for the development of 50-year forecast models from 2020 through 2070. Four forecast models were developed and used to evaluate alternatives to reduce undesirable results (primarily overdraft and subsidence) while minimizing impacts on agricultural production. The model calibration and forecast simulation results were incorporated as an appendix to the GSP.



Gary Kramer, PG

Groundwater Modeling

PROFESSIONAL SUMMARY

Gary has 34 years of experience in engineering/environmental projects involving hydrogeology, the development of groundwater resources, and soil and groundwater assessment and remediation. His experience includes collecting and evaluating hydrogeologic and groundwater chemistry data, developing site and regional scale conceptual hydrogeologic models, and groundwater numeric modeling for agricultural/industrial clients and local water agencies/districts. He is also experienced in geologic logging, evaluating bore-hole geophysics, aquifer testing, well design, spatial data analysis, geographical information systems (GIS), and evaluation of groundwater geochemical data. He has developed conceptual hydrogeologic and numeric groundwater models for projects in areas of complex geology containing faulted and folded strata. He has extensive knowledge of the geology of the San Joaquin Valley and has performed work on several regional scale projects on the west side of the valley.

TOTAL YEARS OF EXPERIENCE

34

EDUCATION

BA, Environmental
Biology, California
State University -
Fresno, 1991

BS, Geology, California
State University -
Fresno, 1989

REGISTRATIONS

Professional Geologist -
California (5618)

MODELING

Groundwater Vistas

MODFLOW-USG

MODFLOW-SURFACT

Visual MODFLOW

MODFLOW 96, 2000, and
2005

MT3D

MODPATH

Hydrus 1D and 2D

PROJECT EXPERIENCE

Verdugo Basin Groundwater Model, Crescenta Valley Water District, Crescenta Valley, CA | *Associate Hydrogeologist*

Developed a basin-wide 3-layer groundwater model using the United States Geologic Survey (USGS) MODFLOW program for the steeply tilted and fault-blocked Verdugo basin of southern California covering a period of 1981 to 2005. The model was used to develop predictive simulations for various groundwater recharge scenarios for the basin. The model included a representation of groundwater withdrawal from production wells, mountain-front recharge from bedrock inflow, surface stream routing and recharge, surface recharge from precipitation, domestic supply consumptive use, sewer and water line leakage, and groundwater inflow/outflow at basin boundaries using general head boundaries. Performed sensitivity analysis to calibrate the model to historical groundwater elevation data from production and monitoring wells. Update the model by extending the calibration period from 2005 through 2008 and a subsequent calibration update from 2008 through 2015, which included a reconceptualization of the base of bedrock within the basin using a combination of new borehole stratigraphy and subsurface geophysics data. The model has been used to support groundwater management and conjunctive reuse within the Verdugo Basin. It was also used in litigation support in which the court sided in favor of the client's position.

Broad Creek #2 Injection Feasibility Evaluation, Midway-Sunset Valley, CA | *Principal Hydrogeologist*

Developed a basin-wide 6-layer groundwater forecast model (2023 to 2150) using the USGS MODFLOW USG program for the Midway-Sunset Valley in folded terrain represented by six stratigraphic units. Used oil field borehole geophysics and isopach maps to discretize the layers in 3-dimensional space so anticline and syncline structures could be represented in the model. Used ArcGIS to create contour surfaces of tops and bottoms of each stratigraphic unit. The model included available hydraulic parameters for the undifferentiated alluvium and Tulare A, Upper Tulare Clay, Tulare B, Amnicola Clay, Lower Tulare, and undifferentiated marine bedrock Formations. The model was used to evaluate the feasibility of two project injection well specifications representing 1 and 3 wells. The forecast used particle tracking to evaluate the radius of influence and hydraulic heads to evaluate groundwater mounding at each project injection well. Nine scenarios for

MEMBERSHIPS / AFFILIATIONS

Groundwater Resources
Association (GRA),
Member

each project were modeled, varying the hydraulic conductivity and porosity by multiples of 0.5, 1, and 1.5 so that an acceptable range of hydraulic conductivity and porosity could be evaluated for each project. The results indicated that the model was sensitive to hydraulic conductivity and porosity changes. The three well scenario appeared to be the most feasible as it allowed redundancy of operation and spread-out injection over a larger area at reduced injection rates.

Groundwater Model Alto (Sub-Basin Portion of Mojave River Basin), Victor Valley Water District, Victorville, CA | Associate Hydrogeologist

Developed a basin wide four-layer groundwater model of the Basin, where municipal water supply in this area is solely dependent on groundwater. The model covered a period from 1986 through 2005. The model domain contained four faults that acted as partial barriers to groundwater flow: the Mojave River that flows intermittently and an extensive area of septic discharge under portions of the communities of Victorville and Hesperia. The model also contained representations of municipal and agricultural pumping and recharge from infiltration of irrigation, septic, and land discharges from a regional water treatment plant. The calibrated model was used to evaluate future groundwater pumping scenarios using various growth and recharge scenarios. The model was used for groundwater resources management to evaluate available storage beneath the district, time to depletion of groundwater at each supply wells and forecasts of changes in groundwater levels under various well field planning scenarios.

Westside Water Quality Coalition, Kern and Kings County, CA | Principal-In-Charge

Responsible for providing consulting services for compliance with the RWQCB's Irrigated Lands Regulatory Program. Performed hydrogeologic services for preparation of a regional groundwater assessment report of hydrogeologic conditions, water quality, nitrate and pesticide in groundwater beneath the coalition area. Prepared subsequent groundwater trend monitoring work and served on a technical committee for the formation of the Central Valley Groundwater Monitoring Collaborative. Prepared a basin plan amendment work plan to propose methods to support a basin plan amendment to delist municipal beneficial and agricultural use form, portions of the coalition area where water quality does not meet the State Water Resources Control Board sources of drinking water policy. Identified facilities that may contribute sources of nitrate to groundwater other than irrigated agriculture and prepared a work plan to assess potential impacts to these facilities.

Groundwater Modeling, Confidential Client, Southeast WA | Senior Associate Hydrogeologist

Team leader for one of four groundwater modeling teams tasked for calibration of a regional 31-layer basin-wide groundwater flow and transport model. Responsible for leading the team in calibrating the flow model using both Visual MODFLOW and USGS MODFLOW and the transport model using MT3D for Nitrate, Hexavalent chromium, Technium 99, and Iodine. The model was being developed to assess fate and transport of constituents and for developing remediation strategies.

Groundwater Modeling, Confidential Client, Palmdale, CA | Senior Hydrogeologist

Developed a 22-layer uncoupled vadose zone/groundwater model used to evaluate fate and transport of inorganic compounds in soil and groundwater. Responsible for developing the conceptual geologic model used for developing the model layers. Used GIS and lithologic data base to generate horizontal sections from which model layers were imported into the vadose zone and groundwater models. The model was developed to assess fate and transport of constituents for developing remediation strategies.

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**Appendix B | Scope of Services to Update Groundwater Model and Evaluate
Movement of Injected Treated Water**

Scope of Work - Proposal to Update Groundwater Model and Evaluate Movement of Injected Treated Water

The scope of work has been divided into several tasks, described in the following paragraphs.

Task 1: Update Groundwater Flow Model

The Basin groundwater flow model, developed in 2005¹, will be updated so that it can be used to evaluate possible movement of injected treated water in the Basin and travel times and flow pathways to CVWD pumping wells. The Basin groundwater flow model was not designed for evaluating groundwater transport, and modification of the model for that purpose would require an extensive amount of work. The Basin groundwater flow model, however, can be used to evaluate groundwater flow paths, flow rates, and travel time by using particle-tracking simulations. Groundwater model simulations would be run for various Basin conditions and would include the introduction of particles at various potential injection well locations to simulate injected water flow paths in the groundwater system.

The existing groundwater flow model simulated the period June 1981 through December 2002. The model will be updated with data provided by CVWD, including CVWD pumping and water level data through December 2021 or June 2022 if data are available. As appropriate, we will review Upper Los Angeles River Area (ULARA) Watermaster annual reports to obtain pumping data for the City of Glendale wells in the Basin, and any other relevant data in these reports. The model will also be updated with estimated areal recharge and mountain front recharge/runoff using the US Geological Survey (USGS) Basin Characterization Model (BCM) data sets. The model will be re-calibrated based on the updated information. Once the model is fully calibrated, it will be ready for use in Task 2 to evaluate treated water injection scenarios.

Additionally, the model would then be available for additional future model runs (not included in this scope of work) to evaluate various pumping scenarios, artificial recharge of surface water flows at Crescenta Valley County Park, or other conditions that CVWD would like to evaluate.

Task 2: Model Simulations

The updated groundwater flow model will be used for particle-tracking scenarios to evaluate possible movement of treated injected water. The number of particles introduced into the model for simulations will depend on the amount of CVWD would like to inject in

specific areas in the Basin. For this task up to five simulations will be run including various injection locations and amounts and various CVWD pumping (extraction) scenarios.

We anticipate that this task will be iterative, with CVWD input prior to running future model scenarios. We anticipate that CVWD will have general locations where injection wells may be located and approximate volumes of treated water to be injected. Following initial discussions with CVWD, we will develop a list of possible model scenarios and discuss it with CVWD and agree on which scenarios should be run first. As scenarios are completed, we will discuss our findings with CVWD and agree on the configuration of remaining model scenarios to be run. Although flow of the injected water may vary based on less-than-average and greater-than-average rainfall years, for purposes of this study, modeling will be performed assuming that wet- and dry-year conditions are similar to historical conditions. Possible future conditions to be considered may include:

- ▶ Historical average CVWD extraction,
- ▶ Increased CVWD extraction, and
- ▶ One or multiple treated water injection locations.

Task 3: Technical Memorandum: Model Update and Evaluation of Injected Water Travel Times and Flow Paths.

For this task, we will prepare a Technical Memorandum summarizing the work performed and providing information to CVWD regarding the flow of injected water in the groundwater system, including rough estimates of the percentage of injected water that would be recovered by CVWD's extraction wells and the percentage that may flow to lower portions of the Basin where the City of Glendale has extraction wells. The technical memorandum will be an update of the Groundwater Modeling Appendix to the Verdugo Basin Groundwater Recharge and Conjunctive Use Feasibility Study (CVWD Project E-713), prepared by WSP (legacy Geomatrix Consultants, Inc.), report, dated May 2005. The technical memorandum will include particle tracking figures showing the modeled movement and travel times for injected water, and a summary of the various modeled scenarios, including travel times and rough percentages of injected water recovered by CVWD's extraction wells.

Crescenta Valley Water District
2024 Recycled Water Feasibility Study (Project M-1081)

Appendix C | SWRCB Water Recycling Program Funding Guidelines

REPORT CONTENT CROSSWALK

The table below reflects a template that can be used to streamline the permitting processes, by clearly indicating where each report element from the SWRCB's Recommended Outline (Appendix D) is located in the report. Kennedy Jenks has used this approach on numerous RWFS's to facilitate efficient review and approval by the SWRCB.

App B Sec. #	Title / Report Element	Corresponding Report Location
A	Project Area	
1	Detailed map(s) showing:	
a	Vicinity.	
b	Relevant hydrologic (major streams, streams receiving waste discharges), geologic, and topographic features	
c	City boundaries.	
d	Project site and service/study area boundary. (provide GIS shapefile of service/study area boundary to Project Manager).	
e	Wholesale and retail water supply entity boundaries within study area and adjacent to study area.	
f	Wastewater agency boundaries within and adjacent to study area.	
g	Groundwater basin boundaries,	
h	Existing recycled water distribution pipelines, storage, and users.	
i	Each recycled water facilities alternative, showing approximate locations of distribution pipelines, storage, and potential users.	
2	Existing land use, trends, and projected land use.	
3	Existing population, trends, and population projections of study area (population projections must be cited from an independent source).	
B	Water Supply Characteristics and Facilities	
1	Description of all wholesale and retail entities.	
2	All sources of water for study area, major facilities, costs (fixed and variable), subsidies, and customer prices.	
3	Beneficial uses of receiving waters, degree of use, and portion of flow that is effluent.	
4	Capacities of present facilities, existing flows, estimated years when capacities will be reached for existing major components (water treatment plants, major transmission, and storage facilities).	
5	Groundwater basins; including quantities extracted by all users, natural and artificial recharge, losses by evapotranspiration, inflow and outflow of basins, and safe yield or overdraft.	
6	Water quality of groundwater and surface water.	
7	Water use trends, future demands, prices, and costs.	
8	Sources for additional water and plans for new facilities (for both the local entity and the wholesalers).	
C	Wastewater Characteristics and Facilities	
1	Description of entities.	

App B Sec. #	Title / Report Element	Corresponding Report Location
2	Description of existing facilities, including treatment/reuse processes and schematic(s), design criteria, current capacities, current flows, current water quality characteristics and beneficial uses of the water resources affected by the facility, and the current discharge location(s).	
3	Wastewater treatment process schematics (existing and proposed) and flows for each stage of treatment (primary, secondary, and tertiary/advanced).	
4	Description of current system users (% residential, commercial, industrial, etc.).	
5	Water quality of effluent and any seasonal variation.	
6	Additional facilities needed to comply with waste discharge requirements.	
7	Sources of other problem constituents and control measures.	
8	Existing water recycling users, quantities, and contractual arrangements.	
9	Existing water rights for use of treated effluent after discharge.	
10	Wastewater flow variations, hourly and seasonally	
11	Description of the current asset, operation, and maintenance management systems used at the treatment facilities.	
D	Treatment Requirements for Discharge and Reuse	
1	Future flow increases or other changes to the influent wastewater characteristics.	
2	Required water qualities for potential uses.	
3	Required health-related water qualities or treatment requirements for potential uses, operational and on-site requirements (backflow prevention, buffer zones, dual plumbing, etc.).	
4	Wastewater discharge or reuse requirements and anticipated changes in requirements.	
5	Water quality-related requirements of the RWQCB to protect surface or groundwater from problems resulting from recycled water use.	
E	Recycled Water Market	
1	Description of market assessment procedures.	
2	Definition of logical service area based on results of market assessment.	
3	Descriptions of all users or categories of potential users, including (a) type of use, (b) expected annual recycled water use, (c) peak use, (d) estimated internal capital investment required (on-site conversion costs), (e) necessary water cost savings, (f) desire to use recycled water, (g) date of possible initial use of recycled water, (h) present and future source of water and quantity of use, (i) quality and reliability needs, and (j) wastewater disposal methods.	
4	Summary tables of potential users and related data.	
F	Project Alternative Analysis	
1	Planning and design assumptions	
a	Delivery and system pressure criteria.	
b	Peak delivery criteria.	
c	Storage criteria.	

