



**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

July 23, 2025

**BOARD OF DIRECTORS**

**W. SCOTT KELLERMAN**  
Division 1

**DON WILSON**  
Division 2

**CYNTHIA SANCHEZ**  
Division 3

**KATHY MAC LAREN-GOMEZ**  
Division 4

**VINCENT DINO**  
Division 5

**DENNIS D. LaMOREAUX**  
General Manager

**ALESHIRE & WYNDER LLP**  
Attorneys



**AGENDA FOR REGULAR MEETING  
OF THE BOARD OF DIRECTORS  
OF THE PALMDALE WATER DISTRICT  
TO BE HELD AT 2029 EAST AVENUE Q, PALMDALE**

**MONDAY, JULY 28, 2025**

**6:00 p.m.**

**NOTES:** To comply with the Americans with Disabilities Act, to participate in any Board meeting please contact Danielle Henry at 661-947-4111 x1059 at least 48 hours prior to a Board meeting to inform us of your needs and to determine if accommodation is feasible.

Additionally, an interpreter will be made available to assist the public in making **comments** under Agenda Item No. 4 and any action items where public input is offered during the meeting if requested at least 48 hours before the meeting. Please call Danielle Henry at 661-947-4111 x1059 with your request. (PWD Rules and Regulations Section 4.03.1 (c))

Adicionalmente, un intérprete estará disponible para ayudar al público a hacer **comentarios** bajo la sección No. 4 en la agenda y cualquier elemento de acción donde se ofrece comentarios al público durante la reunión, siempre y cuando se solicite con 48 horas de anticipación de la junta directiva. Por favor de llamar Danielle Henry al 661-947-4111 x1059 con su solicitud. (PWD reglas y reglamentos sección 4.03.1 (c))

Agenda item materials, as well as materials related to agenda items submitted after distribution of the agenda packets, are available for public review at the District's office located at 2029 East Avenue Q, Palmdale or on the District's website at <https://www.palmdalewater.org/governance/board-activity/2025-meeting-agendas-minutes/> (Government Code Section 54957.5). Please call Danielle Henry at 661-947-4111 x1059 for public review of materials.

**PUBLIC COMMENT GUIDELINES:** The prescribed time limit per speaker is three-minutes. Please refrain from public displays or outbursts such as unsolicited applause, comments, or cheering. Any disruptive activities that substantially interfere with the ability of the District to conduct its meeting will not be permitted, and offenders will be requested to leave the meeting. (PWD Rules and Regulations, Appendix DD, Sec. IV.A.)

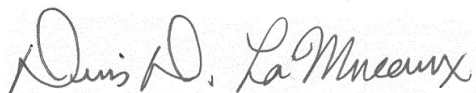
Each item on the agenda shall be deemed to include any appropriate motion, resolution, or ordinance to take action on any item.

- 1) Pledge of Allegiance/Moment of Silence in Honor and Memory of Director Vincent Dino.
- 2) Roll Call.
- 3) Adoption of Agenda.
- 4) Public Comments for Non-Agenda Items.

- 5) Presentations:
  - 5.1) Certificates of Achievement. (Public Affairs Director Shay/Representatives for Antelope Valley Legislators)
- 6) Action Items - Consent Calendar (The public shall have an opportunity to comment on any action item on the Consent Calendar as the Consent Calendar is considered collectively by the Board of Directors prior to action being taken.)
  - 6.1) Approval of Minutes of Regular Board Meeting held July 14, 2025.
  - 6.2) Payment of Bills for July 28, 2025.
  - 6.3) Approval of Ernst & Young for Statement of Work for 2025-2026 State Water Project Procedures Related to the 2026 Statement of Charges. (\$11,144.00 – Not-to-Exceed – Budgeted – General Manager LaMoreaux)
  - 6.4) Approval of Updated District Standard Specifications, Drawings, and List of Approved Materials for Water Distribution Construction. (No Budget Impact – Engineering Manager Bader)
- 7) Action Items – Action Calendar (The public shall have an opportunity to comment on any action item as each item is considered by the Board of Directors prior to action being taken.)
  - 7.1) Consideration and Possible Action to Cast Ballot for Association of California Water Agencies (ACWA) President, Vice President, and Region Board Members Election for the 2026-2027 Term. (No Budget Impact – General Manager LaMoreaux)
  - 7.2) Consideration and Possible Action on Authorizing the General Manager to Enter Into a Professional Services Agreement with Kennedy-Jenks Consultants to Prepare the District's 2025 Urban Water Management Plan and Water Shortage Contingency Plan Update. (\$78,440.00 – Not-to-Exceed – Budgeted – Budget Item No. 1-02-5070-007 – Resource and Analytics Director Bolanos)
  - 7.3) Consideration and Possible Action on Resolution No. 25-5 Approving the Funding Application for the Land and Water Conservation Fund for Littlerock Reservoir Recreation Area Upgrades. (No Budget Impact – Assistant General Manager Rogers)
  - 7.4) Consideration and Possible Action on Authorization of the Following Conferences, Seminars, and Training Sessions for Board and Staff Attendance within Budget Amounts Previously Approved in the 2025 Budget:
    - a) None at This Time.
- 8) Information Items:
  - 8.1) Finance Reports:
    - a) Status Report on Cash Flow Statement and Current Cash Balances as of June 2025. (Financial Advisor Egan/Finance Committee)
    - b) Status Report on Financial Statements, Revenue, and Expense and Departmental Budget Reports for June 2025. (Finance Manager Hoffmeyer/Finance Committee)



- c) Status Report on Committed Contracts Issued. (Finance Manager Hoffmeyer/Finance Committee)
- d) Other Financial Reports. (Finance Manager Hoffmeyer/Finance Committee)
  - 1) Accounts Receivable Overview.
  - 2) Revenue Projections.
- 8.2) Reports of Directors:
  - a) Standing Committees; Organization Appointments; Agency Liaisons:
    - 1) Palmdale Fin & Feather Club Meeting – July 19. (Director Wilson/Director Kellerman, Alt.)
    - 2) Finance Committee Meeting – July 22. (Director Wilson, Chair/Director Kellerman/Director Sanchez, Alt.)
  - b) General Meetings Reports of Directors.
- 8.3) Report of General Manager.
  - a) Department Activity Updates:
    - 1) Engineering Department. (Engineering Manager Bader)
- 8.4) Report of General Counsel.
- 9) Public Comments on Closed Session Agenda Matters.
- 10) Closed Session Under:
  - 10.1) Government Code § 54956.8:
    - a) Conference With Real Property Negotiators – Property Negotiations:  
Negotiating Parties: *PWD General Manager and Calandri Farms, Inc.*  
Property: *Water Rights*  
Under Negotiations: *Price and Terms*
- 11) Public Report of Any Action Taken in Closed Session.
- 12) Board Members' Requests for Future Agenda Items.
- 13) Adjournment.



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DENNIS D. LaMOREAUX,  
General Manager

DDL/dh

**MINUTES OF REGULAR MEETING OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT, JULY 14, 2025:**

*A regular meeting of the Board of Directors of the Palmdale Water District was held Monday, July 14, 2025, at 2029 East Avenue Q, Palmdale, California, in the Board Room of the District Office. President, Kathy Mac Laren-Gomez, called the meeting to order at 6:00 p.m.*

**1) Pledge of Allegiance/Moment of Silence.**

President Mac Laren-Gomez led the Pledge of Allegiance followed by a moment of silence in honor of our military troops.

**2) Roll Call.**

**Attendance:**

Kathy Mac Laren-Gomez, President  
Scott Kellerman, Vice President  
Don Wilson, Treasurer  
Vincent Dino, Secretary  
Cynthia Sanchez, Assistant Secretary

**Others Present:**

Scott Rogers, Assistant General Manager  
Paul Early, General Counsel  
Dennis Hoffmeyer, Finance Manager  
Shadi Bader, Engineering Manager  
Joe Marcinko, Operations Manager  
Amanda Thompson, Water Quality and  
Regulatory Affairs Supervisor  
Jillian Benci-Woodward, Senior Engineer  
Tara Rosati, Customer Care Supervisor  
Danielle Henry, Executive Assistant  
Patricia Guerrero, Management Analyst  
3 members of the public

**3) Adoption of Agenda.**

It was moved by Director Dino, seconded by Director Wilson, and unanimously carried by all members of the Board of Directors present at the meeting to adopt the agenda, as written.

**4) Public Comments for Non-Agenda Items.**

There were no public comments for non-agenda items.

**5) Presentations:**

**5.1) None at This Time.**

There were no presentations.

**6) Action Items – Consent Calendar: (The Public Shall Have an Opportunity to Comment on Any Action Item on the Consent Calendar as the Consent Calendar is Considered Collectively by the Board of Directors Prior to Action Being Taken.)**

**6.1) Approval of Minutes of Regular Board Meeting held June 23, 2025.**

**6.2) Payment of Bills for July 14, 2025.**

**6.3) Receive and File Semi-Annual Employee Reimbursement Report for the Period Covering January 1, 2025 through June 30, 2025. (No Budget Impact – Finance Manager Hoffmeyer)**

**6.4) Approval of First Amendment to Communications Site Lease Agreement Between Palmdale Water District and Verizon Wireless. (Finance Manager Hoffmeyer)**

President Mac Laren-Gomez announced the items included in the Consent Calendar after which it was moved by Director Dino, seconded by Director Wilson, and unanimously carried by all members of the Board of Directors present at the meeting to approve those items included in the Consent Calendar.

**7) Action Items - Action Calendar (The Public Shall Have an Opportunity to Comment on Any Action Item as Each Item is Considered by the Board of Directors Prior to Action Being Taken.)**

**7.1) Public Hearing Regarding the Adoption of the 2025 Public Health Goal Report. (No Budget Impact – Operations Manager Marcinko/Water Quality and Regulatory Affairs Supervisor Thompson)**

President Mac Laren-Gomez opened the public hearing regarding the adoption of the 2025 Health Goal Report after which Water Quality and Regulatory Affairs Supervisor Thompson provided an overview of the Report, including the requirement to prepare the Public Health Goal Report every three years, the compliance of the public noticing requirement, the definition of Public Health Goals, the constituents included in the Public Health Goal Report, and the District's 100% compliance with all primary drinking water standards.

**7.2) Consideration and Possible Action on Adoption of 2025 Public Health Goal Report. (No Budget Impact – Operations Manager Marcinko/Water Quality and Regulatory Affairs Supervisor Thompson)**

Hearing no public comment, it was moved by Director Kellerman, seconded by Director Sanchez, and unanimously carried by all members of the Board of Directors present at the meeting to approve adoption of the 2025 Public Health Goal Report.

**7.3) Consideration and Possible Action on California Special Districts Association Board of Directors Seat B Southern Network Election for the 2026-2028 Term. (No Budget Impact – Assistant General Manager Rogers)**

Assistant General Manager Rogers provided an overview of this election and the options for casting the District's vote, and after a brief discussion of the candidates, it was moved by Director Wilson, seconded by Director Kellerman, and unanimously carried by all members of the Board of Directors present at the meeting to cast the District's ballot for the incumbent, Mr. Don Bartz, in the California Special Districts Association Board of Directors Seat B Southern Network Election for the 2026-2028 Term.

**7.4) Consideration and Possible Action on Authorizing the General Manager to Enter Into a Three-Year Contract with Convergent for Maintenance and Support of the Access Control, Video Surveillance Systems, and Alarm Monitoring. (\$162,000.00 – Budgeted – Information Technology Manager Stanton)**

Assistant General Manager Rogers provided an overview of the support challenges with the current video surveillance and monitoring provider, the proposals received to replace the entire surveillance system, and the benefits of the proposed cooperative purchasing contract, and after a brief discussion of the estimated cost savings, it was moved by Director Dino, seconded by Director Sanchez, and unanimously carried by all members of the Board of Directors present at the meeting to approve authorization of the General Manager to enter into a Three-Year Contract with Convergent for Maintenance and Support of the Access Control, Video Surveillance Systems, and Alarm Monitoring in the amount of \$162,000.00.

**7.5) Consideration and Possible Action on Authorizing the General Manager to Enter Into a Five-Year Contract with ProTelesis for Replacing the District Phone System, Call Center, and Providing Annual System Services. (\$342,000.00 – Budgeted – Information Technology Manager Stanton)**

Assistant General Manager Rogers provided an overview of the system limitations and upgrade expenses of the District's current phone system and the features and benefits of the proposed phone system, and after a brief discussion of the

associated costs, it was moved by Director Sanchez, seconded by Director Wilson, and unanimously carried by all members of the Board of Directors present at the meeting to approve authorization of the General Manager to enter into a Five-Year Contract with ProTelesis for Replacing the District Phone System, Call Center, and Providing Annual System Services in the amount of \$342,000.00.

**7.6) Consideration and Possible Action on Authorizing the General Manager to Enter Into a Contract with SoCal SCADA for Designing and Building the SCADA Network Upgrade. (\$702,000.00 – Non-Budgeted – Project No. 24-616 – Information Technology Manager Stanton)**

Assistant General Manager Rogers provided an overview of the current Supervisory Control and Data Acquisition (SCADA) system vulnerabilities and lack of support and the proposals received to implement the upgrades of the SCADA Master Plan after which it was moved by Director Dino, seconded by Director Wilson, and unanimously carried by all members of the Board of Directors present at the meeting to approve authorization of the General Manager to enter into a Contract with SoCal SCADA for Designing and Building the SCADA Network Upgrade in the amount of \$702,000.00.

**7.7) Consideration and Possible Action on Authorizing the General Manager to Enter Into an Agreement with Environmental Science Associates (ESA) for Environmental Monitoring of the Palmdale Ditch Conversion Project. (\$1,447,000.00 – Not-to-Exceed – Budgeted – Project No. 21-613 – Engineering Manager Bader)**

Engineering Manager Bader provided an overview on the required environmental monitoring for the Palmdale Ditch Conversion Project, including the Project location, the proposed services, and the fee breakdown, and after a brief discussion of the pipeline alignment, of the benefits of enclosing the Palmdale Ditch, and clarification of the environmental monitoring for the entire Project, it was moved by Director Dino, seconded by Director Wilson, and unanimously carried by all members of the Board of Directors present at the meeting to approve authorization of the General Manager to enter into an Agreement with Environmental Science Associates (ESA) for Environmental Monitoring of the Palmdale Ditch Conversion Project in the not-to-exceed amount of \$1,447,000.00.

**7.8) Consideration and Possible Action on Approval of Contract with Rincon Consultants, Inc. for the Crotch's Bumble Bee Habitat Restoration and**

**Maintenance for the Construction of the Palmdale Ditch Conversion Project.  
(\$801,390.00 – Budgeted – Project No. 21-613 – Engineering Manager Bader)**

Engineering Manager Bader provided an overview of the proposed Contract for the Crotch's Bumble Bee Habitat Restoration and Maintenance, including the Project location, the background and needs, the requirements of the California Department of Fish and Wildlife, the proposed scope of work, and the fee breakdown, and after a brief discussion of the relocation and maintenance of the Crotch's Bumble Bee and the impacted Joshua Trees and clarification that this Contract covers the entire Palmdale Ditch Conversion Project, it was moved by Director Wilson, seconded by Director Dino, and unanimously carried by all members of the Board of Directors present at the meeting to approve a Contract with Rincon Consultants, Inc. for the Crotch's Bumble Bee Habitat Restoration and Maintenance for the Construction of the Palmdale Ditch Conversion Project in the amount of \$801,390.00.

**7.9) Consideration and Possible Action on Approval of Tribal Monitoring Budget for the Palmdale Ditch Conversion Project. (\$160,134.00 – Not-to-Exceed – Budgeted – Project No. 21-613 – Engineering Manager Bader)**

Engineering Manager Bader provided an overview of the proposed budget for the required Tribal Monitoring for the Palmdale Ditch Conversion Project, including the Project location, the background and needs, the impacted tribes, the proposed scope of work, and the fee breakdown, and after a brief discussion of the authority of a Project shutdown by the monitors upon potential discoveries, it was moved by Director Dino, seconded by Director Sanchez, and unanimously carried by all members of the Board of Directors present at the meeting to approve the Tribal Monitoring Budget for the Palmdale Ditch Conversion Project in the amount of \$160,134.00.

**7.10) Consideration and Possible Action on Authorization of the Following Conferences, Seminars, and Training Sessions for Board and Staff Attendance within Budget Amounts Previously Approved in the 2025 Budget:**

- a) **None at This Time.**

There were no conferences, seminars, or training sessions to consider.

**8) Information Items:**

**8.1) Reports of Directors:**

**a) Standing Committees; Organization Appointments; Agency Liaisons:**

**1) Antelope Valley East Kern Water Agency (AVEK) Meetings – June 24 & July 8. (Director Dino, Board Liaison/President Mac Laren-Gomez, Alt)**

Director Dino reported that on June 24, he attended the AVEK Meeting where they approved the State Water Contractor Association dues for Fiscal Year 2025/2026.

He then reported that on July 8, he attended the AVEK Meeting where they approved to file the Notice of Completion for the High Desert Water Bank Aqueduct Turnout/Turn-in modifications project.

**b) General Meetings Reports of Directors.**

Director Kellerman reported that on June 25, he attended the All-Hands Meeting and Luncheon; that on June 26, he attended the Palmdale Ditch Groundbreaking Event; and that on July 10, he attended a Board Briefing.

Director Wilson reported that on June 26, he attended the Palmdale Ditch Groundbreaking Event and that on July 10, he attended a Board Briefing.

Director Sanchez reported that on June 26, she attended the Palmdale Ditch Groundbreaking Event and that on July 10, she attended a Board Briefing.

Director Mac Laren-Gomez reported that on June 24, she attended a Public Water Suppliers Meeting; that on June 25, she attended a Watermaster Meeting; that on June 26, she attended the Palmdale Ditch Groundbreaking Event; that on July 3, she attended an Agenda Review Briefing; and that on July 10, she attended a Board Briefing.

Director Dino reported that on June 23, he attended the Palmdale Water District (PWD) Regular Board Meeting; that on June 24, he attended an AVEK Meeting; that on June 25, he attended a CSDA Webinar; that on June 25, he also attended the All-Hands Meeting and Luncheon; that on June 26, he attended the Palmdale Ditch Groundbreaking Event; that on June 27, he attended a CSDA Webinar; that on July 8, he attended an AVEK Meeting; that on July 10, he attended a Board Briefing; that on July 11, he attended a CSDA Webinar; and that on July 14, he is attending the PWD Regular Board Meeting.



**8.2) Report of General Manager.**

**a) Department Activity Updates:**

**1) Customer Care Department. (Customer Care Supervisor Rosati)**

Customer Care Supervisor Rosati thanked the Board for their approval of the contract with ProTelesis and highlighted a few of the benefits the new phone system will provide for the Customer Care Department and then provided a detailed update of the Customer Care Department's current and projected activities including Customer Appreciation Day scheduled for July 22, statistics related to customer phone calls, payments, lobby traffic, processed applications, the Rate Assistance Program, shut-offs due to non-payment, new customers, meter re-reads, and work orders, the features of the staff portal for the new Sensus smart meters, and the 2024 Meter Exchange Project and future meter exchanges followed by a brief discussion of the cloud-based storage and security of the new meter readings.

Assistant General Manager Rogers then reported that he has been working with the Western Joshua Tree Coalition to offer legislative support on their proposed changes to the Joshua Tree Act; that he met with City of Palmdale Manager to discuss collaboration with the Littlerock Dam Reservoir recreation area and that an Ad Hoc Committee Meeting will soon be scheduled; and that earlier today he met with and toured the Pure Water AV Demonstration Facility site with Capture6 and Obayashi Group, an investor interested in Capture6.

**8.3) Report of General Counsel.**

General Counsel Early stated that assembly bills previously reported on continue to move forward with the exception of AB 362 regarding enhancing water quality control protections for California tribal communities and then provided a brief overview on AB 263 regarding the process of emergency regulations adopted by the State Water Resources Control Board.

**9) Public Comments on Closed Session Agenda Matters.**

There were no public comments on closed session agenda matters.

**10) Closed Session:**

**10.1) Government Code § 54956.9(d)(2):**

**a) Conference With Legal Counsel – Anticipated Litigation in 1 Case.**

At 7:10 p.m., President Mac Laren-Gomez called for a closed session for Conference with Legal Counsel for Anticipated Litigation in 1 Case pursuant to California Government Code Section 54956.9(d)(2). She reconvened the Regular Meeting at 7:37 p.m.

**11) Public Report of Any Action Taken in Closed Session.**

General Counsel Early reported that a closed session was held for Conference with Legal Counsel for Anticipated Litigation in 1 Case pursuant to California Government Code Section 54956.9(d)(2) and that the Board unanimously voted to deny the claim received from Cedro Construction, Inc. pursuant to California Government Code Section 905 and defer the response to General Counsel.

**12) Board Members' Requests for Future Agenda Items.**

There were no requests for future agenda items.

**13) Adjournment.**

There being no further business to come before the Board, the meeting was adjourned at 7:38 p.m.

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Secretary



# BOARD MEMORANDUM

**DATE:** July 28, 2025  
**TO:** BOARD OF DIRECTORS  
**FROM:** Mr. Dennis D. LaMoreaux, General Manager  
**RE:** ***APPROVAL OF ERNST & YOUNG STATEMENT OF WORK FOR 2025-2026 STATE WATER PROJECT PROCEDURES RELATED TO THE 2026 STATEMENT OF CHARGES. (\$11,144.00 – NOT-TO-EXCEED – BUDGETED – GENERAL MANAGER LaMOREAUX)***

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## **Recommendation:**

Staff recommends approval of the Statement of Work between the District and Ernst & Young for 2025-2026 State Water Project Procedures related to the Department of Water Resources' 2026 Statement of Charges in the not-to-exceed amount of \$11,144.00.

## **Alternative Options:**

The alternative option would be not to participate in the Ernst & Young contract.

## **Impact of Taking No Action:**

The District will not be involved in auditing activities for State Water Project procedures.

## **Background:**

The Palmdale Water District is a member of the State Water Contractors Independent Audit Association (IAA) and has been involved in these auditing activities for several years. The IAA hires an accounting/auditing firm on an annual basis to review the billings and financial statements prepared by the Department of Water Resources for State Water Project costs. The IAA has reviewed Ernst & Young's audit procedures and recommends IAA members approve the 2025-2026 Statement of Work.

The cost to the District will range from \$8,395.00 to \$10,494.00. depending upon how many members of the IAA approve the Statement of Work for core services (Exhibit "A"). Additional services may be requested for an amount not-to-exceed \$650.00 (Exhibit "B").

## **Strategic Plan Initiative/Mission Statement:**

This item is under Strategic Initiative No. 1 - Water Resource Reliability

This item directly related to the District's Mission Statement.

## **Budget:**

These services are budgeted under Administration budget line item 1-02-4150-000 – Accounting Services.

BOARD OF DIRECTORS  
PALMDALE WATER DISTRICT  
VIA: Mr. Dennis LaMoreaux, General Manager  
RE: Ernst & Young – 2026 Statement of Charges

July 28, 2025

**Supporting Documents:**

- July 14, 2024 letter from Ernst & Young regarding Statement of Work
- Statement of Work
- Master Services Agreement



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ey.com

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July 14, 2025

Mr. Dennis Lamoreaux  
Palmdale Water District  
General Manager  
2029 East Avenue "Q"  
Palmdale, California 93550

Dear Mr. Lamoreaux:

In coordination with the Independent Audit Association (IAA), we have developed the Statement of Work (SOW) for the work to be performed related to the 2026 Statement of Charges as described in Exhibit A and the Water System Revenue Bond Debt-Service Billing Project as described in Exhibit B. This SOW is pursuant to the Master Services Agreement (MSA) by and between EY and Palmdale Water District dated July 1, 2022, which describes the annual approval process of each SOW performed under the MSA.

Please return the signed SOW to EY via mail at 731 K Street, Suite 300, Sacramento, CA 95814 (Attn. Scott Enos) or email to [scott.enos@ey.com](mailto:scott.enos@ey.com). We have also enclosed a copy of the support letter from Chantal Ouellet, IAA Secretary, recommending the approval of the SOW by Palmdale Water District.

If you have any questions about the enclosed SOW, please feel free to call me at (916) 218-1958.

Very truly yours,

A handwritten signature in black ink that reads "Scott Enos". The signature is fluid and cursive, with the first letters of the first and last names being capitalized and prominent.

Scott Enos  
Managing Director

Enclosures



**MEMORANDUM**

Date: July 10, 2025  
To: Members of the Independent Audit Association (IAA)  
From: Chantal Ouellet, IAA Secretary  
Subject: Ernst and Young State Water Project Professional Services Contract related to the 2026 Statement of Charges - Recommended Approval and Execution

Enclosed is the Statement of Work (SOW) related to the 2026 Statement of Charges which includes the State Water Project procedures to be performed in relation to the Department of Water Resources' (DWR) Statement of Charges.

The Exhibit B budget limit remains at \$50,000 and is reviewed and approved by the IAA for additional work related to the Water System Revenue Bond Debt-Service Billing Project. Exhibit C allows individual IAA Members to request Ernst and Young to undertake additional services beyond those included in Exhibit A of the SOW.

The IAA team has reviewed Ernst and Young's proposed procedures and recommends that IAA Members approve and execute the SOW related to the 2026 Statement of Charges period. If you have any questions, please contact me at (559) 992-4127 or [couellet@tlbwsd.com](mailto:couellet@tlbwsd.com).

Sincerely,

Chantal Ouellet, CMA  
Tulare Lake Basin Water Storage District

CC: Scott Enos, EY



Ernst & Young LLP  
Suite 300  
731 K Street  
Sacramento, CA 95814

Tel: +1 916 218 1900  
ey.com

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## **Statement of Work**

This Statement of Work, dated July 14, 2025 (this “SOW”), is made by Ernst & Young LLP (“we” or “EY”) and Palmdale Water District on behalf of itself (“you” or “Client”) and on behalf of the State Water Contractors, pursuant to the Agreement, dated July 1, 2022 (the “Agreement”), between EY and Palmdale Water District (“Agency”).

The additional terms and conditions of this SOW shall apply only to the Services covered by this SOW and not to Services covered by any other SOW pursuant to the Agreement. This SOW incorporates the Agreement by reference to form a contract. Capitalized terms used, but not otherwise defined, in this SOW shall have the meanings defined in the Agreement, including references in the Agreement to “you” or “Client” shall be deemed references to you.

If Client asks EY to begin work before Client executes and returns this SOW to EY, Client will be deemed to have agreed to its terms.

### **Scope of Services**

Except as otherwise set forth in this SOW, this SOW incorporates by reference, and is deemed to be a part of, the Agreement. This SOW sets forth the terms and conditions on which EY will provide services as described in Exhibit A (the “Services”) to the Agency, a member of the State Water Contractors (the “Contractors” or “SWC”) Independent Audit Association (the “IAA”), for the twelve months ending June 30, 2026.

The Services are advisory in nature and will not constitute an audit performed in accordance with Generally Accepted Accounting Principles. EY will perform the Services in accordance with the Statement of Standards for Consulting Services (CS100) of the American Institute for Certified Public Accountants (AICPA). As part of your review of the terms of this SOW, please refer to the enclosed letter from Chantal Ouellet of the IAA Audit Contract Negotiating Committee.

### **Client specific obligations**

Client shall assign a qualified person to oversee the Services. Client is responsible for all management decisions relating to the Services and for determining whether the Services are appropriate for its purposes.

You will not, and you will not permit others to, quote or refer to the Reports, any portion, summary or abstract thereof, or to EY or any other EY Firm, in any document filed or distributed in connection with (i) a purchase or sale of securities to which the United States or state securities laws (Securities Laws) are applicable, or (ii) periodic reporting obligations under Securities Laws. You will not contend that any provisions of Securities Laws could invalidate any provision of this agreement.





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### **Limitations on scope**

The Services are advisory in nature. EY will not: render an assurance report or opinion under the Agreement or this SOW, nor will the Services constitute an audit, review, examination, or other form of attestation as those terms are defined by the AICPA; provide any legal advice or opinions; provide any tax advice or opinions; perform ongoing internal control monitoring activities or other control activities that affect the execution of transactions or confirm that transactions are properly executed and/or accounted for; perform routine activities in connection with Client's financial processes that are equivalent to those of an ongoing compliance or quality control function; determine which, if any, recommendations for improving internal control should be implemented; act on Client's behalf in reporting to Client's Board of Directors or Audit Committee; authorize, execute or consummate transactions or otherwise exercise authority on Client's behalf; prepare source documents on transactions.

If Client requires EY to access or use Client or third-party systems or devices, EY shall have no responsibility for the confidentiality, security or data protection controls of such systems or devices or for their performance or compliance with Client requirements or applicable law.

### **Specific additional terms and conditions**

Notwithstanding anything to the contrary in the Agreement or this SOW, EY does not assume any responsibility for any third-party products, programs or services selected by Client, their performance or compliance with Client's specifications or otherwise.

EY will base any comments or recommendations as to the functional or technical capabilities of any products in use or being considered by Client solely on information provided by Client vendors, directly or through Client. EY is not responsible for the completeness or accuracy of any such information or for confirming any of it.

Where EY's written consent under the Agreement or this SOW is required for you to disclose to a third party EY's Reports, EY will also require that third party to execute a letter substantially in the form of Exhibit D to this SOW. Without EY's prior written consent, Client may not use or publish any of EY's Reports for any purpose.

EY cannot and does not provide any assurance that EY's work and findings will either support or contradict any particular position. Client agrees that, because the Services are limited in nature and scope, they cannot be relied upon to discover all documents and other information, or provide all analyses, that may be important to Client or any proceeding.



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with confidence**

EY has reviewed EY's available records to determine whether potential conflicts might arise out of EY's performance of the Services. However, the very nature, diversity, magnitude, and size of the Ernst & Young organization and its past and present professional relationships does not allow EY to be certain that each and every possible relationship or potential conflict has come to EY's attention.

Unless prohibited by applicable law, we may provide Client information to other EY firms, EY Persons and external third parties, who may collect, use, transfer, store or otherwise process such information in various jurisdictions in which they operate in order to provide support services to any EY Firm and/or assist in the performance of the Services.

EY and other EY Firms may retain and use Client information for benchmarking, analytics, research and development, thought leadership and related purposes, and to enhance their services, provided that any use does not externally identify, or make reference to, Client. In all such matters, EY and other EY Firms will comply with applicable law and professional obligations.

After the Services under this SOW have been completed, we may disclose or present to prospective clients, or otherwise in our marketing materials, that we have performed the Services for you, and we may use your name solely for that purpose, in accordance with applicable professional obligations. In addition, we may use your name, trademark, service mark and logo as reasonably necessary to perform the Services and in correspondence, including proposals, from us to you.

Compliance with U.S. immigration requirements may require EY to provide certain information to the U.S. Citizenship and Immigration Services ("USCIS") to confirm that EY employees on certain visas are, in fact, EY employees and not employees of the Client or other clients of EY. This will include providing certain information regarding work locations to support compliance with the visa requirements. As such, EY may disclose to USCIS information regarding this SOW, including the Client's identity and location, as well as a redacted copy of this SOW. Upon providing this information, EY will request that USCIS keep any such information confidential. In further support of these legal requirements, the U.S. Department of Labor (DOL) regulations, at 20 CFR § 655.734(a)(1)(ii)(A), require the posting of notice of a Labor Condition Application (LCA) in instances where individuals holding H-1B visas will be working on the Client's premises. EY and the Client will work together to develop an appropriate notice as required. The Client acknowledges that EY resources will be operating at all times as an employee of and under the direction and control of Ernst & Young U.S. LLP's management, and all activities including supervision, hiring and firing decisions, and performance evaluations are controlled by Ernst & Young U.S. LLP. The Client will not have the right to control EY resources. At all times, EY resources will receive direction from an EY manager while on-site at the Client premises.



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You shall not, while we are performing the Services hereunder and for a period of 12 months after they are completed, solicit for employment, or hire, any EY personnel involved in the performance of the Services, provided, that you may generally advertise available positions and hire EY personnel who either respond to such advertisements or who come to you on their own initiative without direct or indirect encouragement from you.

The Agency shall, among other responsibilities with respect to the Services, (i) make all management decisions and perform all management functions, including applying independent business judgment to EY work products, making implementation decisions and determining further courses of action in connection with any Services; (ii) assign a competent employee within senior management to make all management decisions with respect to the Services, oversee the Services and evaluate their adequacy and results; and (iii) accept responsibility for the implementation of the results or recommendations contained in the Reports or otherwise in connection with the Services. The Agency hereby confirms that management of the Agency accepts responsibility for the sufficiency of the Services. In performing the Services neither EY nor EY's partners or employees will act as an employee of the Agency.

The Agency represents and warrants to EY that the Agency's execution and delivery of this SOW has been authorized by all requisite corporate or other applicable entity action and the person signing this SOW is expressly authorized to execute it on behalf of, and to bind, the Agency.

The performance of the Services and the parties' obligations in connection therewith are subject to the additional terms and conditions set forth in the Agreement.

It is understood that the Agency is not bound by our findings in any controversy or disagreement between the Agency and the Department of Water Resources (the "Department") should the Agency disagree with our findings.

We would also request that, if any IAA member discovers discrepancies in billings or other financial statements relative to their State Water Project costs, in addition to your working with the Department to correct the error, please notify EY for potential future inclusion as part of their procedures related to all IAA members.



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### **Timetable and project deliverables**

The matrix below lists the specific deliverables and related timelines that EY will provide to the Agency.

Deliverable	Timeline	Comments
Report of Findings and Recommendations	Unless otherwise agreed, and subject to the Agreement, EY expects to perform the Services during the period following the execution of this SOW to the issuance of a final report during January, February, or March 2026.	See Exhibit A for scope of engagement.

### **Contacts**

Client has identified Chantal Ouellet, IAA Secretary as Client's contact with whom EY should communicate about these Services. Client's contact at EY for these Services will be Scott Enos.