App B Sec. #	Title / Report Element	Corresponding Report Location
e	Planning period over which a water recycling project is evaluated.	
2	Water Recycling Alternatives to be Evaluated	
a	Alternative markets:	
i	<i>Based on different levels of treatment.</i>	
ii	<i>Based on Geographical areas.</i>	
b	Treatment alternatives:	
i	<i>Alternative levels of treatment.</i>	
ii	<i>Alternative unit processes to achieve a given level of treatment.</i>	
iii	<i>Plant treatment process prior to construction.</i>	
iv	<i>Class of plant prior to and after construction (i.e. Class I, II, III, IV, or V).</i>	
c	Pipeline distribution alternatives.	
i	<i>Route alternatives.</i>	
ii	<i>Pipeline lengths, diameter, and material.</i>	
iii	<i>Quantity of service laterals and meters to be installed.</i>	
d	Storage alternatives:	
i	<i>Location, type, and material.</i>	
ii	<i>Storage analysis using diurnal flows.</i>	
e	Pump/lift station alternatives:	
i	<i>Provide reason for new pump station and/or upgrades.</i>	
ii	<i>Describe pump types, proposed well design, and proposed components (i.e. debris structure, SCADA controls, backup power, etc.)</i>	
iii	<i>Provide flow design criteria (average daily flow, peak hour flow, proposed flow for future growth projections) and pump curves.</i>	
f	Sub alternatives of selected alternative:	
i	<i>Marginal analysis for selected alternative for certain categories of users or certain geographic areas.</i>	
ii	<i>Use of water blending during peak irrigation months.</i>	
3	Non-recycled water alternatives.	
a	Discussion of other potentially viable new sources of water.	
b	Provide economic costs.	
4	Water conservation/reduction analysis.	
a	Description of analysis.	
b	Impact on recycling, if any.	
c	Recommendation.	
d	Implementation.	
5	Pollution control alternatives, if applicable, needed to comply with waste discharge requirements, and possible allocation of costs between recycling and pollution control.	
6	No project alternative.	
7	Information supplied for each alternative to include, but not be limited to:	
a	Cost tables for each alternative with breakdown of costs by total capital (without grants), O&M, unit processes, and with equivalent annual cost and per acre-foot cost.	
b	Lists of potential users assumed for each alternative.	

App B Sec. #	Title / Report Element	Corresponding Report Location
c	Economic analysis in dollars per acre-foot of recycled water produced or delivered	
d	Energy analysis, including direct and construction energy.	
e	Water quality impacts:	
i	Effect on receiving water by removing or reducing discharge of effluent, including effect on beneficial uses resulting from reduced flow.	
ii	Ground water impacts.	
8	Comparison of above alternatives and recommendation of specific alternative.	
a	Discussion of beneficial and adverse environmental impacts on the existing environment, future environment, and individual sensitive environmental issues identified through project management or public participation.	
b	Analysis of direct, indirect, and cumulative impacts on sensitive environmental resources.	
c	Appropriate mitigation measures not already included in the proposed action or alternatives, to mitigate adverse environmental impacts.	
d	Thorough discussion of the environmental reasoning for selection of the chosen alternative for the project.	
9	Comparison of above alternatives and recommendation of specific alternative.	
G	Recommended Project	
1	Description of all proposed facilities and basis for selection.	
2	Preliminary design criteria	
3	Cost estimate based on time of construction.(a) Selected project alternative total cost (b) Cost index (c) Discount rate. (d) Useful life (years) (e) Life cycle costs (present worth included O&M costs) (f) Operations and maintenance yearly costs (g) Replacement costs.	
4	List of all potential users, quantity of recycled water use, peak demand, and commitments obtained.	
5	Reliability of facilities as compared to user requirements.	
6	Implementation plan:	
a	Coordination with water suppliers, determination of recycled water supplier and needed agreements or ordinances.	
b	Commitments from potential users and ability and timing of users to join system and make on-site investments	
c	Tentative water recycling requirements of RWQCB.	
d	Commitments from potential users.	
e	Water rights impact.	
f	Permits required for project implementation	
g	Detailed schedule including, but not limited to, notice-to proceed, construction completion, initiation of operations, etc.	
7	Operational plan - responsible people, equipment, monitoring, irrigation scheduling, etc.	

App B Sec. #	Title / Report Element	Corresponding Report Location
8	Description of any key issues to be resolved, particularly items that may significantly impact the project budget or schedule.	
H	Construction Financing Plan and Revenue Program	
1	Sources and timing of funds for design and construction.	
2	Pricing policy for recycled water.	
3	Costs that can be allocated to water pollution control.	
4	Annual projection of:	
a	Water prices for each user or category of users.	
b	Recycled water used by each user.	
c	Annual costs (required revenue) of recycling project.	
d	Allocation of costs to users.	
e	Unit costs to serve each user or category of users.	
f	Unit price of recycled water for each user or category of users.	
g	Sensitivity analysis assuming portion of potential users fail to use recycled water.	
5	Sunk costs and indebtedness.	
J	Appendices	
1	Tables of all abbreviations.	
2	Copies of letters of interest or intent from recycled water users, or other documentation of support from potential users.	
3	Draft of recycled water mandatory use ordinance or model user contract.	
4	Drafts of necessary agreements, such as wholesale-retail agreement, joint powers agreement	
5	Hydraulic calculations, model output summaries, other related conclusion supporting information.	

Crescenta Valley Water District
2024 Recycled Water Feasibility Study (Project M-1081)

Appendix D | SWRCB's Recommended Preliminary Report Outline

REPORT OUTLINE

Section 1: Introduction

Section 2: Project Area

- 2.1 Study Area Characteristics
- 2.2 Surface Hydrology and Groundwater Basins
- 2.3 Water Quality
- 2.4 Land Use
- 2.5 Population Projections

Section 3: Water Supply Characteristics and Facilities

- 3.1 Water Sources and Supply Facilities
- 3.2 Beneficial Uses of Receiving Waters
- 3.3 Groundwater Management
- 3.4 Historical and Projected Water Use Trends
- 3.5 Quality of Water Supplies
- 3.6 Potential Future Water Sources

Section 4: Wastewater Characteristics and Facilities

- 4.1 Crescent City Wastewater Treatment and Collection Facilities
- 4.2 Commercial and Industrial Treatment Facilities
- 4.3 Existing Recycled Water System

Section 5: Treatment Requirements

- 5.1 Multi-Barrier Approach and Overview of Regulatory Requirements
- 5.2 Non-Potable Reuse Requirements
- 5.3 Potable Reuse Treatment Requirements

Section 6: Recycled Water Market

- 6.1 Non-Potable Reuse Market Assessment
- 6.2 Potable Reuse Market Assessment

Section 7: Project Alternatives Analysis

- 7.1 Conceptual-Level Engineering Analysis
- 7.2 Description of Recycled Water Alternatives
- 7.3 Alternatives Screening Approach
- 7.4 Alternative Ranking Results
- 7.5 Preferred Alternative Projects
- 7.6 Non Recycled Water Alternatives
- 7.7 Water Conservation/Reduction Analysis
- 7.8 No Project Alternative

Section 9: Recommended Project

- 9.1 Description of Recommended Project and Potential Users
- 9.2 Preliminary Design Criteria
- 9.3 Engineer's Opinion of Probable Costs
- 9.4 Implementation and Operational Plan

Section 10: Construction Financing Plan and Revenue Program

- 10.1 Construction Funding Sources and Considerations
- 10.2 Recycled Water Pricing Policy Options
- 10.3 Financial Planning Considerations

Crescenta Valley Water District
2024 Recycled Water Feasibility Study (Project M-1081)

Appendix E | Addendum Acknowledgement

CRESCENTA VALLEY WATER DISTRICT

PRE-PROPOSAL MEETING MINUTES

REQUEST FOR PROPOSALS FOR PROFESSIONAL ENGINEERING SERVICES FOR CVWD'S 2024 RECYCLED WATER FEASIBILITY STUDY

PROJECT M-1081

JUNE 5, 2024 AT 10:00 AM

A Pre-Proposal meeting was held via Zoom on June 5, 2023, at 10:00 A.M. to brief all bidders of the need for this project and help bidders to fully understand the key requirements of the subject project. The following people attended:

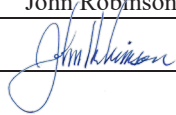
Nathan Boyle	Hazen and Sawyer
Christy Sipos	Civiltec Engineering, Inc
John Robinson	John Robinson Consulting
Paul Chau	Kennedy/Jenks Consultants
Conner Rutten	Kennedy/Jenks Consultants
Michael Kielborn	Cannon-Engineering Consultants
Shem Hawes	Civiltec Engineering, Inc
Steve Tudesco	Tetra tech, Inc.
Gary Cramer	WSP, USA
David Bean	WSP, USA
Peter Hilke	CVWD
Brook Yared	CVWD

The following items were discussed:

1. Mr. Brook Yared started the meeting by announcing the title of the mandatory pre-proposal meeting, followed by introductions of himself and the people in attendance. He posted the pre-proposal meeting agenda via the shared screen on Zoom. Mr. Yared announced that the Zoom meeting would be recorded to document all meeting details and serve as proof for everyone in attendance.
2. The meeting began with Mr. Yared mentioning the details and deadlines for the Bid submission and questions. Deadline for questions will be **Friday, June 14, 2024, 12:00 PM**. All questions should be directed in writing (email) to the Brook Yared – byared@cvwd.com. Questions will be posted in the meeting minutes and will be distributed to everyone in attendance. Deadline for submitting proposals via email is **Friday, July 5, 2024, 12:00 PM**. The proposal will be awarded on Friday July 19, 2024.
3. Mr. Yared discussed the districts history. In the 1970's, District officials were becoming aware of potential problems with private wastewater disposal systems (septic tanks) in the vicinity and potential impacts on the local groundwater supply. With federal funds available through the Clean Water Act, the District created two sewer assessment districts

Received by: John Robinson, Principal

Contractor: John Robinson Consulting, Inc. Date: July 5, 2024

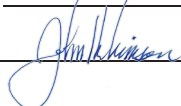
Signature: 

in 1979 and sold bonds for the construction of 64 miles of mainline sewer and 27 miles of house-connection laterals. Approximately 75% of the \$35 million cost was satisfied with federal grant money and the remainder through direct assessment of local property owners. The project also included the purchase of treatment plant capacity from the City of Glendale and the construction of 7 miles of large-diameter sewer interceptor through the City of Glendale. All sewer system construction was completed in the mid-1980's. The rising cost of the City of Glendale/Los Angeles water reclamation plant combined with the ground water levels declining has led the district to explore Direct Potable Reuse (DPR) options. The purpose of the feasibility study is to reduce or even eliminate the conveyance and treatment cost paid to the City of Los Angeles for these services.

4. Mr. Yared continued with stating that the wastewater master plan included a wastewater hydraulic model, and CVWD has an existing ground water model that was generated in the mid-2000s as part of a conjunctive use study. The groundwater model will require updating. Both tools will be utilized as part of the study to see if DPR is an option to recharge the Verdugo Basin. He continued to state that we own the wastewater. In 2005, a feasibility study to install purple pipe for irrigation use but deemed unaffordable at the time.
5. Mr. Yared continued with the meeting agenda by listing the scope of services, beginning by mentioning the importance of data collection and assessment of the wastewater system.
6. Mr. Yared mentioned that the Board of Directors is very concerned about emerging contaminants related to forever chemicals found in our water, such as PFAS. The feasibility study should take into consideration advanced treatment purification methods to address those issues.
7. Mr. Yared pointed out that as part of other requirements the existing groundwater model should be updated with the latest production data to identify any potential water quality impacts and permitting requirements.
8. Mr. Yared mentioned that the preliminary siting study to evaluate potential sites for the alternative wastewater treatment system should have the real estate available and identifying regional stakeholder partnerships with the City of Glendale, City of La Canada, and Foothill Municipal Water District (FMWD). All agencies have shown interest in partnering on projects such as these.
9. Mr. Yared discussed potential CEQA considerations and requirements, including a cursory environmental and public health risk assessment. In addition, determining the impacts on CVWD personnel and permit certification requirements (i.e., additional staff, certification training). Lastly, determining any new requirements from the department of drinking water.
10. Develop multiple alternatives, minimum of three, to consider (including status quo) to collect, treat, dispose or reuse treated wastewater effluent, including preliminary design

Received by: John Robinson, Principal

Contractor: John Robinson Consulting, Inc. Date: July 5, 2024

Signature: 

drawings. The district has identified one major site but would prefer a minimum of three other sites.

11. Other requirements included a life-cycle economic evaluation to derive a preliminary recommendation based on cost and project impact.
12. Perform a preliminary environmental assessment and ten percent design on the selected design alternative. This would apply only to the one major alternative site identified by the district.
13. Determine a preliminary project implementation schedule, a not-to-exceed project cost, and a preferred project delivery method.
14. Public Meetings and Presentations (2 committee meeting presentations, 1 formal presentation to CVWD's Board of Directors). Other project meetings as well. The selected consultant will attend a kick-off meeting, milestone meetings at 50% design step and the final design.
15. Mr. Yared stated that the selected consultant will be required to submit a project schedule and prepare and submit a draft and final master plan reports.
16. Mr. Yared discussed the proposal content and requirements, listed below:

A. Title Page	G. Project Approach
B. Table of Contents	H. Project Schedule
C. Statement of Qualifications	I. Fee and Fee Schedule
D. Company Information	J. Experience
E. Subcontractor Information	K. References
F. Project Team	
17. He also discussed, additional requirements, listed below:
 - A. Consultant's Representative
 - B. Professional Service Agreement
 - C. Insurance Requirements
 - D. District Reimbursements (mileage)
 - E. District Responsibilities
18. The proposing consultants will be evaluated by Brook Yared, James Lee, Carla Dillon, and other members of CVWD's staff before selecting a consultant.
19. Mr. Yared opened the meeting to questions. John Robinson- What is the page limit? Brook- No page limit.
20. Brook mentioned that more data will become available. In addition, two useful presentations can be found on our website explaining how our costs are generated and more financial information.

Received by: John Robinson

Contractor: John Robinson Consulting, Inc. Date: July 5, 2024

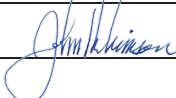
Signature: _____



21. Brook encouraged bidders to submit questions via email. He announced that the meeting minutes would be available on June 21, 2024. Digital submissions of proposals will be accepted but a paper copy must follow in the mail or hand delivered to the district's administrative office.
22. Brook thanked everyone in attendance and concluded the meeting.
23. One question was submitted after the meeting. Please email all proposals to byared@cvwd.com and mail all proposals to the District's administrative offices at 2700 Foothill Blvd., La Crescenta, 91214 to the attention of Carla Dillon, Director of Engineering and Operations.

Received by: John Robinson, Principal

Contractor: John Robinson Consulting, Inc. Date: July 5, 2024

Signature: 



IN ASSOCIATION WITH



Kennedy Jenks

Contact Information

John Robinson
Project Manager
(626) 375-9389

Pasadena Office
1055 East Colorado Boulevard, Suite 500
Pasadena, CA 91106

CRESCENTA VALLEY WATER DISTRICT

BOARD OF DIRECTORS - STAFF REPORT

Action Item No. 2
August 13, 2024

To: Honorable President and Members of the Board of Directors
From: Carla Dillon, P.E. – Director of Engineering & Operations
Subject: **Project Partners - Drafting Services**

ACTION ITEM:

Project Partners Drafting Services – Consideration and motion to authorize the General Manager to enter into an agreement with Project Partners, Inc. to provide drafting services starting August 2024 at a not-to-exceed cost of \$98,800.

BACKGROUND:

The Crescenta Valley Water District (CVWD) has taken on in-house design and construction of some smaller and less complex water pipeline replacement projects. The prior designs were completed by the senior engineer who is no longer with CVWD. In addition, electronic records need to be updated for work that has been completed in the field.

DISCUSSION:

Staff met with representatives from Project Partners to discuss the availability of a staff resource for computer aided design (CAD). Project Partners was able to identify one resource who had part-time availability. The candidate has over 40 years of design and drafting experience, including in the water industry. District staff interviewed the candidate and are requesting the support services to allow for the in-house design and construction work to continue in an expeditious and cost-effective manner. The value of the contract will allow for part-time services for approximately one year. The work will include design drawings for upcoming pipeline projects and updating the CAD master model.

FUNDING AVAILABILITY:

There is funding available as part of the CIP budget and remaining bond proceeds.

RECOMMENDATION:

Staff recommends award of a contract to Project Partners, Inc. for Engineering Department Support Services at a cost of \$98,800.

Prepared by:



Carla Dillon
Director of Engineering & Operations

Attachment:

1. Project Partners, Inc. – Proposal

Exhibit A

SCOPE OF SERVICES

CRESCENTA VALLEY WATER DISTRICT

SCOPE OF WORK

CAD DRAFTING

Project Needs:

Provide skilled technical support for

1. Design drawings, including pipeline projects:
 - a. Gromer Terrace (3400 Block)
 - b. Teasley Street (2300 block)
 - c. Parkhaven Circle (5000 block)
 - d. Caminito Lane (4900 block)
 - e. Ahlin Drive (2000 block)
2. Update CAD Master Model
3. Update CAD drawings from past project As-Builts
4. Valve book development
5. Water Atlas
6. Other CAD related assignments

From: [Oscar Gonzalez](#)
To: [Carla Dillon](#)
Cc: [Atousa Johnson](#); [Kimo Look](#)
Subject: RE: drafters?
Date: Wednesday, July 17, 2024 2:46:25 PM
Attachments: [image001.png](#)
[image002.jpg](#)
[Julius Bolton - CAD Drafter.pdf](#)

Hello Carla,

Attached please find a resume for a CAD Drafter for your consideration. Julius shows very well for your needs, but he is available part-time. For your convenience, we have included a summary of his qualifications below.

Mr. Julius Bolton – is a CAD Drafter with over 45 years of combined drafting and design experience. He has extensive experience in mechanical, electrical, and civil/structural design techniques and has held the titles of CAD Operator, CAD Drafter, and CAD Technician with various companies. Mr. Bolton has worked on a water distribution pipeline projects in the past, and he currently works at Golden State Water Company drafting and designing various size pipeline projects. He is proficient with AutoCAD, AutoCAD 3D, and Intergraph PDS 3D Modeling.

Mr. Bolton is available for part-time work only.

The billing rate for Julius is \$95/hr.; it does not include the cost for software licensing. If you let me know what software you use at CVWD, we share that cost with you as well as an ODC or built into rate.

Let me know your thoughts on this candidate and if you are interested in setting up an interview.

Best Regards,

Oscar Gonzalez
Director of Business Development

23195 La Cadena Drive, Suite 101
Laguna Hills, CA 92653
Ph 949-852-9300
Cell 213-379-3471



Julius Bolton

Project Level

CAD Drafter

Qualifications

- *Senior CAD Drafter With Over 45 Years Of Experience*
- *Extensive Experience In Mechanical, Electrical, And Civil/Structural Design Techniques*
- *Proficient In AutoCAD, Auto CAD Civil 3D, And Intergraph PDS 3D Modeling*
- *Strong Written And Oral Communication Skills*
- *Team Player*

Relevant Experience

Golden State Water Company, San Dimas, CA (Jun 2022-Present)
CAD II Technician

Draft and implement detail design system for booster pump upgrade, reservoir plant design, various size pipeline and well design projects.

Project Partners, Inc., Assigned to the City of Santa Ana, CA (Jan 2021-Jul 2021)
Principal Electrical/Instrumentation Designer

As contract CAD designer for the City of Santa Ana water department, responsibilities include updating and designing base map civil drawings for water, sewer and utility lines etc. using civil 3D or MicroStation cad system Prepare civil plans and details for pipeline design and drafting per municipal standard. Also, layout and update sidewalks, curbs, right of way, gutter and work on various size distribution pipeline project and booster pump upgrades for Golden State Water Capital Improvement project (from 8-5-2017 / 11-30-2017).

WorleyParsons, Monrovia, CA (2006-2021)
Principal Electrical/Instrumentation Designer

Electrical/Instrumentation responsibilities include: developing equipment module layouts, instruments location/conduit plan, input data into SmartPlant (SPI) installation details, loop diagram, wiring diagrams, schematics, block diagrams, cable and conduit schedules, standard details, all type are plan drawings (grounding, underground power, aboveground power, cable tray, lighting, instrumentation/control) for the following projects: Chevron EL Segundo refinery,

Project Partners

Julius Bolton

CAD Drafter

Page 2

Samref clean fuel project, Exxon Mobile (Point Thomson), BP Alaska fire & gas project, ConocoPhillips Alaska project And Saudi Aramco Gas Compression Project.

Parsons, Pasadena, CA (1991-2006)

Electrical Designer

Electrical and instrumentation responsibilities include: developing equipment layouts, wiring diagrams (schematic, single line, and interconnection), plan drawings for lighting, power, grounding, instrumentation, lightning/fire protection system, panel schedules, cable and conduit schedules, cable tray layout and installation details for the following projects: Newport and Blue Grass (military-demilitarization), Shell Oil Company, Mobil, Aramco (petrochemical), Disney and Nestle Food Company (commercial). Also work field assignment at Newport job site (May, 2002 to Feb., 2006) for the military-demilitarization program. Duties included designing, revising and as-builts all type are drawings for electrical, instrumentation, civil, structural and P&ID.

Sverdrup Corporation, St. Louis, MO (1988-1990)

Electrical Jr. Designer/CAD Operator

Developed and implemented required drawings for Eli Lilly Processing Plant (pharmaceutical). Responsibilities included designing and drafting all types of wiring diagrams (schematic, single line, interconnection and loop sheet), developed and designed lighting, power, control, receptacle, grounding, cable tray and instrumentation plans. Also developed and detailed control panel and internal wiring connection diagram for control panel.

Fluor Daniel, Greenville, SC (1987-1988)

Electrical Design Drafter/CAD Operator

Performed electrical and instrumentation design of power distribution and motor control systems for the Kellogg Company's plant expansion and modernization. This included developing diagrams for wiring schematic and MCC single line, along with plans for lighting, power and conduit routing, panel board schedules, control panel layout and electrical details. Also developed loop sheet automation system PLC configuration diagrams.

Bechtel, Inc., Kingsport, TN (1986-1987)

Electrical CAD Drafter

Developed and implemented conceptual and detailed process control system design in a heavy industrial environment for Tennessee Eastman Kodiak Company plant expansion, which involved detail layout, all types of wiring diagrams, drawing flow diagrams and P&IDs.

FMC Corporation, Houston, TX (1978-1986)

Mechanical Designer/CAD Operator

Wellhead Equipment Division, Houston, Texas (1978 - 1986). Coordinated and checked drafter detail engineering and assembly drawings for bill of material, design feature, drafting practice and procedures. Designed, updated, initiated and prepared detailed layouts, weldment and machine drawings for new and current products. Developed designed layout

NEWS FROM THE CVWD

By CV Weekly on July 25, 2024 · 0 Comments



Crescenta Valley Water District continues to pursue ambitious plans that stretch your dollar and reinvest those savings into the water system that provides an essential service for the homes, schools and businesses in our community. District staff has been rolling up its sleeves to replace water mains, helping to save the community money. We have completed a third such in-house pipeline job – first Fierro Circle, then Upper Terrace, and now El Sereno – for a total of 760 feet of pipeline replaced. That’s a total of about 2½ football fields ... it takes a while to walk the length!

The near-term vision for this initiative is to complete three more such projects to round out a half-dozen data points we’ll use to develop a cost-benefit analysis. That analysis will confirm whether the District can outpace skyrocketing contractor costs and by how much. This will inform a broader decision to turn the initiative into a new mode of doing business. Others have called our plan “aggressively ambitious,” and we’re looking forward to sharing with you the economics of projected savings by early October.

As our field crews help us chart a more sustainable future on the pipeline infrastructure side of the business during this heat wave, we’re reminded of the urgency of advancing our water supply situation. We need alternative sources of water supply both for supply sustainability and more affordable groundwater and

recycled water. If you've been following these letters or Mary O'Keefe's recent pieces on the City of Los Angeles (LADWP), then you're apprised on our effort to have water rights approved from LA, which will in turn allow us to build a stormwater capture project at CV Park. The work here continues and we believe that pursuing this challenge will yield major dividends for our ratepayers.

In the interim, I'm proud to announce that the District has won a grant that will significantly increase green infrastructure projects now rather than later. The grant represents a regional partnership co-led by CVWD and Foothill Municipal Water District, our wholesale water agency, along with City of Pasadena's Water & Power Dept., City of Glendale's Water & Power Dept., the California Data Collaborative, and talent from NASA and Bloomberg data science. Low-impact and low-cost stormwater projects can now be identified by triangulating aerial imagery, topographical data, remote-sensing data from NASA and AI integration. This represents to date the District's most significant partnership effort on grants and will pay prompt dividends for ratepayers.

We've recently won another grant, this one to help fund our employee wellness program. I'm a firm believer that any organization starts with its people. CVWD's values are captured by the acronym "S-E-R-V-E" to reflect our commission as a public agency. To share a snippet from the values statement, "Set the tone for safety and fiscal responsibility in everything we do. Stay invested in your teammates and their well-being; we are each other's keepers!" It is my responsibility to seriously take the wellness of those under my charge. It's also good business as happy, stable, inspired workers produce the best ideas and the best results, and a robust wellness program supports this. I am passionate about employee wellness and company culture. I'm happy to share more if you're interested either for yourself as an individual or as a leader of a company or other team.



Some recent additions of talented and inspired team members include: Carla Dillon, director of Engineering & Operations; Katherine Lieu, intern; Rafael Lopez Alas, Operations & Maintenance I, Edgar Perez, Operations & Maintenance I; and Shwetha Rao, intern. Welcome to the team!

To conclude, let's also touch on *your* wellness as it relates to water quality. Our top priority is ensuring that the water we serve is safe and reliable. We've sent out a steady stream of messaging recently to let you know that your water meets all state and federal drinking water health standards, including the U.S. Environmental Protection Agency's new standards on PFAS. "PFAS" is a collective term for a group of man-made chemicals manufactured and used in various industries worldwide for more than 70 years, and you've likely heard of these in the news in many contexts from food and clothes to air and soil.

CVWD's board of directors has taken a very proactive approach to considering the District's role in remediating PFAS, including a pilot study underway to determine the best path to treating water for PFAS in terms of efficacy, cost and ability to also treat future contaminants. We are hosting our third quarterly installment of Office Hours at the La Crescenta Library, 2809 Foothill Blvd. in partnership with the Crescenta Valley Community Association later this evening (July 25) at 6:30 p.m., and we will provide a more detailed look at this initiative.

Thank you for taking the time to read and for continuing the dialogue.

James Lee, General Manager
CVWD

LOCAL WATER SUPPLY IS INCREASED

Facts On New Well Of Mountain Co. Are Given

The recently completed well of the Mountain Water company in Dunsmoor Canyon shows a flow of from three to five inches since the installation of the new pump. Although the amount of water obtained is not as great as was hoped for the officials of the company are well pleased with the result of their operations, it was said. The well showed an eighth inch flow when it was first tested with air.

The directors have stated that the company is well fixed now as far as the water supply is concerned. They point to the fact that a tunnel is being constructed in Dunsmoor Canyon which will materially add to the water supply of the company. This tunnel, it is stated, will be cut back into the hillside for 500 feet and will result in several additional inches of water for the supply. It is by the tunnel method that the water in Pickens Canyon has been developed.

CRESCENTA VALLEY WATER DISTRICT

General Manager Report

GM Report

August 13, 2024

To: Honorable President and Members of the Board of Directors
From: James Lee, General Manager
Subject: **General Manager Report**

General Manager's Report Topics:

- Office hours
- Montrose Farmer's Market
- National Night Out
- Regional Strategic Planning Workshop
- Thirst for Knowledge
- Cell tower update

STAFFING

1 employee has a work anniversary in August: Darlene Telles – 11 years.

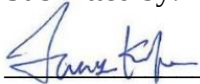
As of August 8th, the District has done 234 days without a lost time incident.

GENERAL MANAGER ACTIVITIES

Meetings:

Managers Meeting(s)	- July 25 th ; Aug 1 st ; Aug 8 th
Regional Strategic Planning Workshop	- July 23 rd
La County Public Works - Stormwater	- July 25 th
Office Hours at the Library, 3 rd Installment	- July 25 th
Southern California Water Coalition	- July 26 th
Thirst for Knowledge: No-Code Apps, AI	- July 31 st
Los Angeles County Fire	- July 31 st

Submitted by:



James Lee
General Manager

Field Maintenance and Operations Report

July 2024

0

Water Main Repairs

22

Water Service

Repairs: 14 Replacements: 8

8

After Hours Leaks/Repairs

18,200'

Sewer Maintenance

Clean: 2100' Inspect: 16,000' Reports: 0

- **Field Maintenance Projects**

- * Rosemont Preserve – Job walk, survey & planning meeting

- **Operations Report**

- * Glenwood – chlorination equipment maintenance

- * Mills Booster A – Installation

- * PFAS – Plat conversion kick-off meeting

- **Electrical/Telemetry**

- * E-939 – Punch list

- **Facilities Maintenance**

- * Administrative office – temporary roof repairs

- **Wastewater**

- * Lift Station Visits: 4 (De-rag pumps, check valves)

Field Maintenance and Operations Report

July 2024

Days without a lost-time incident: 226

120+

Water Quality Samples w/ additional
PFAS monitoring samples

116

Valves

Replace: 1 Exercise: 115 Install: 0

1

Fire Hydrant Maintenance

Rebuild: 0 Install: 1 Inspect: 0

2

Water Meter Replacement

¾": 0, 1": 1, 1.5": 1, 2": 1, 3": 0, 4": 0

- **Training/Cross Training**

- * Procore

- **Events**

- * None to Report

- **New Certification**

- * None to report

- **Safety**

- * Temporary Traffic Control
- Glenwood

Engineering Report

August 13, 2024
Staff Report

To: Honorable President and Members of the Board of Directors
From: Carla Dillon, P.E. – Director of Engineering & Operations
Subject: **Engineering Report – August 2024**