### **Fees and billing**

The obligation to pay EY's fees is not contingent upon the nature of EY's findings or recommendations. The General Terms and Conditions of the Agreement address our fees and expenses generally.

The total fees for these Services to be rendered to the Agency, as well as an allocation of the total fees for each member Agency of the IAA, appear in Exhibits A and B attached. Our total fees pursuant to Exhibit A to be charged to all members of the IAA entering into agreements with us shall not exceed \$653,000 for the twelve months ending June 30, 2026. This agreement will not be effective unless, in addition to the Agency, a sufficient number of other IAA agencies enter into agreements with us for such Services whose combined allocated fee would represent not less than 80% of \$653,000 based on the 100% participation fee allocation (see column 2 at A-4). If all agencies who are presently participating in the Services rendered by our firm enter into agreements with us for this twelve-month period, the maximum fees for our Services to your Agency will not exceed \$8,395 for Exhibit A. However, if not all of the participating agencies enter into agreements with us for services during the twelve-month period ending June 30, 2026, the maximum fees to your Agency will vary between the above-mentioned amount and \$10,494, which represents the maximum fees should sufficient agencies enter into agreements with us with a combined allocated fee of not less than 80%, as stated above.

In addition to the maximum fees under Exhibit A, maximum fees under Exhibit B shall not exceed a total of \$50,000 or \$643 for the Agency unless agreed to by the IAA.



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We have also included Exhibit C as part of this contract, which provides the opportunity for individual Contractors to enter into separate agreements for additional services with EY. There are currently no fees related to Exhibit C included herein.

Any presentations requested at individual Contractor locations will be negotiated with the individual Contractor under Exhibit C and will be paid for by that Contractor.

Invoices for time and expenses will be billed monthly and are due upon receipt. Work may be halted in the event of fee payment delinquency. All amounts due must be paid to EY in full before EY will issue any Report.

In witness whereof, the parties have executed this SOW as of the date set forth above.

**Palmdale Water District**

**Ernst & Young, LLP**

**Representative**

**Representative**

\_\_\_\_\_  
**Signature**

*Scott Enos*  
\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Printed Name**

Scott Enos  
\_\_\_\_\_  
**Printed Name**

\_\_\_\_\_  
**Title**

Authorized Signatory  
\_\_\_\_\_  
**Title**

\_\_\_\_\_  
**Address**

Ernst & Young LLP  
731 K Street, Suite 300  
Sacramento, CA 95814  
\_\_\_\_\_  
**Address**

\_\_\_\_\_  
**Date**

July 14, 2025  
\_\_\_\_\_  
**Date**

## EXHIBIT A

### I. SCOPE OF ENGAGEMENT

A-1 EY will work with the IAA, the SWC Audit/Finance Committee, and any subcommittees thereof, and the Department during the twelve months ending June 30, 2026, relating to matters currently being discussed between the SWC and the Department.

EY's Services to be rendered as described in this Exhibit shall be determined by the IAA at its discretion. These Services shall include:

1. Completion of the procedures related to the 2026 Statement of Charges as outlined further below.
2. Participation in all meetings of the SWC Audit/Finance Committee, which is a basic forum for communications between the State Water Project Contractors and the Department's staff on financial and accounting matters.
3. Cooperation with any subcommittees of the IAA assigned to study and resolve specific problem areas.
4. Read reports and other documents prepared by the Department and disseminated at these meetings.
5. Provide an annual report setting forth the findings and recommendations related to our Services.

### **Report definitions**

The assessment of risk of future occurrence (i.e., ratings), included in the finding and recommendations summary tables in the report, provides the IAA with a meaningful measurement of the likelihood of similar findings in subsequent years if the finding is not addressed or corrected by the appropriate parties. This assessment of risk of future occurrence is based on knowledge obtained during discussions with the Department personnel and performance of procedures under this Exhibit A. The ratings in our Report do not represent a conclusion on the assessment of the findings and recommendations resulting from our procedures. Below are the definitions used in the report of findings and recommendations for the twelve months ending June 30, 2026 as developed by the IAA.

Risk of Future Occurrence:

- A. High – it is highly likely (or probable) that the error or process failure will be repeated
- B. Medium – it is more likely than not that the error or process failure will be repeated
- C. Low – it is possible that the error or process failure will be repeated

During the twelve months ending June 30, 2026, the Services will include the following procedures.

## **Procedures Related to the 2026 Statement of Charges**

The procedures for the fiscal year ended June 30, 2026, were designed using budgeted hours of 3,000. We will prioritize the primary procedures included in items 1-6 below and will perform all primary procedures unless it is expected to exceed the budgeted hours of 3,000. We will perform the procedures in items 7-8 if time permits. As a part of these procedures, we will regularly meet with the IAA to discuss the progress under this engagement. We will also submit the Report to each Agency setting forth the findings and recommendations related to our Services.

The following items represent the risks, risk factors, and procedures requested and determined by the IAA for the Contractors to be performed for the 2026 Statement of Charges (SOC) engagement:

### **Primary Procedures (Items 1-6)**

#### **1. Statement of Charges**

**Risk:**

- Incorrect amounts billed to contractors for each component by the Department.

**Risk Factors:**

- Manual adjustments made to data to arrive at amounts billed. Manual processes create opportunities for errors.
- Ongoing updates to the cost allocation billing system create opportunities for errors.
- High importance of accurate contractor bills.
- Actual costs reported in the bills can be misstated.
- Potential for billing errors (i.e., double billings).

**Areas of Focus:**

- Assess that all SOC amounts are internally consistent and agree to the Bulletin 132 for the contractors selected for testing (to be provided by IAA).
- Agree debt service amounts in the SOC attachments to the appropriate debt service schedule.
- Comparison of the current year SOC attachments to the prior year SOC attachments.
- Assessment of manual adjustments.
- Assess the actual costs charged to various areas of the project.
- Assess the factors for distributing reach capital and minimum costs among the contractors.



## 2. Delta Water Charge

### Risk:

- Incorrect amounts charged to contractors for conservation based on actual and estimated costs.

### Risk Factors:

- Calculation of delta water charge has manual aspects to the process.
- Tracking of Oroville Spillway costs and reimbursement and segregation between response and recovery costs is a manual process.
- Ongoing updates to the cost allocation billing system create opportunities for errors.
- Potential for high dollar impact (\$393 million in delta water charges in 2023 per Table B-21).

### Areas of Focus:

- Recalculate the delta water charge used in the SOC.
- For prior year actual costs included in the calculation, compare costs in the cost allocation and billing system at the delta water charge cost center group level to the delta water charge calculation and investigate variances.
- Obtain an understanding of future estimates included in the calculation and perform appropriate procedures to assess such estimates.
- Assess the Hyatt-Thermalito credit to the delta water charge.

### 3. Alpha Allocation Cycles

Risk:

- Incorrect contractor charged and/or incorrect allocation of costs between contractors.

Risk Factors:

- The F-series and S-series alpha allocation cycles update performed on an annual basis has manual aspects. Manual processes create opportunities for errors.
- Ongoing updates to the cost allocation billing system create opportunities for errors.
- Potential for errors in determining work performed that falls under direct to reach, field division, and state-wide allocations.
- Potential for billing errors (i.e., double billings).
- Potential for high dollar impact (\$373 million allocated by alpha allocation cycles in 2023).

Areas of Focus:

- Assess all cost centers from the system to determine which cost centers represent alpha cost centers.
- Select alpha cost centers with the largest total annual costs.
- Assess costs being posted to selected alpha cost centers based on activities charged to the alpha cost center through examination of invoices posted and discussions with the project managers, as necessary.
- Assess the F-series and S-series updates performed by the Department.
- Assess new alphas created or modified in the current year by the Department.

#### **4. Transportation Minimum and Capital Direct and Indirect Analysis**

Risk:

- Incorrect amounts billed to contractors for the transportation minimum and capital component by the Department.

Risk Factors:

- Direct and indirect costs may be allocated incorrectly through corresponding reaches.
- Judgment involved in selecting internal orders and work breakdown structures for billing to the contractors create opportunities for incorrect allocations.
- Ongoing updates to the cost allocation billing system create opportunities for errors.
- Project manager's and employee's lack of understanding of importance of accurate time charging to correct internal orders and work breakdown structures create opportunities for incorrect allocations.
- Potential for billing errors (i.e., double billings).

Areas of Focus:

- Obtain a listing of internal orders and work breakdown structures associated with costs for selected reaches and group like internal orders and work breakdown structures to perform a fluctuation analysis to the prior year.
- Assess a sample of internal orders and work breakdown structures with the largest change in costs from group like internal orders and work breakdown structures for direct and indirect costs allocations.
- Obtain supporting documentation to assess the work was performed for the selected reaches.

## 5. System Power Costs – Variable Transportation

Risk:

- Incorrect contractor charged and/or incorrect allocation of costs between contractors.

Risk Factors:

- Calculation of the allocation factors has manual aspects. Manual processes create opportunities for errors.
- Ongoing updates to the cost allocation billing system create opportunities for errors.
- Estimated Table 2 projected costs (invoicing rate) may not reflect actual costs incurred.
- Potential for high dollar impact (\$431 million net system power costs in 2023 per Table B-3).

Areas of Focus:

- Assess power costs and power revenues from the system for the classification of costs.
- Recalculate the calendar year power allocation factors used in the system to allocate net power costs.
- Recalculate the value of recovery generation credits, station service costs allocation factors, and transmission costs allocation factors used to allocate net power costs.
- Recalculate the billed amounts for the transportation variable cost components for the contractors selected (to be provided by the IAA).

## 6. Debt Service

Risk:

- Incorrect bond debt service charged to the contractors.

Risk Factors:

- Debt service not subsequently adjusted to provide the benefits of any refinancing to the contractors.
- WSRB Surcharge calculation has manual aspects. Manual processes create opportunities for errors.
- Ongoing updates to the cost allocation billing system create opportunities for errors.
- Debt service billing project has manual aspects. Manual processes create opportunities for errors.
- WSRB Surcharge currently does not reflect the results of the debt service billing project.

Areas of Focus:

- Reconcile any new bond offerings to the debt issuance management system.
- Determine whether refinanced bonds were credited to the debt service schedules to provide the benefits of such refinancing to the contractors (direct billed debt service and WSRB Surcharge).
- Assess debt service billing project deliverables as directed by the IAA as budgeted hours allow.

**Other Procedures (Items 7-8)**

These procedures will only be performed as time permits after completion of items 1-6 above and consideration of the 3,000 hour time budget.

**7. Rate Management Calculation Including Revenue and Cost Data**

Risk:

- Rate management credits are improperly allocated among the contractors.
- Rate management credits are improperly calculated based on the revenue and expenditure data in the rate management credits calculation prepared by the Department.

Risk Factors:

- Calculation of rate management credits has manual aspects to the process.
- Ongoing updates to the cost allocation billing system create opportunities for errors.
- Lack of review and approval process for the rate management credit calculation.
- Outdated information used to calculate credits due to the contractors.

Areas of Focus:

- Obtain the rate management calculation used for the SOC and recalculate the allocation between contractors.
- Obtain the rate management calculation and assess a sample of the balances included in the calculation which would include both revenue and cost data.
- Agree the rate management calculation to each contractor's SOC.

## **8. Reconciliation between PR5 and the cost allocation billing system**

**Risk:**

- Costs and revenues are not accurately billed to the contractors based on inconsistencies between systems.

**Risk Factors:**

- Costs and revenues do not accurately match between both systems.
- Manual process of moving costs between systems create opportunities for errors.
- Potential for movement of costs and revenues outside the SWRDS funds used for the state water project.

**Areas of Focus:**

- Gain an understanding of the reconciliation process performed by the Department.
- Reconcile all SWRDS PR5 costs and revenues included in the bond fund (0502), the construction fund (0506), and the revenue fund (0507) to the cost allocation billing system.
- Identify, document, and investigate variances between the two systems.

**II. FEES FOR EY SERVICES**

- A-2. Total fees for Exhibit A Services performed by EY will not exceed \$653,000, including reasonable and necessary out-of-pocket expenses, which represent budgeted hours of 3,000.

**III. ALLOCATION OF FEES**

- A-3. The maximum aggregate fee set forth in paragraph A-2 shall be apportioned among the agencies named in table A-4 based on a basis consistent with prior years.



**IV. MAXIMUM AGGREGATE FEE FOR EACH AGENCY**

A-4. The portion of the maximum aggregate fee set forth in paragraph A-2 applicable to each Agency in conformity with the methodology set forth in paragraph A-3 is shown below:

Agency	Maximum fee for each Agency, provided all agencies listed below enter into agreements with EY	Maximum fee for each Agency, provided 80% of agencies listed below enter into agreements with EY	Percent of total
Alameda County Flood Control and Water Conservation District, Zone No. 7	\$ 31,773	\$ 39,716	4.9%
Alameda County Water District	16,553	20,691	2.5
Antelope Valley-East Kern Water Agency	57,085	71,356	8.7
Casitas Municipal Water District	7,882	9,853	1.2
Central Coast Water Authority	17,927	22,409	2.7
City of Yuba City	3,784	4,730	0.6
Coachella Valley Water District	54,526	68,158	8.4
County of Kings	3,667	4,584	0.6
Crestline-Lake Arrowhead Water Agency	2,286	2,858	0.4
Desert Water Agency	21,972	27,465	3.4
Dudley Ridge Water District	17,873	22,341	2.7
Empire West Side Irrigation District	1,182	1,478	0.2
Kern County Water Agency	163,250	204,063	25.0
Littlerock Creek Irrigation District	906	1,133	0.1
Mojave Water Agency	33,815	42,269	5.2
Napa County Flood Control and Water Conservation District	11,439	14,299	1.8
Palmdale Water District	8,395	10,494	1.3
San Bernardino Valley Municipal Water District	40,436	50,545	6.2
San Gabriel Valley Municipal Water District	11,351	14,189	1.7
San Geronio Pass Water Agency	6,818	8,523	1.0
San Luis Obispo County Flood Control and Water Conservation District	9,853	12,316	1.5
Santa Clara Valley Water District	39,412	49,265	6.0
Santa Clarita Valley Water Agency	37,520	46,900	5.7
Solano County Water Agency	18,821	23,526	2.9
Tulare Lake Basin Water Storage District	34,474	43,093	5.3
Total	<u>\$ 653,000</u>		<u>100.0%</u>

**V. PAYMENT SCHEDULE**

This is the payment schedule for the Agency.

<u>August 8, 2025 Billing</u>	<u>September 10, 2025 Billing</u>	<u>October 10, 2025 Billing</u>	<u>November 10, 2025 Billing</u>	<u>December 10, 2025 Billing</u>	<u>Total Billing</u>
\$2,518	\$1,679	\$1,679	\$1,679	\$840	\$8,395

**EXHIBIT B**

**STATEMENT OF WORK**

This Statement of Work, dated July 14, 2025 (this “SOW”), is made by Ernst & Young LLP (“we” or “EY”) and Palmdale Water District on behalf of itself (“you” or “Client”) and on behalf of the State Water Contractors, pursuant to the Agreement, dated July 1, 2022 (the “Agreement”), between EY and Palmdale Water District (“Agency”).

The additional terms and conditions of this SOW shall apply only to the Services covered by this SOW and not to Services covered by any other SOW pursuant to the Agreement. This SOW incorporates the Agreement by reference to form a contract. Capitalized terms used, but not otherwise defined, in this SOW shall have the meanings defined in the Agreement, including references in the Agreement to “you” or “Client” shall be deemed references to you.

If Client asks EY to begin work before Client executes and returns this SOW to EY, Client will be deemed to have agreed to its terms.

**Scope of Services**

Except as otherwise set forth in this SOW, this SOW incorporates by reference, and is deemed to be a part of, the Agreement. This SOW sets forth the terms and conditions on which EY will provide services as described in Attachment A-1 – Water System Revenue Bond Debt-Service Billing Project Areas of Focus (the “Services”) to the Agency, a member of the State Water Contractors (the “Contractors” or “SWC”) Independent Audit Association (the “IAA”), for the twelve months ending June 30, 2026.

The Services are advisory in nature and will not constitute an audit performed in accordance with Generally Accepted Accounting Principles. EY will perform the Services in accordance with the Statement of Standards for Consulting Services (CS100) of the American Institute for Certified Public Accountants (AICPA). As part of your review of the terms of this SOW, please refer to the enclosed letter from Chantal Ouellet of the IAA Audit Contract Negotiating Committee.

**Client specific obligations**

Client shall assign a qualified person to oversee the Services. Client is responsible for all management decisions relating to the Services and for determining whether the Services are appropriate for its purposes.

You will not, and you will not permit others to, quote or refer to the Reports, any portion, summary or abstract thereof, or to EY or any other EY Firm, in any document filed or distributed in connection with (i) a purchase or sale of securities to which the United States or state securities laws (Securities Laws) are applicable, or (ii) periodic reporting obligations under Securities Laws. You will not contend that any provisions of Securities Laws could invalidate any provision of this agreement.

### **Limitations on scope**

The Services are advisory in nature. EY will not: render an assurance report or opinion under the Agreement or this SOW, nor will the Services constitute an audit, review, examination, or other form of attestation as those terms are defined by the AICPA; provide any legal advice or opinions; provide any tax advice or opinions; perform ongoing internal control monitoring activities or other control activities that affect the execution of transactions or confirm that transactions are properly executed and/or accounted for; perform routine activities in connection with Client's financial processes that are equivalent to those of an ongoing compliance or quality control function; determine which, if any, recommendations for improving internal control should be implemented; act on Client's behalf in reporting to Client's Board of Directors or Audit Committee; authorize, execute or consummate transactions or otherwise exercise authority on Client's behalf; prepare source documents on transactions.

If Client requires EY to access or use Client or third-party systems or devices, EY shall have no responsibility for the confidentiality, security or data protection controls of such systems or devices or for their performance or compliance with Client requirements or applicable law.

### **Specific additional terms and conditions**

Notwithstanding anything to the contrary in the Agreement or this SOW, EY does not assume any responsibility for any third-party products, programs or services selected by Client, their performance or compliance with Client's specifications or otherwise.

EY will base any comments or recommendations as to the functional or technical capabilities of any products in use or being considered by Client solely on information provided by Client vendors, directly or through Client. EY is not responsible for the completeness or accuracy of any such information or for confirming any of it.

Where EY's written consent under the Agreement or this SOW is required for you to disclose to a third party EY's Reports, EY will also require that third party to execute a letter substantially in the form of Exhibit D to this SOW. Without EY's prior written consent, Client may not use or publish any of EY's Reports for any purpose.

EY cannot and does not provide any assurance that EY's work and findings will either support or contradict any particular position. Client agrees that, because the Services are limited in nature and scope, they cannot be relied upon to discover all documents and other information, or provide all analyses, that may be important to Client or any proceeding.

EY has reviewed EY's available records to determine whether potential conflicts might arise out of EY's performance of the Services. However, the very nature, diversity, magnitude, and size of the Ernst & Young organization and its past and present professional relationships does not allow EY to be certain that each and every possible relationship or potential conflict has come to EY's attention.

Unless prohibited by applicable law, we may provide Client information to other EY firms, EY Persons and external third parties, who may collect, use, transfer, store or otherwise process such information in various jurisdictions in which they operate in order to provide support services to any EY Firm and/or assist in the performance of the Services.

EY and other EY Firms may retain and use Client information for benchmarking, analytics, research and development, thought leadership and related purposes, and to enhance their services, provided that any use does not externally identify, or make reference to, Client. In all such matters, EY and other EY Firms will comply with applicable law and professional obligations.

After the Services under this SOW have been completed, we may disclose or present to prospective clients, or otherwise in our marketing materials, that we have performed the Services for you, and we may use your name solely for that purpose, in accordance with applicable professional obligations. In addition, we may use your name, trademark, service mark and logo as reasonably necessary to perform the Services and in correspondence, including proposals, from us to you.

Compliance with U.S. immigration requirements may require EY to provide certain information to the U.S. Citizenship and Immigration Services ("USCIS") to confirm that EY employees on certain visas are, in fact, EY employees and not employees of the Client or other clients of EY. This will include providing certain information regarding work locations to support compliance with the visa requirements. As such, EY may disclose to USCIS information regarding this SOW, including the Client's identity and location, as well as a redacted copy of this SOW. Upon providing this information, EY will request that USCIS keep any such information confidential. In further support of these legal requirements, the U.S. Department of Labor (DOL) regulations, at 20 CFR § 655.734(a)(1)(ii)(A), require the posting of notice of a Labor Condition Application (LCA) in instances where individuals holding H-1B visas will be working on the Client's premises. EY and the Client will work together to develop an appropriate notice as required. The Client acknowledges that EY resources will be operating at all times as an employee of and under the direction and control of Ernst & Young U.S. LLP's management, and all activities including supervision, hiring and firing decisions, and performance evaluations are controlled by Ernst & Young U.S. LLP. The Client will not have the right to control EY resources. At all times, EY resources will receive direction from an EY manager while on-site at the Client premises.

You shall not, while we are performing the Services hereunder and for a period of 12 months after they are completed, solicit for employment, or hire, any EY personnel involved in the performance of the Services, provided, that you may generally advertise available positions and hire EY personnel who either respond to such advertisements or who come to you on their own initiative without direct or indirect encouragement from you.

The Agency shall, among other responsibilities with respect to the Services, (i) make all management decisions and perform all management functions, including applying independent business judgment to EY work products, making implementation decisions and determining further courses of action in connection with any Services; (ii) assign a competent employee within senior management to make all management decisions with respect to the Services, oversee the Services and evaluate their adequacy and results; and (iii) accept responsibility for the implementation of the results or recommendations contained in the Reports or otherwise in connection with the Services. The Agency hereby confirms that management of the Agency accepts responsibility for the sufficiency of the Services. In performing the Services neither EY nor EY's partners or employees will act as an employee of the Agency.

The Agency represents and warrants to EY that the Agency's execution and delivery of this SOW has been authorized by all requisite corporate or other applicable entity action and the person signing this SOW is expressly authorized to execute it on behalf of, and to bind, the Agency.

The performance of the Services and the parties' obligations in connection therewith are subject to the additional terms and conditions set forth in the Agreement.

It is understood that the Agency is not bound by our findings in any controversy or disagreement between the Agency and the Department of Water Resources (the "Department") should the Agency disagree with our findings.

We would also request that, if any IAA member discovers discrepancies in billings or other financial statements relative to their State Water Project costs, in addition to your working with the Department to correct the error, please notify EY for potential future inclusion as part of their procedures related to all IAA members.

#### **Timetable and project deliverables**

The matrix below lists the specific deliverables and related timelines that EY will provide to the Agency.

<b>Deliverable</b>	<b>Timeline</b>	<b>Comments</b>
Report of Findings and Recommendations	Unless otherwise agreed, and subject to the Agreement, EY expects to perform the Services during the period following the execution of this SOW to the issuance of a final report at conclusion of the Water System Revenue Bond Debt-Service Billing Project.	See Attachment A-1 – Water System Revenue Bond Debt-Service Billing Project Areas of Focus.

## **Contacts**

Client has identified Chantal Ouellet, IAA Secretary as Client's contact with whom EY should communicate about these Services. Client's contact at EY for these Services will be Scott Enos.

## **Fees and billing**

The obligation to pay EY's fees is not contingent upon the nature of EY's findings or recommendations. The General Terms and Conditions of the Agreement address our fees and expenses generally.

EY's fees for the Services will be based on time and material basis, plus expenses. The hourly rate for the Services set forth in this SOW by Agency is included in Attachment A-2. Total fees shall not exceed \$50,000 across all Agencies, which represent budgeted hours of 196 hours.

Client shall reimburse EY for expenses incurred in connection with the performance of the Services, including reasonable and customary out-of-pocket expenses such as travel, meals accommodations and other expenses specifically related to this engagement. Actual out-of-pocket expenses incurred by EY while executing the Services will be billed separately.

Invoices for time and expenses will be billed monthly and are due upon receipt. Work may be halted in the event of fee payment delinquency. All amounts due must be paid to EY in full before EY will issue any Report.

In witness whereof, the parties have executed this SOW as of the date set forth above.

**Palmdale Water District**

**Ernst & Young, LLP**

**Representative**

**Representative**

*Scott Enos*

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Signature**

\_\_\_\_\_  
**Printed Name**

Scott Enos

\_\_\_\_\_  
**Printed Name**

\_\_\_\_\_  
**Title**

Authorized Signatory

\_\_\_\_\_  
**Title**

\_\_\_\_\_  
**Address**

Ernst & Young LLP  
731 K Street  
Sacramento, CA 95814

\_\_\_\_\_  
**Address**

\_\_\_\_\_  
**Date**

July 14, 2025

\_\_\_\_\_  
**Date**



**Attachment A-1 – Water System Revenue Bond Debt-Service Billing Project Areas of Focus**

Water System Revenue Bond Debt-Service Billing Project Section	EY Plan
1. Attend meetings and workshops related to the Water System Revenue Bond Debt-Service Billing Project	In scope
2. Water System Revenue Bond Surcharge Redetermination <ul style="list-style-type: none"> <li>a. Obtain and assess supporting documentation from the Department of Water Resources including the data, calculations, and reports used for the redetermination.</li> <li>b. Assess the Department of Water Resources' Article 50(a)(5) calculations.</li> <li>c. Investigate and communicate any variances identified with the IAA and Department of Water Resources.</li> </ul>	In scope
3. Rate Management Credits Redetermination <ul style="list-style-type: none"> <li>a. Obtain and assess supporting documentation from the Department of Water Resources including the data, calculations, and reports used for the redetermination.</li> <li>b. Investigate and communicate any variances identified with the IAA and Department of Water Resources.</li> </ul>	In scope
4. Transportation Variable Redetermination <ul style="list-style-type: none"> <li>a. Obtain and assess supporting documentation from the Department of Water Resources including the data, calculations, and reports used for the redetermination.</li> <li>b. Investigate and communicate any variances identified with the IAA and Department of Water Resources.</li> </ul>	In scope
5. Direct Debt Service Recalculation	Not in scope
6. Transportation Capital Redetermination	Not in scope
7. Conservation Capital Redetermination	Not in scope
8. Debt Issuance Management System Processing	Not in scope
9. Debt Service Reserve Refund	Not in scope
10. Prepare and issue a report on results of procedures	In scope

**Attachment A-2 – Hourly Rate for each Agency**

Agency	Hourly rate for each Agency	Percent of total
Alameda County Flood Control and Water Conservation District, Zone No. 7	\$ 12.50	4.9%
Alameda County Water District	6.39	2.5
Antelope Valley-East Kern Water Agency	22.23	8.8
Casitas Municipal Water District	3.07	1.2
Central Coast Water Authority	6.90	2.7
City of Yuba City	1.53	0.6
Coachella Valley Water District	21.21	8.4
County of Kings	1.53	0.6
Crestline-Lake Arrowhead Water Agency	0.77	0.3
Desert Water Agency	8.69	3.4
Dudley Ridge Water District	6.90	2.7
Empire West Side Irrigation District	0.51	0.2
Kern County Water Agency	63.87	25.0
Littlerock Creek Irrigation District	0.26	0.1
Mojave Water Agency	13.28	5.2
Napa County Flood Control and Water Conservation District	4.60	1.8
Palmdale Water District	3.33	1.3
San Bernardino Valley Municipal Water District	15.84	6.2
San Gabriel Valley Municipal Water District	4.35	1.7
San Geronio Pass Water Agency	2.55	1.0
San Luis Obispo County Flood Control and Water Conservation District	3.84	1.5
Santa Clara Valley Water District	15.33	6.0
Santa Clarita Valley Water Agency	14.57	5.7
Solano County Water Agency	7.41	2.9
Tulare Lake Basin Water Storage District	13.54	5.3
Total	\$ 255.00	100.0%

**EXHIBIT C**

**I. INDIVIDUAL CONTRACTOR AGREEMENTS**

We have included this Exhibit C as part of this contract, which provides the opportunity for individual Contractors to enter into separate agreements for additional services with EY. These services will be performed and billed separately from the services outlined in Exhibits A and B.

The terms and conditions of any procedures performed under Exhibit C, including payment terms, will be outlined in a separate Statement of Work (SOW). These services, which will be agreed to by EY and the requesting Contractor in advance, will be documented in the example SOW attached to herein as Exhibit C-1. An Exhibit C-1 statement of work will be made available to any Contractor upon request. All other provisions of the Contractor's signed contract with EY for the twelve months ending June 30, 2026, will continue to be in effect.

Total fees for such other consulting services shall be agreed to with the individual Contractor prior to commencement of work. The fees for services provided under Exhibit C will be outside of those referenced in Exhibits A and B, and will be paid for directly by the requesting Contractor.

## **EXHIBIT C-1**

### **Statement of Work**

This Statement of Work, dated July 14, 2025 (this “SOW”), is made by Ernst & Young LLP (“we” or “EY”) and Palmdale Water District on behalf of itself (“you” or “Client”) and on behalf of the State Water Contractors, pursuant to the Agreement, dated July 1, 2022 (the “Agreement”), between EY and Palmdale Water District (“Agency”).

The additional terms and conditions of this SOW shall apply only to the Services covered by this SOW and not to Services covered by any other SOW pursuant to the Agreement. This SOW incorporates the Agreement by reference to form a contract. Capitalized terms used, but not otherwise defined, in this SOW shall have the meanings defined in the Agreement, including references in the Agreement to “you” or “Client” shall be deemed references to you.

If Client asks EY to begin work before Client executes and returns this SOW to EY, Client will be deemed to have agreed to its terms.

### **Scope of Services**

Except as otherwise set forth in this SOW, this SOW incorporates by reference, and is deemed to be a part of, the Agreement. This SOW sets forth the terms and conditions on which EY will provide services as described [INSERT DEFINITION OF SERVICES] (the “Services”) to the Agency, a member of the State Water Contractors (the “Contractors” or “SWC”) Independent Audit Association (the “IAA”), for the twelve months ending June 30, 2026.

The Services are advisory in nature and will not constitute an audit performed in accordance with Generally Accepted Accounting Principles. EY will perform the Services in accordance with the Statement of Standards for Consulting Services (CS100) of the American Institute for Certified Public Accountants (AICPA).

### **Client specific obligations**

Client shall assign a qualified person to oversee the Services. Client is responsible for all management decisions relating to the Services and for determining whether the Services are appropriate for its purposes.

You will not, and you will not permit others to, quote or refer to the Reports, any portion, summary or abstract thereof, or to EY or any other EY Firm, in any document filed or distributed in connection with (i) a purchase or sale of securities to which the United States or state securities laws (Securities Laws) are applicable, or (ii) periodic reporting obligations under Securities Laws. You will not contend that any provisions of Securities Laws could invalidate any provision of this agreement.

### **Limitations on scope**

The Services are advisory in nature. EY will not: render an assurance report or opinion under the Agreement or this SOW, nor will the Services constitute an audit, review, examination, or other form of attestation as those terms are defined by the AICPA; provide any legal advice or opinions; provide any tax advice or opinions; perform ongoing internal control monitoring activities or other control activities that affect the execution of transactions or confirm that transactions are properly executed and/or accounted for; perform routine activities in connection with Client's financial processes that are equivalent to those of an ongoing compliance or quality control function; determine which, if any, recommendations for improving internal control should be implemented; act on Client's behalf in reporting to Client's Board of Directors or Audit Committee; authorize, execute or consummate transactions or otherwise exercise authority on Client's behalf; prepare source documents on transactions.

If Client requires EY to access or use Client or third-party systems or devices, EY shall have no responsibility for the confidentiality, security or data protection controls of such systems or devices or for their performance or compliance with Client requirements or applicable law.

### **Specific additional terms and conditions**

Notwithstanding anything to the contrary in the Agreement or this SOW, EY does not assume any responsibility for any third-party products, programs or services selected by Client, their performance or compliance with Client's specifications or otherwise.

EY will base any comments or recommendations as to the functional or technical capabilities of any products in use or being considered by Client solely on information provided by Client vendors, directly or through Client. EY is not responsible for the completeness or accuracy of any such information or for confirming any of it.

Where EY's written consent under the Agreement or this SOW is required for you to disclose to a third party EY's Reports, EY will also require that third party to execute a letter substantially in the form of Exhibit D to this SOW. Without EY's prior written consent, Client may not use or publish any of EY's Reports for any purpose.

EY cannot and does not provide any assurance that EY's work and findings will either support or contradict any particular position. Client agrees that, because the Services are limited in nature and scope, they cannot be relied upon to discover all documents and other information, or provide all analyses, that may be important to Client or any proceeding.

EY has reviewed EY's available records to determine whether potential conflicts might arise out of EY's performance of the Services. However, the very nature, diversity, magnitude, and size of the Ernst & Young organization and its past and present professional relationships does not allow EY to be certain that each and every possible relationship or potential conflict has come to EY's attention.

Unless prohibited by applicable law, we may provide Client Information to other EY firms, EY Persons and external third parties, who may collect, use, transfer, store or otherwise process such information in various jurisdictions in which they operate in order to provide support services to any EY Firm and/or assist in the performance of the Services.

EY and other EY Firms may retain and use Client information for benchmarking, analytics, research and development, thought leadership and related purposes, and to enhance their services, provided that any use does not externally identify, or make reference to, Client. In all such matters, EY and other EY Firms will comply with applicable law and professional obligations.

After the Services under this SOW have been completed, we may disclose or present to prospective clients, or otherwise in our marketing materials, that we have performed the Services for you, and we may use your name solely for that purpose, in accordance with applicable professional obligations. In addition, we may use your name, trademark, service mark and logo as reasonably necessary to perform the Services and in correspondence, including proposals, from us to you.