- **Water Production Report**
 - July 2024 – Water production –56%/44% split – 121 MG for the month
 - July 2024 – Average use – 7% more than 2023 and 5% less than 5-year average
- **Rainfall Update**
 - 0.14” for July 2024
 - Rainfall Total for WY 2023/24 – 26.28”
- **Engineering Update - Water**
 - **FY 23/24 Capital Improvement Project**
 - Goss Canyon #2 Reservoir Rehabilitation
 - Complete
 - Paschall Booster B
 - Complete
 - LADWP-CVWD Emergency Interconnection
 - Manifold approved by LADWP
 - Manifold and break point chlorination installation – Week of June 10, 2024
 - Ramsdell Mixing Station/Pressure Reducing Station
 - Above ground PRVs Constructed
 - Materials on order for In-house repairs
 - Conversion to Chloramination
 - On hold
 - Mills Booster A VFD Installation
 - Motor removed for rewinding
 - VFD installation rescheduled for July 2024 due to supply chain delay
 - Held kick off meeting for the PFAS pilot project
 - **FY 22/23 Capital Improvement Project (E-1046)**
 - 2600 & 2700 Blocks of Orange Ave
 - Reviewing claim documentation
 - **3000 & 3100 Blocks of Montrose Ave (E-1067)**
 - Complete
 - **Transfer of Services to Glendale Water and Power (E-1051)**
 - GWP completed five lateral installations in June and is pending a final installation at 3445 Foothill Blvd
 - CVWD to proceed with extension and abandonments in August 2024
 - **Replacement of Supervisory Control and Data Acquisition (SCADA) System**
 - Site visit week of July 22
 - Investigated comm alarm and faulty radio at Markridge; replaced
 - Remaining work to be accomplished in three site visits:
 - Punchlist items
 - Document all control strategies

- Upgrade 29 processors to version 36
- Commissioned Glenwood well call sequence and configuration
- Tag and alarm check for 3 sites
- Seismic valve graphic display and testing for 2 sites
- Next visit in August to complete remaining punchlist items and document control strategies

- **Engineering Update - Wastewater**

- Wastewater Master Plan
 - Report is complete and in process of scheduling Kennedy-Jenks to present at next Engineering - Operations Committee Meeting

- **Grant Status (Engineering)**

- Water Recycling Grant Agreement (Attached)

- **Developer Projects**

- On hiatus
 - 3037/3043 Foothill – Pending payment of materials, selection of a contractor, and faithful performance bond
 - 4360 Ocean View – 7 units – Pending Reconciliation and Transfer
 - 4521 Briggs/2413 Foothill – New 81 units
 - 2341 Mira Vista – New 4 Units
 - 2434 Foothill – New 31 units – Developer has cancelled the project and is selling the parcels

- **FMWD**

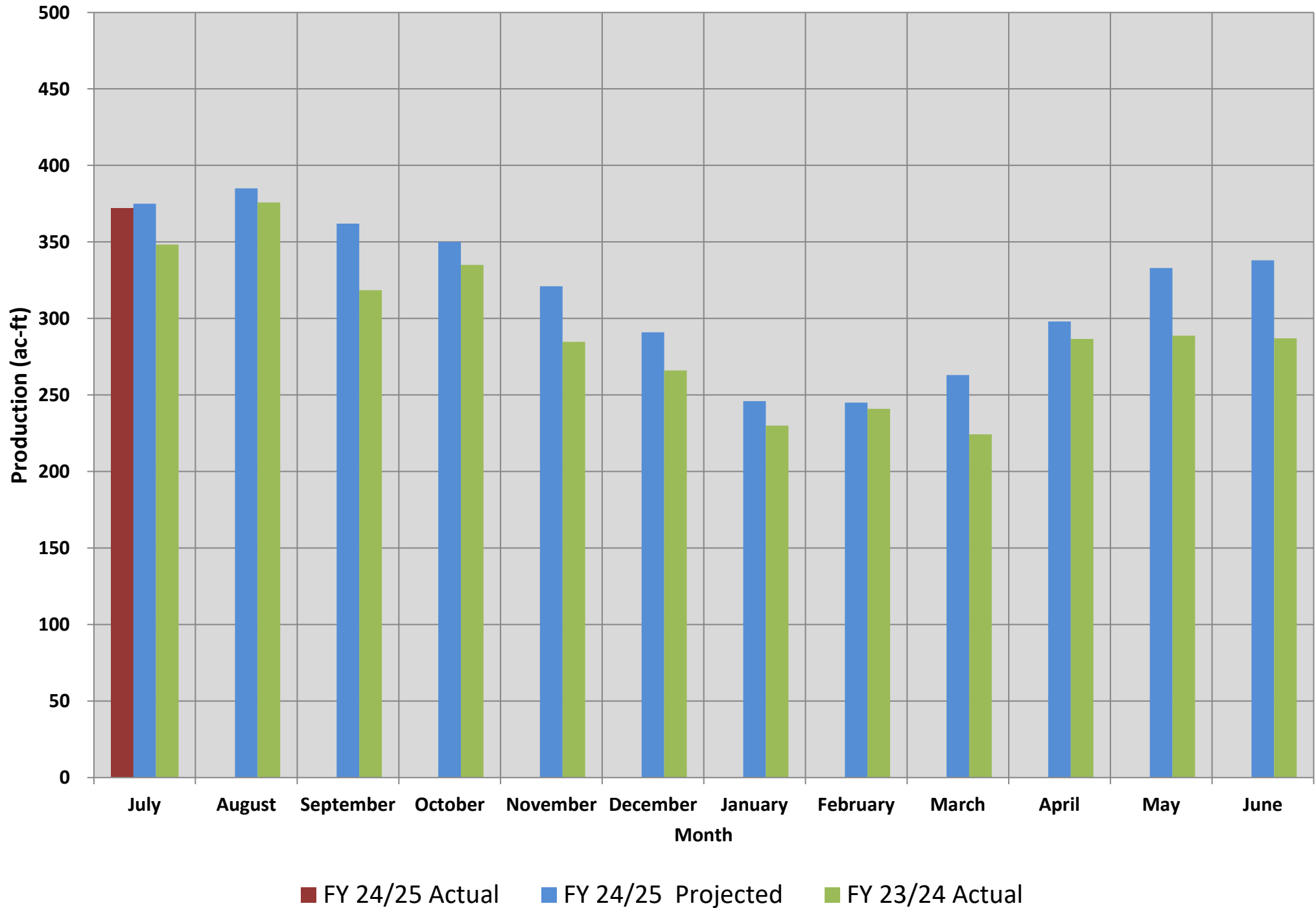
- No Report

Well Production:	60,726,414	Gals		
GWP Production:	5,108,000	Gals		
Gravity Production:	1,465,006	Gals	% GW	56%
FMWD:	53,917,979	Gals		
City of Glendale:	<u>0</u>	Gals	% Import	44%
TOTAL:	121,217,399	Gals		
	372.00	ac-ft		

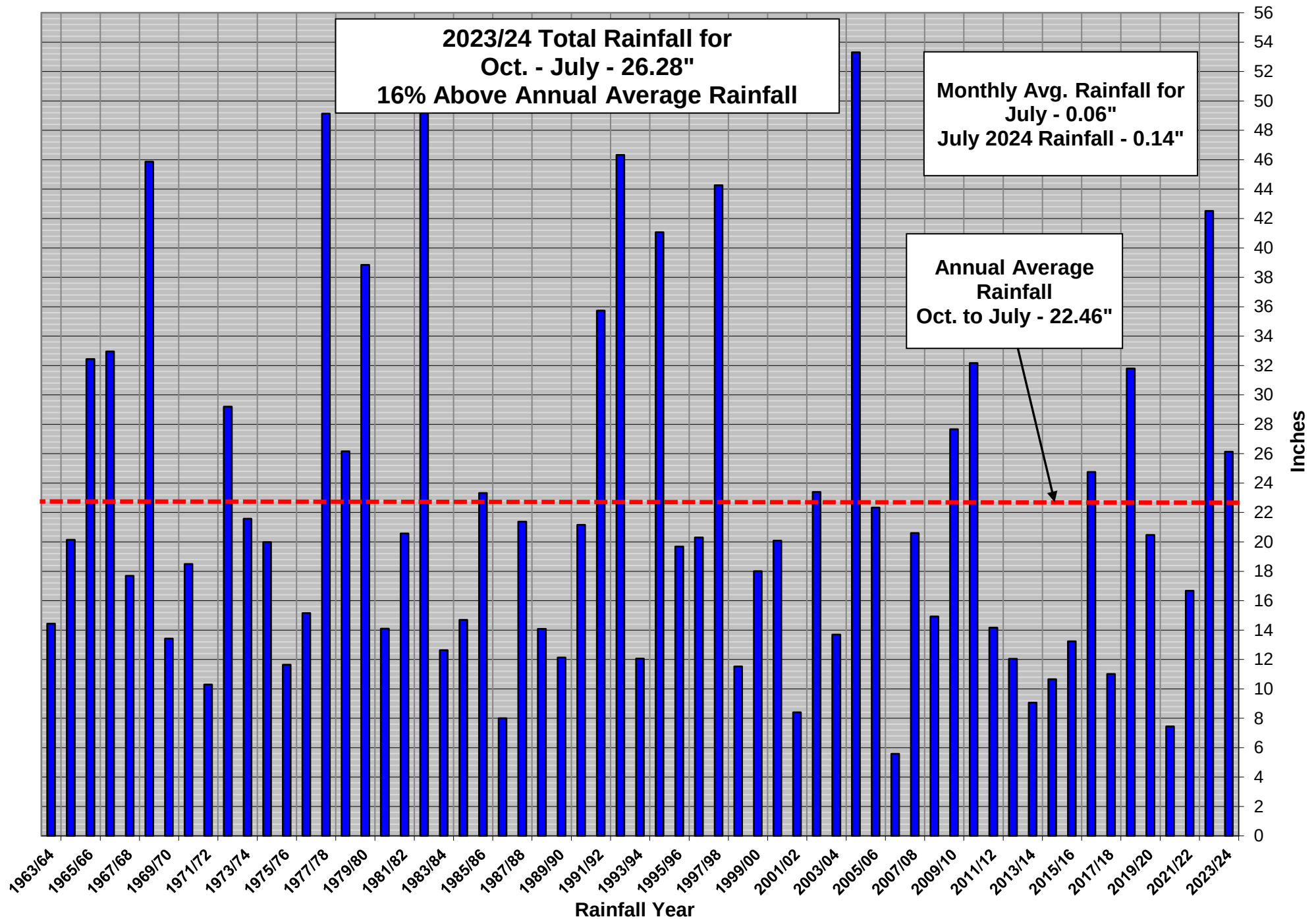
WATER DEMAND COMPARISON								
Time Period			Average Daily Usage (gals)		Current Period Change			
July 1 - July 31, 2024			3,874,705					
July 1 - July 31, 2023			3,622,659		7.0%			
5-yr Average - July 2019 - 2023			4,080,157		-5.0%			
RAINFALL: July 1 - 31, 2024			0.14"					
Season-To-Date:			26.28"					
2024/25 Fiscal Year Water Production			WY 23/24 - Groundwater Production Water Rights		GWP (Well 16) Water Production - 2024		Purchased Water Production Tier 2 Allocation - 2024	
Month	Actual Total Water Production (ac-ft)	Projected Total Water Production (ac-ft)	Month	Month	Month	Well Production (ac-ft)	Month	Imported Water Production (ac-ft)
July	372	375	October	160	January	13	January	79
August		385	November	168	February	13	February	53
September		362	December	169	March	14	March	51
October		350	January	142	April	15	April	74
November		321	February	142	May	16	May	96
December		291	March	160	June	15	June	141
January		246	April	161	July	16	July	165
February		245	May	181	August		August	
March		263	June	176	September		September	
April		298	July	191	October		October	
May		333	August		November		November	
June		338	September		December		December	
Total to Date	372	3,469	Total to Date	1,650	Total to Date	102	Total to Date	659
Projected	710	3,807	Water Rights	3,294			Tier 2	2,154
% of Projected	9.8%	91.1%	% of Rights	50%			% of Allocation	31%
Remaining	3,435	338	Remaining	1,644			Remaining	1,495

NOTE:
1) Blue Numbers = Estimated Water Production

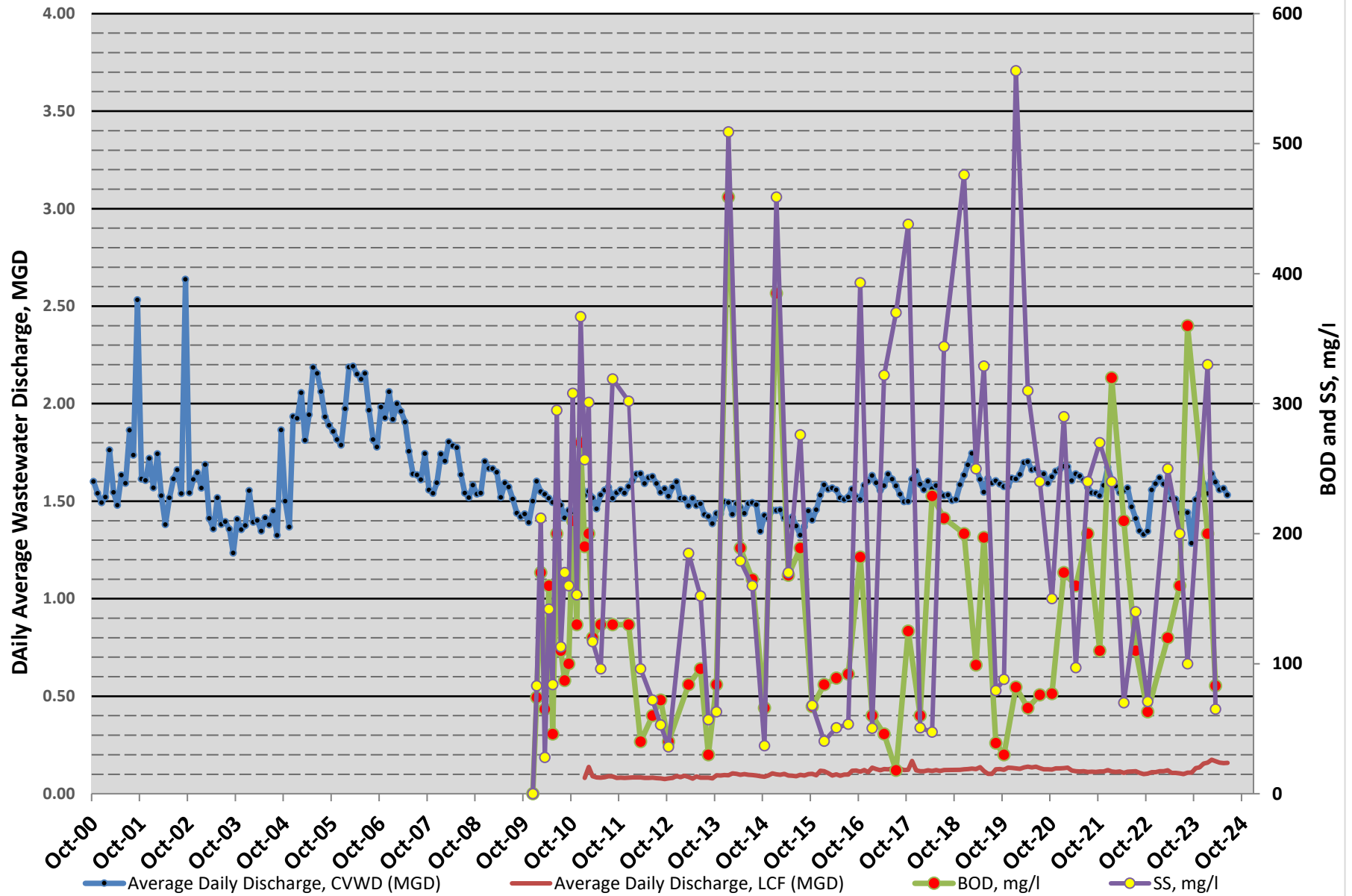
Monthly Water Production: FY 24/25 Actual, FY 24/25 Projected & FY 23/24 Actual



Monthly Rainfall - 1963/64 - 2023/24 (Oct. 1 - July 31)



CVWD Daily Average Wastewater Discharge and Strength
October 1, 2000 - June 30, 2024



Grants

July 2024



State Water Resources Control Board

June 25, 2024

Crescenta Valley Water District
Attn: Brook Yared – Interim Director of Engineering and Operations
2700 Foothill Blvd.
La Crescenta, CA, 91214

Agreement Number: D2305009
Project Number: C-06-8769-110

Please review, and if appropriate, electronically sign the signature page of the Agreement via Adobe Sign no later than thirty (30) calendar days from the date of this letter. Once electronically signed, the Agreement will be routed automatically to the next signer. You will automatically receive a copy of the fully executed Agreement via Adobe Sign once the final signer has signed. This Agreement cannot be considered binding by either party until executed by the State Water Resources Control Board (State Water Board).

For the Funding Agreement to be executed by the State Water Board, the signature page **must be signed and returned electronically.**

Please note that all projects receiving funding must comply with all applicable implementing guidelines and regulations adopted by the California Department of Industrial Relations (DIR), regarding state prevailing wage requirements. You must contact DIR for guidance on how to comply. Information can be found at: <http://www.dir.ca.gov/lcp.asp>.

We strive to provide superior service to our recipients and would appreciate your feedback on the application process. Please assist us in completing a 5-minute Customer Satisfaction Survey at <https://www.surveymonkey.com/s/CWSRFsatisfaction> so we can continue to improve on our service and process. Your comments are valuable to the success of the CWSRF Program. Thank you for your time and we look forward to continuing to work with you.

Ms. Muskaan Aleem may be contacted at (916) 323-8268 or Muskaan.Aleem@Waterboards.ca.gov.

Enclosures

E. JOAQUIN ESQUIVEL, CHAIR | ERIC OPPENHEIMER, EXECUTIVE DIRECTOR

1001 I Street, Sacramento, CA 95814 | Mailing Address: P.O. Box 100, Sacramento, CA 95812-0100 | www.waterboards.ca.gov



**WATER RECYCLING FUNDING PROGRAM
PLANNING GRANT**

AGREEMENT No. D2305009

BY AND BETWEEN

CRESCENTA VALLEY WATER DISTRICT ("Recipient")

AND

CALIFORNIA STATE WATER RESOURCES CONTROL BOARD ("State Water Board")

FOR THE PURPOSE OF THE

RECYCLED WATER FEASIBILITY STUDY ("Project")

PROJECT NO. C-06-8769-110

- Section 79143 of the Water Code, and Resolution No. 2019-0058.
- Assembly Bill 102 (Stats. 2023, Ch. 38), Sec. 115, amending Provision 1 of Item 3940-106-0001 of Section 2.00 of the Budget Act of 2023, dated July 10, 2023.

PROJECT FUNDING AMOUNT: \$150,000

GRANT COMPONENT: \$150,000

ESTIMATED REASONABLE PROJECT COST: \$380,000

ELIGIBLE WORK START DATE: MARCH 7, 2024

WORK COMPLETION DATE: DECEMBER 30, 2026

FINAL REIMBURSEMENT REQUEST DATE: MARCH 1, 2027

RECORDS RETENTION END DATE: DECEMBER 30, 2062

1. The State Water Board and the Recipient mutually promise, covenant, and agree to the terms, provisions, and conditions of this Agreement, including the following Exhibits, which are attached hereto or are incorporated by reference:
 - EXHIBIT A – SCOPE OF WORK AND SCHEDULE
 - EXHIBIT B – SPECIFIC FUNDING PROVISIONS
 - EXHIBIT C – GENERAL TERMS AND CONDITIONS 2019-NOV
 - EXHIBIT D – SPECIAL CONDITIONS
2. The following documents are also incorporated by reference, as well as any documents incorporated by reference in Exhibit D:
 - National Pollutant Discharge Elimination System Permit No. CA0053953
3. Party Contacts during the term of this Agreement are:

State Water Board		Crescenta Valley Water District	
Section:	Division of Financial Assistance		
Name:	Steve Cheung, Project Manager	Name:	Brook Yared, Interim Director of Engineering and Operations
Address:	1001 I Street, 16th Floor	Address:	2700 Foothill Blvd.
City, State, Zip:	Sacramento, CA 95814	City, State, Zip:	La Crescenta, CA 91214
Phone:	(916) 449-5612	Phone:	(818) 236-4119
Email:	steve.cheung@waterboards.ca.gov	Email:	byared@cvwd.com

Each party may change its contact upon written notice to the other party. While Party Contacts are contacts for day-to-day communications regarding Project work, the Recipient must provide official communications and notices to the Division's Deputy Director.

4. Conditions precedent to this Agreement are set forth as follows:
 - (a) The Recipient must deliver to the Division a resolution authorizing this Agreement and identifying its authorized representative by title.
5. The Recipient represents, warrants, and commits to the following as of the Eligible Work Start Date and continuing thereafter for the term of this Agreement, which shall be at least until the Records Retention End Date:
 - (a) The Recipient agrees to comply with all terms, provisions, conditions, and commitments of this Agreement, including all incorporated documents.
 - (b) The execution and delivery of this Agreement, including all incorporated documents, has been duly authorized by the Recipient. Upon execution by both parties, this Agreement constitutes a valid and binding obligation of the Recipient, enforceable in accordance with its terms, except as such enforcement may be limited by law.
 - (c) None of the transactions contemplated by this Agreement will be or have been made with an actual intent to hinder, delay, or defraud any present or future creditors of Recipient. The Recipient is solvent and will not be rendered insolvent by the transactions contemplated by this Agreement. The Recipient is able to pay its debts as they become due. The Recipient maintains sufficient insurance coverage considering the scope of this Agreement, including,

for example but not necessarily limited to, general liability, automobile liability, workers compensation and employer liability, professional liability.

- (d) The Recipient is in compliance with all State Water Board funding agreements to which it is a party.
- 6. This Agreement, and any amendments hereto, may be executed and delivered in any number of counterparts, each of which when delivered shall be deemed to be an original, but such counterparts shall together constitute one document. The parties may sign this Agreement, and any amendments hereto, either by an electronic signature using a method approved by the State Water Board or by a physical, handwritten signature. The parties mutually agree that an electronic signature using a method approved by the State Water Board is the same as a physical, handwritten signature for the purposes of validity, enforceability, and admissibility.

IN WITNESS WHEREOF, this Agreement has been executed by the parties hereto.

CRESCENTA VALLEY WATER DISTRICT:

By: _____
Name: Brook Yared
Title: Interim Director of Engineering and Operations

Date: _____

STATE WATER RESOURCES CONTROL BOARD:

By: _____
Name: Joe Karkoski
Title: Deputy Director
Division of Financial Assistance

Date: _____

EXHIBIT A – SCOPE OF WORK AND SCHEDULE

A.1 PROJECT PURPOSE AND DESCRIPTION.

The Project is for the benefit of the Recipient. The funding under this Agreement shall be used to develop recycled water alternatives for the purposes of treatment and reuse of wastewater within Crescenta Valley Water District's service area.

A.2 SCOPE OF WORK.

The Recipient agrees to produce a draft and final Facilities Planning Report in accordance with the following major tasks:

The Study alternatives may include the following potential concepts:

- Centralized or decentralized wastewater treatment for recycled water irrigation reuse
- Centralized wastewater and advanced water purification treatment for groundwater recharge
- Centralized wastewater treatment for recycled water sales to other utilities
- Nitrate treatment plant brine separation and treatment for irrigation or potable use

A.3 SCHEDULE.

Failure to provide items by the due dates indicated in the table below may constitute a material violation of this Agreement. The Project Manager may adjust the dates in the "Estimated Due Date" column of this table, but Critical Due Date adjustments will require an amendment to this Agreement. The Recipient must complete and submit all work in time to be approved by the Division prior to the Work Completion Date. As applicable for specific submittals, the Recipient must plan adequate time to solicit, receive, and address comments prior to submitting the final submittal. The Recipient must submit the final Reimbursement Request prior to the Final Reimbursement Request Date set forth on the Cover Page.

ITEM	DESCRIPTION OF SUBMITTAL	CRITICAL DUE DATE	ESTIMATED DUE DATE ¹
EXHIBIT A – SCOPE OF WORK			
	WORK TO BE PERFORMED BY RECIPIENT		
	Draft Project Report submittal	N/A	06/30/2025
	Mid-course Meeting	N/A	09/30/2025
	Final Project Report submittal	N/A	12/30/2025
	Work Completion Date	12/30/2026	N/A
EXHIBIT B – REIMBURSEMENTS, BUDGET DETAIL, AND REPORTING PROVISIONS			
	REIMBURSEMENTS		
	Final Disbursement Request/End of Draw	03/01/2027	N/A
Notes: ¹ Estimated dates may be extended as necessary by the Division, pursuant to the Guidelines. However, estimated dates cannot be extended beyond the Work Completion Date.			

The Recipient must deliver any request for extension of the Work Completion Date no less than 90 days prior to the Work Completion Date.

The Division may require corrective work to be performed prior to Project Completion. Any work occurring after the Work Completion Date will not be reimbursed under this Agreement.

A.4 PROJECT REPORTS.

(a) The Recipient must submit a draft Project Report consistent with the Scope of Work above to the Division with a copy to the appropriate Regional Water Board on or before the due date established by the Division and the Recipient. If the Recipient fails to submit a timely draft Final Project Report, the State Water Board may stop processing pending or future applications for new financial assistance, withhold reimbursements under this Agreement or other agreements, and begin administrative proceedings.

(b) The Recipient must submit a Final Project Report consistent with the Scope of Work above to the Division with a copy to the appropriate Regional Water Board on or before the due date established by the Division and the Recipient in advance of the Final Reimbursement Request Date. If the Recipient fails to submit a timely Final Project Report, the State Water Board may stop processing pending or future applications for new financial assistance, withhold reimbursements under this Agreement or other agreements, and begin administrative proceedings.

EXHIBIT B – FUNDING AMOUNTS

B.1 ESTIMATED REASONABLE COST AND PROJECT FUNDS.

The estimated reasonable cost of the total Project is set forth on the Cover Page of this Agreement, and is greater than or equal to the funding anticipated to be provided by the State Water Board under this Agreement. Subject to the terms of this Agreement, the State Water Board agrees to provide Project Funds not to exceed the amount of the Project Funding Amount set forth on the Cover Page of this Agreement.

B.2 RECIPIENT CONTRIBUTIONS.

The Recipient must pay any and all costs connected with the Project including, without limitation, any and all Project Costs. If the Project Funds are not sufficient to pay the Project Costs in full, the Recipient must nonetheless complete the Project and pay that portion of the Project Costs in excess of available Project Funds, and shall not be entitled to any reimbursement therefor from the State Water Board.

B.3 VERIFIABLE DATA.

Upon request by the Division, the Recipient must submit verifiable data to support deliverables specified in the Scope of Work. The Recipient's failure to comply with this requirement may be construed as a material breach of this Agreement.

B.4 BUDGET COSTS.

The Division's Form 260 and Form 261 will document a more detailed budget of eligible Project Costs and Project funding amounts.

Project Costs incurred prior to July 10, 2023 are not eligible for Budget Act of 2023 grant funding under this Agreement. The Recipient must not request reimbursement of Project Costs incurred prior to July 10, 2023 in excess of \$75,000.

Project Costs incurred prior to the Eligible Work Start Date on the cover page of this Agreement are not eligible for reimbursement.

Budget costs are contained in the Summary Project Cost Table below:

LINE ITEM	PROJECT FUNDING AMOUNT
Draft Project Report	\$75,000
Final Project Report	\$75,000
TOTAL	\$150,000

Indirect Costs are ineligible for funding under this Agreement.

The Recipient is prohibited from requesting disbursement amounts that represent Recipient's mark-ups to costs invoiced or otherwise requested by consultants or contractors.

B.5 LINE ITEM ADJUSTMENTS.

Adjustments may be made between line items, as approved by the Project Manager, at the time of Recipient's submittal of its final Reimbursement Request. The sum of adjusted line items must not exceed the Project Funding Amount.

B.6 REIMBURSEMENT PROCEDURE.

- a. Project Funds will be provided in two reimbursements:
1. Reimbursement of approved costs of up to 50 percent of the total Project Funding Amount will occur after Division staff have approved the draft Project Report. Approval of the draft report will not occur until after the Mid-Course meeting, at the earliest.
 2. Reimbursement of the remaining approved Project Costs will occur after Division staff have approved the final Project Report or have authorized suspension of work under this Agreement due to a determination of lack of feasibility.
- b. The Recipient must not request reimbursement for any Project Cost until such cost has been incurred and is currently due and payable by the Recipient, although the actual payment of such cost by the Recipient is not required as a condition of reimbursement. Supporting documentation (e.g., receipts) must be submitted with each Reimbursement Request. The amount requested for Recipient's administration costs must include a calculation formula (i.e., hours or days worked times the hourly or daily rate = total amount claimed). Reimbursement of Project Funds will be made only after receipt of a complete, adequately supported, properly documented, and accurately addressed Reimbursement Request.
- c. The Recipient must spend Project Funds within 30 days of receipt. If the Recipient earns interest earned on Project Funds, it must report that interest immediately to the State Water Board. The State Water Board may deduct earned interest from future reimbursements.
- d. The Recipient must not request a reimbursement unless that Project Cost is allowable, reasonable, and allocable.
- e. Notwithstanding any other provision of this Agreement, no reimbursement shall be required at any time or in any manner which is in violation of or in conflict with federal or state laws, policies, or regulations.
- f. Notwithstanding any other provision of this Agreement, the Recipient agrees that the State Water Board may retain an amount equal to ten percent (10%) of the Project Funding Amount until Project Completion. Any retained amounts due to the Recipient will be promptly disbursed to the Recipient, without interest, upon Project Completion.

B.7 REVERTING FUNDS AND DISENCUMBRANCE.

In the event the Recipient does not submit Reimbursement Requests for all funds encumbered under this Agreement timely, any remaining funds revert to the State. The State Water Board may notify the Recipient that the project file is closed, and any remaining balance will be disencumbered and unavailable for further use under the Agreement.