Compliance with U.S. immigration requirements may require EY to provide certain information to the U.S. Citizenship and Immigration Services ("USCIS") to confirm that EY employees on certain visas are, in fact, EY employees and not employees of the Client or other clients of EY. This will include providing certain information regarding work locations to support compliance with the visa requirements. As such, EY may disclose to USCIS information regarding this SOW, including the Client's identity and location, as well as a redacted copy of this SOW. Upon providing this information, EY will request that USCIS keep any such information confidential. In further support of these legal requirements, the U.S. Department of Labor (DOL) regulations, at 20 CFR § 655.734(a)(1)(ii)(A), require the posting of notice of a Labor Condition Application (LCA) in instances where individuals holding H-1B visas will be working on the Client's premises. EY and the Client will work together to develop an appropriate notice as required. The Client acknowledges that EY resources will be operating at all times as an employee of and under the direction and control of Ernst & Young U.S. LLP's management, and all activities including supervision, hiring and firing decisions, and performance evaluations are controlled by Ernst & Young U.S. LLP. The Client will not have the right to control EY resources. At all times, EY resources will receive direction from an EY manager while on-site at the Client premises.

You shall not, while we are performing the Services hereunder and for a period of 12 months after they are completed, solicit for employment, or hire, any EY personnel involved in the performance of the Services, provided, that you may generally advertise available positions and hire EY personnel who either respond to such advertisements or who come to you on their own initiative without direct or indirect encouragement from you.

The Agency shall, among other responsibilities with respect to the Services, (i) make all management decisions and perform all management functions, including applying independent business judgment to EY work products, making implementation decisions and determining further courses of action in connection with any Services; (ii) assign a competent employee within senior management to make all management decisions with respect to the Services, oversee the Services and evaluate their adequacy and results; and (iii) accept responsibility for the implementation of the results or recommendations contained in the Reports or otherwise in connection with the Services. The Agency hereby confirms that management of the Agency accepts responsibility for the sufficiency of the Services. In performing the Services neither EY nor EY's partners or employees will act as an employee of the Agency.

The Agency represents and warrants to EY that the Agency's execution and delivery of this SOW has been authorized by all requisite corporate or other applicable entity action and the person signing this SOW is expressly authorized to execute it on behalf of, and to bind, the Agency.

The performance of the Services and the parties' obligations in connection therewith are subject to the additional terms and conditions set forth in the Agreement.

It is understood that the Agency is not bound by our findings in any controversy or disagreement between the Agency and the Department of Water Resources (the "Department") should the Agency disagree with our findings.

We would also request that, if any IAA member discovers discrepancies in billings or other financial statements relative to their State Water Project costs, in addition to your working with the Department to correct the error, please notify EY for potential future inclusion as part of their procedures related to all IAA members.

#### **Timetable and project deliverables**

The matrix below lists the specific deliverables and related timelines that EY will provide to **(insert Contractor)**.

Deliverable	Timeline	Comments

## **Contacts**

Client has identified [Name of contact] as Client's contact with whom EY should communicate about these Services. Client's contact at EY for these Services will be Scott Enos.

## **Fees and billing**

The obligation to pay EY's fees is not contingent upon the nature of EY's findings or recommendations. The General Terms and Conditions of the Agreement address our fees and expenses generally.

Below is a summary of the current cost estimates for this SOW. Due to the complexities and variable nature of this project, actual costs could vary from these estimates. In the event costs are expected to exceed the estimate, EY will contact **(insert Contractor)** before performing any additional work.

Client shall reimburse EY for expenses incurred in connection with the performance of the Services, including reasonable and customary out-of-pocket expenses such as travel, meals accommodations and other expenses specifically related to this engagement. Actual out-of-pocket expenses incurred by EY while executing the Services will be billed separately.

Invoices for time and expenses will be billed monthly and are due upon receipt. Work may be halted in the event of fee payment delinquency. All amounts due must be paid to EY in full before EY will issue any Report.



IN WITNESS WHEREOF, the parties hereto have executed this SOW as of the day and year written below.

**Palmdale Water District**

**Ernst & Young, LLP**

**Representative**

**Representative**

---

**Signature**

---

**Signature**

---

**Printed Name**

---

**Printed Name**

---

**Title**

---

**Title**

---

**Address**

---

**Address**

---

**Date**

---

**Date**

## EXHIBIT D

### Form of Access Letter

[Letterhead of EY member firm]

[Addressee (e.g., third party seeking access to EY Report)]

[Month XX, 20XX]

[Street Address]

[City, State Zip]

Dear [ ] :

[Client] (the “Client”) has informed [Ernst & Young LLP] (“EY”) that it wishes to disclose to [party seeking access] (the “Recipient”) EY’s [describe report(s)], dated \_\_\_\_\_, relating to [describe subject] (the “Report(s)”). EY has not placed any limitations on the Client’s ability to disclose any contents of the Report(s) relating to the tax aspects or structure of any transaction proposed by the Client.

EY performed advisory services only for the Client. EY did not undertake the services on behalf of, or to serve the needs of, the Recipient or any other third party. EY did not audit the Client’s financial statements, nor did it perform any procedures with respect to its financial information, or otherwise for or relating to any period subsequent to the date(s) of the Report(s).

EY prepared the Report(s) solely for the Client. The Report(s) address[es] only the issues identified by the Client, and [is/are] based solely on information obtained by EY using the procedures specified by the Client or otherwise provided by or on behalf of the Client. The Report(s) [is/are] subject to many limitations and [do/does] not provide any form of assurance with respect to any of the information referred to therein. The Recipient understands and accepts the scope and limitations of the Report(s).

Except (1) where compelled by legal process (of which the Recipient will immediately notify EY and tender to EY, if it so elects, the defense thereof), (2) with respect to any contents of the Report relating to the tax treatment and tax structure of the proposed transaction (including any facts that may be relevant to understanding the proposed tax treatment of the proposed transaction), or (3) with EY’s prior written consent, the Recipient will not, circulate, quote, disclose or distribute any of the Report(s) or any information contained therein, or any summary or abstract thereof, or make any reference thereto or to EY, to anyone other than the Recipient’s directors, officers or employees or legal advisors who, in each case, need to know its contents in order to \_\_\_\_\_, and who have agreed to be bound by the terms and conditions of this agreement to the same extent as the Recipient.

The Recipient further agrees that it will not, and will not permit others to, quote or refer to the Report, any portion, summary or abstract thereof, or to EY, in any document filed or distributed in connection with (a) a purchase or sale of securities to which the United States or state securities laws (“Securities Laws”) are applicable or (b) periodic reporting obligations under Securities Laws. The Recipient will not contend that any provisions of Securities Laws could invalidate any provision of this agreement.

In further consideration of EY allowing the Recipient access to the Report(s) and the information contained therein, the Recipient agrees that:

1. It does not acquire any rights against EY, and EY does not assume any duties or obligations to the Recipient or otherwise, as a result of such access.
2. It will not rely on the Report(s) or any portion thereof and will make no claim that it has done so.
3. It will make no claim against EY, its partners, employees or affiliates, or other members of the global Ernst & Young network (collectively, the “EY Parties” that relates in any way to the Report(s), any information contained therein, or the Recipient’s access to the Report(s).
4. To the fullest extent permitted by applicable law, it will indemnify, defend and hold harmless the EY Parties from and against any claim or expense, including reasonable attorneys’ fees, suffered or incurred by any EY Party relating to any breach by the Recipient of any of its representations or agreements contained herein or the use or disclosure of the Report(s) or any portion thereof by anyone who received it directly or indirectly from or at the request of the Recipient.

This letter shall be governed by, and construed in accordance with, the laws of the United States applicable to agreements made and fully to be performed therein by residents thereof.

Very truly yours,

Ernst & Young LLP

Accepted by:

[Addressee]

By:

Title:



# BOARD MEMORANDUM

**DATE:** July 28, 2025  
**TO:** **BOARD OF DIRECTORS**  
**FROM:** Mr. Shadi Bader, Engineering Manager  
**VIA:** Mr. Scott Rogers, Assistant General Manager  
Mr. Dennis D. LaMoreaux, General Manager  
**RE:** ***APPROVAL OF UPDATED DISTRICT STANDARD SPECIFICATIONS, DRAWINGS, AND LIST OF APPROVED MATERIALS FOR WATER DISTRIBUTION CONSTRUCTION. (NO BUDGET IMPACT – ENGINEERING MANAGER BADER)***

---

## **Recommendation:**

Staff recommends that the Board approve the updated District Standard Specifications, Drawings, and List of Approved Materials for Water Distribution Construction.

## **Alternative Options:**

The alternative is not to update the District's Standard Specifications and Drawings.

## **Impact of Taking No Action:**

The District will be operating with outdated construction specifications.

## **Background:**

The District's Standard Specifications for Water Distribution Construction, Standard Drawings, and List of Approved Materials were last updated in February 2024. Since then, Engineering staff worked closely with the Operations and Facilities teams to review feedback, evaluate field practices, and identify areas where the documents could be improved or clarified.

For the 2025 update, the Specifications were revised to reflect current construction methods, industry best practices, and the latest AWWA standards. The List of Approved Materials was expanded to include new manufacturers and products that meet the District's quality, reliability, and performance requirements. The Standard Drawings were also updated to provide clearer and more consistent guidance for typical applications in the field, helping contractors, developers, and internal teams interpret and apply the standards more effectively.

Maintaining up-to-date specifications, drawings, and approved materials provides several key benefits:

- Improved clarity and consistency across all phases of design, construction, inspection, and maintenance
- Better alignment with current codes and industry standards, including AWWA, ASTM, and other applicable agencies

July 28, 2025

- Increased efficiency during project delivery by reducing ambiguity and misinterpretation
- Improved communication between the District, contractors, and developers
- Enhanced quality control through vetted materials and construction methods
- Greater adaptability to new technologies, products, and construction techniques
- Reduced risk of change orders, delays, and rework in the field

Standard Drawings W-1 through W-25 were updated to include references directing users to the District's List of Approved Materials. Updates also include the addition of certain ductile iron pipe fittings for lateral installations and revised backflow prevention requirements.

The service vaults were updated to reflect the latest manufacturer currently used by the District. General notes were revised, and materials are now listed in sequence from the water main to the end of the water facility.

These documents are considered living resources and will continue to be reviewed and revised periodically. As construction practices evolve and new materials and technologies become available, the District will incorporate those changes into future updates to ensure the standards remain relevant, practical, and effective.

By treating these standards as dynamic tools rather than static documents, the District can stay ahead of emerging trends and maintain a high level of service, safety, and reliability in its water infrastructure.

**Strategic Plan Initiative/Mission Statement:**

This item is under Strategic Initiative No. 3 – Systems Efficiency and No. 5 – Regional Leadership.

This item directly relates to the District's Mission Statement.

**Budget:**

There is no impact to the Budget.

**Supporting Documents:**

- Standard Specifications for Water Distribution Construction dated July 2025
- 2025 Standard Drawings
- List of Approved Materials

**PALMDALE WATER DISTRICT**

**STANDARD SPECIFICATIONS**

**FOR**

**WATER DISTRIBUTION SYSTEM CONSTRUCTION**



**July 2025**

PALMDALE WATER DISTRICT  
2029 EAST AVENUE Q, PALMDALE, CA 93550

661-947-4111

[www.palmdalewater.org](http://www.palmdalewater.org)

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## SECTION 1 - GENERAL PROVISIONS

### 1-01 General

These specifications are to be used to establish standards of work, materials, and construction procedures for improvements to the water system of the Palmdale Water District. These specifications are intended to establish general requirements and technical standards for all pipeline work within the District. Interpretation, if any, is subject to District discretion.

### 1-02 Supplementary Specifications

Wherever reference is made within these documents to certain standard specifications, the reference shall be construed to mean the standards, with all subsequent amendments, changes, or additions as thereafter adopted and published that are in effect at the date of approval of the plans and specifications. State Water Resources Control Board Waterworks Standard R-14-03 references information and documentation pertaining to standard specifications below. Standard specifications and documents referenced herein, and their abbreviations include, without limitation, the following:

AASHTO	American Association of State Highway and Transportation Officials
ACI	American Concrete Institute
AI	The Asphalt Institute
AISC	American Institute of Steel Construction, Inc.
AISI	American Iron and Steel Institute
ANSI	American National Standards Institute (formerly USASI, USAS, ASA)
ASCE	American Society of Civil Engineers
ASME	American Society of Mechanical Engineers
ASTM	American Society for Testing and Materials
AWS	American Welding Society
AWWA	American Water Works Association
MIL	Military Specification (leading symbol)
NFPA	National Fire Protection Association
OSHA	Occupational Safety and Health Administration, U.S. Dept. of Labor
SSPC	Steel Structures Painting Council State
Spec.	California Standard Specifications, Department of Transportation, Division of Highways
UL	Underwriters' Laboratories, Inc.

## Definition of Terms

Whenever in these specifications or other documents where these specifications govern, and the following terms are used and they shall be defined as follows:

a) Acceptance.

Shall mean that the water system has received final completion as defined herein, the one (1) year guarantee period has passed, and all repairs necessary during the one (1) year guarantee period have been made to the satisfaction of the District.

b) Agreement.

The written Agreement between the District and the Applicant providing for the construction of the improvement by the Applicant or his/her Contractor.

c) Applicant.

Shall mean any property owner, firm, or corporation who makes application for District service or enters into an Agreement with the District.

d) AWWA/ANSI/ASTM Standard

Any AWWA/ANSI/ASTM standard that is referenced in the standard specifications shall be defined as the latest edition or revision.

d) Board.

The Board of Directors of the Palmdale Water District.

e) Contract.

A written Agreement executed by and between the Applicant and the Contractor covering the performance of the work.

f) Contractor.

The individual, partnership, association, corporation, entity (public or private), or combination thereof, who has entered into a Contract with the Applicant or into a Public Contract with the District for performance of the work pursuant to these specifications. Except as to Public Contracts, wherever reference is made to Contractor in the Specifications, such reference shall include the

Contractor in his/her own capacity and in his/her capacity as authorized agent and representative of the Applicant. Accordingly, where the Specifications require the Contractor to perform certain acts, or hold the Contractor responsible for certain costs, expenses or liabilities, or the like, such requirements and responsibilities shall be equally applicable to and binding upon the Applicant.

g) District.

The Palmdale Water District.

h) Engineer.

A registered civil engineer appointed by the District acting either directly or through his properly authorized engineers.

i) Final Completion.

Shall mean the water system is complete and active, street improvements are complete, and required title insurance policies for easements, if any, are provided. The date of final completion shall initiate the beginning of the one-year guarantee period. See Section 1-14 for other requirements.

j) Fire System Activation Letter.

The letter informing Los Angeles County Fire Department that the water system and fire hydrants are available for protection. Two sets of as-built drawings must be submitted, easement documents must be recorded, and title insurance policies to said easements provided prior to issuance of letter. Also, pipe identification wires and compound meters shall be tested if included in the project.

k) Inspector - Owner's Representative.

The personal representative of the District acting on the behalf of the District Engineer and/or District Manager.

l) Plans.

The official scale and full-size approved detail drawings, or exact reproductions thereof, which show location, character, dimensions, elevations, and details of the work.

m) Specifications.

The STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM CONSTRUCTION of the Palmdale Water District. Should job-specific specifications, approved by the District, conflict with these Specifications, the job-specific specifications shall govern.

n) Standard Drawings.

The Standard Drawings, a part of the STANDARD SPECIFICATIONS FOR WATER DISTRIBUTION SYSTEM CONSTRUCTION of the Palmdale Water District, unless otherwise qualified.

o) Work.

All labor, materials, equipment, transportation, supervision, or other facilities necessary to complete the improvement provided for in the Agreement of Public Contract.

p) Private Contract Work.

Work done pursuant to a Contract between the Contractor and the Applicant.

q) Public Contract Work.

Work done pursuant to a Contract between the Contractor and the District.

r) Private Engineer.

A registered civil engineer employed by the Applicant.

s) Approved, Directed, Satisfactory, Proper, Acceptable, Required, Necessary, and Or Equal.

Shall be defined as considered approved, directed, satisfactory, proper, acceptable, required, necessary, or equal in the opinion of the District.

## 1-04 Abbreviations

The abbreviations used in the plans and specifications are abbreviations the meanings of which are established by general usage through the industry and those defined in subsection 1-02 herein.

## Inspection of Work

The District will provide inspection for all work. The inspection fee will be determined in accordance with the “Palmdale Water District Rules and Regulations” and must be paid to the District before beginning construction activity. Prior to commencement of construction, all materials must be on-site, inspected, and approved by a District representative.

Prior to beginning any construction operations or inspection services, the developer shall give the District at least forty-eight (48) hours advance written notice of the name and contractor’s license number of the contractor who will perform the work and a written request for a pre-job meeting with the location for same to be determined by District staff. Prior to the pre-job meeting, the Contractor will submit:

1. Approved Traffic Plan
2. Approved Submittals
3. Material onsite for District inspection
4. All fees necessary requested by the District

All work shall be performed only with the approval of the District's authorized representative, and any work done in the absence of said District's authorized representative shall be subject to rejection. The Contractor shall give sufficient notice to the District's authorized representative in advance of backfilling or otherwise covering any part of the work so that the District's authorized representative may observe such part of the work before it is concealed.

District inspection is available between 7:00 a.m. and 4:00 p.m., Monday through Friday, except District holidays. If the Contractor wishes to work on holidays, weekends, or at other hours than stated in this paragraph, the Developer shall submit a written request for said hours at least forty-eight (48) hours in advance and shall obtain the written permission of the District. The Developer shall cover the full cost of inspections conducted outside of normal District working hours, subject to inspector availability, by providing a deposit in advance.

Inspection by the District will not in any way reduce the Developer's or Contractor's responsibility for the work.

All costs for re-testing and re-inspection which are necessitated by defective materials and/or workmanship shall be at the sole expense of the Contractor and or Applicant.



## 1-06

### Plans Submitted by Private Engineers

First submittal of water improvement plans shall include a letter for District file and record purposes. All documents can be electronic (PDF, CAD). The following described documents, drawings, and materials required by the District to start processing the request:

- a) A Conceptual Plan showing how the project will be served;
- b) One (1) print of an approved tentative map;
- c) One (1) copy of the conditions of approval of said tentative tract map;
- d) Full name, address, and telephone number of the developer;
- e) Name, address, and telephone number of the tract engineer of record and the name of the project engineer representing the firm on the subject project;
- f) Two (2) prints of the tentative map on which the approved, preliminary water system, including required connections to sources of supply, are legibly shown;
- g) A plan check fee deposit determined in accordance with the “Palmdale Water District Rules and Regulations”;
- h) Any additional maps, surveys, or documents required by the Fire Department or the District to expedite preliminary plan check and which will be required by Palmdale Water District prior to approving plans.

A complete set of plans shall include the following:

- 1) A cover sheet containing the following:
  - a) Benchmark;
  - b) General Notes;
  - c) One (1) inch equals Two hundred (200) feet map showing lot lines, lot numbers, existing and proposed water mains, water main sizes, valves, fire hydrant locations, sheet numbers, and easements;
  - d) Vicinity Map;
  - e) List of Materials;

- f) Name, address, and telephone number of Engineer and Developer; and
  - g) Approval and revision blocks.
- 2) Plan and profile sheets containing, but not limited to, the following:
  - a) Horizontal scale of one (1) inch equals forty (40) feet;
  - b) Vertical scale of one (1) inch equals four (4) feet;
  - c) Locations of all existing utilities;
  - d) Existing and future surface profiles;
  - e) Approval and revision blocks;
  - f) North arrow;
  - g) Curb, gutter, and sidewalk;
  - h) Property lines, lot lines, and tract boundaries;
  - i) Complete dimensioning for entire right-of-way of subject street and adjoining streets;
  - j) Stationing, where applicable, relative to street centerline as shown on the corresponding street improvement plans for the project;
  - k) All proposed valves, fittings, and appurtenances;
  - l) Profile view showing all sewer and utility crossings, the proposed water main, valves, fittings, air/vacs, and transitions;
  - m) Details for transitions including all stationing, and elevations necessary to define pipe alignment and separation from other utilities or improvements;
  - n) Label and dimensioning for proposed water main.
- 3) District design criteria for new water system improvements include the following:
  - a) Water main shall be ten (10) feet from curb of face, five (5) feet horizontal, and one (1) foot vertical separation from other dry utilities. For wet utilities refer to Title 22 Section 64572 Water Main Separation Section. For sewer, see District Standard Details, Sheet W-10;

- b) Pipe shall have 48 inches of cover from top of curb.
- c) All materials in direct contact with drinking water must be NSF 61 and NSF 372 certified.
- d) Project shall have two (2) points of connection/sources of supply;
- e) All water mains must loop (no dead ends);
- f) Valves shall be located at right-of-way and property line prolongations;
- g) All easement lines shall be valved at both ends, have no service connections, and must be ductile iron pipe;
- h) High points shall have air/vacuum release valves;
- i) No fittings closer than six (6) feet from curb face;
- j) All systems will require retaining glands with mechanical joints;
- k) Fire hydrants to be located on the same side of the street as the main wherever possible. Blue dots to be placed six (6) inches from centerline toward fire hydrant.

#### 4) CAD Files (CIVIL 3D)

Plans for private contract work shall be checked by the District and shall be approved by the District prior to starting work.

Plans submitted to the District for approval shall have thereon the name and California Civil Engineer license number of the private engineer who prepared the plans or the name of the engineering firm with the name and registration number of the private engineer under whose direction the plans were prepared. Such plans shall be free of advertising, insignia, labels, emblems, seals, or other markings not relevant to the work. Plans are to be presented in a neat, concise, and professional condition.

Upon District's approval of the plans, a single set of original mylars will be sent to the District for signature. Approval of plans by the District will not relieve the Applicant or private engineer of any responsibility because of errors in the plans either by commission or omission. Such errors, when brought to the attention of the private engineer by the District, shall be promptly remedied as herein provided.

After plans have been approved and filed, changes may be made in the plans only upon approval of the District. In order to obtain such approval, the private engineer shall first submit two sets of prints showing the proposed changes. After approval of changes, four prints of the approved revised plans shall be submitted to the District.

If construction operations are not started within twelve (12) months of the date of approval, the plans must be re-submitted for plan check prior to construction. The re-submitted plans will be checked for conformance with the criteria current at the time of re-submittal. The cost of rechecking plans will be paid by the developer as determined above.

The private engineer shall prepare "RECORD DRAWINGS" on prints of the latest revised plans clearly showing all changes in location and elevation of constructed improvement prior to the project being considered complete. These drawings shall show the configuration, manufacturer, and date of manufacture of all valves. CAD files shall also be submitted.

The private engineer shall submit the "RECORD DRAWINGS" to the District Manager for final inspection and approval. Upon receipt of such approval, the private engineer shall correct and deliver the "as-built" original tracings to the District not later than thirty (30) days after receipt of such approval.

## 1-07 Easement Document Requirements.

All easement documents are to be prepared and submitted on the District's approved format and provided along with plans submitted for plan check review.

Prior to the approval of water system plans, the easement documents must be approved as to form.

Grant deeds for easements are required to be executed by the grantor, re-submitted to the District, and have the Affidavit of Acceptance by the District attached to same prior to the tie-in of the water system.

All required easements will be recorded and a Title Insurance Policy for same in the minimum amount of \$25,000.00 provided to the District prior to issuance of the Fire System Activation Letter.

## 1-08 Compliance with Laws and Regulations

The Contractor shall keep himself informed of all laws, ordinances, and regulations in any manner affecting those employed on the work, or the materials used in the work, and of all orders and decrees of bodies or tribunals having any jurisdiction or

authority over the same. He shall at all times and at no expense to the District observe and comply with, and shall require all his agents, employees, contractors, and subcontractors to observe and comply with all such applicable laws, ordinances, regulations, orders, and decrees in effect or which may become effective before completion of the work. Unless otherwise explicitly provided in these specifications, all permits, and licenses required by other agencies necessary to the prosecution of the work shall be secured by the contractor.

## 1-09

### Protection of Persons and Property

The Contractor shall provide for the protection of all persons and property as herein specified. Attention is called to "General Industry Safety Orders" and "Construction Safety Orders" of the California State Department of Industrial Relations, Division of Industrial Safety, to which the Contractor is required by law to conform. He shall provide himself with copies of these rules and orders. To the extent applicable, the Contractor shall also comply with the provisions of the Safety and Health Regulations for construction promulgated by the Secretary of Labor under Section 107 of the Contract Work Hours and Safety Standards Act, as set forth in Title 29 C.F.R.

The Contractor shall take all necessary measures to protect the work and prevent accidents during the construction. He shall provide and maintain sufficient night lights, barricades, guards, temporary sidewalks, temporary bridges, danger signals, watchmen, and necessary appliances and safeguards to properly safeguard life and property. He shall also protect all excavations, equipment, and materials with barricades and danger signals so that the public will not be endangered.

The Contractor shall so conduct his operations as to offer the least possible obstruction and inconvenience to traffic, and he shall have under construction no greater amount of work than he can handle properly with due regard for the rights of the public. All traffic shall be permitted to pass through the work with as little delay and inconvenience as possible unless otherwise authorized by the County of Los Angeles, the City of Palmdale or Caltrans.

Convenience of abutting property owners shall be provided for as far as practicable. Convenient access to mailboxes, driveways, houses, and buildings adjoining the work, as well as fire hydrants, shall be maintained and temporary approaches to intersections shall be provided and kept in good condition. When a section of surfacing, pavement, or a structure has been completed, it shall be opened for use by traffic at the request of the District. In order that unnecessary delay to the traveling public may be avoided, the Contractor, when so ordered, shall provide competent flagmen whose sole duty shall consist of directing traffic either through or around the work.

Care should be taken to preserve and protect all public and private property and facilities in and around the work site. The Contractor shall be liable for the complete cost of repairing or replacing all such property and facilities damaged or destroyed during the progress of the work.

No valve or other control on the existing system shall be operated for any purpose by the Contractor unless said operation is under the direct supervision of District personnel. Any operation of District facilities without direct supervision of District personnel will be cause for the District to stop work on the project and will be regarded as tampering with a public water system (U.S. Code 300i-1) and could result in imprisonment or fine to the Contractor or Developer responsible. Any damage resulting from said operation will be repaired at the Contractor's expense. Otherwise, the District will operate all valves, hydrants, blow-offs, and curb-stops on the existing system. The District Inspector shall be notified 48 hours prior to the construction of tie-ins to existing lines.

A waiver of liability shall be completed if the Contractor is performing work on District property. The District shall also be added to Contractor's insurance as an additional insured.

## 1-10 Public Notice

### a) Notice of Starting Work:

The Contractor shall provide and distribute to all occupants along the streets of the proposed work, printed notices 8-1/2 inches x 11 inches in size, with wording similar to that shown on the following page 1-12.

### b) Notice of Temporary Shutdown:

Notice shall be given for temporary interruption of service to existing customers no later than twenty-four (24) hours prior to said interruption. Said note to be printed on 8-1/2 inches x 11 inches paper in a format to be approved by the District prior to distribution.

# PUBLIC NOTICE

[Contractor's Company Name] will be conducting construction work on your street on [Day of Week, Month, Date] between [XX a.m.- XX p.m] for the next [X months or days]. As work starts at [Intersection Street Name], proceeds along your street and ends at [Intersection Street Name], we ask for your cooperation and understanding.

We ask that you please:

1. Remain alert when driving/walking by the construction site.
2. Keep children and pets away from the construction area.
3. Report your concerns to [construction superintendent's name] at [contact number].

The work is being performed by [Contractor Company Name] and supervised by [superintendent's name], who can be contacted at [address, and telephone number]. [Contractor Company Name] is being contracted by Palmdale Water District (PWD) for this project.

PWD's Project Manager is [name], who can be reached at [telephone number].

If you have a concern after normal business office hours or have a water emergency, please call PWD's emergency line at 661-947-4114.

Thank you for your cooperation,

[Contractor's Company Name]

# NOTICIA PÚBLICA

[Nombre de la empresa del contratista] llevará a cabo trabajos de construcción en su calle el [Día de la semana, mes, fecha] entre [XX a.m.- XX p.m] durante los próximos [X meses o días]. Como el trabajo comienza en [Nombre de la calle de intersección], continúa a lo largo de su calle y termina en [Nombre de la calle de intersección], le pedimos su cooperación y comprensión.

Le pedimos que por favor:

1. Permanezca alerta cuando conduzca / camine por el sitio de construcción.
2. Mantenga a los niños alejados del área de construcción.
3. Informe sus inquietudes al [nombre del superintendente de construcción] en [número de contacto].



El trabajo está siendo realizado por [Nombre de la empresa contratista] y supervisado por [nombre del superintendente], a quien se puede contactar en [dirección y número de teléfono]. [Nombre de la empresa contratista] está siendo contratado por Palmdale Water District (PWD) para este proyecto. El gerente de proyecto de PWD es [nombre], a quien se puede contactar en [número de teléfono].

Si tiene alguna inquietud después del horario normal de oficina comercial o tiene una emergencia de agua, llame a la línea de emergencia de PWD al 661-947-4114.

Gracias por su cooperación,

**Nombre de la Firma**

## 1-11 Materials and Workmanship

Unless otherwise specified, all materials incorporated in the work shall be new. Materials not otherwise designated by detailed specifications shall be of the best commercial quality, suitable for the purpose intended and approved by the District. Equipment, pipe, fittings, etc. must be transported to the site and installed without damage.

All workmanship shall be in conformance with the best trade practices. Particular attention shall be given to the appearance of exposed work. Any work or workmanship not conforming to the best practices shall be subject to rejection.

The District practices zero tolerance for graffiti, and it is the Contractor's responsibility to protect and maintain facilities are graffiti-free until acceptance.

## 1-12 Project Clean-Up

An orderly job shall be maintained at all times. Tools, debris, and materials shall be stored neatly and removed regularly. There shall be removed from the vicinity of the completed work all material, etc., used during construction. Surfaces shall be returned to a condition acceptable to the District. All excess material shall be disposed of as directed by the District or removed from the work site.

## 1-13

### Guarantee

All parts of the work shall be guaranteed against defective materials or workmanship and against settlement of backfill and any resulting damage to resurfacing for a period of one year from the date of final completion of the work.

The expiration of the one (1) year guarantee period does not limit the developer's liability for work which is done contrary to the plans and specifications. Any Performance Bond provided in accordance with Subsection 1-21 of these Specifications shall remain in full force and effect for the guarantee period. The guarantee period starts from the date of the Bill of Sale completed by the developer.

When such defect or settlement is discovered requiring repairs to be made under this guarantee, all such repair work shall be done at no expense to the District within ten (10) days after written notice has been given by the District. Should the Contractor or Applicant fail to repair the work as directed within ten (10) days thereafter, the District may make the necessary repairs and charge the Developer or Applicant with the actual cost of all labor and materials required.

In the event such defect or settlement is discovered requiring immediate corrective action to be taken in the opinion of the District Manager, the District shall have the right to repair or replace same and to take whatever other action the District deems appropriate to correct same and to charge the Developer with the actual cost incurred by the District.

## 1-14

### Final Completion

As a necessary condition to, and prior to District recognition of final completion of the work, the Applicant shall submit in duplicate to the District:

- a) An itemized cost breakdown of the work including cost per foot, and total footage installed, for each size and type of pipe installed; cost per each and total number of fire hydrants installed; and cost per each and total number installed for each size of service lateral and meter installed.
- b) A bill of sale conveying, at no cost, to the District all facilities installed.
- c) All easement documents recorded, and title insurance policies issued.
- d) A letter requesting a final walk-through or punch list and the completion of all items on said punch list.
- e) Any outstanding balances owed to the District

## Equal Opportunity

During the performance of the public contract, the Contractor agrees as follows:

The Contractor will not discriminate against any employee or applicant for employment because of race, color, religion, sex, or national origin. The Contractor will take affirmative action to ensure that applicants are employed and that employees are treated, during employment, without regard to their race, color, religion, sex, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion, or transfer; recruitment or recruitment advertising; layoff or termination; rates of any or other forms of compensation; and selection for training, including apprenticeship. The Contractor agrees to post in a conspicuous place available to employees and applicants for employment, notices setting forth the provisions of this Equal Opportunity clause.

The Contractor shall, in all solicitations or advertisements for employees placed by or on behalf of the Contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, sex, or national origin.

The Contractor shall send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding a notice advising the said labor union or worker's representative of the Contractor's commitments under this section and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

When applicable to the project, the Contractor will comply with all provisions of Executive Order No. 11246 of September 24, 1965, and of the rules, regulations, and relevant orders of the Secretary of Labor.

- a) The Contractor will furnish all information and reports required by Executive Order No. 11246 of September 24, 1965, and by the rules, regulations, and orders of the Secretary of Labor or pursuant thereto and will permit access to his books, records, and accounts by the administering agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations, and orders.
- b) In the event of the Contractor's noncompliance with the Equal Opportunity clause of this Section or with any of the said rules, regulations, or orders, the Contract may be canceled, terminated, or suspended in whole or in part, and the Contractor may be declared ineligible for further Government federally assisted construction contracts in accordance with procedure authorized in Executive Order No. 11246 of September 24, 1965 or by rule, regulation, or order of the Secretary of Labor, or as provided by law.

- c) The Contractor will include this Equal Opportunity clause in every subcontract or purchase order unless exempted by rules, regulations, or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order No. 11246 of September 24, 1965, so that such provisions will be binding upon each subcontractor or vendor. The Contractor will take such action with respect to any subcontract or purchase order as the administering agency may direct as a means of enforcing such provisions including sanctions for noncompliance; provided, however, that in the event the Contractor becomes involved in, or is threatened with, litigation with a subcontractor or vendor as a result of such direction by the administering agency, the Contractor may request the United States to enter into such litigation to protect the interests of the United States.

The Equal Opportunity requirements of Executive Order No. 11246 are not applicable to Federally assisted contracts:

- 1) Which do not exceed ten-thousand dollars (\$10,000)
- 2) Where work is to be performed entirely outside the United States and no recruitment of workers within the United States is involved; or
- 3) Which are specifically exempt by the Secretary of Labor.