EXHIBIT C – GENERAL TERMS AND CONDITIONS 2019-NOV

GENERAL TERMS AND CONDITIONS 2019-NOV is posted at https://www.waterboards.ca.gov/water_issues/programs/grants_loans/general_terms.html and replicated below:

DEFINITIONS. Unless otherwise specified in this Agreement, each capitalized term used in this Agreement has the following meaning:

- “Agreement” means this agreement, including all exhibits and attachments hereto.
- “Cover Page” means the front page of this Agreement.
- “Days” means calendar days unless otherwise expressly indicated.
- “Deputy Director” means the Deputy Director of the Division.
- “Division” means the Division of Financial Assistance of the State Water Board or any other division or unit of the State Water Board authorized to administer this Agreement.
- “Event of Default” means the occurrence of any of the following events:
 - a) A representation or warranty made by or on behalf of the Recipient in this Agreement or in any document furnished by or on behalf of the Recipient to the State Water Board pursuant to this Agreement shall prove to have been inaccurate, misleading or incomplete in any material respect;
 - b) Failure by the Recipient to observe and perform any covenant, condition, or provision in this Agreement, which failure shall continue for a period of time, to be determined by the Division;
 - c) Initiation of proceedings seeking arrangement, reorganization, or any other relief under any applicable bankruptcy, insolvency, or other similar law; the appointment of or taking possession of the Recipient's property by a receiver, liquidator, assignee, trustee, custodian, conservator, or similar official; the Recipient's entering into a general assignment for the benefit of creditors; the initiation of resolutions or proceedings to terminate the Recipient's existence, or any action in furtherance of any of the foregoing;
 - d) A determination pursuant to Gov. Code section 11137 that the Recipient has violated any provision in Article 9.5 of Chapter 1 of Part 1 of Division 3 of Title 2 of the Government Code; or
 - e) Loss of the Recipient's rights, licenses, permits, or privileges necessary for the Project, or the occurrence of any material restraint on the Recipient's enterprise by a government agency or court order.
- “Final Reimbursement Request Date” means the date set forth as such on the Cover Page of this Agreement, after which date, no further reimbursements or disbursements may be requested.
- “Fiscal Year” means the period of twelve (12) months terminating on June 30 of any year.
- “GAAP” means generally accepted accounting principles, the uniform accounting and reporting procedures set forth in publications of the American Institute of Certified Public Accountants or its successor, or by any other generally accepted authority on such procedures, and includes, as applicable, the standards set forth by the Governmental

Accounting Standards Board or its successor, or the Uniform System of Accounts, as adopted by the California Public Utilities Commission for water utilities.

- "Material Obligation" means an obligation of the Recipient that is material to this transaction.
 - "Party Contact" means, for the Recipient, the Authorized Representative of the Recipient or any designee of the Authorized Representative, and, for the State Water Board, the Division staff set forth in Section 2 of this Agreement.
 - "Project" means the Project funded by this Agreement as described in Exhibits A and B and in the documents incorporated by reference herein.
 - "Project Completion" means, as determined by the Division, that the Project is complete to the reasonable satisfaction of the Division.
 - "Project Costs" means the incurred costs of the Recipient which are eligible for funding under this Agreement, pursuant to applicable statutes, policy, regulations, or guidelines.
 - "Project Funding Amount" means the maximum amount payable under this Agreement, as set forth on the Cover Page.
 - "Project Funds" means all moneys disbursed to the Recipient by the State Water Board for eligible Project Costs pursuant to this Agreement.
 - "Project Manager" means the person designated by the State Water Board to manage performance of this Agreement. The Project Manager is set forth on the Cover Page.
 - "Records Retention End Date" means the last date that the Recipient is obligated to maintain records related to this Agreement and is set forth on the Cover Page of this Agreement.
 - "Regional Water Quality Control Board" or "Regional Water Board" means the appropriate Regional Water Quality Control Board.
 - "Reimbursement Period" means the period during which Project Funds may be disbursed.
 - "Reimbursement Request" means the Recipient's request for Project Funds from the State Water Board as set forth in Exhibit B.
 - "State" means State of California.
 - "State Water Board" means the State Water Resources Control Board.
 - "Work Completion" means the Recipient's submittal of all work set forth under Exhibit A for review and approval by the Division.
 - "Work Completion Date" means the date set forth on the Cover Page of this Agreement and is the last date on which Project Costs may be incurred under this Agreement.
 - "Year" means calendar year unless otherwise expressly indicated.
1. ACCESS, INSPECTION, AND PUBLIC RECORDS. The Recipient must ensure that the State Water Board, the State Auditor, or any authorized representative of the foregoing, will have safe

and suitable access to the Project site at all reasonable times through the Records Retention End Date or useful life of the Project, whichever is longer. The Recipient acknowledges that, except for a subset of information regarding archaeological records and personally identifiable information, the Project records and locations may be public records, including but not limited to all of the submissions accompanying the application, all of the documents incorporated into this Agreement by reference, and all reports, Reimbursement Requests, and supporting documentation submitted hereunder.

2. **ACCOUNTING AND AUDITING STANDARDS; FINANCIAL MANAGEMENT SYSTEMS.** The Recipient must maintain GAAP-compliant project accounts, including GAAP requirements relating to the reporting of infrastructure assets. Without limitation of the requirement to maintain Project accounts in accordance with GAAP, the Recipient must:
 - (a) Establish an official file for the Project which adequately documents all significant actions relative to the Project;
 - (b) Establish separate accounts which will adequately and accurately depict all amounts received and expended on the Project, including all Project Funds received under this Agreement;
 - (c) Establish separate accounts which will adequately depict all income received which is attributable to the Project, specifically including any income attributable to Project Funds disbursed under this Agreement;
 - (d) Establish an accounting system which will accurately depict final total costs of the Project if authorized under this Agreement;
 - (e) Establish such accounts and maintain such records as may be necessary for the State to fulfill federal reporting requirements, including any and all reporting requirements under federal tax statutes or regulations; and
 - (f) If the Recipient uses its own employees, equipment, or resources for any phase of the Project, accounts will be established which reasonably document all employee hours charged to the Project and the associated tasks performed by each employee.
3. **AMENDMENT.** No amendment or variation of the terms of this Agreement shall be valid unless made in writing and signed by both the Recipient and the Deputy Director or designee and approved as required.
4. **ASSIGNABILITY.** This Agreement is not assignable by the Recipient, either in whole or in part, without the consent of the State Water Board. Amendment of the Agreement may be required.
5. **AUDIT.** The Division may call for an audit of financial information relative to the Project if the Division determines that an audit is desirable to assure program integrity or if an audit becomes necessary because of State or federal requirements. If an audit is called for, the audit must be performed by a certified public accountant independent of the Recipient and at the cost of the Recipient. The audit must be in the form required by the Division. The Recipient must return, or ensure the return of, any audit disallowances within 30 days.
6. **BONDING.** Where construction contractors are used, the Recipient must not authorize construction to begin until each contractor has furnished a performance bond in favor of the Recipient in the following amounts: faithful performance (100%) of contract value; labor and materials (100%) of contract value. This requirement shall not apply to any contract for less than \$25,000.00.

7. **COMPETITIVE BIDDING.** Recipient must adhere to any applicable State law or local ordinance for competitive bidding and applicable labor laws. If Recipient is a private entity, any construction contracts related in any way to the Project must be let by competitive bid procedures which assure award of such contracts to the lowest responsive and responsible bidders. Recipient must not award a construction contract until a summary of bids and identification of the selected lowest responsible bidder is submitted to and approved in writing by the Division. Recipient must provide a full explanation if Recipient is proposing to award a construction contract to anyone other than the lowest responsible bidder.
8. **COMPLIANCE WITH APPLICABLE LAWS, RULES, AND REQUIREMENTS.** The Recipient must, at all times, comply with and require its contractors and subcontractors to comply with all applicable federal and State laws, rules, guidelines, regulations, and requirements and with provisions of the adopted environmental mitigation plan, if any, for the useful life of the Project.
9. **COMPUTER SOFTWARE.** The Recipient certifies that it has appropriate systems and controls in place to ensure that State funds will not be used in the performance of this Agreement for the acquisition, operation or maintenance of computer software in violation of copyright laws.
10. **CONFLICT OF INTEREST.** The Recipient certifies that it, its owners, officers, directors, agents, representatives, and employees are in compliance with applicable State and federal conflict of interest laws and will remain in compliance for the useful life of the Project. Any service provider or contractor with which the Recipient contracts must not have any role or relationship with the Recipient, that, in effect, substantially limits the Recipient's ability to exercise its rights, including cancellation rights, under the contract, based on all the facts and circumstances. Public entities are required to have adopted conflict of interest codes and may be required to provide documentation of those codes to the Division.
11. **DATA MANAGEMENT.** The Recipient will undertake appropriate data management activities so that Project data can be incorporated into statewide data systems.
12. **DEBARRED, DISQUALIFIED, OR EXCLUDED CONTRACTORS.** The Recipient must not contract or allow subcontracting with excluded parties. The Recipient must not contract with any party who is debarred or suspended or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the State Water Board program for which this funding is authorized. For any work related to this Agreement, the Recipient must not contract with any individual or organization on the State Water Board's List of Disqualified Businesses and Persons that is identified as debarred or suspended or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the State Water Board program for which funding under this Agreement is authorized. The State Water Board's List of Disqualified Businesses and Persons is located at http://www.waterboards.ca.gov/water_issues/programs/enforcement/fwa/dbp.shtml
13. **DRUG-FREE WORKPLACE.** The Recipient certifies that it will provide a drug-free workplace in compliance with the Drug-Free Workplace Act (Gov. Code. §§ 8350-8357). The Recipient shall publish a statement notifying employees that the unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited in the Recipient's workplace and specifying the actions to be taken against employees for violations of the prohibition. The Recipient shall establish a drug-free awareness program to inform employees about the dangers of drug abuse in the workplace, the Recipient's policy of maintaining a drug-free workplace, any available drug counseling, rehabilitation and employee assistance programs, and penalties that may be imposed upon employees for drug abuse violations. The Recipient shall provide that every employee who works on the Project receives a copy of the Recipient's drug-free workplace policy statement and agrees to abide by the terms of the statement as a condition of employment on the Project.

14. ENVIRONMENTAL CLEARANCE. No work that is subject to California Environmental Quality Act (CEQA) or the National Environmental Policy Act (NEPA) may proceed under this Agreement until the State Water Board has provided approval to proceed. Upon receipt and review of the Recipient's environmental documents, the State Water Board shall make the appropriate environmental findings before determining whether to approve construction or implementation funding for the Project under this Agreement. Providing approval for such construction or implementation funding is fully discretionary. The State Water Board may require changes in the scope of work or additional mitigation as a condition to providing construction or implementation funding under this Agreement. Recipient shall not perform any work subject to CEQA and/or NEPA before the State Water Board completes its environmental review and specifies any changes in scope or additional mitigation that may be required. Proceeding with work subject to CEQA and/or NEPA without approval by the State Water Board shall constitute a breach of a material provision of this Agreement. If this Project includes modification of a river or stream channel, the Recipient must fully mitigate environmental impacts resulting from the modification. The Recipient must provide documentation that the environmental impacts resulting from such modification will be fully mitigated considering all of the impacts of the modification and any mitigation, environmental enhancement, and environmental benefit resulting from the Project, and whether, on balance, any environmental enhancement or benefit equals or exceeds any negative environmental impacts of the Project.
15. FINAL REIMBURSEMENT REQUEST. The Recipient agrees to ensure that its final Reimbursement Request is received by the Division no later than the Final Reimbursement Request Date, unless prior approval has been granted by the Division. If the final Reimbursement Request is not received timely, the undisbursed balance of this Agreement may be deobligated.
16. FRAUD AND MISUSE OF PUBLIC FUNDS. All requests for disbursement must be accurate and signed by the Recipient or its Authorized Representative under penalty of perjury. All costs submitted pursuant to this Agreement must only be for the work or tasks set forth in this Agreement. The Recipient must not submit any invoice containing costs that are ineligible or have been reimbursed from other funding sources unless required and specifically noted as such (i.e., match costs). Any costs for which the Recipient is seeking reimbursement shall not be reimbursed from any other source. Double or multiple billing for time, services, or any other cost is improper and will not be compensated. Any suspected occurrences of fraud, forgery, embezzlement, theft, or any other misuse of public funds may result in suspension of disbursements and, notwithstanding any other section in this Agreement, the termination of this Agreement requiring the immediate repayment of all funds disbursed hereunder. Additionally, the Deputy Director of the Division may request an audit and refer the matter to the Attorney General's Office or the appropriate district attorney's office for criminal prosecution or the imposition of civil liability.
17. FUNDING CONTINGENCY. The State Water Board's disbursement of funds hereunder is contingent on the Recipient's compliance with the terms and conditions of this Agreement. The State Water Board's obligation to disburse funds is contingent upon the availability of sufficient funds to permit the disbursements provided for herein. If sufficient funds are not available for any reason, including but not limited to failure of the federal or State government to appropriate funds necessary for disbursement of funds, the State Water Board shall not be obligated to make any disbursements to the Recipient under this Agreement. If this Agreement's funding for any fiscal year expires due to reversion or is reduced, substantially delayed, or deleted by the Budget Act, by Executive Order, or by order or action of the Department of Finance, the State Water Board has the option to either cancel this Agreement with no liability accruing to the State Water Board, or offer an amendment to the Recipient to reflect the reduced amount. This provision shall be construed as a condition precedent to the obligation of the State Water Board to make any disbursements under this Agreement. Nothing in this Agreement shall be construed to provide the

Recipient with a right of priority for disbursement over any other entity. If any disbursements due the Recipient under this Agreement are deferred because sufficient funds are unavailable, it is the intention of the State Water Board that such disbursement will be made to the Recipient when sufficient funds do become available, but this intention is not binding.

18. **GOVERNING LAW.** This Agreement is governed by and shall be interpreted in accordance with the laws of the State of California.
19. **RECIPIENT'S SHARE.** The Recipient agrees that it will provide for the payment of its full share, if any share is required, of Project Costs and that all costs connected with the Project will be timely paid by the Recipient.
20. **INDEMNIFICATION AND STATE REVIEWS.** The parties agree that review or approval of Project plans and specifications by the State Water Board is for administrative purposes only, including conformity with application and eligibility criteria, and expressly not for the purposes of design defect review or construction feasibility, and does not relieve the Recipient of its responsibility to properly plan, design, construct, operate, and maintain the Project. To the extent permitted by law, the Recipient agrees to indemnify, defend, and hold harmless the State Water Board and any trustee, and their officers, employees, and agents for the Bonds, if any (collectively, "Indemnified Persons"), against any loss or liability arising out of any claim or action brought against any Indemnified Persons from and against any and all losses, claims, damages, liabilities, or expenses, of every conceivable kind, character, and nature whatsoever arising out of, resulting from, or in any way connected with (1) the Project or the conditions, occupancy, use, possession, conduct, or management of, work done in or about, or the planning, design, acquisition, installation, or construction, of the Project or any part thereof; (2) the carrying out of any of the transactions contemplated by this Agreement or any related document; (3) any violation of any applicable law, rule or regulation, any environmental law (including, without limitation, the Federal Comprehensive Environmental Response, Compensation and Liability Act, the Resource Conservation and Recovery Act, the California Hazardous Substance Account Act, the Federal Water Pollution Control Act, the Clean Air Act, the Toxic Substances Control Act, the Occupational Safety and Health Act, the Safe Drinking Water Act, the California Hazardous Waste Control Law, and California Water Code Section 13304, and any successors to said laws), rule or regulation or the release of any toxic substance on or near the Project; or (4) any untrue statement or alleged untrue statement of any material fact or omission or alleged omission to state a material fact necessary to make the statements required to be stated therein, in light of the circumstances under which they were made, not misleading with respect to any information provided by the Recipient for use in any disclosure document utilized in connection with any of the transactions contemplated by this Agreement, except those arising from the gross negligence or willful misconduct of the Indemnified Persons. The Recipient must also provide for the defense and indemnification of the Indemnified Persons in any contractual provision extending indemnity to the Recipient in any contract let for the performance of any work under this Agreement, and must cause the Indemnified Persons to be included within the scope of any provision for the indemnification and defense of the Recipient in any contract or subcontract. To the fullest extent permitted by law, the Recipient agrees to pay and discharge any judgment or award entered or made against Indemnified Persons with respect to any such claim or action, and any settlement, compromise or other voluntary resolution. The provisions of this section survive the term of this Agreement.
21. **INDEPENDENT ACTOR.** The Recipient, and its agents and employees, if any, in the performance of this Agreement, shall act in an independent capacity and not as officers, employees, or agents of the State Water Board.
22. **INSPECTION.** Throughout the useful life of the Project, the State Water Board shall have the right to inspect the Project area to ascertain compliance with this Agreement.

23. **INTEGRATION.** This Agreement constitutes the complete and final agreement between the parties. No oral or written understanding or agreement not incorporated in this Agreement shall be binding on either party.
24. **LIENS.** The Recipient must not make any pledge of or place any lien on the Project or Project assets except upon consent of the Division.
25. **NO DISCRIMINATION.** The Recipient must comply with Government Code section 11135 and the implementing regulations (Cal. Code Regs, tit. 2, § 11140 et seq.), including, but not limited to, ensuring that no person is unlawfully denied full and equal access to the benefits of, or unlawfully subjected to discrimination in the operation of, the Project on the basis of sex, race, color, religion, ancestry, national origin, ethnic group identification, age, mental disability, physical disability, medical condition, genetic information, marital status, or sexual orientation as such terms are defined under California law, for as long as the Recipient retains ownership or possession of the Project. If Project Funds are used to acquire or improve real property, the Recipient must include a covenant of nondiscrimination running with the land in the instrument effecting or recording the transfer of such real property. The Recipient must comply with the federal American with Disabilities Act of 1990 and implementing regulations as required by Government Code section 11135(b). The Recipient's obligations under this section shall survive the term of this Agreement. During the performance of this Agreement, Recipient and its contractors and subcontractors must not unlawfully discriminate, harass, or allow harassment against any employee or applicant for employment because of sex, race, color, ancestry, religious creed, national origin, sexual orientation, physical disability (including HIV and AIDS), mental disability, medical condition (cancer), age (over 40), marital status, denial of family care leave, or genetic information, gender, gender identity, gender expression, or military and veteran status. The Recipient, its contractors, and subcontractors must ensure that the evaluation and treatment of their employees and applicants for employment are free from such discrimination and harassment. The Recipient, its contractors, and subcontractors must comply with the provisions of the Fair Employment and Housing Act and the applicable regulations promulgated thereunder. (Gov. Code, §12990, subds. (a)-(f) et seq.; Cal. Code Regs., tit. 2, § 7285 et seq.) Such regulations are incorporated into this Agreement by reference and made a part hereof as if set forth in full. The Recipient, its contractors, and subcontractors must give written notice of their obligations under this clause to labor organizations with which they have a collective bargaining or other agreement. The Recipient must include the nondiscrimination and compliance provisions of this clause in all subcontracts to perform work under this Agreement.
26. **NO THIRD-PARTY RIGHTS.** This Agreement creates no rights in and grants no remedies to any third party as a beneficiary of this Agreement.
27. **NO OBLIGATION OF THE STATE.** Any obligation of the State Water Board herein contained shall not be an obligation, debt, or liability of the State and any such obligation shall be payable solely out of the moneys encumbered pursuant to this Agreement.
28. **NON-WAIVER.** Nothing in this Agreement shall affect or impair the Recipient's obligation to undertake work under this Agreement or shall affect or impair the right of the State Water Board to bring suit to enforce such work. No delay or omission of the State Water Board in the exercise of any right arising upon an Event of Default shall impair any such right or be construed to be a waiver of any such Event of Default. The State Water Board may exercise from time to time and as often as shall be deemed expedient by the State Water Board, any remedy or right provided by law or pursuant to this Agreement. Any waiver of rights by the State Water Board with respect to a default or other matter arising under this Agreement at any time shall not be considered a waiver of rights with respect to any other default or matter.

29. **OTHER FUNDING SOURCES; INCOME RESTRICTIONS.** If funding for Project Costs is made available to the Recipient from sources other than this Agreement, the Recipient must notify the Division. The Recipient may retain such funding up to an amount which equals the Recipient's contribution to Project costs. To the extent allowed by requirements of other funding sources, excess funding must be remitted to the State Water Board. The Recipient agrees that any refunds, rebates, credits, or other amounts (including any interest thereon) accruing to or received by the Recipient as related to this Agreement must be paid by the Recipient to the State Water Board, to the extent that they are properly allocable to costs for which the Recipient has been reimbursed by the State Water Board under this Agreement.
30. **PERMITS AND AUTHORIZATIONS.** Recipient must procure all permits, licenses and other authorizations necessary to accomplish the work contemplated in this Agreement, pay all charges and fees, and give all notices necessary and incidental to the due and lawful prosecution of the work. Signed copies of any such permits or licenses must be submitted to the Division before any construction or implementation begins.
- Any contractors, outside associates, or consultants required by the Recipient in connection with the services covered by this Agreement shall be limited to such individuals or firms as were specifically identified and agreed to during negotiations for this Agreement, or as are specifically authorized by the State Water Board's Project Manager during the performance of this Agreement. Any substitutions in, or additions to, such contractors, associates, or consultants, shall be subject to the prior written approval of the State Water Board's Project Manager.
31. **PREVAILING WAGES.** If applicable, the Recipient agrees to be bound by all applicable provisions of State Labor Code regarding prevailing wages. If applicable, the Recipient must monitor all agreements subject to reimbursement from this Agreement to ensure that the applicable prevailing wage provisions of the State Labor Code are being met. Division of Industrial Relations (DIR) requirements may be found at: <http://www.dir.ca.gov/lcp.asp>. For more information, please refer to DIR's Public Works Manual at: <http://www.dir.ca.gov/dlse/PWManualCombined.pdf>.
32. **PRIOR COSTS.** No costs incurred prior to the Eligible Work Start Date are eligible for reimbursement.
33. **PROFESSIONALS.** The Recipient agrees that only licensed professionals will be used to perform services under this Agreement where such services are called for. All technical reports required pursuant to this Agreement that involve planning, investigation, evaluation, design, or other work requiring interpretation and proper application of engineering, architectural, or geologic sciences, shall be prepared by or under the direction of persons registered to practice in California pursuant to Business and Professions Code, sections 5536.1, 6735, 7835, and 7835.1. As required by these laws, completed technical reports must bear the signature(s) and seal(s) of the registered professional(s) in a manner such that all work can be clearly attributed to the professional responsible for the work.
34. **RECORDS, INSPECTION, AUDITS, AND INTERVIEWS; RECORDS RETENTION.** The Recipient must maintain separate books, records and other material relative to the Project and retain such books, records, subcontracts, and other material until at least the Records Retention End Date set forth on the Cover Page of this Agreement. The Recipient must require that such books, records, and other material are subject at all reasonable times (at a minimum during normal business hours) to inspection, copying, and audit by the State Water Board, the Department of Finance, the California State Auditor, the Bureau of State Audits, or any authorized representatives of the aforementioned, including federal funding agencies and their auditors, if any. The Recipient must allow and must require its contractors to allow interviews during normal business hours of any employees who might reasonably have information related to such

records. The Recipient agrees to include a similar duty regarding audit, interviews, and records retention in any contract or subcontract related to the performance of this Agreement. The provisions of this section survive the term of this Agreement.

35. **RELATED LITIGATION.** Under no circumstances may the Recipient use funds from any reimbursement under this Agreement to pay costs associated with any litigation the Recipient pursues against the State Water Board or any Regional Water Board. Regardless of the outcome of any such litigation, and notwithstanding any conflicting language in this Agreement, the Recipient agrees to complete the Project funded by this Agreement or to repay all of the disbursed funds plus interest.
36. **REMEDIES.** The State Water Board may enforce its rights under this Agreement by any judicial proceeding, whether at law or in equity. None of the remedies available to the State Water Board shall be exclusive of any other remedy, and each such remedy shall be cumulative and in addition to every other remedy given hereunder or now or hereafter existing at law or in equity. The State Water Board may exercise any remedy, now or hereafter existing, without exhausting and without regard to any other remedy. Any dispute of the Recipient is limited to the rights and remedies provided to the Recipient under this Agreement and is subject to the procedures provided to the Recipient under this Agreement.
37. **REPORTS - AS NEEDED.** The Recipient must provide expeditiously any reports, data, and information reasonably required by the Division, including but not limited to material necessary or appropriate for evaluation of the funding program or to fulfill any reporting requirements of the State or federal government.
38. **RESPONSIBILITY FOR WORK.** The Recipient shall be responsible for all work and for persons or entities engaged in work performed pursuant to this Agreement, including, but not limited to, contractors, subcontractors, suppliers, and providers of services. The Recipient shall be responsible for responding to any and all disputes arising out of its contracts for work on the Project, including, but not limited to, payment disputes with contractors and subcontractors. The State Water Board will not mediate disputes between the Recipient and any other entity concerning responsibility for performance of work.
39. **RIGHTS IN DATA.** The Recipient agrees that all data, plans, drawings, specifications, reports, computer programs, operating manuals, notes, and other written or graphic work produced in the performance of this Agreement are subject to the rights of the State as set forth in this section. The State shall have the right to reproduce, publish, and use all such work, or any part thereof, in any manner and for any purposes whatsoever and to authorize others to do so. If any such work is copyrightable, the Recipient may copyright the same, except that, as to any work which is copyrighted by the Recipient, the State reserves a royalty-free, nonexclusive, and irrevocable license to reproduce, publish, and use such work, or any part thereof, and to authorize others to do so, and to receive electronic copies from the Recipient upon request. The Recipient may disclose, disseminate and use in whole or in part, any final form data and information received, collected, and developed under this Agreement, subject to appropriate acknowledgement of credit to the State Water Board for financial support. The Recipient shall not utilize the materials for any profit-making venture or sell or grant rights to a third party who intends to do so.
40. **STATE WATER BOARD ACTION; COSTS AND ATTORNEY FEES.** In the event of litigation between the parties hereto arising from this Agreement, it is agreed that each party shall bear its own costs and attorney fees.
41. **STATUS QUO.** If any action to enforce any right or exercise any remedy shall be brought and either discontinued or determined adversely to the State Water Board, then the State Water

Board shall be restored to its former position, rights, and remedies as if no such action had been brought.

42. **TERMINATION, IMMEDIATE REPAYMENT, AND INTEREST:** This Agreement may be terminated by written notice at any time, at the option of the State Water Board, if:
- a. the Recipient has received funds as a result of a material misrepresentation in the funding application or other submitted document; or
 - b. upon violation by the Recipient of any material provision of this Agreement after such violation has been called to the attention of the Recipient and after failure of the Recipient to bring itself into compliance with the provisions of this Agreement within a reasonable time as established by the State Water Board.

In the event of such termination, the Recipient agrees, upon demand, to immediately repay to the State Water Board an amount equal to the amount of Project Funds disbursed to the Recipient prior to such termination. In the event of termination, interest shall accrue on all amounts due at the highest legal rate of interest from the date that notice of termination is mailed to the Recipient to the date of full repayment by the Recipient.

43. **TIMING.** Time is of the essence. The Recipient must expeditiously proceed with and complete the Project. Failure to proceed according to the timelines set forth in this Agreement may require the Recipient to repay to the State Water Board all disbursed Project Funds.
44. **TRAVEL AND PER DIEM.** No work or travel outside the State of California is permitted under this Agreement unless the Division provides prior written authorization. No work or travel outside the United States of America is authorized. Failure to comply with this restriction may constitute an Event of Default and result in termination of this Agreement. Any reimbursement for necessary travel and per diem shall be set pursuant to and at rates not to exceed those set by the California Department of Human Resources at <http://www.calhr.ca.gov/employees/Pages/travel-reimbursements.aspx> as of the date costs are incurred by the Recipient.
45. **UNDISBURSED FUNDS.** The Recipient is not entitled to interest earned on undisbursed funds.
46. **UNENFORCEABLE PROVISION; SEVERABILITY.** In the event that any provision of this Agreement is unenforceable or held to be unenforceable, then the parties agree that all other provisions of this Agreement have force and effect and shall not be affected thereby.
47. **UNION ACTIVITIES:** The Recipient hereby acknowledges the applicability of Government Code sections 16645 through 16649 to this Agreement. The Recipient certifies that none of the Project Funds will be used to assist, promote, or deter union organizing. If the Recipient incurs costs or makes expenditures to assist, promote, or deter union organizing, the Recipient will maintain records sufficient to show that no reimbursement from Project Funds has been sought for these costs and the Recipient shall provide those records to the Attorney General upon request.
48. **VENUE.** Any action arising out of this Agreement shall be filed and maintained in the Superior Court in and for the County of Sacramento, California.
49. **WAIVER AND RIGHTS OF THE STATE WATER BOARD.** Any waiver of rights by the State Water Board with respect to a default or other matter arising under this Agreement at any time shall not be considered a waiver of rights with respect to any other default or matter.
50. **WATER CONSERVATION AND EFFICIENCY PROGRAMS:** The Recipient acknowledges that it has appropriate water conservation and efficiency programs in place, and that this provision constitutes a condition of this Agreement. A web link with examples of water conservation and

efficiency programs is available at:

http://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/conservation.shtml.

51. **WATER DIVERSION AND USE:** To the extent applicable, the Recipient has complied with, and shall continue to comply with, the requirements of Water Code, division 2, part 5.1, section 5100 et seq. for filing statements of water diversion and use.
52. **WITHHOLDING OF DISBURSEMENTS AND REIMBURSEMENTS.** Notwithstanding any other provision of this Agreement, the State Water Board may withhold all or any portion of the Project Funds upon the occurrence of any of the following events:
- a) Failure of the Recipient to maintain reasonable progress on the Project as determined by the Division;
 - b) Commencement of litigation or a judicial or administrative proceeding related to the Project, or Recipient that the State Water Board determines may impair the timely satisfaction of Recipient's obligations under this Agreement;
 - c) Any investigation by State, local, or federal investigators or auditors, or a grand jury, relating to the Recipient's financial management, accounting procedures, or internal fiscal controls;
 - d) A material adverse change in the condition of the Recipient, or the Project, that the Division reasonably determines would materially impair the Recipient's ability to satisfy its obligations under this Agreement, or any other event that the Division reasonably determines would materially impair the Recipient's ability to satisfy its obligations under this Agreement;
 - e) The Recipient's material violation of, or threat to materially violate, any provision of this Agreement;
 - f) Suspicion of fraud, forgery, embezzlement, theft, or any other misuse of public funds by the Recipient or its employees, or by its contractors or agents directly or indirectly regarding the Project;
 - g) An event requiring notice under this Agreement; or
 - h) An Event of Default or an event that the Division determines may become an Event of Default.

EXHIBIT D – SPECIAL CONDITIONS

D.1 DEFINITIONS.