## 1-16 Trench Shoring and Sheet piling

In the event the work will entail construction of any trench or trenches or excavation or excavations which will be five (5) feet or deeper and into which a person will be required to descend, prior to commencing such construction, the Contractor shall obtain a permit from the California Division of Industrial Safety pursuant to Section 6501 of the California Labor Code. Said permit shall be posted at the job site prior to opening of the excavation. A copy of said permit shall be provided to the District prior to the start of construction or excavation requiring same.

In addition, and with respect to Public Contract work involving a Public contract price in excess of twenty-five thousand dollars (\$25,000.00), if any such trenches or excavations will be entailed in the work, prior to commencing such construction, the Contractor shall also submit to the District for approval a detailed plan showing the design of shoring, bracing, sloping, or other provisions to be made for worker protection from the hazard of caving ground during the excavation of such trench or trenches. If such plan varies from the shoring system standards established in Title 8, Article 6, California Division of Industrial Safety Orders, the plan shall be prepared at Contractor's expense by a private engineer registered as a civil or structural engineer.

## 1-17 Preservation of Monuments

All historical monuments, benchmarks, survey marks, and stakes shall be preserved. If such monuments are damaged or destroyed during construction, they shall be repaired or replaced at no expense to the District.

## 1-18 Dust Control

The work shall be conducted to provide control as follows:

- a) No fuel shall be used nor shall any work be conducted which shall emit into the atmosphere any smoke, which is defined as equal to Ringelmann No. 2, or darker.
- b) No work shall be conducted which will emit into the atmosphere any flying dust or dirt which is hazardous to humans or which might constitute a nuisance. Any dirt, dust, or mud that accumulates on streets is to be removed by the end of each workday.

## 1-19 Sanitation

Temporary chemical toilet facilities shall be provided for the use of all workmen. Each toilet building shall be maintained in a sanitary condition at all times, and at the completion of the construction, shall be removed from the site. Pit-type privies shall not be used.

Pure, cool drinking water with individual drinking cups or a sanitary bubbler fountain shall be available at all times.

## 1-20 Shop Drawings

The Contractor shall submit to the District four (4) copies of any shop and erection drawings required by the plans or specifications via CIPO. The District will, within fifteen (15) days, return two copies to the Contractor marked "Rejected", "Approved", or "Approved as Corrected". In the last case, all revisions will be clearly shown on the returned copy, which shall be considered as an approved drawing, and only drawings or prints which are approved shall be used for manufacture.

Revisions shown on the shop drawings shall be considered as changes necessary to meet the requirements of the plans and specifications and shall not be taken as the basis of claims for extra charges. When delay is caused by the re-submission of shop drawings, Contractor shall not be entitled to any damages or extension of time on account of such delay. The corrections on prints marked "Approved as Corrected" shall

be made on the originals as soon as practicable and new prints submitted. District's approval shall be considered as applying only to the general arrangement, and such approval of the revisions to detail shall not relieve the Contractor from entire responsibility for correctness of details and dimensions. Contractor shall correct any misfits due to any errors in the drawings. Any fabrication or other work performed in advance of the receipt of approved shop drawings shall be done entirely at the Contractor's expense.

## 1-21 Contract Bonds

Public Contracts. Simultaneously with the execution of the Agreement, the Applicant shall furnish to the District a bond insuring performance of and full payment for, the work pursuant to the Agreement, Contract, and Specifications in an amount equal to one hundred percent (100%) of the contract price. Insuring performance of the guarantee shall be set forth in Subsection 1-12 of the Specifications in an amount equal to fifty percent (50%) of the contract price. The bond shall be issued by a surety acceptable to the District and shall be released as to insuring such performance and payment of the work immediately upon acceptance of the work by the District and shall be released as to insuring such performance of the guarantee one (1) year after the District's acceptance of the work.

- b) Other Contracts. The Contractor shall furnish to the County of Los Angeles or to the City of Palmdale any bonds specified in the approval document for the improvements issued by the applicable jurisdiction.

The District shall notify the appropriate agency upon final completion of the work to allow the agency to release construction bonds held to the extent the agency's policy dictates.

## SECTION 2 - PIPELINE MATERIALS

### 2-01 General

The work of this section shall include furnishing and installing all pipe, fittings, joints, together with all material, equipment, labor, transportation, supervision, and other items of expense necessary for or incidental to the installation of pressure water mains and appurtenances in accordance with the plans and specifications.

All materials shall be carefully examined at the job site by the Contractor and District Inspector. The pipe and appurtenances shall be new.

## 2-02 Scope

This section defines the materials to be used for pipelines, fittings, joints, and appurtenances.

## 2-03 Cement Mortar Lined and Coated Steel Pipe

Cement mortar lined and coated steel pipe (CMLC Pipe) and fittings shall be furnished and installed in accordance with the plans. Pipe, including special fittings, shall be manufactured in accordance with AWWA C205-18, Cement Mortar Protective Lining and Coating for Steel Water Pipe – 4 inch and larger – Shop Applied, and Fed. Spec. SS-P-385 except as further specified in these specifications.

The pipe shall consist of the following component parts: a welded sheet steel or plate steel cylinder with joints formed integrally with the steel cylinder or with the steel joint rings welded to the ends; a five-sixteenth (5/16) inch cement mortar-lining; a one-half (1/2) inch concentric exterior mortar coating; a self-centering bell and spigot joint with a circular pre-formed rubber gasket so designed that the joint will be watertight under all conditions of service.

Steel for cylinders shall be hot-rolled low carbon steel sheets conforming to ASTM A1011-23. The minimum acceptable yield strength of the steel shall be 33,000 psi, and the minimum wall thickness of any size pipe shall be 10 gauge. Diameter indicated or specified shall be net inside diameter plus or minus one-quarter (1/4) inch after cement mortar-lining. Type II cement shall be used for all mortar-linings and coating.

The exterior of the pipe shall be cement mortar coated. Cement mortar-coating shall be applied in accordance with AWWA C205-18, Cement Mortar Protective Lining and Coating for Steel Water Pipe – 4 inch and larger – Shop Applied and Fed. Spec. SS-P-385. Cathodic protection for CMLC Pipe is required as specified.

a) Joints.

- (1) Rubber Gasket Joints. Rubber gasket joints shall conform to Fed. Spec. SS-P-385 and be made in accordance with Standard Drawings W-9.
- (2) Lap Welded Field Joints. Where indicated on the drawings, lap joints shall comply with AWWA C206-17, Field Welding of Steel Pipes. See Standard. Drawing No. W-9
- (3) Flanged Ends. Pipe section ends required to be fitted with flanges for special fittings and connections, as shown on the drawings, shall

utilize flanges which comply with the requirements of AWWA C207-18, Steel Pipe Flanges for Waterworks Service, Sizes 4-inch through 114-inch, Class "D" for steel hub flanges. No plate flanges shall be used. All flanges shall be flat faces. All flanged spools shall be positioned and tack-welded in place prior to completing the weld. Flange bolts installed underground shall be either galvanized or cadmium plated, thoroughly coated with NO-OX Grease and wrapped with 8 mil polyethylene sheet (AWWA C105/A21.5-18, Polyethylene Encasement for Ductile Iron Pipe Systems). Gaskets for flanged joints shall be one sixteenth (1/16) inch thick for up to twenty-four (24) inch pipe, one-eighth (1/8) inch thick for pipe larger than twenty-four (24) inches. Rubber gaskets shall not be used for flanged connections. Nuts and bolts shall have hex heads.

b) Fittings for Steel Pipe.

All bends, ells, tees, crosses, reducers, and other fittings for mains twelve (12) inches and smaller shall be either Class 150 or Class 250 Steel Flanged Fittings and shall conform to AWWA Standard C207-18, Steel Pipe Flanges for Waterworks Service, Sizes 4-inch through 114-inch, and shall be cement mortar lined and coated per AWWA Standard C205-18, Cement-Mortar Protective Lining and Coating for Steel Water Pipe, 4-inch and larger; or epoxy lined as approved by the District. Fittings for mains larger than twelve (12) inches may be fabricated in accordance to AWWA Standard C208-22, Dimensions for Fabricated Steel Water Pipe Fittings.

c) Connections.

All connections including hot tap for water service shall be with 3,000 lb. weld-on half coupling, welded to the pipe in the shop at time of pipe fabrication. After coupling is welded to the pipe, it shall be covered by mortar coating, so no bare metal is left exposed. Where it is necessary to make the connection in the field, additional care shall be exercised to minimize the damage to mortar linings. Refer to Section 5-06.

## 2-04 Ductile Iron Pipe

Ductile iron pipe shall be designed in accordance with ANSI/AWWA C150/A21.50-21, Thickness Design for Ductile Iron Pipe. Water mains shall be Class 350 (or project requirements, whichever is greater).



Ductile iron pipe shall be manufactured in accordance with ANSI/AWWA C151/A21.51-17, Ductile Iron Pipe, Centrifugally Cast. Each pipe shall be subjected to a hydrostatic pressure test of at least 500 psi at the point of manufacture.

Pipe shall have standard asphaltic pipe coating on the exterior and a double thickness cement mortar lining on the interior in accordance with ANSI/AWWA C104/A21.4-22, Cement-Mortar Lining for Ductile-Iron Pipe and Fittings.

Manufacturers certificates indicating that pipe has been double lined must be submitted with each pipe delivery.

The class or nominal thickness, net weight without lining, and name of manufacturer shall be clearly marked on each length of pipe. Additionally, the letters "DI" or Ductile" and the country where the pipe was cast shall be either cast or stamped on to the pipe.

a) Joints.

All pipe shall be furnished with either Push-On Type Joints, such as "Tyton" or "Fastite", or Mechanical Joints. Joints shall be in accordance with ANSI/AWWA C111/A21.11-23, Rubber-Gasket Joints for Ductile Iron Pressure Pipe and Fittings, and be furnished complete with all necessary accessories.

Push on Restraint: When restraining push on joints adjacent to restrained fittings, a harness restraint device shall be used. All harnesses shall have a pressure rating equal to that of the pipe on which it is used through 14". Harness assemblies, including the bolts, shall be manufactured of ductile iron conforming to ASTM A536-84. Field lok gaskets are acceptable.

b) Fittings for Ductile Iron Pipe.

Fittings shall be ductile iron. Ductile iron fittings shall conform to either ANSI/AWWA C110/A21.10-21 Ductile Iron and Gray Iron Fittings or ANSI/AWWA C153/A21.53-19 Ductile Iron Compact Fittings. Fittings shall have a standard asphaltic coating on the exterior and a double thickness cement mortar lining on the interior in accordance with ANSI/AWWA C104/A21.4-22, Cement Mortar Lining for Ductile-Iron Pipe and Fittings.

All fittings and accessories shall be furnished with Mechanical Joints in accordance with ANSI/AWWA C111/A21.11-23, Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings. Retaining glands will be required on all Mechanical Joint fittings. The design of all connections between ductile

iron pipe and other types of pipe shall be submitted to the District for approval prior to ordering the connection materials.

c) Mechanical Restrained Joints.

Restrained joint fittings shall be provided at all tees, crosses, reducers, bends, caps, plugs, and valves such that the pipe is fully restrained in any one given direction.

Mechanical Restrained Joints shall meet Uni-B-13 for PVC and be UL/FM approved through 12" for both ductile iron and PVC. The restraint mechanism shall consist of individually activated gripping surfaces to maximize restraint capability.

Twist-off nuts, sized the same as the tee-head bolts, shall be used to insure proper activating of restraining devices. The gland shall be manufactured of ductile iron conforming to ASTM A536-84. The retainer-gland shall have a pressure rating equal to that of the pipe on which it is used through 14" with a minimum safety factor of 2. See Standard Drawings W-21, W-22, and W-23.

d) Installation of Ductile Iron Pipe and Fittings.

All pipe, fittings, and accessories shall be installed and tested in accordance with AWWA Standard C600-17, Installation of Ductile Iron Water Mains and Their Appurtenances. Newly installed ductile iron water mains shall be disinfected in accordance with AWWA Standard C651-14 Disinfecting Water Mains, prior to placing in service.

e) Connections.

All connections for water service shall be made with malleable iron double strap service saddle as shown on Standard Drawing No. W-1 and W-1A, refer to Section 5-07. Hot tapping instructions stated in Section 4-21.f)

f) Short Pipe Lengths.

Short lengths of pipe no less than one half the length of a standard pipe section shall be used only where necessary to permit the deflections required for abrupt changes of grade or short radius curves. If short lengths of pipe are required to necessitate placing a valve or fitting on station, the short length shall be installed a minimum of one full pipe length away from said fitting, otherwise joint restraints will be required.

## 2-05 Polyvinyl Chloride (PVC) Pipe

Polyvinyl Chloride (PVC) pipe and joints shall be designed and manufactured in accordance with ANSI/AWWA Standard C900-22, Polyvinyl Chloride (PVC) Pressure Pipe, and Fabricated Fittings 4-inch through 60 inch for Water Distribution, and Appendix B of said Standard. All pipes shall have a dimension ratio (DR) as shown on the approved plans. If the DR is not specified, DR 18 shall be installed.

Pipe markings shall be in accordance with ANSI/AWWA Standard C900-22, Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4-inch through 60-inch for Water Distribution, including the seal (mark) of the testing agency which verified the suitability of the pipe material for potable-water service. An affidavit of compliance to specifications shall be provided for all delivered materials.

a) Fittings for Polyvinyl Chloride (PVC) Pipe.

Fittings shall be ductile-iron and shall conform to either ANSI/AWWA Standard C110/A21.10-21, Ductile Iron and Gray Iron Fittings, or ANSI/AWWA C153/A21.53-19, Ductile Iron Compact Fittings Class 350. All fittings shall be cement mortar lined per ANSI/AWWA Standard C104/A21.5-22, Cement-Mortar Lining for Ductile Iron Pipe and Fittings.

All fittings and accessories shall be furnished with mechanical joints in accordance with ANSI/AWWA Standard C111/A21.11-23, Rubber Gasket Joints for Ductile Iron Pressure Pipe and Fittings. All fitting joints shall have Mechanical Restrained Joints.

The design of all connections between Polyvinyl Chloride (PVC) Pipe and other types of pipe shall be submitted to the District for approval prior to ordering the connection materials.

Mechanical Restrained Joints: Restrained joint fittings shall be provided at all tees, crosses, reducers, bends, caps, plugs, and valves such that the pipe is fully restrained in any one given direction.

Mechanical Restrained Joints shall meet Uni-B-13 for PVC and be UL/FM approved through 12" for both ductile iron and PVC. The restraint mechanism shall consist of individually activated gripping surfaces to maximize restraint capability. Twist-off nuts, sized the same as the tee-head bolts, shall be used to insure proper activating of restraining devices. The gland shall be manufactured of ductile iron conforming to ASTM A536-84. The retainer-gland shall have a pressure rating equal to that of the pipe on which it is used

through 14" with a minimum safety factor of 2. See Standard Drawings W-18, W-19, and W-20.

b) Curves and Bends.

Changes in alignment and grade may be made by deflecting the pipe units at joints as provided herein and pipe units shorter than standard length may be required. Pipe joints shall not be deflected more than half of the manufacturer's recommendation. Pipe with factory installed couplings shall be deflected not more than half the allowable deflection for field installed couplings.

If necessary, alternate methods of providing curves in pipelines other than shown on the plans may be submitted to the District for approval.

Where no radius is given at minor Points of Intersection, the deflection angle shall be accomplished by making the deflection at one or more couplings as required.

Short lengths of pipe no less than one half the length of a standard pipe section shall be used only where necessary to permit the deflections required for abrupt changes of grade or short radius curves. If short lengths of pipe are required to necessitate placing a valve or fitting on station, the short length shall be installed a minimum of one full pipe length away from said fitting, otherwise Mechanical Restrained Joint will be required.

c) Identification Wire.

Identification wire shall be installed with all Polyvinyl Chloride (PVC) Pipe. The wire shall be insulated 14-gauge copper and shall be installed as detailed on Standard Drawing No. W-8. The wire shall be placed on the top of the pipe on the centerline of the pipe. The wire shall be fastened securely at four (4) foot intervals and at each joint or fitting with an eight (8) inch length of two (2) inch wide duct tape or other approved method. All splices to be encapsulated with rubber sealing tape and shall be in hydrant pads where possible. Refer to PWD List of Approved Materials and Standard Drawing W-8. The wire shall be tested prior to issuance of Fire System Activation Letter to ensure continuity. Testing must be witnessed by the District Inspector.

d) Connections.

All connections for water service shall be made with a bronze service saddle set with double stainless-steel straps as shown on Standard Drawing No. W-1

and W-1A and stated in section 5-07. Hot tapping instructions stated in Section 4-21. Refer to PWD List of Approved Materials

e) Underground Marking Tape.

Underground marking tape shall be installed with all pipe materials. The tape shall be placed one (1) foot above the pipe with the lettering facing up. It shall be six (6) inches wide, blue in color, with the following wording: "Caution - Water Line Buried Below", stretchable, and constructed of six (6) ply high-density copolymer. Refer to PWD List of Approved Materials.

f) Push on Restraint.

When restraining push on joints adjacent to restrained fittings, a harness restraint device shall be used. All harnesses shall have a pressure rating equal to that of the pipe on which it is used through 14". Harness assemblies, including the bolts, shall be manufactured of ductile iron conforming to ASTM A536-84.

## **SECTION 3 - VALVES, FIRE HYDRANTS, AND APPURTENANCES**

### **3-01 Gate Valves**

Unless otherwise specified, no gate valves larger than ten (10) inches shall be used.

All gate valves must equal or exceed the requirements of standards for gate valves and resilient-seated gate valves, AWWA C500-19, Metal-Seated Gate Valves for Water Supply Service or AWWA C509-23, Resilient-Seated Gate Valves for Water Supply Service.

Valves supplied shall be resilient seated wedge, with O-ring seals, non-rising stems, two (2) inch operation nut, opening left.

Valves specified "with handwheels" shall be supplied with operating handwheels instead of two (2) inch operating nut.

Valve ends shall conform to AWWA standard; flanged ends per AWWA C110/A21.10-21, Ductile Iron and Gray Iron Fittings, as required for steel pipe; or mechanical joints as required for ductile iron and polyvinyl chloride (PVC) pipe.

Valves shall be suitable for buried service and horizontal mounting. Valves shall be adequately anchored for thrust in accordance with the requirements of these specifications and as shown in the Standard Drawing W-4.

a) Gate Valves Two and One-half (2-1/2) Inches and Smaller.

Valves shall conform to Fed. Spec. WW-V-54, Type III, Class C, and style as required. Valves shall be supplied with operating handwheels.

### 3-02 Check Valves

All check valves must equal or exceed the requirements of standards for check valves, AWWA C508-17, Swing-Check Valves for Waterworks Service, 2-in through 48-in. All check valves shall have an unrestricted opening with an adjustable controlled closure rate so that valve slamming is reduced to an absolute minimum upon instantaneous shut-off. Valves shall be mounted vertically between ANSI required class flanges. Body shall be ductile iron or steel. Disc and shaft shall be stainless steel 18-8 or 303. It shall be complete with hydraulic or pneumatic cushion chamber, counterweight, and accumulator for hydraulic operators. Seat ring shall be replaceable and shall be Viton or Teflon. Refer to PWD List of Approved Materials.

### 3-03 Plug Valves

Plug valves shall be used only where specified.

Plug valves shall be lubricated, have a semi-steel body, and tapered plug with dry film coating on seating surface with adjustable 3-bolt gland assembly sealed by double o-rings. The plug shall be removable through the top of the valve. The valves shall be designed for the working pressures shown on the plans.

Unless approved otherwise, valves shall have flanged ends and shall be equipped for totally enclosed worm gear operating with a two (2) inch square operating nut where called for on plans. Other valves shall be lever operated. Valves shall be equipped with lubricator extensions as indicated on the plans.

### 3-04 Butterfly Valves

Butterfly valves, if shown on the plans, shall meet AWWA C504-23, Rubber-Seated Butterfly Valves for rubber seated, tight closing valves. Valves shall be flanged-pattern short body, and shall be ductile iron, shaft or stainless steel 18-8 Type 304, disc of Ni-Resist Type 1. They shall be Class 150 unless noted on the plans. Valve operators shall be waterproof, suitable for buried service and equipped with a two (2) inch square operating nut. Where possible, operators shall be placed on the side of

the pipeline nearest the curb, opposite centerline of street. Valves shall be adequately anchored for thrust in accordance with the requirements of these specifications and as shown in the Standard Drawing W-4. Concrete pads shall be poured under butterfly valves adequately anchored for thrust.

All butterfly valves shall be field tested in the presence of the District prior to installation for compliance with Section 5 of AWWA C504-23, Rubber-Seated Butterfly Valves. This includes performance, leak, and hydrostatic testing. Factory certification is not an acceptable substitute for field testing. Any valves not tested will be rejected.

Contractor shall coordinate with pipe manufacture to ensure free movement of valve disc within the pipe.

### 3-05 Combination Air and Vacuum Valve Assemblies and Blow-off Assemblies

a) General.

Combination air and vacuum valves and blow-off valves shall be installed in the pipeline at locations shown on the plans. The tap for the air valves and/or blow-off valves shall be made in a level section of pipe, no closer than twenty-four (24) inches from any machined section of pipe, rubber gasketed joint, or flanged joint.

Where practical, connections to steel pipe for combination valve assemblies and/or blow-off assemblies shall be made with a 3,000 lb. half weld-on coupling welded to the pipe in the shop at time of fabrication.

Where it is necessary to make the connection in the field, additional care shall be exercised to minimize the damage to mortar-linings. Wherever connections can be made dry, the coupling shall be welded to the pipe and the mortar lining repaired. The exterior concrete lining shall be repaired, and two heavy coats of coal tar enamel paint applied to all exposed steel fittings in conformance with AWWA C203-20, Coal-Tar Protective Coatings & Linings for Steel Water Pipe.

b) Combination Air and Vacuum Valve Assemblies.

The Contractor shall install in the water main combination air and vacuum valve assembly as shown on Standard Drawing W-16 at locations detailed on the plans and sized in accordance with manufacturers recommendations.

Generally, one (1) inch assemblies are used for eight (8) inch and smaller mains, and two (2) inch assemblies for larger mains.

c) Blow-off Valve Assemblies.

The Contractor shall install blow-off assemblies as detailed on the plans. Valves and fittings shall equal or exceed the pressure rating of the pipe to which they are attached. Materials and required fittings are shown on Standard Drawings W-6, W-6A, and W-7. The blow-off valves shall be adequately sized for blow-down of water lines. For 2" or larger, contractor to provide calculations to District for review.

### 3-06 Fire Hydrant Assemblies

a) General.

Fire hydrant assemblies shall include the connection to the main and shall consist of fire hydrant and appurtenances in accordance with these specifications and as shown on the Standard Drawings W-2 and 3

b) Location.

Fire hydrant risers shall be located on lot lines or at intersections a minimum of five (5) feet beyond curb radius ends and shall set back from face of curb two (2) feet. Distances in each case are measured from the centerline of the fire hydrant riser.

Gate valves shall be located adjacent to the water main.

c) Materials.

Fire hydrants shall be six (6) inches x four (4) inches by two and one-half (2-1/2) inches. All valve operating stem ends shall be equipped with pentagonal dummy nuts the same size as the nozzle cap ends. Refer to PWD List of Approved Materials.

Fire hydrants shall be ductile iron.. All hydrants must conform to AWWA C503-21, Wet-Barrel Fire Hydrants, and in all cases must be approved by the County of Los Angeles, Forester, and Fire Warden. Fire hydrant tops shall be tapped for two and one-half (2-1/2) inch I.P.T. at the discretion of the District, as needed.

Fire hydrant risers and runners shall be a full six (6) inches inside diameter pipe. The type of pipe shall be ten (10) ga. CMLC steel as described in Section



2-04 of these specifications when installed with asbestos cement or steel pipe. The riser shall be ductile iron with an eight (8) hole patterned flange.

All required bolts, nuts, and gaskets shall be provided. Bolt holes shall be seven-eighths (7/8) inches in diameter, and bolts shall be three-quarter (3/4) inches by three (3) inches machined bolts. Bolts at hydrant flange shall be zinc-plated hollow bolts, installed with nuts on bottom. Only hexagonal nuts and bolts will be permitted. All bolts provided must be a minimum length of at least three threads past nut when tightened.

All hydrants shall be painted with one (1) coat of red primer and two (2) finish coats of Rust-Oleum Safety Yellow or approved equal. The Contractor shall apply an additional finish coat after installation.

### 3-07 Location of Appurtenances

The District reserves the right to direct the location of all valve marker posts, air release valve assemblies, and blow-off valve assemblies within the road right-of-way or easement to ensure proper drainage and to minimize interference with traffic.

### 3-08 Valve Boxes and Covers

Valve boxes for buried valves shall be installed with eight (8) inch Schedule 40 PVC pipe risers. The entire valve box assembly shall be per Standard Drawing No. W-5.

### 3-09 Meter Boxes

Meter boxes shall be furnished and installed as shown on the plans or in the Standard Drawings.

Meter boxes shall be furnished according to the following schedule:

- a) Three-quarter (3/4) inch water service and meter: Refer to PWD List of Approved Materials.
- b) One (1) inch water service and meter: Refer to PWD List of Approved Materials.
- c) One and one-half (1-1/2) inch or two (2) inch water service and meter: Refer to PWD List of Approved Materials.
- d) Two (2) inch blow-off assembly: Refer to PWD List of Approved Materials.
- e) Water sampling station: Refer to PWD List of Approved Materials.

### 3-10 Flexible Couplings

Flexible couplings shall have all stainless-steel nuts and bolts and be either stainless steel bodies or all epoxy lined and coated. Flanged couplings adapters, clamp type mechanical couplings are listed in PWD List of Approved Materials. Clamp type mechanical couplings shall be for pipes with grooved ends for water service and able to withstand a pressure equal to the strength of the pipe to which they are attached.

### 3-11 Reduced Pressure Detector Assembly (RPDA)

All projects that are required to provide on-site fire protection will be required to install a USC-approved reduced pressure detector assembly (RPDA) that is sized appropriately to meet the projects on-site fire protection requirements. RPDAs shall also be field tested by a certified testing firm prior to issuance of Fire System Activation Letter. Testing shall be done at one-year intervals thereafter until the project is accepted.

### 3-12 Large Meters (3" and Larger)

Large meter assemblies, when required, shall be completely contained in a vault and include sufficient valving and by-pass capabilities to allow the meter to be serviced, removed, or tested without interrupting water service to the customer. Serial number of the large meters shall be clearly labelled on the body of the meter or within the register. The large meter and vault must be fully detailed on improvement plans. The vault shall have the following features:

- a) A 3/8" aluminum diamond plated cover with a spring-loaded access cover;
- b) A ladder; and
- c) A concrete floor sloped to a sump constructed per Standard Drawing W-12.

The large meter, registers, and automatic reading system shall be manufactured and assembled as a complete unit and shall be accompanied by certification from the manufacturer that the automatic reading system is appropriate and an integral part of same. Certification of bench test accuracy shall be provided at the time of delivery of the unit. The remote readers shall accurately reflect the actual meter readings.

Large meters shall also be field tested for accuracy by a certified testing firm prior. Testing shall be done at one-year intervals thereafter until the project is accepted. All registers of the meter shall comply with the AWWA C715-18(R22), Cold-Water Meters – Electromagnetic and Ultrasonic Type For Revenue Applications, standard for accuracy. All flanged bolts and appurtenances shall be painted a minimum of two

(2) coats of automotive grade non-lead red primer. See PWD List of Approved Materials.

### 3-13 Flange Insulation Kits

Flange insulation kits are required for connections between ductile mains and steel mains or services. Flange insulation kits shall be installed as shown on approved plans or as directed by the District. Refer to PWD List of Approved Materials.

## SECTION 4 - PIPELINE INSTALLATION

### 4-01 Scope

This section covers the installation of pipelines and appurtenances, including trenching, laying, backfill, compaction, restoring street surfaces, and clean-up.

### 4-02 Shop Drawings

Wherever proposals for alternate methods or materials, special conditions, require approval of the District, detailed shop, fabrication, or erection drawings shall be provided by the Contractor for District approval as specified in Section 1-20 to accommodate the rate of construction.

### 4-03 Control of Water

The Contractor shall furnish, install, and operate all necessary machinery, appliances, and equipment to keep excavation sufficiently free from water during construction of the work to permit proper laying and jointing and shall dispose of water so as not to cause injury to public or private property or to cause a nuisance or a menace to the public.

### 4-04 Excavation

The Contractor shall perform all excavations for pipelines and appurtenances of whatever substances encountered to the depths indicated or otherwise required. Excavated material suitable for backfilling shall be piled in an orderly manner a minimum of two (2) feet from the excavated banks to avoid overloading and to prevent slides or cave-ins. Such grading shall be done as may be necessary to prevent surface water from flowing into trenches. Any water accumulating therein shall be removed by pumping away from the excavation so that it does not reenter or other approved means. Such sheeting and shoring shall be installed as may be necessary for protection of the work and safety of personnel in accordance with O.S.H.A. requirements.

Excavations in earth and in rock shall be carried to six (6) inches below bottom of pipe. Bell holes and depressions for couplings, valves, and the like shall be excavated the same distances below these installations. The materials excavated shall be used in the backfill or removed and disposed of by Contractor as required and specified by the District Engineer.

The overnight use of trench plates will be allowed only upon written request by the Contractor or Developer subject to approval by the District.. Trench plates shall be non-skid, a minimum of one-inch thick, and rated for H.D.-20 loading or greater. The excavation beneath the plate shall be shored, and the plates must be either pinned to the existing surface and ramped with temporary asphalt or counter-sunk flush to the surface. If two or more adjoining plates are to be used, they shall be tack-welded together. In the event that pending inclement weather or other conditions, as determined by the District, may adversely affect the use of plates, said plates shall be removed, and the excavation shall be backfilled, and the surface secured with temporary asphalt. The placement of trench plates shall be in accordance with the requirements of and meet the approval of the governmental agencies having jurisdiction.

Unless otherwise approved by the District prior to the beginning of construction, the length of open trench shall not exceed 500 feet including excavation, pipeline installing, and backfill in any one location. Minimum trench width shall be as required for proper assembly and joint inspection, but in no case less than twelve (12) inches greater than nominal pipe diameter. Maximum allowable width of trench for all pipelines measured at the top of the pipe shall be the outside diameter of the pipe (exclusive of all bells or collars) plus sixteen (16) inches, and such maximum shall be inclusive of all timbers. All open trenches will be backfilled to the compaction requirements and to the satisfaction of the District Inspector by the end of each workday.

#### 4-05 Location of Existing Facilities

Contractor shall excavate and locate existing utilities and culverts prior to Final Approval. All pavements shall be cut or sawed a minimum eight (8) inches wider than the trench prior to trenching.

#### 4-06 Depth of Pipe

Unless otherwise shown on the plans, all water mains shall have a coverage of forty-eight (48) inches between top of pipe to top of curb or forty-two (42) inches between top of pipe to finished surface.

#### 4-07 Changes in Line and Grade

The alignment of the pipeline is shown on the plans.

In the event obstructions not shown on the plans are encountered during the progress of the work, which will require alterations to the plans, the Developer's Engineer shall submit proposed changes to the District for approval. The Contractor shall not make any deviation from the specified line or grade without prior approval by the District.

#### 4-08 Handling and Storing Materials

During storage, handling, and transporting, every precaution shall be taken to prevent damage to pipe. Pipe shall be handled only by means of fabric slings or other approved methods for the pipe used. Pipe shall be stored onsite on wood blocks with open ends temporarily capped. PVC shall be covered or otherwise protected from UV. Refer to AWWA C600 for ductile iron, C605 for PVC, M11 for CMLC for pipe storage.

Valves, fittings, hydrants, and other accessories shall be loaded and unloaded by lifting with hoist or skidding, so as to avoid shock or damage. Under no circumstances shall such materials be dropped. Any disapproved materials shall be removed from the job site immediately.

In distributing the material at the site of work, each piece shall be unloaded opposite the place where it is to be laid in the trench.

Steel and ductile iron pipe shall be handled so that the lining and coating will not be damaged. If, however, any part of the coating is damaged, repair shall be made by the Contractor at his expense to manufacturer's specifications.

#### 4-09 Installing Pipe

The Contractor is required to coordinate all installation of the various utilities so that the storm drain, sewer and curb and gutter are constructed prior to the water main installation. The Contractor shall, after excavating the trench and preparing the proper bedding for the pipe, furnish all necessary facilities for properly lowering and placing sections of the pipe in the trench without damage and shall properly install the pipe. The sections of pipe shall be fitted together correctly and shall be laid true to line and grade in accordance with elevations established by the Engineer. In the absence of curb and gutter, the Contractor shall submit a letter via CIPD accepting the liability of installing improvements by survey staking versus actual location of other improvements (i.e. curb, sanitary sewer, etc). Construction stakes shall be set by a

registered civil engineer or licensed land surveyor indicating line and grade and location of all valves, fire hydrants and appurtenances.

The maximum stake interval shall be fifty (50) feet. The full length of the barrel of the pipe shall have a uniform bearing upon six (6) inches of bedding material, but if the pipe has a projecting bell, suitable excavation shall be made to receive the bell which shall not bear on the subgrade. The requirement for closely fitting the bottom of the pipe to the bedding material for the width shown on the drawings will be strictly enforced.

Pipe shall be laid uphill. Pipe shall be true in alignment, both vertical and horizontal, and shall not show any undue settlement after laying. No pipe shall be laid which is damaged, cracked, checked, or spalled, or has any other defect deemed by the District to make it unacceptable. All such sections shall be permanently removed from the work.

At all times when the work of installing pipe is not in progress, all openings into the ends of the installed pipelines shall be kept tightly closed with suitable bulkheads to prevent the entrance of animals, foreign materials, and water.