Each capitalized term used in this Agreement has the following meaning:

- “Authorized Representative” means the duly appointed representative of the Recipient as set forth in the certified original of the Recipient’s authorizing resolution that designates the authorized representative by title.
- “Eligible Work Start Date” means the date set forth on the Cover Page of this Agreement, establishing the date on or after which any costs may be incurred and eligible for reimbursement hereunder.
- “Enterprise Fund” means the enterprise fund of the Recipient in which Revenues are deposited.
- “Event of Default” means, in addition to the meanings set forth in Exhibit C, the occurrence of any of the following events:
 - a) A material adverse change in the condition of the Recipient, which the Division reasonably determines would materially impair the Recipient’s ability to satisfy its obligations under this Agreement.
- “Guidelines” means the State Water Board’s “Water Recycling Funding Program Guidelines” in effect as of the execution date of this Agreement.
- “Indirect Costs” means those costs that are incurred for a common or joint purpose benefiting more than one cost objective and are not readily assignable to the Project (i.e., costs that are not directly related to the Project). Examples of Indirect Costs include, but are not limited to: central service costs; general administration of the Recipient; non-project-specific accounting and personnel services performed within the Recipient organization; depreciation or use allowances on buildings and equipment; the costs of operating and maintaining non-project-specific facilities; tuition and conference fees; generic overhead or markup; and taxes.
- “Revenues” means, for each Fiscal Year, all gross income and revenue received or receivable by the Recipient from the ownership or operation of the System, determined in accordance with GAAP, including all rates, fees, and charges (including connection fees and charges) as received by the Recipient for the services of the System, and all other income and revenue howsoever derived by the Recipient from the ownership or operation of the System or arising from the System, including all income from the deposit or investment of any money in the Enterprise Fund or any rate stabilization fund of the Recipient or held on the Recipient’s behalf, and any refundable deposits made to establish credit, and advances or contributions in aid of construction.
- “System” means all wastewater, water recycling, and/or potable water collection, pumping, transport, treatment, storage, and/or disposal facilities, including land and easements thereof, owned by the Recipient, including the Project, and all other properties, structures or works hereafter acquired and constructed by the Recipient and determined to be a part of the System, together with all additions, betterments, extensions or improvements to such facilities, properties, structures, or works, or any part thereof hereafter acquired and constructed.

D.2 ADDITIONAL REPRESENTATIONS AND WARRANTIES.

The Recipient has not made any untrue statement of a material fact in its application for this financial assistance or omitted to state in its application a material fact that makes the statements in its application not misleading.

The Recipient agrees to fulfill all assurances, declarations, representations, and commitments in its application, accompanying documents, and communications filed in support of its request for funding under this Agreement.

The execution, delivery, and performance by Recipient of this Agreement, including all incorporated documents, do not violate any provision of any law or regulation in effect as of the date of execution of this Agreement by the Recipient, or result in any breach or default under any contract, obligation, indenture, or other instrument to which Recipient is a party or by which Recipient is bound as of the date of execution of this Agreement by the Recipient.

Except as set forth in this paragraph, there are, as of the date of execution of this Agreement by the Recipient, no pending or, to Recipient's knowledge, threatened actions, claims, investigations, suits, or proceedings before any governmental authority, court, or administrative agency which materially affect the financial condition or operations of the Recipient and/or the Project.

There are no proceedings, actions, or offers by a public entity to acquire by purchase or the power of eminent domain any of the real or personal property related to or necessary for the Project.

The Recipient is duly organized and existing and in good standing under the laws of the State of California. Recipient must at all times maintain its current legal existence and preserve and keep in full force and effect its legal rights and authority. Within the preceding ten years, the Recipient has not failed to demonstrate compliance with state or federal audit disallowances.

Any financial statements or other financial documentation of Recipient previously delivered to the State Water Board as of the date(s) set forth in such financial statements or other financial documentation: (a) are materially complete and correct; (b) present fairly the financial condition of the Recipient; and (c) have been prepared in accordance with GAAP. Since the date(s) of such financial statements or other financial documentation, there has been no material adverse change in the financial condition of the Recipient, nor have any assets or properties reflected on such financial statements or other financial documentation been sold, transferred, assigned, mortgaged, pledged or encumbered, except as previously disclosed in writing by Recipient and approved in writing by the State Water Board.

The Recipient is current in its continuing disclosure obligations associated with its material debt, if any.

The Recipient has no conflicting or material obligations, except as set forth in this paragraph.

The Recipient and its principals, contractors, and subcontractors, to the best of the Recipient's knowledge and belief, are not presently debarred, suspended, proposed for debarment, declared ineligible, or otherwise excluded from participation in any work overseen, directed, funded, or administered by the State Water Board program for which this funding is authorized; nor have they engaged or permitted the performance of services covered by this Agreement from parties that are debarred or suspended or otherwise excluded from or ineligible for participation in any work overseen, directed, funded, or administered by the State Water Board program for which this funding is authorized.

D.3 ACKNOWLEDGEMENTS.

The Recipient must include the following acknowledgement in any document, written report, or brochure to be shared with the general public prepared in whole or in part pursuant to this Agreement:

"Funding for this project has been provided in full or in part under Proposition 13 – the Water Quality, Supply, and Infrastructure Improvement Act of 2014 through an agreement with the State Water Resources Control Board. The contents of this document do not necessarily reflect the views and policies of the foregoing, nor does mention of trade names or commercial products constitute endorsement or recommendation for use."

D.4 RETURN OF FUNDS.

Notwithstanding any other provision of this Agreement, if the Division determines that an Event of Default has occurred, the Recipient may be required, upon demand, to immediately return to the State Water Board any grant or principal forgiveness amounts received pursuant to this Agreement and pay interest at the highest legal rate on all of the foregoing.

D.5 DAMAGES FOR BREACH OF TAX-EXEMPT STATUS.

In the event that any breach of any of the provisions of this Agreement by the Recipient results in the loss of tax-exempt status for any bonds of the State or any subdivision or agency thereof, or if such breach results in an obligation on the part of the State or any subdivision or agency thereof to reimburse the federal government by reason of any arbitrage profits, the Recipient must immediately reimburse the State or any subdivision or agency thereof in an amount equal to any damages paid by or loss incurred by the State or any subdivision or agency thereof due to such breach.

D.6 NOTICE.

Upon the occurrence of any of the following events, the Recipient must notify the Division's Deputy Director and Party Contacts by phone and email within the time specified below:

(a) The Recipient must notify the Division and Party Contacts promptly of the occurrence of any of the following events:

- i. Bankruptcy, insolvency, receivership or similar event of the Recipient, or actions taken in anticipation of any of the foregoing;
- ii. Change of ownership of the Project (no change of ownership may occur without written consent of the Division);
- iii. Loss, theft, damage, or impairment to Project;
- iv. Events of Default, except as otherwise set forth in this section;
- v. A proceeding or action by a public entity to acquire the Project by power of eminent domain.
- vi. Any litigation pending or threatened with respect to the Project or the Recipient's technical, managerial or financial capacity or the Recipient's continued existence, or any judgment or court order relating to such litigation that has a significant effect on the Project or the System;

- vii. Consideration of dissolution, or disincorporation;
- viii. Enforcement actions by or brought on behalf of the State Water Board or Regional Water Board.
- ix. The discovery of a false statement of fact or representation made in this Agreement or in the application to the Division for this funding, or in any certification, report, or request for reimbursement made pursuant to this Agreement, by the Recipient, its employees, agents, or contractors;
- x. Any substantial change in scope of the Project. The Recipient must undertake no substantial change in the scope of the Project until prompt written notice of the proposed change has been provided to the Division and the Division has given written approval for the change;
- xi. Any circumstance, combination of circumstances, or condition, which is expected to or does delay Work Completion for a period of ninety (90) days or more;
- xii. Any Project monitoring, demonstration, or other implementation activities required in this Agreement;
- xiii. Any public or media event publicizing the accomplishments and/or results of this Agreement and provide the opportunity for attendance and participation by state representatives with at least ten (10) working days' notice to the Division;
- xiv. Any event requiring notice to the Division pursuant to any other provision of this Agreement; and
- xv. Work Completion, and Project Completion.

D.7 FRAUD, WASTE, AND ABUSE.

The Recipient shall prevent fraud, waste, and the abuse of Project Funds, and shall cooperate in any investigation of such activities that are suspected in connection with this Agreement. The Recipient understands that discovery of any evidence of misrepresentation or fraud related to Reimbursement Requests, invoices, proof of payment of invoices, or other supporting information, including but not limited to double or multiple billing for time, services, or any other eligible cost, may result in an administrative action by the State Water Board and/or referral to the Attorney General's Office or the applicable District Attorney's Office for appropriate action. The Recipient further understands that any suspected occurrences of false claims, misrepresentation, fraud, forgery, theft or any other misuse of Project Funds may result in withholding of reimbursements and/or the termination of this Agreement requiring the immediate repayment of all funds disbursed hereunder. A person who knowingly makes or causes to be made any false statement, material misrepresentation, or false certification in any submittal may be subject to a civil penalty, criminal fine, or imprisonment. (Wat. Code, § 13490 et seq.)

D.8 DISPUTES.

The Recipient must continue with the responsibilities under this Agreement during any dispute. The Recipient may, in writing, appeal a staff decision within 30 days to the Deputy Director of the Division or designee, for a final Division decision. The Recipient may appeal a final Division decision to the State Water Board within 30 days. The Office of the Chief Counsel of the State Water Board will prepare a summary of the dispute and make recommendations relative to its final resolution, which will be provided

to the State Water Board's Executive Director and each State Water Board Member. Upon the motion of any State Water Board Member, the State Water Board will review and resolve the dispute in the manner determined by the State Water Board. Should the State Water Board determine not to review the final Division decision, this decision will represent a final agency action on the dispute. This provision does not preclude consideration of legal questions, provided that nothing herein shall be construed to make final the decision of the State Water Board, or any official or representative thereof, on any question of law. This section relating to disputes does not establish an exclusive procedure for resolving claims within the meaning of Government Code sections 930 and 930.4.

D.9 EXECUTIVE ORDER N-6-22 — RUSSIAN SANCTIONS.

On March 4, 2022, Governor Gavin Newsom issued Executive Order N-6-22 (the EO) regarding Economic Sanctions against Russia and Russian entities and individuals. "Economic Sanctions" refers to sanctions imposed by the U.S. government in response to Russia's actions in Ukraine, as well as any sanctions imposed under state law. The EO directs state agencies to terminate contracts with, and to refrain from entering any new contracts with, individuals or entities that are determined to be a target of Economic Sanctions. Accordingly, should the State Water Board determine Recipient is a target of Economic Sanctions or is conducting prohibited transactions with sanctioned individuals or entities, that shall be grounds for termination of this Agreement. The State Water Board shall provide Recipient advance written notice of such termination, allowing Recipient at least 30 calendar days to provide a written response. Termination shall be at the sole discretion of the State Water Board.

The Recipient represents that the Recipient is not a target of economic sanctions imposed in response to Russia's actions in Ukraine imposed by the United States government or the State of California. The Recipient is required to comply with the economic sanctions imposed in response to Russia's actions in Ukraine, including with respect to, but not limited to, the federal executive orders identified in California Executive Order N-6-22, located at <https://www.gov.ca.gov/wp-content/uploads/2022/03/3.4.22-Russia-Ukraine-Executive-Order.pdf> and the sanctions identified on the United States Department of the Treasury website (<https://home.treasury.gov/policy-issues/financial-sanctions/sanctions-programs-and-country-information/ukraine-russia-related-sanctions>). The Recipient is required to comply with all applicable reporting requirements regarding compliance with the economic sanctions, including, but not limited to, those reporting requirements set forth in California Executive Order N-6-22 for all Recipients with one or more agreements with the State of California with an aggregated value of Five Million Dollars (\$5,000,000) or more. Notwithstanding any other provision in this Agreement, failure to comply with the economic sanctions and all applicable reporting requirements may result in termination of this Agreement.

For Recipients with an aggregated agreement value of Five Million Dollars (\$5,000,000) or more with the State of California, reporting requirements include, but are not limited to, information related to steps taken in response to Russia's actions in Ukraine, including but not limited to:

1. Desisting from making any new investments or engaging in financial transactions with Russian institutions or companies that are headquartered or have their principal place of business in Russia;
2. Not transferring technology to Russia or companies that are headquartered or have their principal place of business in Russia; and
3. Direct support to the government and people of Ukraine.

D.10 STATE CROSS-CUTTERS.

Recipient represents that, as applicable, it complies and covenants to maintain compliance with the following for the term of the Agreement:

- The California Environmental Quality Act (CEQA), as set forth in Public Resources Code 21000 et seq. and in the CEQA Guidelines at Title 14, Division 6, Chapter 3, Section 15000 et seq.
- Water Conservation requirements, including regulations in Division 3 of Title 23 of the California Code of Regulations.
- Monthly Water Diversion Reporting requirements, including requirements set forth in Water Code section 5103.
- Public Works Contractor Registration with Department of Industrial Relations requirements, including requirements set forth in Sections 1725.5 and 1771.1 of the Labor Code.
- Volumetric Pricing & Water Meters requirements, including the requirements of Water Code sections 526 and 527.
- Urban Water Management Plan requirements, including the Urban Water Management Planning Act (Water Code, § 10610 et seq.).
- Urban Water Demand Management requirements, including the requirements of Section 10608.56 of the Water Code.
- Delta Plan Consistency Findings requirements, including the requirements of Water Code section 85225 and California Code of Regulations, title 23, section 5002.
- Agricultural Water Management Plan Consistency requirements, including the requirements of Water Code section 10852.
- Charter City Project Labor Requirements, including the requirements of Labor Code section 1782 and Public Contract Code section 2503.
- The Recipient agrees that it will, at all times, comply with and require its contractors and subcontractors to comply with directives or orders issued pursuant to Division 7 of the Water Code.
- Regulations in Division 4 of Title 22 of the California Code of Regulations, including but not limited to California Waterworks Standards in Chapter 16, and Lead and Copper regulations in Chapter 17.5.

California Environmental Quality Act (CEQA) Determination

Crescenta Valley Water District (Applicant)
Recycled Water Feasibility Study (Project)
Project Number: 8769-110

As the Deputy Director for the State Water Resources Control Board (State Water Board), Division of Financial Assistance, I have been delegated the authority to approve and execute the financing agreement for projects that are routine and non-controversial. The execution of the financing agreement is an action that is subject to CEQA. The authority to make this CEQA determination necessarily accompanies the delegation to approve and execute the financing agreement for this Project. I hereby find the following:

1. The Applicant is the CEQA Lead Agency and the State Water Board is a Responsible Agency under CEQA.
2. This Project is exempt from CEQA, as the Project scope involves planning and feasibility studies (CEQA Guidelines, California Code of Regulations, title 14, division 6, chapter 3, article 18, section 15262), and/or data collection, research, experimental management and resource evaluation activities (CEQA Guidelines, California Code of Regulations, title 14, division 6, chapter 3, article 19, section 15306), which will not result in any significant adverse water quality impacts.

Joe Karkoski



Digitally signed by Joe Karkoski
Date: 2024.06.24 16:41:14
-07'00'

Joe Karkoski, Deputy Director
Division of Financial Assistance

6/24/24

Date