The pipe trench shall be kept free from water at all times, and the Contractor shall take all necessary precautions to prevent the pipe from floating due to water entering the trench from any source, shall assume full responsibility for any damage due to this cause, and shall, at his expense, restore and replace the pipe to its specified condition and grade if it is displaced due to floating or due to any other reason.

All pipelines adjoining concrete structures shall have a flexible joint at eighteen (18) inches from the face of such concrete structures.

Before lowering and while suspended or standing vertically at trench side, the pipe shall be inspected for defects. Any defective, damaged, or unsound material shall be rejected.

a) Ductile Iron or Polyvinyl Chloride (PVC) Pipe.

Pipe shall be laid true to line and grade. Pipe shall be installed in accordance with AWWA C600-17, Installation of Ductile-Iron Water Mains and Their Appurtenances and AWWA C605-21/C900-22, Underground Installation of Polyvinyl Chloride (PVC) and Molecularly Oriented Polyvinyl Chloride Pressure Pipe and Fittings/ Polyvinyl Chloride (PVC) Pressure Pipe and Fabricated Fittings, 4-inch through 60-inch. All pipe on curves shall be assembled straight and laid over. The maximum joint deflection shall be as herein before specified. The rubber rings shall be checked after installation with a gauge supplied by the manufacturer to ensure that the ring is properly

seated. If, for any reason, the ring is not properly seated, the joint shall be pulled apart and satisfactorily remade.

At all locations where pipe is to be encased or cradled in concrete, the pipe shall be wrapped with a minimum of two (2) layers of fifteen (15) pound, asphalt-impregnated roofing felt in such a manner that the concrete does not form a bond with the pipe.

Identification wire shall be installed with all non-metallic pipe. The wire shall be insulated, 14-gauge copper, and shall be installed as detailed on Standard Drawing No. W-8. The wire shall be placed on the top of the pipe and the centerline of the pipe. The wire shall be fastened securely at intervals of four (4) feet and at each joint or fitting with an eight (8) inch length of two (2) inch wide duct tape or other approved method.

Underground marking tape shall be installed with all non-metallic pipe. The tape shall be placed one (1) foot above the pipe with the lettering facing up. It shall be six (6) inches wide, blue in color, with the following wording: "Caution - Water Line Buried Below", stretchable, and constructed of six (6) ply high-density copolymer. Refer to PWD List of Approved Materials.

For large-diameter PVC pipe, Contractor shall follow AWWA/manufacturer approved installation method.

b) Steel Pipe.

Joining sections of welded steel pipe with rubber gasket joints shall be accomplished by placing the rubber gasket in the spigot groove before the section is lowered into the trench and lubricating the bell end of the last section laid with an approved lubricant to reduce the friction of the entering gasket. The spigot end shall then be inserted in the bell end of the pipe in place and forced into position without injury to the pipe or gasket. Care shall be taken to ensure that the spigot is fully entered into the bell and a "feeler" gauge used to check the position of the rubber gasket. Just prior to joining the two ends together, each end of pipe shall be "buttered" with cement mortar in such a manner and in sufficient quantity to completely fill the space between the respective mortar linings. The mortar shall be composed of one (1) part of Portland Cement of the same type used in the lining and coating, two (2) parts of sand by volume, and one-eighth (1/8) part fire clay with sufficient water added to give the mixture a stiff consistency. The mixture shall not be held over one (1) hour then shall be discarded and no re-tempering by addition of water shall be allowed. Epoxy concrete adhesive shall be applied to the metal prior to coating of field fabrications or minor repairs on both coating and lining

that the District may allow. After the jointing is completed, the pipe interior shall be swabbed to remove all excess mortar by drawing an approved type swab or squeegee through the pipe. After the field joints have been completed and inspected, the joint exterior shall be thoroughly cleaned.

Pipe bonding devices to provide electrical continuity shall be installed in accordance with the pipe manufacturers recommendations.

The outside joint recess shall be grouted with cement mortar after a fabric diaper has first been placed around the joint and tightened securely to prevent leakage while the mortar is being poured. The diaper shall be made of heavy-duty polyethylene fabric or other approved material of sufficiently close weave to prevent cement loss from the mortar. The fabric shall be hemmed on each edge and shall contain a metal strap within each hem sufficiently longer than the circumference of the pipe to allow a secure attachment of the diaper to the pipe. The diaper shall be centered on the joint and positioned to provide a mortar coating of the pipe ends equal in thickness to the mortar coating on the pipe. The mortar shall be the same as for the interior joints except that it shall contain sufficient water to produce a creamy consistency. Prior to placing the mortar, the joint and diaper shall be moistened with water. The joints shall be poured and rodded or manipulated by hand to remove air bubbles from one side only until the mortar comes up to the top of the diaper on the opposite side. The mortar shall completely fill the outside annular space between the ends of the pipes around the entire circumference of the joint.

If required by the District, the diaper shall be removed, and the grouted joint inspected after the adjacent pipe sections have been sufficiently covered with backfill material to bring the pipe to a normal in-place temperature. The joint shall be repaired, if necessary, and given a heavy coating of Hunt Process Concrete Curing Compound or curing compound (Hunter equal) at the earliest practicable time after the mortar has hardened sufficiently.

Field welded joints shall be in conformance with AWWA C206-17, Field Welding of Steel Water Pipe.

## 4-10 Foundation Rock

Where ground water is encountered or the native material does not afford a solid foundation for pipe subgrade as specified herein, the Contractor shall excavate to such depths below the subgrade as the District decides is necessary and shall construct a stable base by placing foundation rock upon which pipe bedding can be prepared. Foundation rock shall be three-quarter (3/4) inch aggregate base material.



## 4-11 Protective Coatings

All otherwise uncoated buried steel surfaces, including nuts and bolts, shall be thoroughly coated with NO-OX Grease and then be wrapped with 8 mil polyethylene sheet per AWWA C-105/A21.5-18, Polyethylene Encasement for Ductile Iron Pipe Systems. V-Bio film for the pipe is required.

## 4-12 Shop Painting

All exposed ferrous metal surfaces, including any pipe supports, shall be shop painted unless otherwise shown on the plans.

a) Surface Preparation.

All rust, loose scale, and foreign matter shall be removed from surfaces to be coated by wire brushing or sandblasting. Oil and grease shall be removed with cleaning solvent, and surfaces shall be dry.

b) Coating.

Surfaces which will be in contact with the earth and are to receive a field applied coating as specified elsewhere shall be shop-painted in accordance with AWWA C203-20, Coal Tar Protective Coatings and Linings for Steel Water Pipe.

Exposed surfaces shall be shop-painted with one coat of red primer.

## 4-13 Anchor and Thrust Blocks

Anchor and thrust blocks shall be installed at fittings and valves and, where directed by the District, in accordance with details shown on Standard Drawing W-4. Excavations and forms for thrust and anchor blocks shall be examined by the District's authorized representative prior to placement of concrete. Thrust blocks shall be constructed of five-sack concrete and shall bear against undisturbed soil and shall be allowed to cure until an adequate strength has been obtained, at least forty-eight (48) hours, prior to pressurizing the pipe. No quick setting additives shall be used. Any flanged fittings coming in contact with concrete shall be thoroughly wrapped, including the bolts and nuts, with a layer of 8 mil polyethylene film. Form work shall be constructed of sandbags wherever necessary to confine the concrete to the prescribed dimensions for the block.

## Hydrostatic Tests

After the pipe backfill has been completed and accepted, the pipe shall be subjected to a hydrostatic pressure test as hereinafter specified. The District shall be notified twenty-four (24) hours prior to testing. An Inspector shall be present at all tests.

Each water main shall be filled with potable water and shall be tested in sections of convenient lengths as determined by the range of elevations within the test section which shall result in test pressure within the limits hereinafter specified. Testing against valves will not be permitted.

The test pump and gauge shall be connected to the water main at a location other than the highest point in the line in order to facilitate release of air from the high point. The gauge shall be approved by the District.

The test pressure at the location of the testing equipment shall be computed on the basis of the relative elevations of the test gauge and the lowest point in the pipe section being tested and shall result in a pressure equal to the pressure classification of the pipe plus 50 psi at the lowest point in said pipe section. The test pressure at the highest point in the pipe test section shall not be less than 110 percent of pressure classification.

This test shall be made on all sections of water main in order that all pipe, valves, fittings, fire hydrants, connections, and water services may receive the test. The test pressure shall be maintained continuously by pumping for a period of one (1) hour. Pumping shall then be discontinued for one (1) hour and the drop in pressure read on the dial of the gauge at the end of the second hour and recorded. The initial test pressure shall then be restored by pumping, and the quantity of water pumped into the line to accomplish this shall be measured accurately. If there is any sign of leakage or failure at any point on the line during the test, the test shall be discontinued until the same has been repaired after which the test shall be repeated until the pipe section tested shall have met the above requirements. The test shall be performed and accepted only in the presence of District's authorized representative.

The following latest standards should be followed to calculate and determine the maximum allowable leakage rate:

**Steel Pipe**

AWWA C604-17

**Ductile Iron Pipe**

AWWA C600-17

Contractor shall furnish and install, at his own expense, all corporation stops, temporary pipe, fittings, connections, equipment, bulkheads, R.P.B.D.'s, and bracing required for the tests and shall be responsible for any and all damage resulting from failure under test of material furnished and installed by him, or from faulty workmanship, negligence, or improper test methods.

All defective joints, cracked, or defective pipe, fittings, valves, hydrants, or service connections shall be removed and replaced by Contractor with sound material. Tests shall be rejected until satisfactory results are obtained as determined by the District.

Before applying the specified test pressure, care shall be taken to ensure the expulsion, through hydrants, air release valves, services, or by other suitable means, of all air within the pipe and appurtenances to be tested.

#### **4-15      Disinfection of Water Mains and Services**

All water mains, water services, attached appurtenances, and temporary connections, if any, shall be disinfected in accordance with AWWA C651-14, Disinfecting Water Mains, and the following requirements:

Chlorine shall be applied to the water in sufficient quantity to produce a dosage of not less than 50 ppm in all sections of the line, services, and appurtenances. Treated water shall be retained in the system for a period of twenty-four (24) hours minimum and shall produce not less than twenty-five (25) ppm in all sections being disinfected at the end of the twenty-four (24) hour period. Chlorination shall be done using a chlorine gas/water or sodium hypochlorite solution. Chlorine dosage not-to-exceed one hundred (100) ppm under normal conditions.

The chlorinated water may be used later, if practicable, for water settling operations in connection with backfilling, for testing other mains, or if not so used, Contractor shall properly dechlorinate and dispose of the water. District will not be responsible for loss or damage resulting from such disposal.

Contractor shall install corporation valves in accordance with Standard Drawing W-1 of the proper size wherever necessary to chlorinate or sample and/or dispose of any chlorinated water. Contractor shall furnish and install at his own expense, all materials and labor needed to perform chlorination on all segments of newly installed pipes. There shall be no separate payment for tapping and installing connections which are for filling, testing, sampling, or chlorination or flushing only.

Temporary taps for bacteriological samples shall be installed every 500 feet on main lines where there are no other outlets available for sampling.

Disinfecting the main and services, hydrostatic testing, and preliminary retention may run concurrently for the required twenty-four (24) hour period, but in the event, there is leakage and repairs are necessary, additional disinfection may be required.

During the chlorination process, all valves and accessories shall be operated.

After the required period of retention of the chlorine or hypochlorite solution, a District representative will test the water for residual chlorine and any further tests which may be required.

After chlorination, the water shall be flushed from the line at its extreme ends until the replacement water is chemically and bacteriologically equal to the permanent source of water supply. One set of samples for bacterial analysis will be taken not less than twenty-four (24) hours later by the District and sent to the District's laboratory for analysis. The disinfection will not be considered complete until the supply is in conformance with the public health standards for drinking water and pseudomonas aeruginosa is no greater than the water source. The number of samples required will be as determined by the District, and the cost of processing shall be borne by the Developer.

If the tests are not satisfactory, Developer shall provide additional disinfection as required at no extra cost to the District.

## 4-16 Water

District will provide water at the standard metered rate to perform all necessary operations. No other water shall be used unless test results are provided proving the water meets all applicable quality standards at point of connection to system. Contractor shall bear the cost of any necessary testing and connections and install any necessary facilities to obtain water, unless stated on the drawings.

## 4-17 Pipeline Trench Restoration

### a) Placing of Pipe Zone Bedding and Backfill Material.

All pipe zone backfill from a depth of six (6) inches below the bottom of the pipe to twelve (12) inches above the top of the pipe shall be imported fill sand having a minimum sand equivalency of 30 per ASTM D2419-22. The six (6) inch bedding layer shall be placed and compacted to a minimum of 90% of the maximum density of the material at optimum moisture content. The pipe shall

then be installed after which the remaining imported pipe zone material up to twelve (12) inches above the top of the pipe shall be placed and compacted in lifts, if necessary, to said relative compaction of 90%.

b) Backfilling Pipe Trenches Above the Pipe Zone.

Backfill in pipe trenches above the pipe zone shall be a structural fill accomplished by filling and compacting the trench in lifts of depths that will permit obtaining a minimum compaction of 90% of the maximum density of the material at optimum moisture content.

All backfill materials shall be placed in such a manner as to not disturb the pipe or damage its coating. Impact, free fall, hydro hammer, or similar compaction equipment shall not be used for compaction in water system trenches.

Existing roadway concrete structures like cross gutters, curbs and gutters, and similar shall have a minimum of 1-sack to 1 ½ slurry beneath the structure and remain in place for the installation of pipelines where boring is not possible. The concrete structure shall be removed and reinstalled to 5-feet on either side of the centerline of the pipeline unless a cold joint exists within the 5-ft. Slurry or cement-treated backfill material will not be allowed in trench unless approved by the General Manager.

c) Trench Backfill Compaction Tests.

An independent geotechnical engineering firm having a State of California licensed laboratory to make soils compaction tests at any point or points, or depths as required by the District as the trench is backfilled. The minimum number of tests shall be shown on the plans. In the event any of said tests indicate that the trench compaction is less than the compaction above described, the Contractor will be required, at his own expense, to remove placed trench material in the zone or zones directed by the District. Contractor shall replace and compact said trench material to meet the requirements of this specification. Compaction re-tests will be required on re-compacted material and at the expense of the contractor. No compaction tests shall be spotted by the District until all utilities have been installed.

d) Asphalt Resurfacing.

Asphalt resurfacing, where required, shall be accomplished in accordance with the requirements of and meet the approval of the governmental agencies having jurisdiction, such as the Los Angeles County Road Department, the City of Palmdale, or Caltrans.

## 4-18 Valves

All main line valves shall be located on the property line or utility easement prolongation in the street unless otherwise indicated by the District. All gate valves up to eight (8) inches shall be flanged. Valves greater than ten (10) inches shall be flanged butterfly valves.

All valve box risers shall be of eight (8) inch Schedule 40 PVC pipe. All valve risers shall be adjusted so that the valve box lid will be flush with the finished street grade per Standard W-5.

Valves shall be installed plumb and in alignment with the pipe. Each valve shall be operated prior to its installation to assure proper functioning.

## 4-19 Fire Hydrants

### a) Location.

Hydrants shall be located as shown or as directed and, in a manner, to provide complete accessibility and also in such a manner that the possibility of damage from vehicles or injury to pedestrians will be minimized. When placed behind the curb, the centerline of the hydrant barrel shall be set twenty-four (24) inches behind the face of curb unless specifically stated on approved plans.

The installation of the hydrants shall be in accordance with Standard Drawing No. W-2, and W-3.

### b) Position.

All hydrants shall stand plumb and shall have their nozzles facing the curb at an angle of forty-five (45) degrees. Hydrants installed where there is no curb shall have the four (4) inch nozzle facing the street. Hydrants shall be set to the established grade as shown in Standard Drawings W-2, W-2A, W-3, or W-3A.

### c) Fire Hydrant Barricades.

When required, fire hydrant barricades shall not obstruct the outlets and shall be constructed per Standard Drawing W-14 or W-15.

## 4-20 Connections to Existing Water Lines

No connection to the existing system shall be made until after the new system has been completed and fully accepted by the District.

In the locations shown on the drawings, the Contractor shall cut and machine existing water pipes and install the new fittings and lines as specified or noted. The Contractor shall make all connections within a maximum shutdown period required by the District.

If, in the opinion of the District, the connection cannot be accomplished within the required shutdown period, the connection shall be made at night or on weekends. The District will supervise operation of all existing valves necessary for the shutdown.

Contractor shall be responsible for handling dewatering from existing main, prevent cross contamination of existing water system, dechlorination, and disposal of water.

## 4-21 Hot Tapping of Existing Water Line

Pressure taps are allowed only as shown on approved plans.

All hot taps shall either be performed by the District or an experienced licensed contractor specializing in said work. Contractors must have a proved ability and experience to perform hot taps, hold a current underground contractor's license, and carry sufficient insurance as determined by the District and be approved by the District prior to commencing said work.

Existing mains to be tapped must be cleaned. The area required to be cleaned shall be either the diameter of the hot tap plus seven (7) inches or the full diameter of the main to be tapped when full circle reinforcement is required.

Approved tapping sleeves will be required for size-on-size taps and only allowed when approved by a District Inspector/Engineer. Tapping sleeves shall be installed in accordance with the manufacturer's instructions. The pipe barrel shall be thoroughly cleaned with a wire brush to provide a smooth, hard surface for the sleeve. The sleeve shall be independent of the pipe during the tapping operation. The sleeve shall be hydrostatic tested in the presence of the District representative prior to tapping. Thrust blocks shall be provided at the tapping sleeve after tap is completed.

The following steps are then required prior to hot tapping:

### a) Steel Mains.

The nozzle shall be welded to the main after cleaning. It shall then be blind flanged and air tested to 100 psi. The pressure must hold for a minimum of three minutes. The test must be done in the presence of a District Inspector.

After passing the air test, the reinforcement ring shall be placed and welded continuously on edges to the existing main and to the nozzle pipe.

b) Ductile Iron and PVC Mains.

Mechanical tapping sleeves are required. After cleaning, the sleeve shall be bolted to the main and a blind flange placed on the nozzle. An air test shall then be performed as described above. Ductile iron and PVC hot tapping shall be made with mechanical tapping sleeves. Refer to PWD List of Approved Materials.

c) Asbestos Concrete Mains.

Mechanical tapping sleeves are required. The tapping sleeve shall be installed in accordance with the manufacturer's instructions and to the satisfaction of the District representative. Refer to PWD List of Approved Materials.

## 4-22 Sewer Crossings

The alternative construction criteria in this document apply to sewer laterals that cross above a water main, but not to those that cross below a water main. Water mains and non-potable pipelines conveying sewage or other liquids should never be installed in the same trench.

### 4.0 CALIFORNIA CODE OF REGULATIONS- BASIC REQUIREMENTS

A. New water mains and raw water supply lines shall not be installed in the same trench as, and shall be at least ten feet (10') horizontally from, and one foot (1') vertically above any parallel pipeline conveying:

- a. Untreated/Sanitary Sewage
- b. Recycled Water
- c. Hazardous fluids such as fuels, industrial waste etc.

B. New water mains and raw water supply lines shall be installed at least four feet (4') horizontally from, and one foot (1') vertically above any parallel pipeline conveying:

- a. Storm Drainage



b. Disinfected tertiary recycled water

C. New supply lines conveying raw water to be treated for drinking purposes shall be installed at least 4 feet horizontally from, and one foot vertically below, any water main

D. If crossing a pipeline conveying any of the non-potable fluids listed in paragraphs A and B above, a new water main shall be constructed perpendicular to and at least one foot (1') above that pipeline. No connection joints shall be made in the water main within ten feet (10') measured from the outside wall of the non-potable fluid pipeline.

E. New water mains shall not be installed within one hundred feet (100') of any sanitary landfill, wastewater disposal pond, or hazardous waste disposal site, or within twenty-five feet (25') of any cesspool, septic tank, sewage leach field, or groundwater recharge project site.

F. The minimum clear distances between the water pipe bell or flange and other utility pipes, ducts, and/or structures shall be as follows for water pipe four inches (4") diameter and larger:

a. Thirty inches (30") for adjacent or parallel utilities.

b. Sixty inches (60") for adjacent or parallel high pressure, high voltage, or other high-risk utilities.

c. Twelve inches (12") vertical clearance for perpendicular or crossing utilities.

## 5.0 ALTERNATIVE CONSTRUCTION CRITERIA

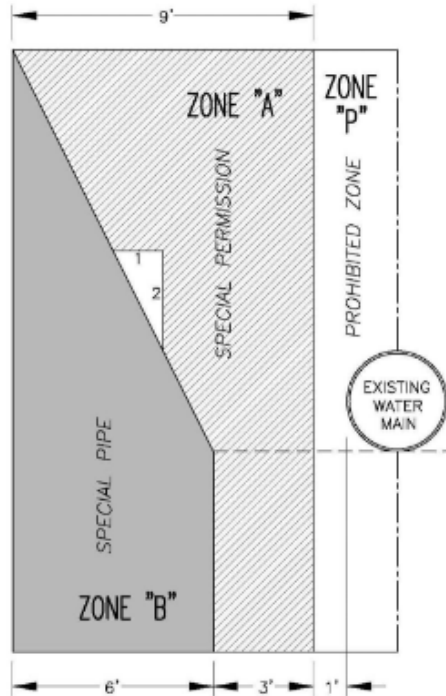
When new water mains and new sanitary sewer mains are being installed in existing developed areas, local conditions (e.g., available space, limited slope, existing structures) may necessitate installing them at a distance less than the Basic Requirements. In such cases, PWD may approve alternative construction criteria.

Any application proposing alternative construction criteria must demonstrate how additional mitigation measures will be instituted to ensure no increased public health risk. Appropriate

alternative construction criteria for four different cases where basic separation requirements cannot be met are shown in Figures 1 through 4.

- Figure 1 - New Sewer Main parallel to Existing Water Main.
- Figure 2 - New Sewer Main crossing Existing Water Main.
- Figure 3 - New Water Main parallel to Existing Sewer Main.
- Figure 4 - New Water Main crossing Existing Sewer Main.

NOTE: Dimensions shown in the figures are from the outside wall of the water main to the outside wall of the other pipeline, manhole, or sleeve.



**FIGURE 1**

**NOTES:**

1. ZONES IDENTICAL ON EITHER SIDE OF EXISTING PIPE
2. ZONE "P" IS A PROHIBITED AREA. SECTION 64630 (e) CALIFORNIA CODE OF REGULATIONS, TITLE 22

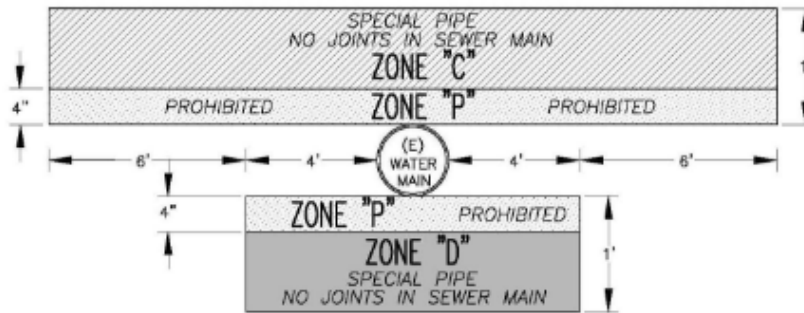
<b><u>Zone</u></b>	<b><u>Alternative Construction Criteria</u></b>
--------------------	---

- |          |   |
|----------|---|
| <b>P</b> | Construction within Zone "P" is prohibited.   |
| <b>A</b> | The new parallel sewer main shall not be permitted in Zone "A" without prior written approval from the City.  |
| <b>B</b> | <p>The new parallel sewer main within Zone "B" shall be constructed of one of the following:</p> <ol style="list-style-type: none"> <li>1. A continuous section of HDPE pipe with no joints.</li> <li>2. HDPE pipe with electro-fusion joints (per AWWA C906-99).</li> <li>3. PVC sewer pipe with rubber ring joints (per ASTM D3034) contained within a continuous outer sleeve or encased in 2-sack cement slurry.</li> </ol> |

Alternative Construction Criteria

CROSSING CONSTRUCTION FOR NEW

SEWER MAIN AND EXISTING WATER MAIN



**FIGURE 2**

**NOTES:**

1. ZONES IDENTICAL ON EITHER SIDE OF EXISTING PIPE
2. ZONE "P" IS A PROHIBITED AREA. SECTION 64630 (e) CALIFORNIA CODE OF REGULATIONS, TITLE 22

**Zone                      Alternative Construction Criteria**

The existing water main shall be constructed of one of the following within four feet (4') feet from either side of the new sewer main:

1. A continuous section of ductile iron pipe with no joints.
2. Ductile iron pipe with "MEGALUG" mechanical joints
3. Any other pipe material contained within a continuous outer sleeve or encased in 2-sack cement slurry.

- C**      New sewer main crossing above the existing water main in Zone "C" should be constructed of a continuous section of HDPE pipe (per AWWA C906-99) with no joints within ten feet (10') of the water main:
- P**      Prohibited.
- D**      New sewer main crossing below the existing water main in Zone "D" should be constructed of a continuous pipe of HDPE pipe (per AWWA C906-99) with no joints within four feet (4') of the water main:

Alternative Construction Criteria

PARALLEL CONSTRUCTION FOR NEW

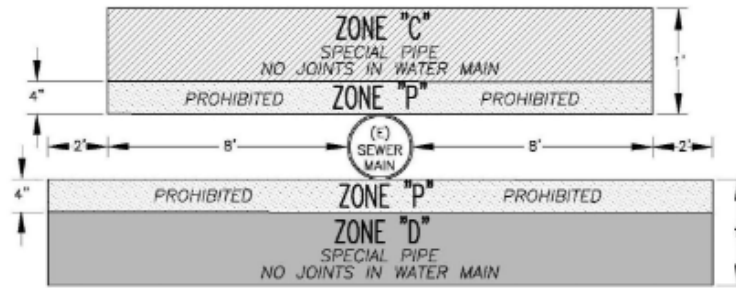
WATER MAIN AND EXISTING SEWER MAIN



1. ZONES IDENTICAL ON EITHER SIDE OF EXISTING PIPE  
2. ZONE "P" IS A PROHIBITED AREA. SECTION 64630 (e) CALIFORNIA CODE OF REGULATIONS, TITLE 22

1. A continuous section of HDPE pipe with no joints.
2. HDPE pipe with butt-fused or electro-fusion joints (per AWWA C906-99).
3. Any other pipe material contained within a continuous outer sleeve or encased in 2-sack cement slurry.

- 50



**FIGURE 4**

**NOTES:**

1. ZONES IDENTICAL ON EITHER SIDE OF EXISTING PIPE
2. ZONE "P" IS A PROHIBITED AREA. SECTION 64630 (a) CALIFORNIA CODE OF REGULATIONS, TITLE 22

<b><u>Zone</u></b>	<b><u>Alternative Construction Criteria</u></b>
--------------------	---

The existing sewer main should be constructed of one of the following within four feet (4') from either side of the new water main:

1. A continuous pipe of HDPE or ductile iron pipe with no joints.
2. HDPE pipe with electro-fusion joints (per AWWA C906-99).
3. Any other pipe material contained within a continuous outer sleeve or encased in 2-sack cement slurry.

**C** New water main crossing above the existing sewer main in Zone "C" should be constructed of a continuous pipe of ductile iron pipe with hot dip bituminous coating and no joints within eight feet (8') of the sewer main:

**P** Prohibited.

**D** New water main crossing below the existing sewer main in Zone "D" should be constructed of one of the following within ten feet (10') of the sewer main:

1. A continuous pipe of ductile iron pipe with hot dip bituminous coating and no joints.
2. Ductile iron pipe with hot dip bituminous coating and "MEGALUG" mechanical joints.

Alternative Construction Criteria

CROSSING CONSTRUCTION FOR NEW

WATER MAIN AND EXISTING SEWER MAIN

## 6.0 SEWER FORCE MAINS AND WATER MAINS

1. Sewer force mains shall not be installed within ten feet (10') horizontally of a water main.
2. When a sewer force main must cross a water main, the crossing should be as close as practical to the perpendicular. The sewer force main should be at least one foot (1') below the water main.
3. When a new sewer force main crosses under an existing water main, and a one foot (1') vertical separation cannot be provided, all portions of the sewer force main within eight feet (8') measured from the outside wall of the water main should be enclosed within a continuous outer sleeve or encased in 2-sack cement slurry. In these cases, a minimum vertical separation distance of 4 inches (4") shall be maintained between the bottom edge of the water main and the top of the continuous sleeve.
4. When a new water main crosses over an existing sewer force main, the water main shall be constructed of pipe materials with a minimum rated working pressure of 200 psig or the equivalent.

## 7.0 STORM DRAINS AND WATER MAINS

The basic separation criteria for water mains and storm drains are a four feet (4') horizontal separation where lines are running parallel and one foot (1') vertical separation (water line above storm drains) where the lines cross each other.

## 8.0 MISCELLANEOUS GUIDANCE

More stringent requirements may be necessary if conditions such as high groundwater exist; HDPE or similar pipe may be required to provide flexibility to move without potential joint leaks. Sanitary sewer mains should not be installed within 25 feet horizontally of a low head (5 psig or less pressure) water main. New water mains and sanitary sewer mains should be pressure tested in accordance with manufacturer's specifications. When installing new water mains, sewers, or other pipelines, measures should be taken to prevent or minimize disturbance of existing pipes. Disturbance of the base materials supporting the existing pipes could eventually result in pipeline failure. Special consideration should be given to the selection of pipe materials if corrosive conditions are likely to exist. These conditions may be due to soil type and/or the nature of the fluid conveyed in the pipe, such as septic sewage producing corrosive hydrogen sulfide.

## SECTION 5 - SERVICE LINES

### 5-01 Location of Service Lines

- a) The trench for a single service diameter size ranging from (3/4") to (2") shall have a minimum width of ten (10) inches and a depth of thirty (30) inches below the existing or finished grade throughout the length of service. Services larger than two (2) inches shall be detailed in supplementary drawings which will be furnished to the Contractor if such larger size is specified.
- b) Services in existing, paved streets shall be installed by boring under the pavement, where practicable.
- c) Size of services shall be as shown on the plans, as specified, or as determined by the District.
- d) In general, each service shall start at the new water main and shall extend to the meter location at an elevation determined by Standard Drawing W-1 or W-1A and the existing grade at the meter location. Each service shall be connected to the corporation valve at the main and an angle valve shall be installed at its end in the meter box location.
- e) The locations of the meter boxes shall be as indicated on the plans or as directed by the Inspector. No meter box shall be installed closer than five (5) feet from the edge of a driveway apron.
- f) Single service lines shall not be less than five (5) horizontal feet from sewer laterals.
- g) In no case shall a service or other tap be made in a main closer than twenty-four (24) inches to a bell, coupling, joint, fitting, or another service tap.
- h) A single service line is required for each metered connection. However, two individual services may be installed in a single twenty-four (24) inch wide trench excavated approximately along the projection of a lot line common to any two (2) lots. In such cases, service taps on the main shall not be less than two (2) feet apart.
- i) Meter will be purchased from the District and installed by Contractor. Water services shall be installed by Contractor only when indicated on the plans.



- j) Services shall be tested and disinfected in the same manner as specified elsewhere herein for water mains. These operations shall be performed concurrently with the testing and disinfecting of the water mains where practicable.

## 5-02 Corporation Valves and Angle Valves

All corporation valves and angle valves shall be same size as the service size. Corporation valves shall have male iron pipe threads on the inlet.

All valves shall have a circular waterway of service line diameter. All nuts, washers, and contact surfaces shall be faced to a true fit. All tapers shall be carefully ground and show no leakage under hydrostatic test. All valves shall be finished in a neat and workmanlike manner, and the thickness of metal shall be equal around the axis of the circular way. All burrs on the inside of valves shall be carefully removed leaving a clean, smooth waterway. All valves, including copper tubing connections, shall be field tested with the water main as noted above.

All valves shall be sand cast of high-grade bronze conforming to ASTM B62-17. District shall have the right to take one or more from each lot and have them analyzed.

## 5-03 Copper Tubing

Copper tubing shall be required for all services. It shall be seamless copper water tube, Type K, cold drawn, and annealed of the size shown on the plans. It shall be true, smooth, clean on both inside and outside, and free from any cracks, seams, or other defects. It shall be truly cylindrical, of the full specified outside and inside diameters and of uniform thickness of metal and shall conform to ASTM B88-22. The tubing shall be continuous between the main line and the meter with no splices permitted. All copper tubing shall be wrapped with 20 mil tape within 18" of the water main inclusive of corporation valve for ductile iron.

## 5-04 Fittings

All fittings shall have copper flare and/or compression connections. All joints shall be made in accordance with manufacturers' recommendations.

## 5-05 Connections to Asbestos Cement Mains

All connections for water services shall be made with a bronze double strap service clamp as shown on Standard Drawing W-1 and W-1A.

## 5-06 Connections to Cement Mortar Lined and Coated Steel Mains

Where practical, connections for water services shall be made with 3,000 lb. weld-on half coupling, welded to the pipe in the shop at time of pipe fabrication. After coupling is welded to the pipe, it shall be covered by mortar coating, so no bare metal is left exposed. Where it is necessary to make the connection in the field, additional care shall be exercised to minimize the damage to mortar linings.

## 5-07 Connections to Polyvinyl Chloride (PVC)

All connections for water services shall be made with a bronze service saddle with double stainless-steel straps, positioned as shown on Standard Drawing W-1 and W-1A. Refer to PWD List of Approved Materials.

## 5-08 Connections to Ductile Iron Mains

All connections for water services shall be made as shown on Standard Drawing W-1 and W-1A.

## 5-09 Water Meters

All water meters shall include an approved Automatic Meter Reading System. Water meters shall be purchased from the Water District. Meters must be paid for and ordered from the District a minimum of thirty days prior to date of need.

## 5-10 Pressure Regulators

All services at 80 psi or greater must be equipped with pressure regulators. Regulators may not be installed within the meter box. All pressure regulators shall be installed on the property and are maintained by the property owner.

## 5-11 Cross Connection Protection

All cross-connection protection shall conform to Appendix F in the District's Rules and Regulations. In addition, all plumbing between meter and backflow prevention assembly must be visually inspected and approved by Cross Connection Specialist or District Inspector. Said assemblies shall be placed as close as practical to meter. Backflows to be tested within seven (7) days of activation of service and submitted to the District for approval.

# **PALMDALE WATER DISTRICT**

## **Standard Specification Drawings**



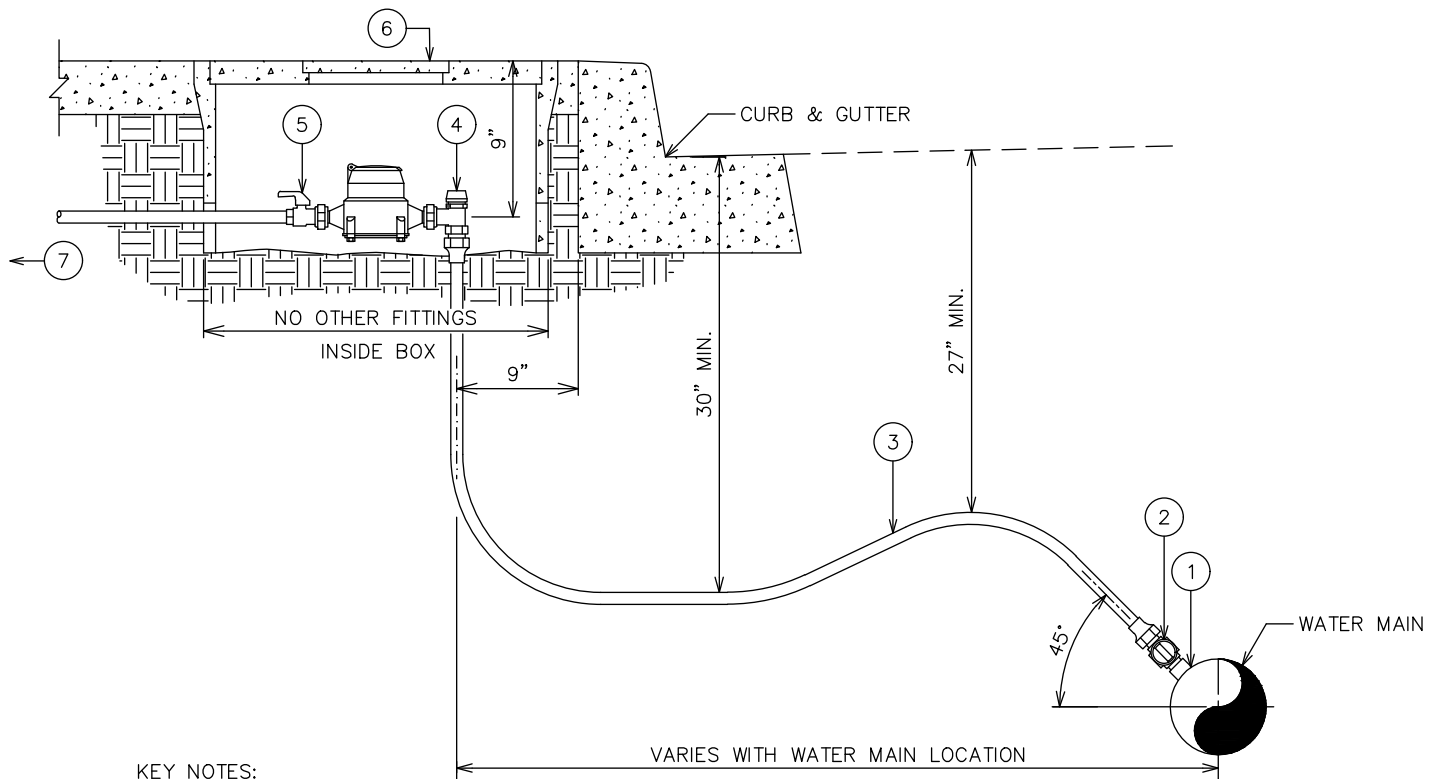
**July 2025**

**PALMDALE WATER DISTRICT**

**2029 EAST AVENUE Q, PALMDALE, CA 93550**

**661-947-4111**

**[www.palmdalewater.org](http://www.palmdalewater.org)**



KEY NOTES:

1. ALL METER BOXES WILL BE SET BEHIND CURB SECTION SO THERE IS 2" TO 4" BETWEEN BACK OF CURB & METER BOX. METER BOX TO BE SET TO SIDEWALK GRADE. NO METER BOX SHALL BE LOCATED CLOSER THAN 5'-0" FROM EDGE OF DRIVEWAY APRON.
2. ALL METER BOXES NOT SET IN A SIDEWALK AND CURB SECTION WILL BE SET IN A CONCRETE PAD 12" THICK AND 12" WIDE AROUND THE BOX. COMPACTION TO BE FIRM AND UNYIELDING. METER WILL BE SET NEXT TO THE PROPERTY LINE AND OUTSIDE THE TRAVELED AREA. METER BOX COVERS TO COME COMPLETE WITH POLYMER CONCRETE COVER W/QUICK READ PORT. COVERS MAY BE REQUIRED TO BE TRAFFIC RATED UPON DISTRICT DISCRETION.
3. DISTRICT WILL APPROVE ALL LOCATIONS OF METER BOXES.

\*REFER TO LIST OF APPROVED MATERIALS

- ① 3000 LB. WELD ON HALF COUPLING FOR 3/4" & 1" SERVICE CONNECTIONS ON STEEL PIPE. DOUBLE STRAP BRASS SERVICE SADDLES FOR 3/4" & 1" SERVICE CONNECTION ON ASBESTOS CEMENT PIPE. DOUBLE STRAP MALLEABLE IRON SADDLES WITH DIELECTRIC BUSHINGS FOR DUCTILE IRON PIPE. EQUAL FOR P.V.C. PIPE. ALL SADDLES TO BE GREASED AND WRAPPED. WRAP SERVICE WITH 10 MIL TAPE WITHIN 18" OF BUSHING FOR D.I. PIPE. TYPE OF SADDLES MAY BE DETERMINED BY THE DISTRICT DURING PLAN CHECK REVIEW.
- ② 3/4" & 1" BALL TYPE CORPORATION VALVE WITH MALE I.P.T. ON THE INLET. SET CORPORATION VALVE AT 45° ON 3/4" AND 1" SERVICE CONNECTIONS.
- ③ TYPE "K" SOFT COPPER TUBING SERVICE LINE.
- ④ BALL ANGLE METER VALVE W/ LOCKWING FOR 3/4" & 1" TUBING.
- ⑤ CUSTOMER SHUT-OFF VALVE FOR 3/4" AND 1" (SHORT HANDLE) SERVICES.
- ⑥ 12" x 20" x 12" METER BOX W/SENSUS COMPATIBLE READING LID FOR 3/4" SERVICES AND 13" x 24" x 12" METER BOX W/SENSUS COMPATIBLE READING LID FOR 1" SERVICES.
- ⑦ APPROVED BACKFLOW PREVENTION DEVICE IS REQUIRED FOR ALL DEVELOPMENT OTHER THAN SINGLE FAMILY RESIDENCES.

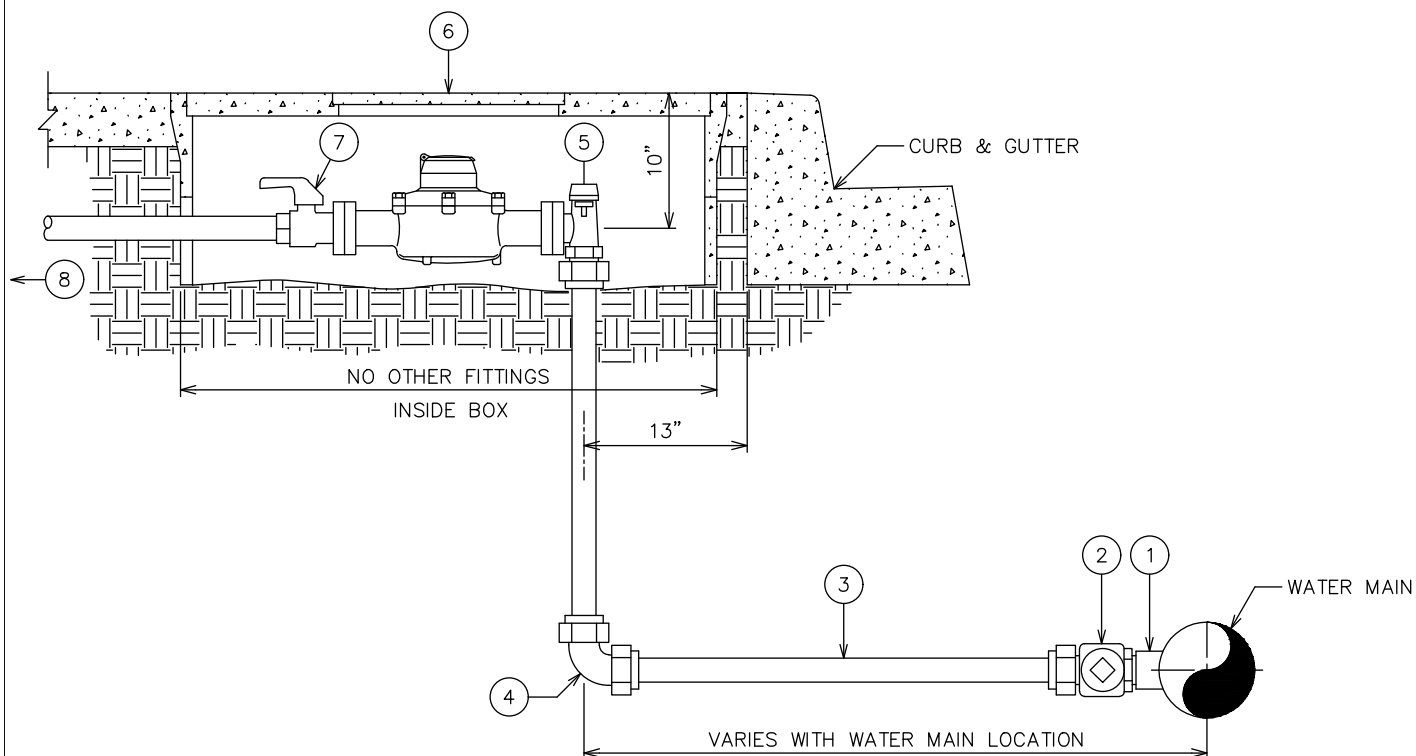


**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

**TYPICAL SERVICE CONNECTION**  
(3/4" AND 1")

W-1



KEY NOTES:

1. ALL METER BOXES WILL BE SET BEHIND CURB SECTION SO THERE IS 2" TO 4" BETWEEN BACK OF CURB & METER BOX. METER BOX TO BE SET TO SIDEWALK GRADE. NO METER BOX SHALL BE LOCATED CLOSER THAN 5'-0" FROM EDGE OF DRIVEWAY APRON.
2. ALL METER BOXES NOT SET IN A SIDEWALK AND CURB SECTION WILL BE SET IN A CONCRETE PAD 12" THICK AND 12" WIDE AROUND THE BOX. SOIL COMPACTION TO BE FIRM AND UNYIELDING. METER WILL BE SET NEXT TO THE PROPERTY LINE AND OUTSIDE THE TRAVELED AREA. METER BOX COVERS TO COME COMPLETE WITH POLYMER CONCRETE COVER W/QUICK READ PORT. COVERS MAY BE REQUIRED TO BE TRAFFIC RATED UPON DISTRICT DISCRETION.
3. DISTRICT WILL APPROVE ALL LOCATIONS OF METER BOXES.

\*REFER TO LIST OF APPROVED MATERIALS

- ① 3000 LB. WELD ON HALF COUPLING FOR 1-1/2" & 2" SERVICE CONNECTIONS ON STEEL PIPE. DOUBLE STRAP BRASS SERVICE SADDLES FOR 1-1/2" & 2" SERVICE CONNECTIONS ON ASBESTOS CEMENT PIPE. DOUBLE STRAP MALLEABLE IRON SADDLES WITH DIELECTRIC BUSHINGS FOR DUCTILE IRON PIPE. EQUAL FOR P.V.C. PIPE. ALL SADDLES TO BE GREASED AND WRAPPED. WRAP SERVICE WITH 10 MIL TAPE WITHIN 18" OF BUSHING FOR D.I. PIPE. TYPE OF SADDLES MAY BE DETERMINED BY THE DISTRICT DURING PLAN CHECK.
- ② 1-1/2" OR 2" BALL TYPE CORPORATION VALVE WITH MALE I.P.T. ON THE INLET. SET CORPORATION VALVE HORIZONTAL ON 1-1/2" & 2" SERVICE CONNECTIONS.
- ③ TYPE "K" SOFT COPPER TUBING SERVICE LINE AND COMPRESSION FITTINGS WILL BE USED.
- ④ COMPRESSION 90° ELBOW COUPLING.
- ⑤ BALL ANGLE METER VALVE WITH LOCKWING (JONES NO. E-1975W) FOR 1" & 2" TUBING OR APPROVED EQUAL WITH FULL-FACE OR DROP-IN GASKET.
- ⑥ 17" x 30" x 12" METER BOX AND COVER W/SENSUS COMPATIBLE READING LID.
- ⑦ BALL STRAIGHT METER VALVE WITH HANDLE FOR 1-1/2" & 2" TUBING WITH FULL-FACE OR DROP-IN GASKET.
- ⑧ APPROVED BACKFLOW PREVENTION DEVICE IS REQUIRED FOR ALL DEVELOPMENT OTHER THAN SINGLE FAMILY RESIDENCES.



PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

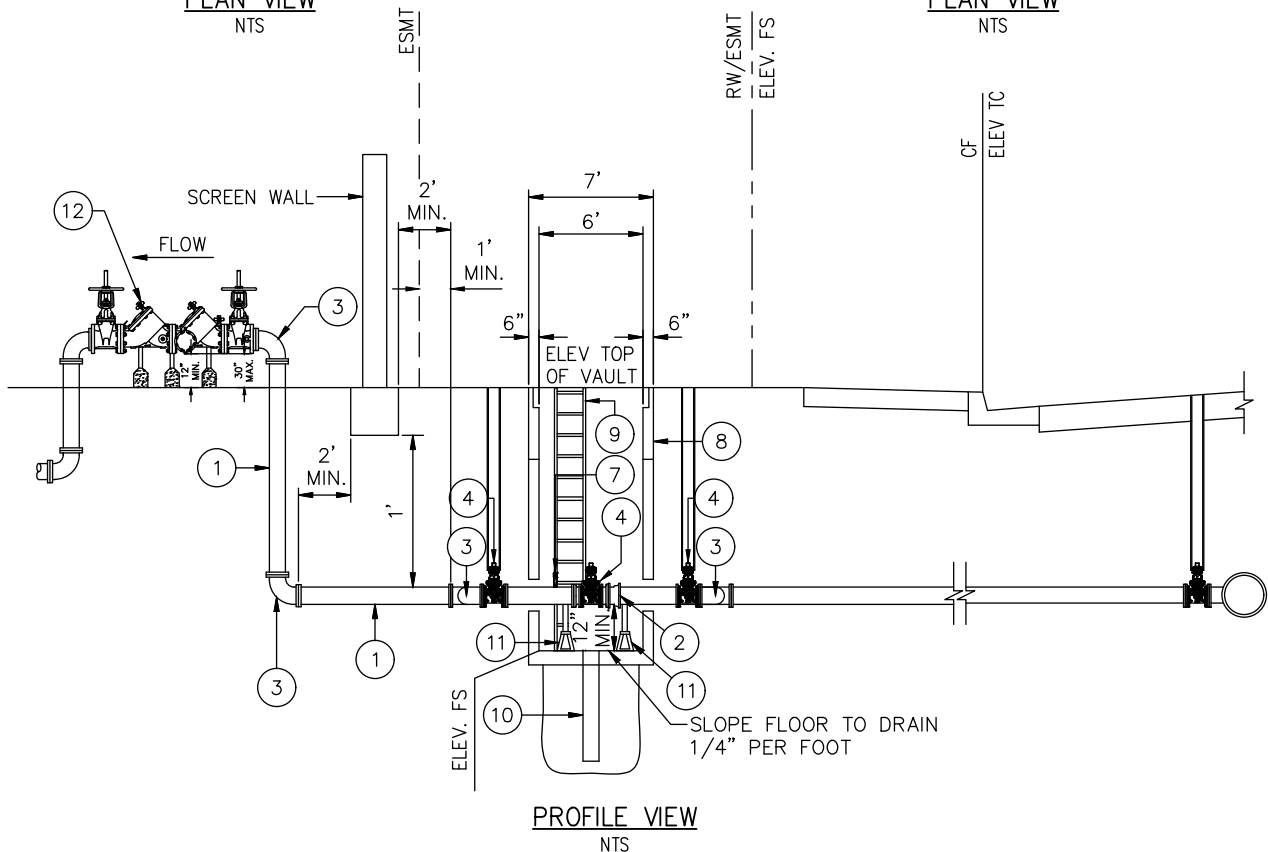
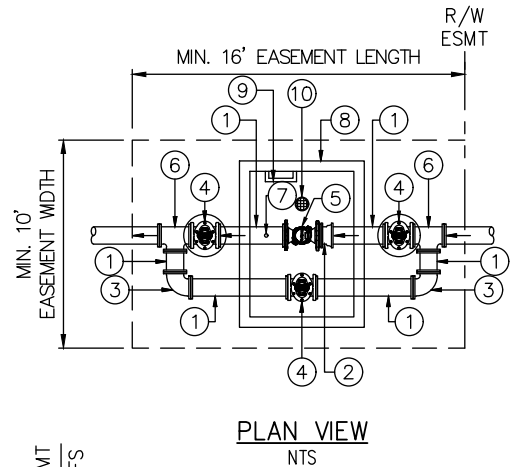
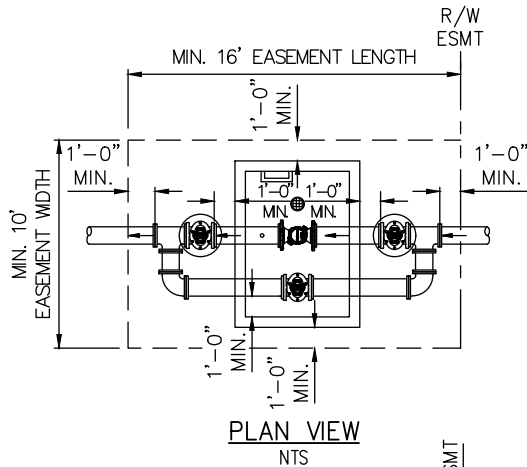
DATE: June 2025 CMV  
APPROVED:

TYPICAL SERVICE CONNECTION  
(1-1/2" AND 2")

W-1A

# MATERIAL DESCRIPTION

- |  |   |
|--|---|
| <p>① FLANGE DUCTILE IRON PIPE SPOOL (LENGTH AS REQ'D)</p> <p>② MJ X FLG ADAPTER, D.I., CL350 DCML</p> <p>③ FLANGED 90° ELBOW, D.I., CL350 DCML</p> <p>④ FLANGED GATE VALVE CL150 W/VALVE BOX PER P.W.D. STD. W-5 W/LOCKING LID (LOCKING LIDS FOR VALVES LOCATED OUTSIDE OF VAULT)</p> <p>⑤ LARGE METER WITH AUTOMATIC METER READING SYSTEM.</p> <p>⑥ FLANGED TEE, D.I., CL350 DCML</p> | <p>⑦ DOUBLE STRAP BRASS SERVICE SADDLE, AND FEMALE THREADED 2" BALL VALVE.</p> <p>⑧ 8'W X 6'L (INTERNAL DIMENSIONS) CONCRETE VAULT.</p> <p>⑨ LADDER, HOT-DIPPED GALVANIZED IRON.</p> <p>⑩ SUMP DRAIN PER PWD STD. W-12</p> <p>⑪ ADJUSTABLE STEEL SUPPORTS.</p> <p>⑫ REDUCED PRESSURE-PRINCIPLE BACKFLOW PREVENTER</p> |
|--|---|

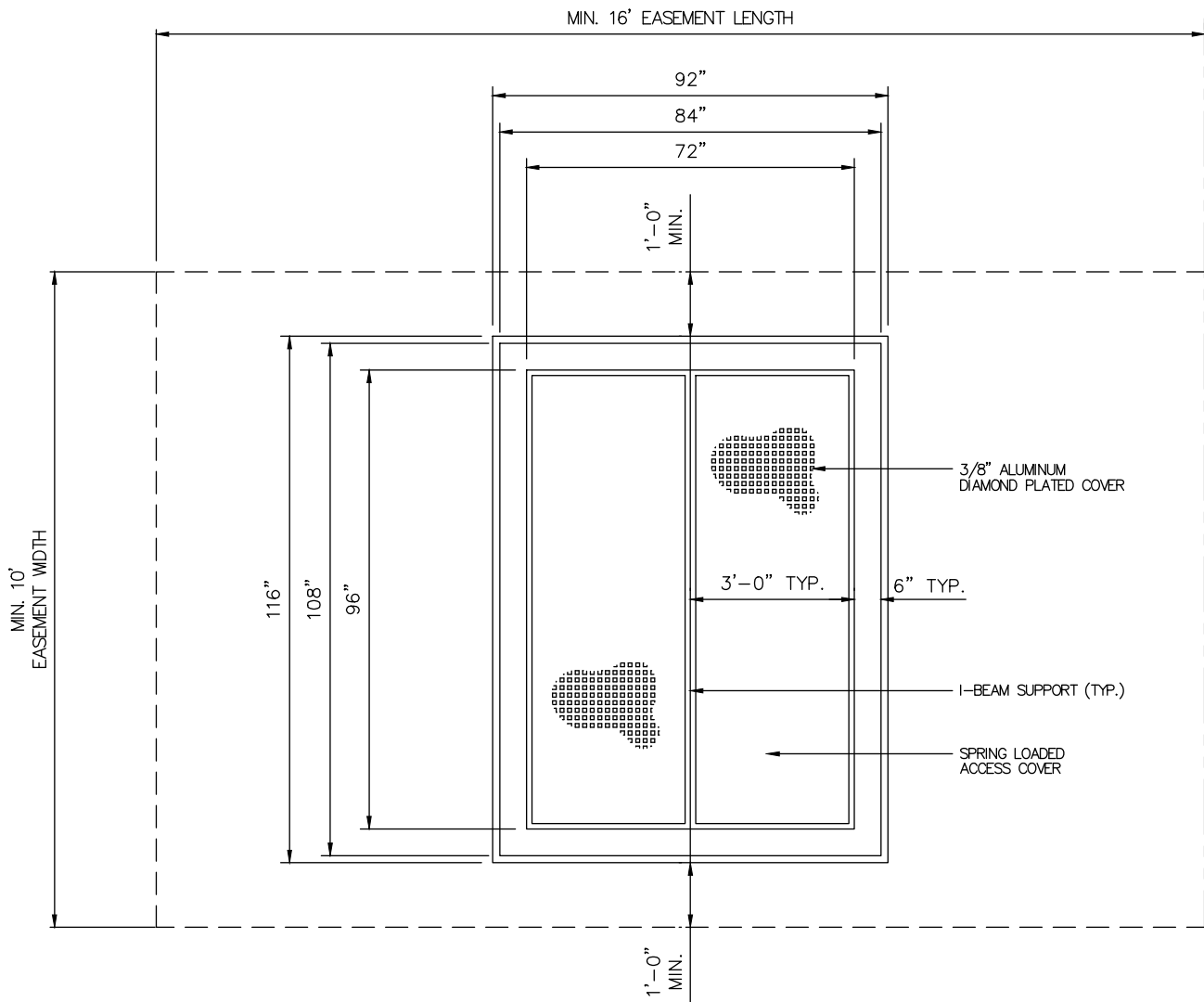


PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

## TYPICAL LARGE METER SERVICE CONNECTION (3" - 10")

W-1B



PLAN VIEW VAULT COVER

NTS

NOTES:

1. FRAME AND COVER TO ALUMINUM.
2. VAULT AND LID SUBMITTAL TO BE PROVIDED BY CONTRACTOR AND APPROVED BY DISTRICT PRIOR TO INSTALLATION.
3. VAULT LID SHALL BE RATED FOR H-20 LOADING.
4. EASEMENT SHALL BE GRANTED TO THE PALMDALE WATER DISTRICT FOR ACCESS, MAINTENANCE, AND INCIDENTAL PURPOSES.
5. AREA WITHIN AND ADJACENT TO THE VAULT EASEMENT SHALL BE GRADED TO DIRECT FLOWS AWAY FROM THE VAULT.
6. METER MUST BE SET IN A HORIZONTAL POSITION AT LEAST TWO (2) DIAMETERS OF STRAIGHT PIPE REQUIRED AT INLET END.
7. SCREEN WALL, IF REQUIRED, MUST BE LOCATED OUTSIDE DISTRICT EASEMENT. NO JOINTS WITHIN 2' OF FOOTING EDGE.
8. REDUCED-PRESSURE PRINCIPLE BACKFLOW PREVENTER TO BE MAINTAINED BY OWNER/DEVELOPER.

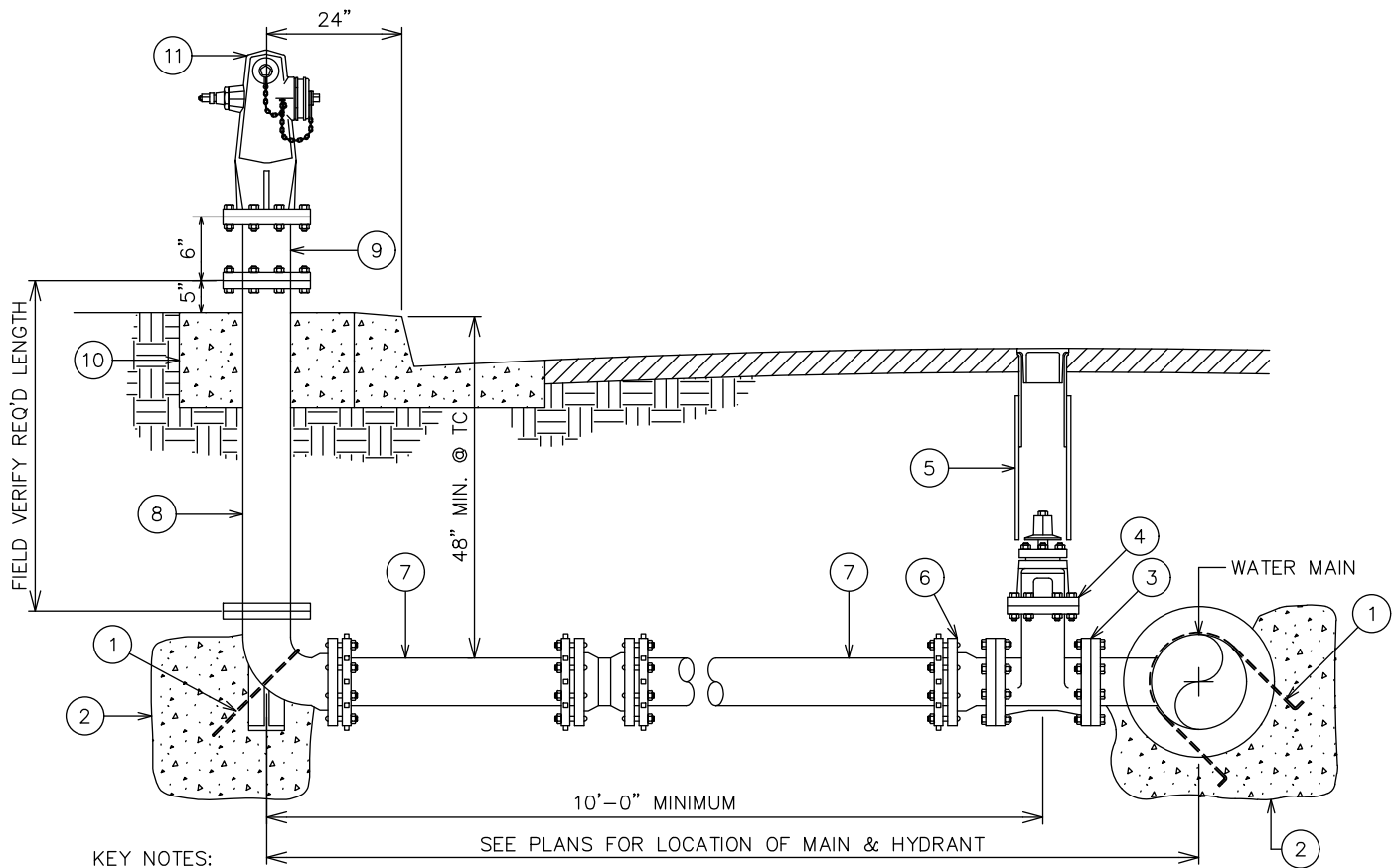


PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

TYPICAL LARGE METER SERVICE CONNECTION  
(3" - 10")

W-1B  
CONTINUED



1. CENTERLINE OF RISER SHALL BE 2 FEET BEHIND CURB FACE. NO FIRE HYDRANT SHALL BE INSTALLED CLOSER THAN 5 FEET FROM THE EDGE OF ANY DRIVEWAY APRON OR CURB RETURN. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN WRAPPED WITH V-BIO FILM ALL HYDRANTS SHALL BE PAINTED WITH ONE COAT OF RED PRIMER AND TWO COATS OF RUSTOLEUM SAFETY YELLOW OR APPROVED EQUAL. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE RESTRAINED WITH A MECHANICAL JOINT SLEEVE WITH RETAINING GLANDS OR JOINT RESTRAINT. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER.

\*REFER TO LIST OF APPROVED MATERIALS

- 1 ANCHOR ROD PER STD. W-4
- 2 USE 3000 PSI MIN. CONCRETE FOR THRUST BLOCKS AND HYDRANT PAD. PLACE CONCRETE ON UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF STD. W-4.
- 3 FLG INSULATION KIT (WHEN CONNECTING TO STEEL WATER MAIN)
- 4 6" FLANGED GATE VALVE CL150.
- 5 VALVE BOX PER STD. W-5.
- 6 6" FLG. X M.J. ADAPTER, D.I., D.C.M.L., CL350 WITH RETAINING GLAND.
- 7 6.90" O.D. DUCTILE IRON PIPE CL350 D.C.M.L.
- 8 6" DUCTILE IRON SPOOL AND 6" M.J. x FLG. 90° ELBOW, D.I., D.C.M.L., CL350 WITH RETAINING GLAND.
- 9 6" DUCTILE IRON BREAK-AWAY SPOOL WITH SINGLE OR DOUBLE SCORED GROOVES.
- 10 36" x 36" x 12" CONCRETE PAD WITH SIDEWALK FINISH TO BE SLOPED 1/4" PER FOOT TOWARDS THE CURB. IN THE ABSENCE OF A CONCRETE CURB OR WHERE TYPE "E" CURB (ROLLED) IS USED, SET BOTTOM OUTLET 24" ABOVE CROWN OF ROAD AND INSTALL BARRICADES PER STD. W-14.
- 11 6" x 4" x 2-1/2" FIRE HYDRANT. SET F.H. OUTLETS AT 45° TO STREET OR 4" OUTLET TO STREET IF BARRICADES INSTALLED. INSTALL BOLTS WITH HEADS UP. (HOLLOW BOLTS REQUIRED)



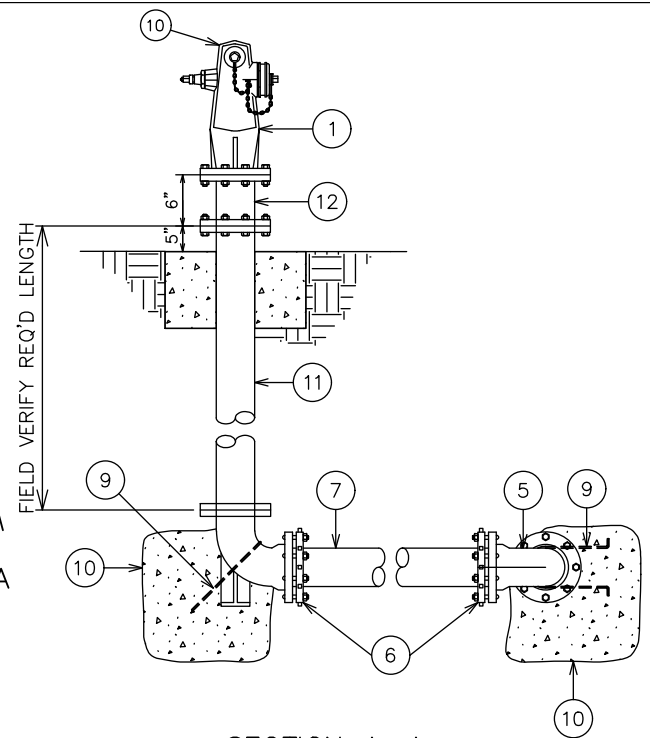
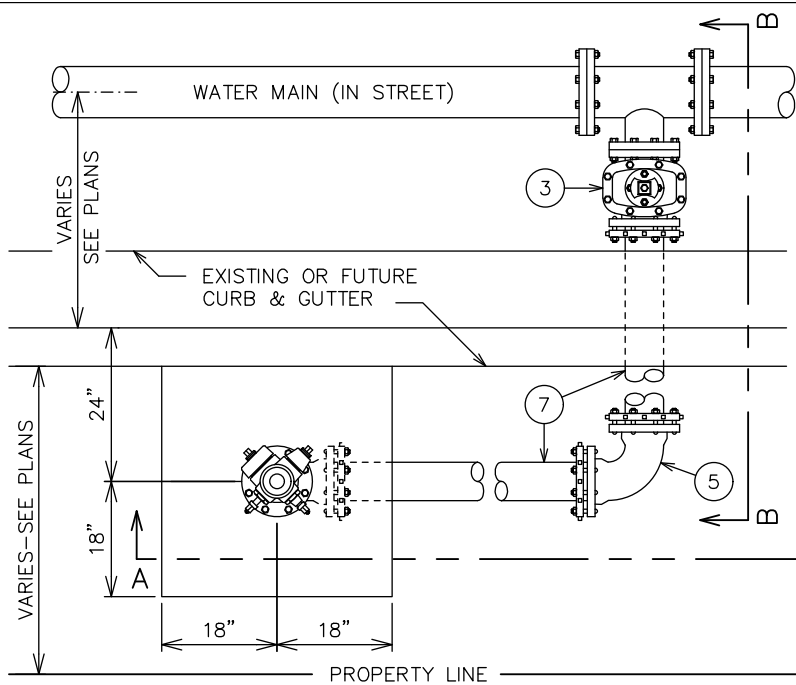
**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

6" x 4" x 2-1/2" FIRE HYDRANT

W-2





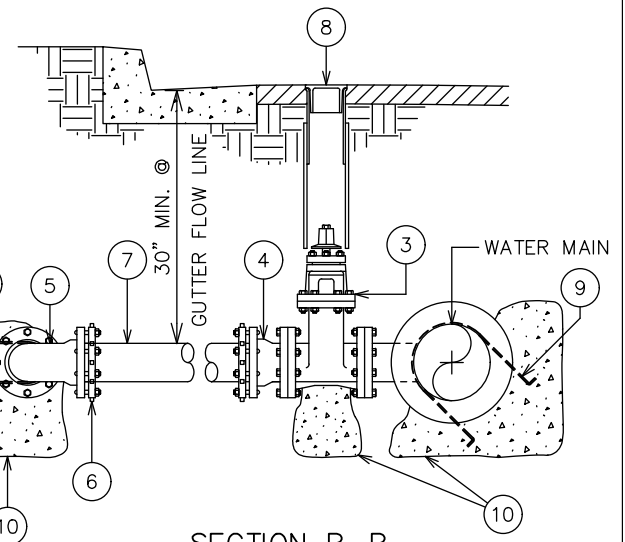
KEY NOTES:

PLAN VIEW

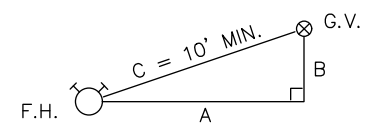
1. CENTERLINE OF RISER SHALL BE 2 FEET BEHIND CURB FACE. NO FIRE HYDRANT SHALL BE INSTALLED CLOSER THAN 5 FEET FROM THE EDGE OF ANY DRIVEWAY APRON OR CURB RETURN. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN WRAPPED WITH V-BIO FILM. ALL HYDRANTS SHALL BE PAINTED WITH ONE COAT OF RED PRIMER AND TWO COATS OF RUSTOLEUM SAFETY YELLOW OR APPROVED EQUAL. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE RESTRAINED WITH A MECHANICAL JOINT SLEEVE WITH RETAINING GLANDS OR JOINT RESTRAINT. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER. FOR C-900 PIPE USE TRACER WIRE PER P.W.D. STD. W-8.

\*REFER TO LIST OF APPROVED MATERIALS

- (1) SEE STANDARD W-2 FOR FIRE HYDRANT REQUIREMENTS.
- (2) SET FIRE HYDRANT OUTLETS AT 45° TO STREET.
- (3) 6" FLANGED GATE VALVE CL150.
- (4) 6" FLG. X M.J. ADAPTER, D.I., D.C.M.L., CL350 WITH RETAINING GLAND.
- (5) 6" M.J. 90° ELBOW, D.I., D.C.M.L., CL350 WITH RETAINING GLAND.
- (6) ALL M.J. FITTINGS SHALL HAVE RETAINING GLANDS.
- (7) 6.90" O.D. DUCTILE IRON PIPE CL 350 D.C.M.L.
- (8) VALVE BOX PER STD. W-5.
- (9) ANCHOR ROD PER STD. W-4.
- (10) USE 3000 PSI MINIMUM CONCRETE FOR THRUST BLOCKS AND CONCRETE PAD. PLACE CONCRETE AGAINST UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF STD. W-14. IN THE ABSENCE OF A CURB OR WHERE TYPE "E" CURB(ROLLED) IS USED, SET BOTTOM OUTLET 24" ABOVE CROWN OF ROAD AND INSTALL BARRICADES PER STD. W-14.
- (11) 6" DUCTILE IRON SPOOL AND 6" M.J. X FLG. 90° ELBOW, D.I., D.C.M.L., CL350 WITH RETAINING GLAND.
- (12) 6" DUCTILE IRON BREAK-AWAY SPOOL WITH SINGLE OR DOUBLE SCORED GROOVES.



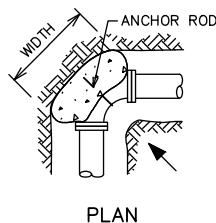
SECTION B-B



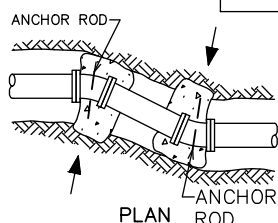
$$\sqrt{A^2 + B^2} = C$$

FORMULA FOR FIGURING HYDRANT FROM VALVE LOCATION

→ = DIRECTION OF RESULTANT THRUST

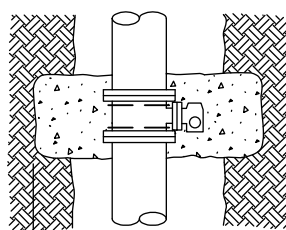


PLAN

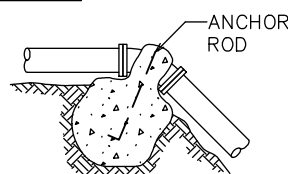


PLAN

### BENDS

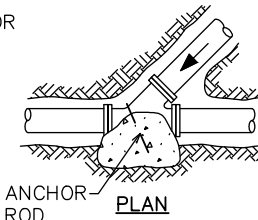


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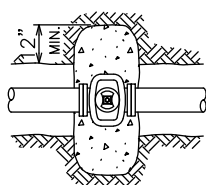
ELEVATION

### VERTICAL BEND (SEE NOTE 5)

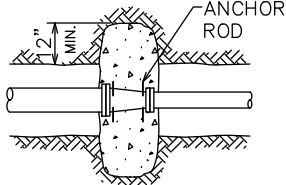


PLAN

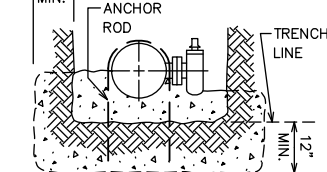
### WYE



PLAN

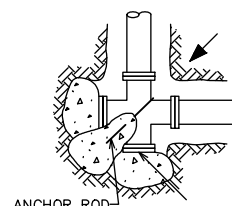


PLAN

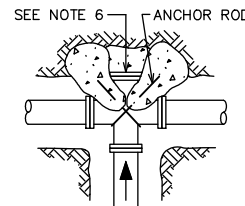


PROFILE

### BUTTERFLY VALVES

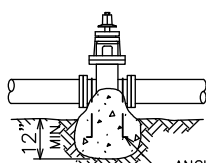


PLAN



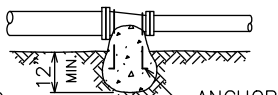
PLAN

### CROSSES



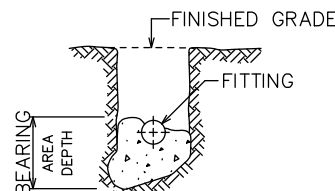
ELEVATION

### VALVES (ALL TYPES EXCEPT BFV)

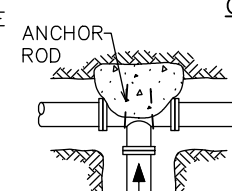


ELEVATION

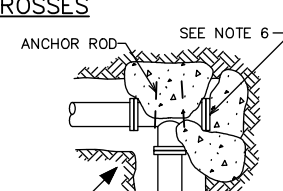
### REDUCERS



### FITTING SECTION (TYPICAL)



PLAN



PLAN

### TEES

TABLE I

* MINIMUM BEARING AREAS IN SQ. FT.				
MAIN SIZE	** TEE	90° BEND	45° BEND	22-1/2° BEND
6"	4	4	4	3
8"	5	7	4	3
10"	9	12	6	4
12"	12	16	9	6

\* BASED ON 150 PSI W.W.P. PRESSURE AND SOIL BEARING LOADS OF 2000 PSF. THE RATIO OF WIDTH TO HEIGHT SHALL NOT EXCEED 1-1/2 TO 1.

\*\* TEES, PLUG, CAPS AND HYDRANTS.

TABLE II

*** SOIL TYPE	**** MAX. ALLOWABLE SOIL BEARING VALUES	FACTORS FOR INCREASING AREAS IN TABLE I
LOOSE SAND	500 PSF	4
SOFT SANDY CLAY	1000 PSF	2
ADOBE	1000 PSF	2
COMPACT FINE SAND	2000 PSF	1
COMPACT COARSE SAND	2000 PSF	1
MEDIUM STIFF CLAY	2000 PSF	1

\*\*\* THE CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING THE SAFE SOIL BEARING VALUES AND THE POSITION AND SIZE OF BEARING AREAS.

\*\*\*\* BASED ON 2 FEET MINIMUM DEPTH OF COVER OVER PIPE.

### GENERAL NOTES:

1. ALL ANCHOR AND THRUST BLOCKS SHALL BEAR AGAINST UNDISTURBED OR COMPACTED SOIL.
2. MINIMUM ALLOWABLE WATER PRESSURE FOR DESIGN OF THRUST BLOCKS IS 150 PSI. BEARING AREA INCREASES DIRECTLY WITH INCREASE IN PRESSURE.
3. ALL CONCRETE USED IN THRUST BLOCKS SHALL ATTAIN 3000 PSI STRENGTH.
4. ANCHOR RODS SHALL BE A MINIMUM OF 1/2" DIAMETER REINFORCING STEEL AND SHALL BE USED FOR ALL THRUST BLOCKS. ENCASE RODS IN 3000 PSI CONCRETE. EXPOSED PORTIONS OF RODS SHALL BE THOROUGHLY COATED IN NO-OX GREASE AND WRAPPED WITH V-BIO FILM.
5. USE ANCHOR BLOCKS AT VERTICAL BENDS WHEN PIPE IS ABOVE OR BELOW GROUND. SIZE OF BLOCK AND ROD SHALL BE AS SHOWN ON THE PLANS OR AS DETERMINED BY THE ENGINEER IN THE FIELD.
6. USE 30 POUND FELT TO INSURE COLD JOINT OR 8 MIL POLYETHYLENE WRAP PER AWWA C105.
7. FOR WATER MAINS LARGER THAN 12", ENGINEER TO SIZE THRUST BLOCKS.



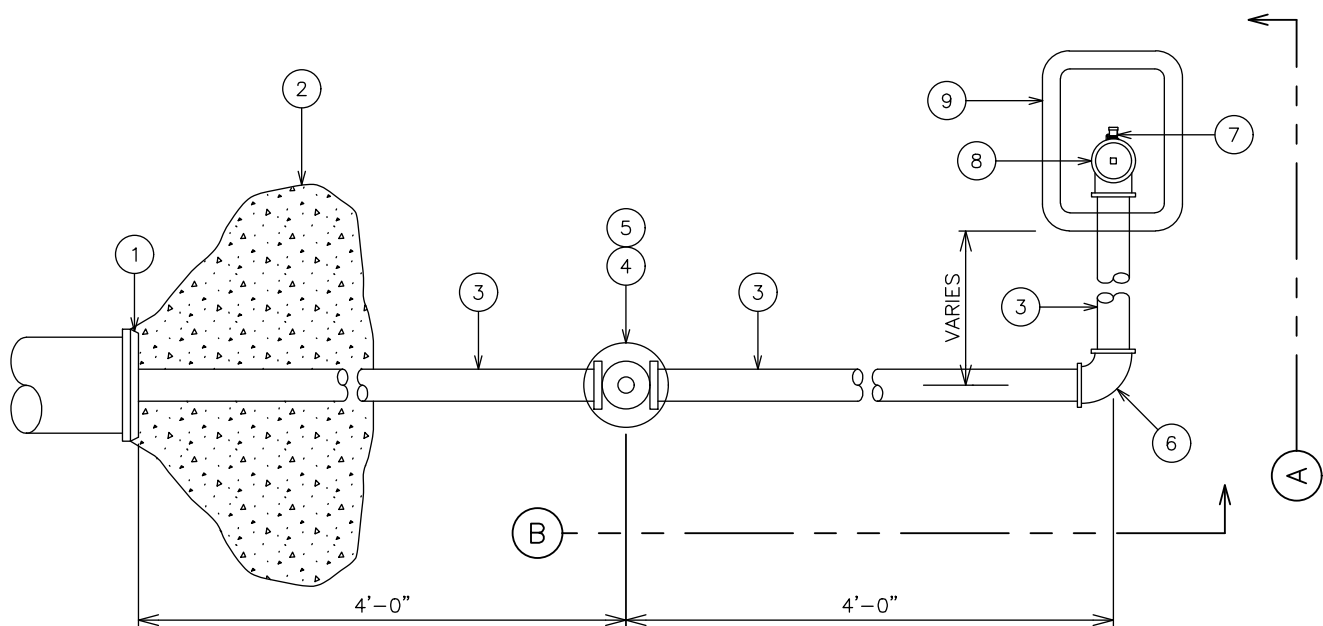
PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

## CONCRETE THRUST BLOCKS

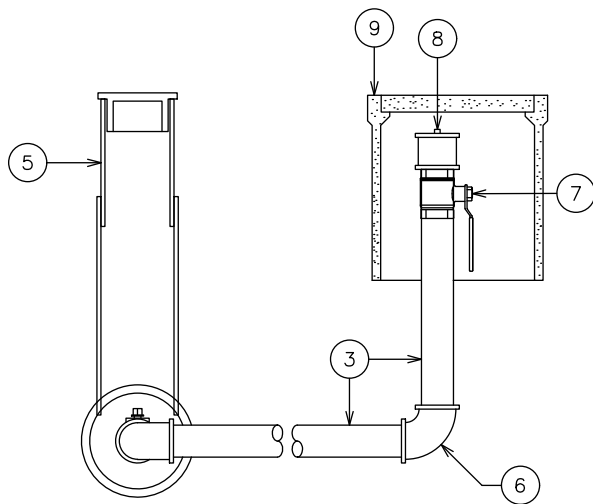
W-4





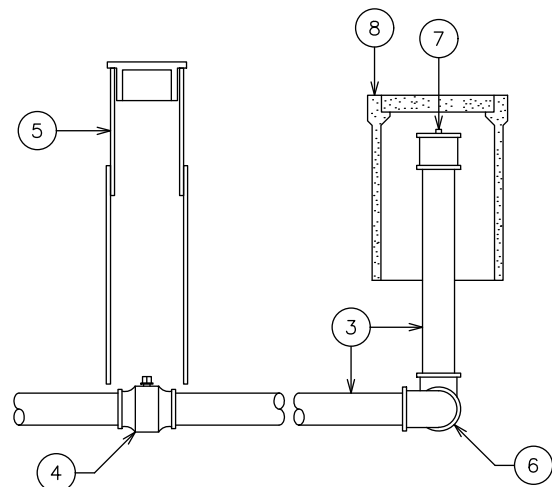
PLAN VIEW

N.T.S.



SECTION A

N.T.S.



SECTION B

N.T.S.

KEY NOTES:

1. DUCTILE PIPE WILL REQUIRE A DIELECTRIC BUSHING.
2. 10 MIL TAPE REQUIRED FROM END CAP TO 1 FT PAST CONCRETE OR 18" MIN.

\*REFER TO LIST OF APPROVED MATERIALS

- ① 2" TAPPED CAP OR BLIND FLANGE.
- ② CONCRETE THRUST BLOCK PER P.W.D. STD. W-4.
- ③ 2" BRASS ALLOY LEAD FREE (LF) PER NSF/ANSI 61 AND 372.
- ④ 2" LF BRASS BALL STRAIGHT SVC VALVE.
- ⑤ VALVE BOX PER STD. W-5 (NOTE: VALVE RISER IS NOT TO REST ON PIPE).
- ⑥ 2" 90° ELBOW BRASS ALLOY LEAD FREE (LF) PER NSF/ANSI 61 AND 372.
- ⑦ 2" BALL VALVE.
- ⑧ 2" COUPLING WITH SQUARE HEAD PLUG BRASS ALLOY LEAD FREE (LF).
- ⑨ SET METER BOX W/COVER, 1-1/2" TO 2" BEHIND THE CURB SECTION.  
IN THE ABSENCE OF CURB, SET METER BOX ADJACENT TO RIGHT-OF-WAY LINE WITH CONCRETE PAD PER STD. W-1 AND USE TRAFFIC RATED COVER.

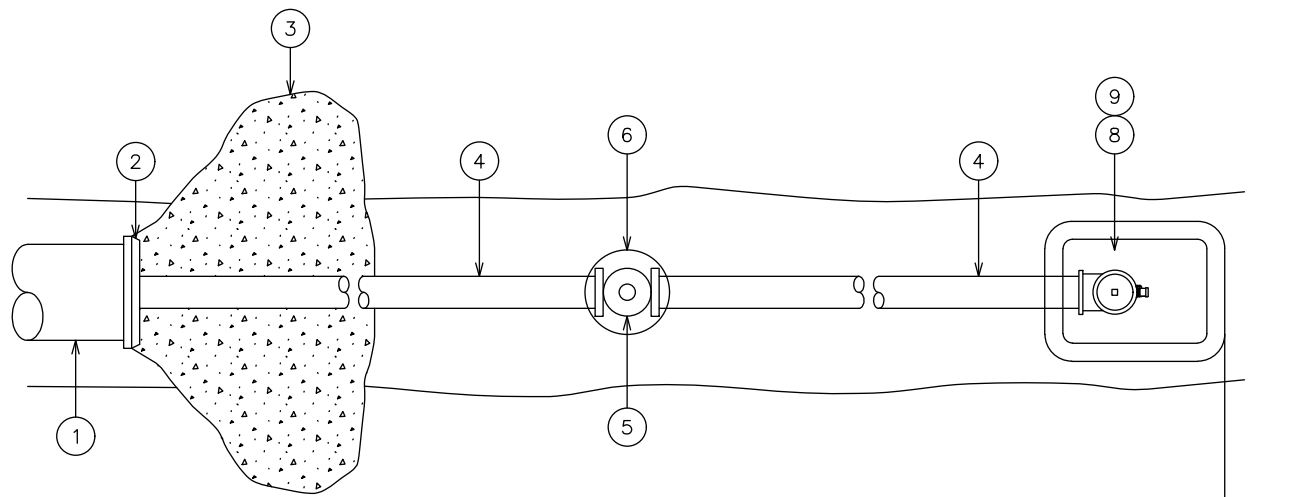


PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

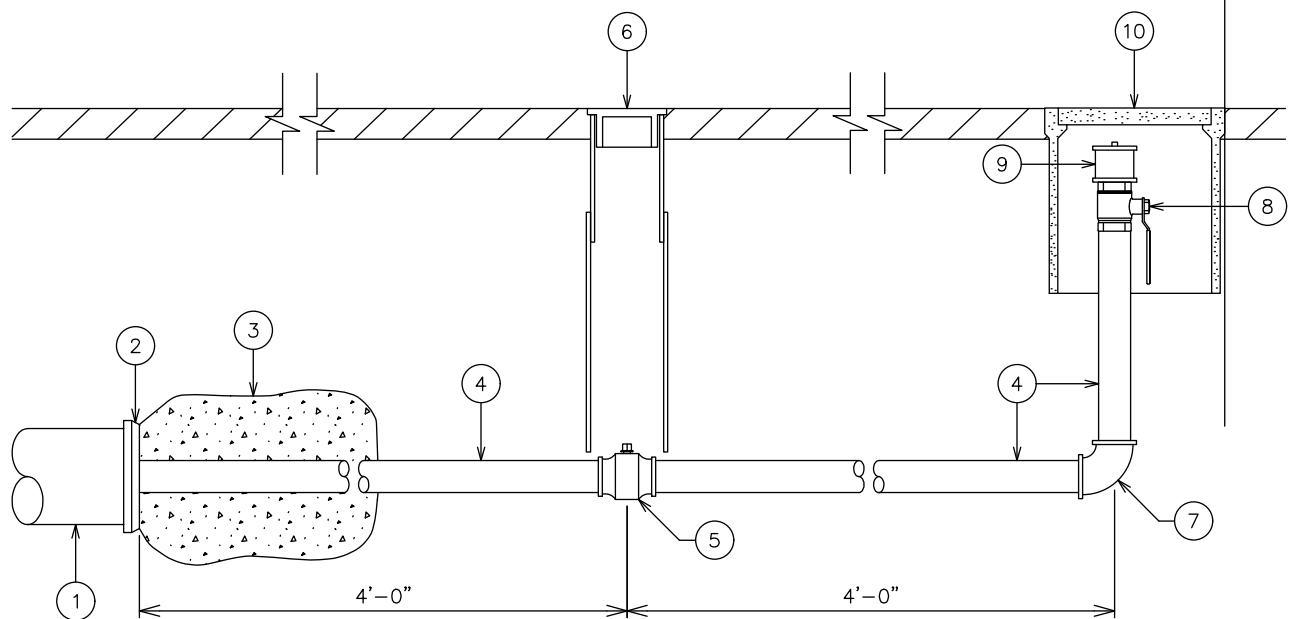
2" TEMPORARY BLOW-OFF ASSEMBLY  
(BEHIND CURB IN PARKWAY)

W-6



PLAN VIEW

N.T.S.



SECTION VIEW

N.T.S.

GENERAL NOTES:

- ① DUCTILE PIPE WILL REQUIRE A DIELECTRIC BUSHING.
- ② 2" LF BRASS TAPPED CAP OR BLIND FLANGE.
- ③ CONCRETE THRUST BLOCK PER STD. W-4.
- ④ 2" BRASS ALLOY LEAD FREE (LF) PER NSF/ANSI 61 AND 372.
- ⑤ 2" LF BRASS BALL STRAIGHT SVC VALVE.
- ⑥ VALVE BOX PER STD. W-5 (NOTE: VALVE RISER IS NOT TO REST ON PIPE).
- ⑦ 2" 90° ELBOW BRASS ALLOY LEAD FREE (LF) PER NSF/ANSI 61 AND 372.
- ⑧ 2" BALL VALVE.
- ⑨ 2" LF BRASS COUPLING WITH SQUARE HEAD PLUG.
- ⑩ SET METER BOX W/COVER, 1-1/2" TO 2" BEHIND THE CURB SECTION  
IN THE ABSENCE OF CURB, SET METER BOX ADJACENT TO RIGHT-OF-WAY LINE WITH  
CONCRETE PAD PER STD. W-1 AND USE TRAFFIC RATED COVER.
- ⑪ 10 MIL TAPE REQUIRED FROM END CAP TO 1 FT PAST CONCRETE OR 18" MIN.



PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

2" TEMPORARY BLOW-OFF ASSEMBLY  
(IN THE STREET)

W-6A



1. IN THE ABSENCE OF A CURB OR WHERE TYPE "E" CURB (ROLLED) IS USED, SET OUTLET 24-INCHES ABOVE CROWN OF ROAD AND INSTALL BARRICADES PER STD. W-14.
2. CENTERLINE OF RISER SHALL BE 2 FEET BEHIND CURB FACE.
3. NO BLOW-OFF SHALL BE INSTALLED CLOSER THAN 5 FEET FROM EDGE OF ANY DRIVEWAY APRON OR CURB RETURN.
4. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN BE WRAPPED WITH 8 MIL POLYETHYLENE SHEET (AWWA C-105).
5. ALL BLOW-OFFS SHALL BE PAINTED WITH ONE COAT OF RED PRIMER AND TWO COATS OF RUST-OLEUM FOREST GREEN OR APPROVED EQUAL.
6. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE FLANGED. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER.

\*REFER TO LIST OF APPROVED MATERIALS

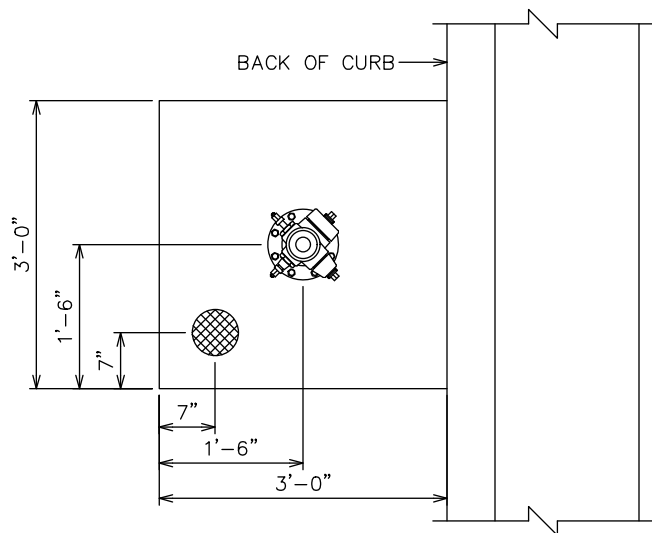
- ① USE 3000 PSI MINIMUM CONCRETE FOR THRUST BLOCKS AND CONCRETE PAD. PLACE CONCRETE ON UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF P.W.D. STD. W-4.
- ② ANCHOR ROD PER STD. W-4.
- ③ FLG INSULATION KIT (WHEN CONNECTING TO STEEL WATER MAIN)
- ④ 4" FLANGED GATE VALVE CL150.
- ⑤ VALVE BOX PER P.W.D. STD. W-5.
- ⑥ 4" FLG. X M.J. ADAPTER, D.I., D.C.M.L., CL350 WITH RETAINING GLAND.
- ⑦ 4.80" O.D. DUCTILE IRON PIPE CL350 D.C.M.L.
- ⑧ 4" DUCTILE IRON SPOOL AND 4" M.J. X FLG. 90° ELBOW, D.I., D.C.M.L., CL350 WITH RETAINING GLAND.
- ⑨ 36" x 36" x 12" CONCRETE PAD WITH SIDEWALK FINISH TO BE SLOPED 1/4" PER FOOT TOWARDS THE CURB.
- ⑩ 4" COMPANION FLANGE CL125. INSTALL BOLTS WITH HEADS UP. (HOLLOW BOLTS REQUIRED).
- ⑪ 4" SCH. 40 THREADED BRASS NIPPLE
- ⑫ 4" x 2-1/2" WHARF HEAD.



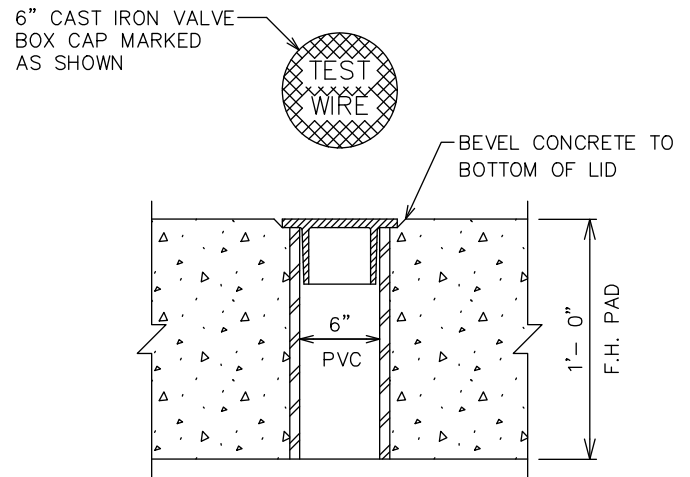
**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025      CMV  
APPROVED:

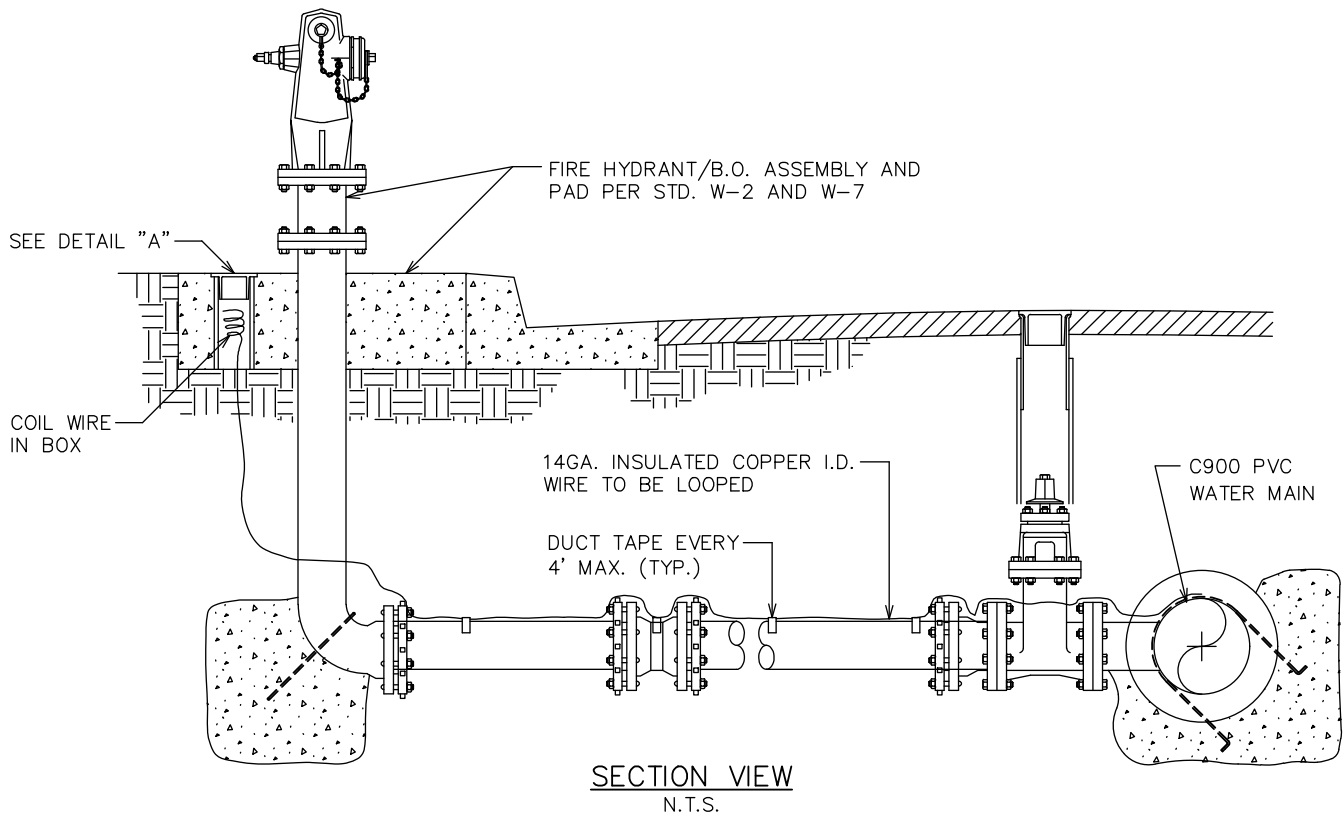
## W-7



PLAN VIEW  
N.T.S.



DETAIL "A"  
N.T.S.



SECTION VIEW  
N.T.S.

GENERAL NOTES:

1. WIRE MUST BE LAID ON TOP OF PIPE AND FASTENED SECURELY AT 4' MAX. INTERVALS WITH AN EIGHT INCH LENGTH OF DUCT TAPE OR OTHER APPROVED METHOD.
2. SPLICES TO BE MADE WITH BUTT CONNECTORS AND ARE TO BE ENCAPSULATED WITH RUBBER SEALING TAPE (POLYISOBUTYLENE) PER DUET INDUSTRIES OR OTHER APPROVED TYPE.
3. INSTALL TEST STATION AT ALL DEAD ENDS OR POINT OF CONNECTION.

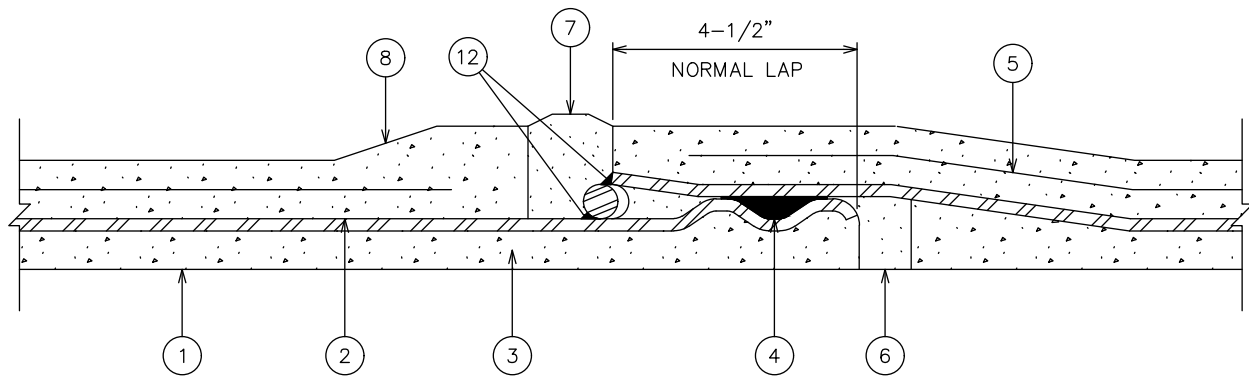


**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

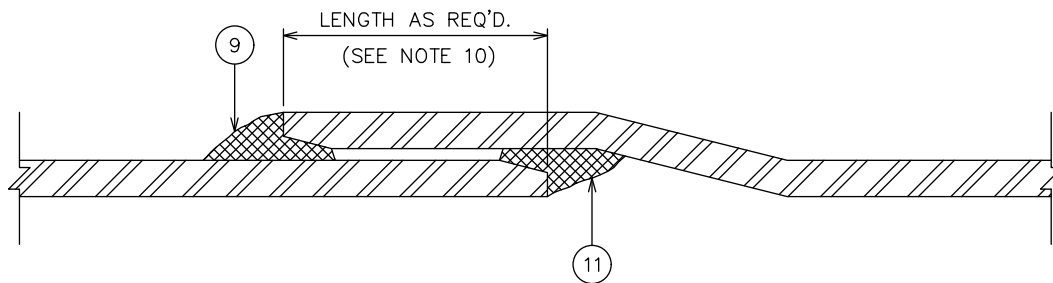
DATE: June 2025 CMV  
APPROVED:

**INSTALLATION OF IDENTIFICATION WIRE**  
(C-900 PVC PIPE)

W-8



TYPICAL RUBBER GASKET JOINT



TYPICAL LAP-WELDED SLIP JOINT

GENERAL NOTES:

1. I.D. PIPE
2. O.D. CYLINDER
3. CEMENT MORTAR LINING
4. RUBBER GASKET
5. WIRE REINFORCEMENT
6. CEMENT MORTAR - PLACE IN FIELD - STEEL TROWEL FINISH FOR PIPE 24" DIAMETER & LARGER, BALL FINISHED FOR LESS THAN 24" DIAMETER.
7. CEMENT GROUT PLACED IN FIELD WITH FACTORY SUPPLIED DIAPERS.
8. CEMENT MORTAR COATING
9. OUTSIDE WELD
10. NORMAL LAP - 1-1/2 INCHES. 10TH JOINT LAP - 3 INCHES (NOT TO BE WELDED UNTIL 9 JOINTS ON EACH SIDE HAVE BEEN WELDED).
11. INSIDE WELD MAY BE SUBSTITUTED FOR OUTSIDE WELD.
12. CONTINUITY CONNECTOR.
13. CCTV INSPECTIONS MAY BE REQUIRED.



PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

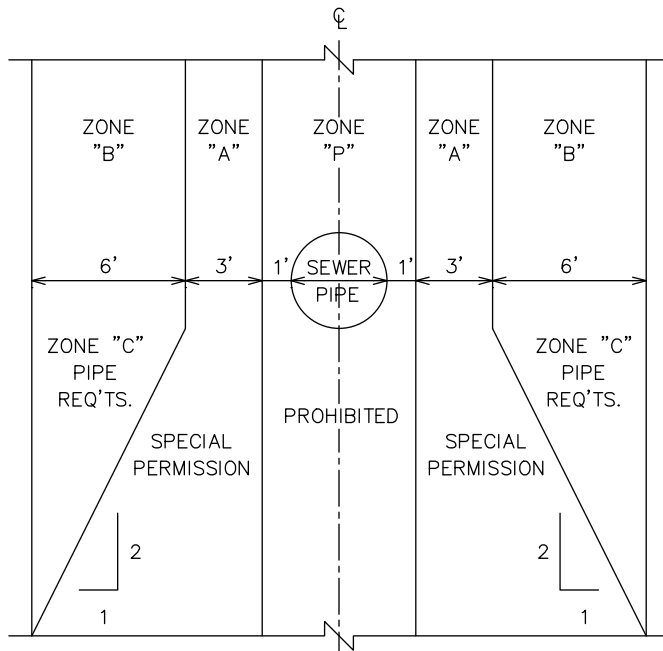
DATE: June 2025 CMV  
APPROVED:

TYPICAL STEEL PIPE JOINT DETAILS

W-9

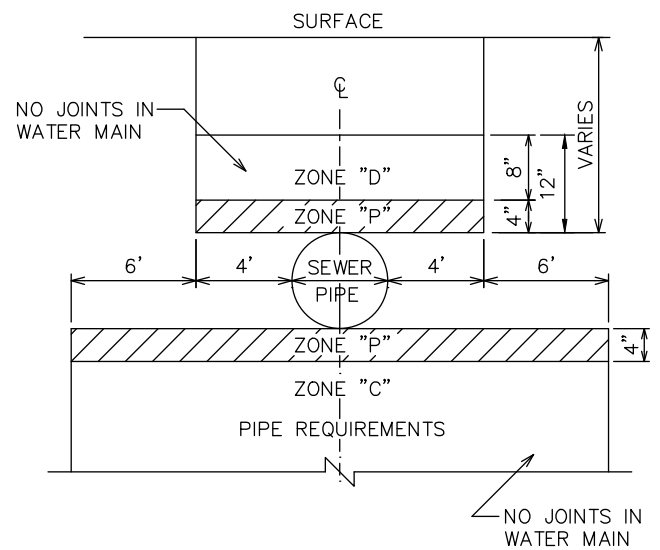


## PARALLEL CONSTRUCTION



SPECIAL CONSTRUCTION WILL BE REQUIRED IF HORIZONTAL CLEARANCE BETWEEN PRESSURE WATER MAIN AND SEWER LINE IS LESS THAN 10 FEET. SEE THE ZONE ABOVE CORRESPONDING TO CONSTRUCTION REQUIREMENTS BELOW.

## PERPENDICULAR CONSTRUCTION



SPECIAL CONSTRUCTION WILL BE REQUIRED IF VERTICAL CLEARANCE BETWEEN PRESSURE WATER MAIN AND SEWER LINE IS LESS THAN 1 FOOT AT CROSSING. SEE THE ZONE ABOVE CORRESPONDING TO CONSTRUCTION REQUIREMENTS BELOW.

ZONE	WATER MAIN CONSTRUCTION REQUIREMENTS
A	NO WATER MAINS PARALLEL TO SEWERS SHALL BE CONSTRUCTED WITHOUT APPROVAL FROM THE HEALTH AGENCY.
B	USE THE FOLLOWING TYPES OF PIPE: DUCTILE IRON PIPE, C.M.L. WITH HOT DIP BITUMINOUS COATING OR STEEL PIPE 10 GA. (MIN.), C.M.L. & C.M.C. WITH WELDED JOINTS.
C	NO JOINTS WITHIN 10 FEET OF OUTER EDGES OF SEWER LINE. PIPE REQUIREMENTS: DUCTILE IRON PIPE, C.M.L. WITH HOT DIP BITUMINOUS COATING OR STEEL PIPE 10 GA. (MIN.), C.M.L. & C.M.C. WITH WELDED JOINTS. PIPE SHALL BE 20 FT LENGTHS NO WATER MAINS CROSSING UNDER SEWERS SHALL BE CONSTRUCTED WITHOUT APPROVAL FROM THE HEALTH AGENCY.
D	NO JOINTS WITHIN 4 FEET OF EITHER SIDE OF SEWER LINE. USE THE FOLLOWING TYPES OF PIPE & MATERIALS: DUCTILE IRON PIPE, C.M.L. AND POLYETHYLENE WRAPPED OR STEEL PIPE 10 GA. (MIN.), C.M.L. & C.M.C. WITH WELDED JOINTS.
P	PROHIBITED ZONE – NO WATER MAINS ARE ALLOWED TO BE INSTALLED WITHIN THIS ZONE.

### GENERAL NOTES:

1. WATER MAINS AND SEWER LINES SHALL NOT BE INSTALLED IN THE SAME TRENCH.
2. SEPARATION DISTANCES SPECIFIED SHALL BE MEASURED FROM THE OUTER EDGES OF PIPE.
3. THE "CALIFORNIA WATERWORKS STANDARDS" SETS FORTH THE MINIMUM SEPARATION REQUIREMENTS FOR WATER MAINS AND SEWER LINES. THESE STANDARDS ARE CONTAINED IN SECTION 64630, TITLE 22, CALIFORNIA ADMINISTRATIVE CODE.

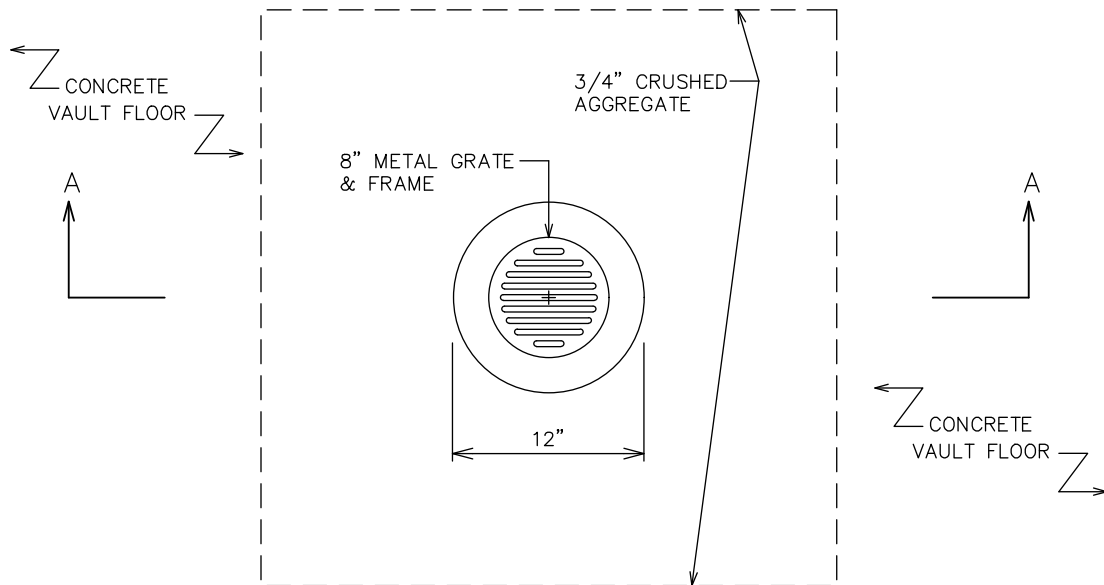


PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

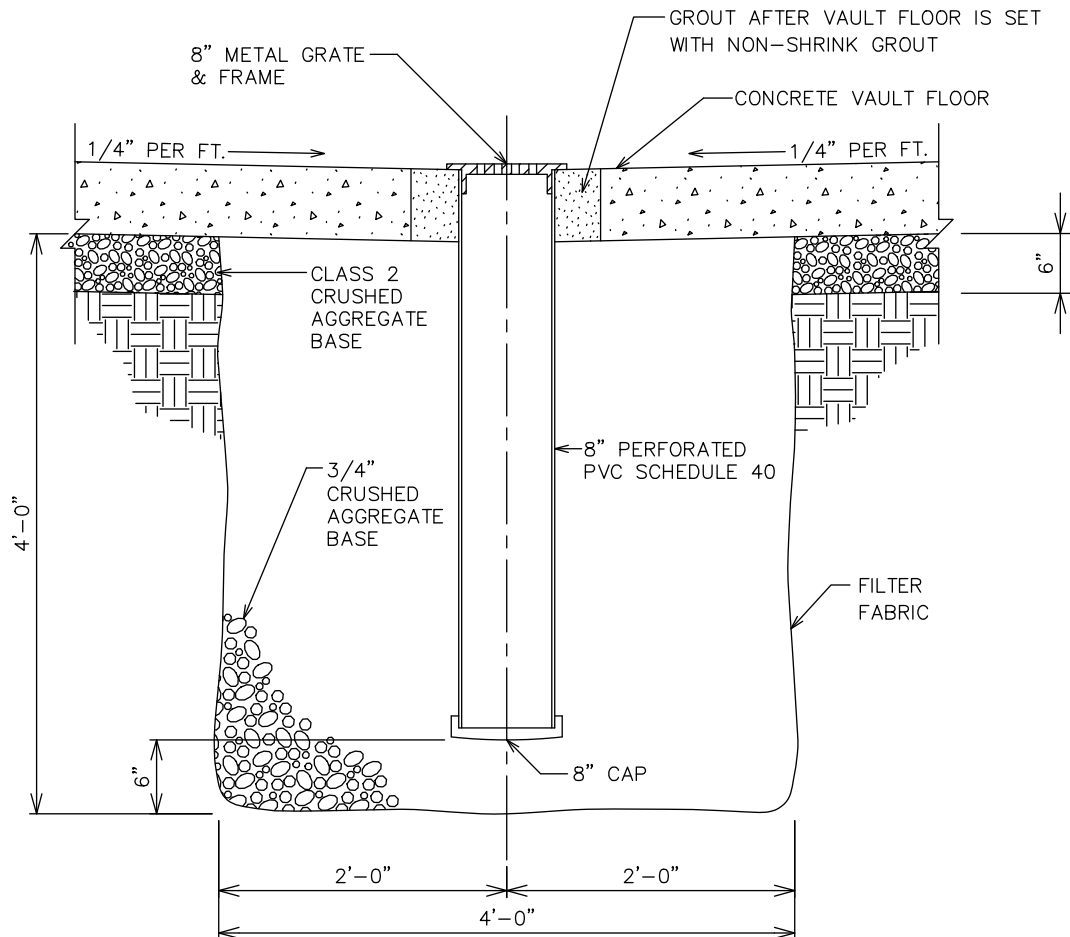
## DESIGN REQUIREMENTS FOR WATER MAINS IN THE VICINITY OF SANITARY SEWERS

W-10



**PLAN VIEW**

N.T.S.



**SECTION A-A**

N.T.S.



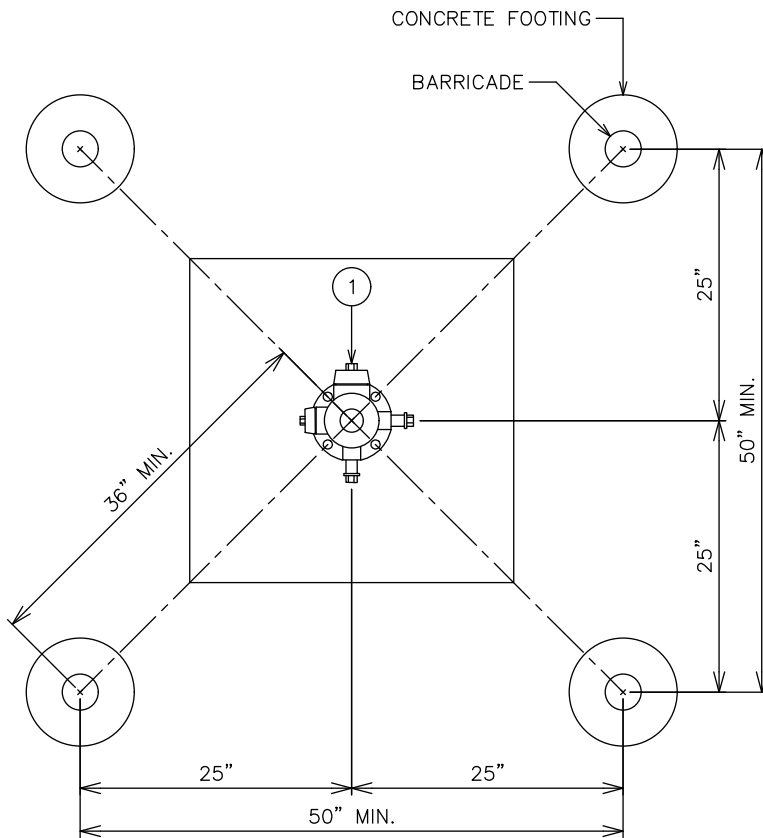
**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

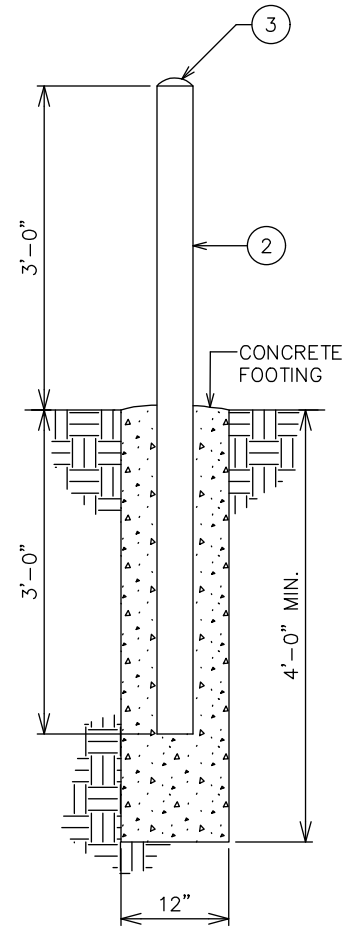
**SUMP DETAIL FOR METER VAULTS**  
(TO BE LOCATED PER APPROVED PLAN)

W-12

# STREET WITHOUT CONCRETE CURB



**BARRICADE PLAN**  
TYPICAL PER L.A. CO. FIRE DEPARTMENT  
N.T.S.



**BARRICADE DETAIL**  
N.T.S.

## GENERAL NOTES:

1. WATER DEVICE (HYDRANT SHOWN) BEING PROTECTED.
2. 6' OF 4" STANDARD STEEL PIPE SCHEDULE 40. MIN. 3000 PSI MIN. CONCRETE FILLED
3. MIN. 3000 PSI CONCRETE CAP
4. FOUR BARRICADES ARE TO BE USED UNLESS OTHERWISE SPECIFIED.
5. THE EXACT LOCATION OF BARRICADES MAY BE CHANGED BY THE DISTRICT REPRESENTATIVE IN THE FIELD.
6. THE STEEL PIPE ABOVE THE GROUND SHALL BE PAINTED A MINIMUM OF ONE FIELD COAT OF RED PRIMER AND TWO COATS OF RUST-OLEUM SAFETY YELLOW OR APPROVED EQUAL.
7. 25" BARRICADE SPACING SHALL BE WIDENED AS REQUIRED TO PROVIDE CLEARANCE FOR ATTACHMENTS TO FIRE HYDRANT OUTLETS.

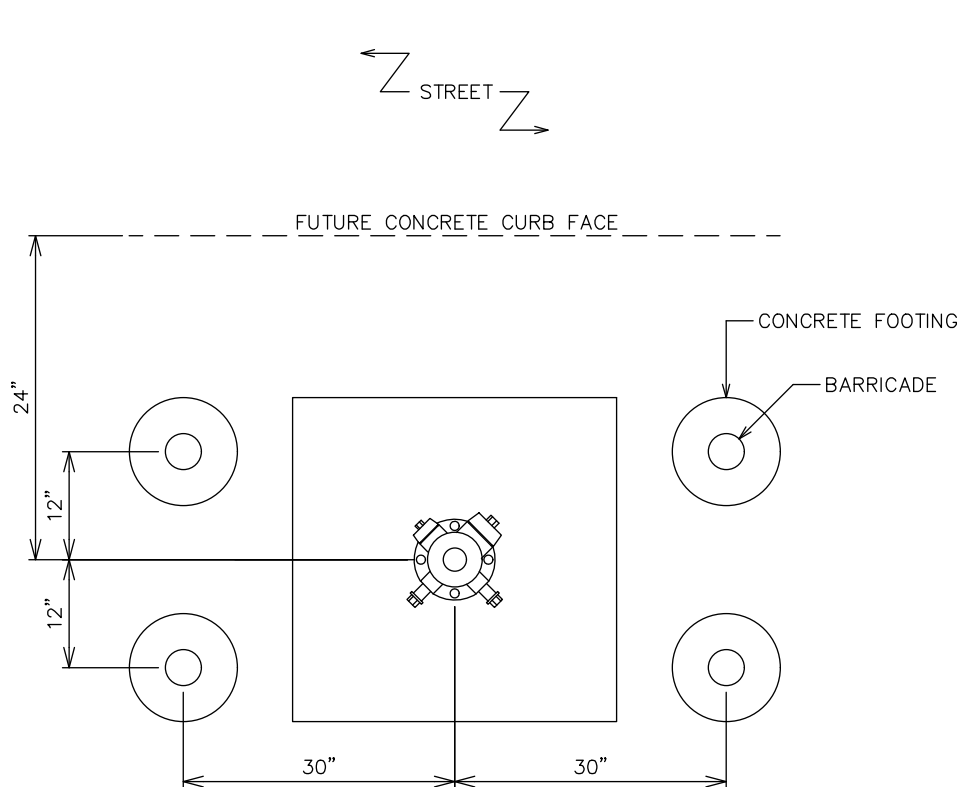


**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

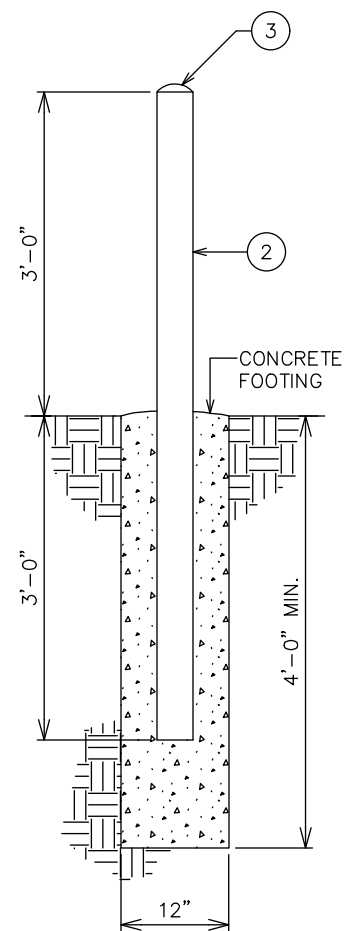
DATE: June 2025 CMV  
APPROVED:

TYPICAL BARRICADES DETAIL  
(STREET WITHOUT CONCRETE CURB)

W-14



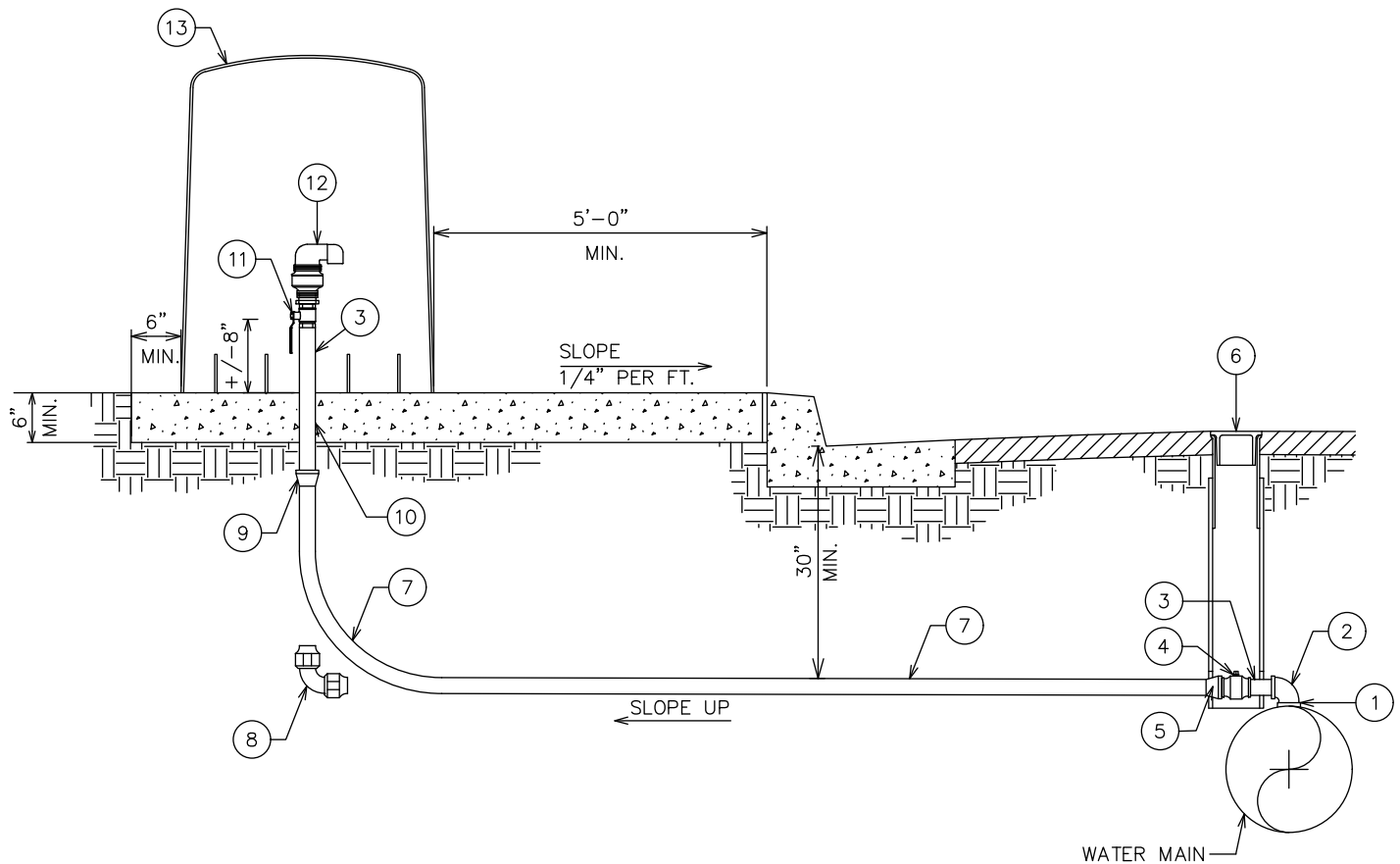
**TEMPORARY BARRICADE PLAN**  
**TYPICAL PER L.A. CO. FIRE DEPARTMENT**  
 N.T.S.



**BARRICADE DETAIL**  
 N.T.S.

**GENERAL NOTES:**

1. FIXTURE BEING PROTECTED.
2. 6' OF 4" STANDARD STEEL PIPE SCHEDULE 40 MIN. 3000 PSI CONCRETE FILLED
3. MIN. 3000 PSI CONCRETE CAP
4. FOUR BARRICADES ARE TO BE USED UNLESS OTHERWISE SPECIFIED.
5. THE EXACT LOCATION OF BARRICADES MAY BE CHANGED BY THE DISTRICT REPRESENTATIVE IN THE FIELD.
6. THE STEEL PIPE ABOVE THE GROUND SHALL BE PAINTED A MINIMUM OF ONE FIELD COAT OF RED PRIMER AND TWO COATS OF RUST-OLEUM SAFETY YELLOW.

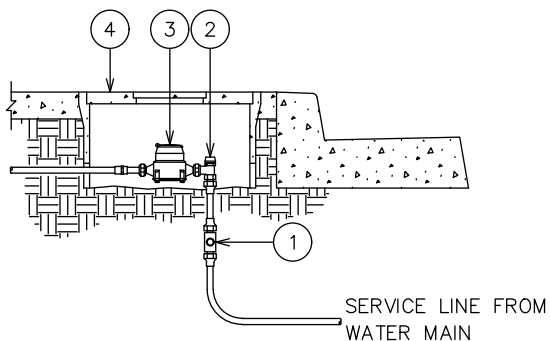
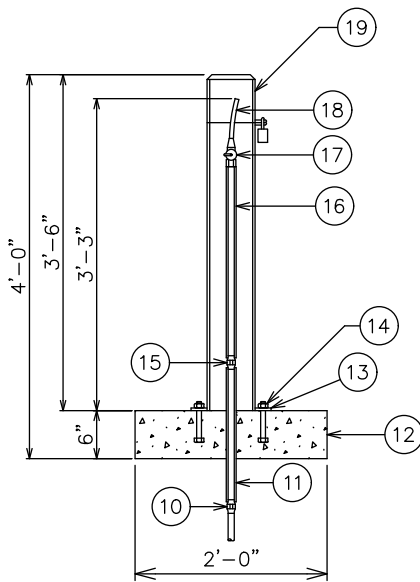
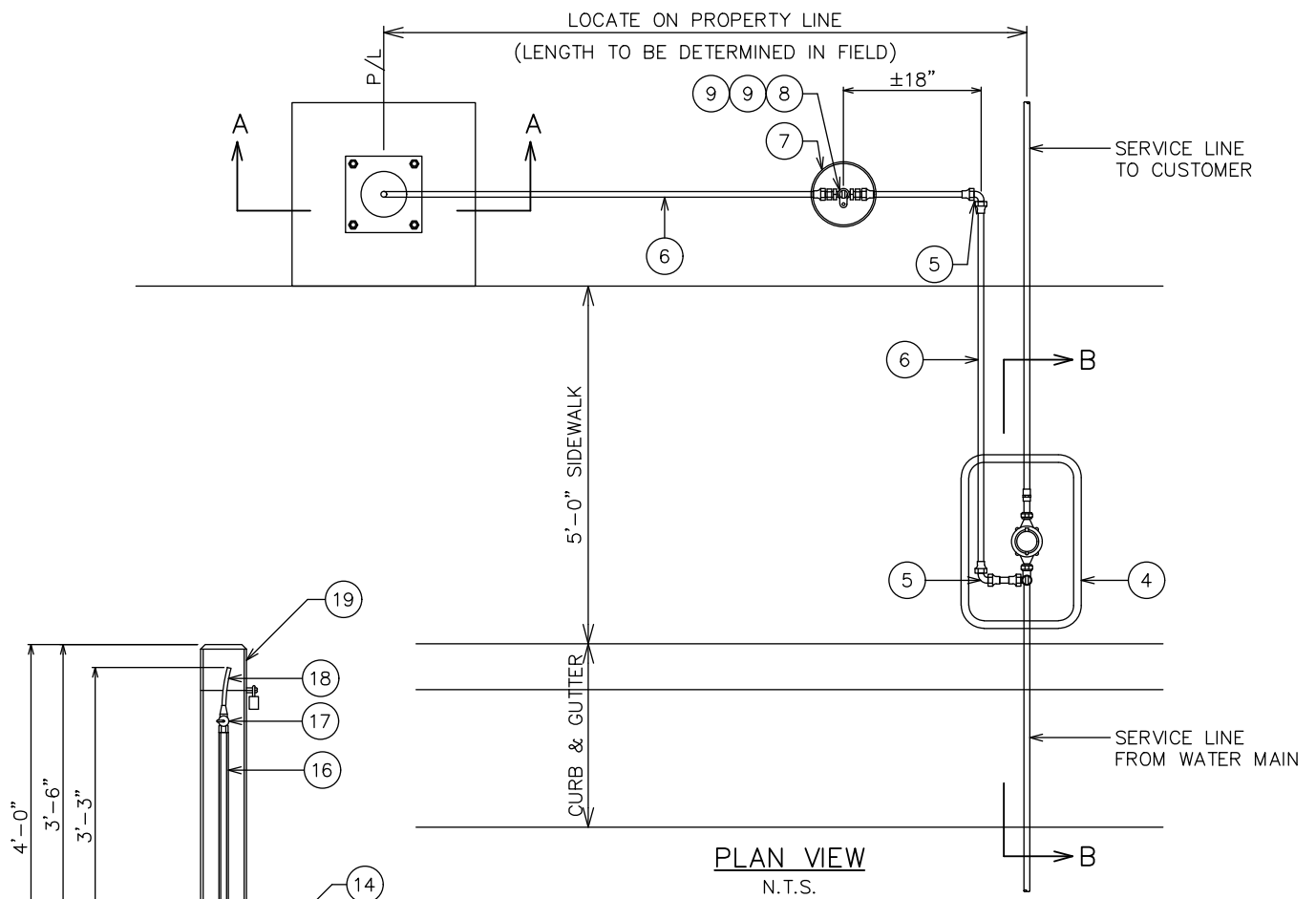


KEY NOTES:

1. WHEN WATER MAIN IS REQUIRED TO BE HOT TAPPED USE M.I.P. x M.I.P. CORPORATION VALVE.
2. IF NO CURB AND GUTTER OR IF TYPE "E" CURB (ROLLED). INSTALL BARRICADES PER STANDARD W-14 AS REQUIRED (RUST-OLEUM SAFETY YELLOW).
3. ALL VALVES AND PIPING ABOVE GROUND SHALL BE INSULATED.
4. USE PROPER CLASS FITTINGS FOR WATER WORKING PRESSURE (CLASS 150 MINIMUM).
5. SEE PLANS FOR VALVE SIZES AND USE SAME SIZE FITTINGS AND NIPPLE LENGTHS TO SUIT (NO CLOSE NIPPLES).
6. ALL EDGES AGAINST OTHER CONCRETE TO HAVE PREFORMED JOINT FILLER.
7. ALL PIPING AND APPURTENANCES WILL BE AIR VACUUM VALVE SIZE.
8. 36" x 36" x 6" CONCRETE PAD WITH SIDEWALK FINISH TO BE SLOPED 1/4" PER FOOT TOWARDS THE CURB.
9. WATER MAINS 8" AND SMALLER WILL BE 1" AIR/VAC AND WATER MAINS 10" AND LARGER WILL BE 2" AIR/VAC.

\*REFER TO LIST OF APPROVED MATERIALS

- ① CONNECTIONS SHALL BE MADE WITH MATERIALS SPECIFIED IN P.W.D. STD. W-1
- ② 90° STREET ELBOW, BRASS
- ③ BRASS NIPPLE
- ④ BALL STRAIGHT SVC VALVE.
- ⑤ MIP x COMPRESSION ADAPTER FOR 2", MIP x COMP. ADAPTER FOR 1".
- ⑥ VALVE BOX PER P.W.D. STD. W-5 (NOTCH VALVE RISER AROUND PIPE)
- ⑦ USE TYPE "K" COPPER TUBING
- ⑧ COMPRESSION 90° ELBOW REQUIRED FOR 2" ASSEMBLIES
- ⑨ COUPLING, F.I.P. x COMPRESSION FOR 2", FIP x COMP. FOR 1"
- ⑩ PROTECT PIPE WITH 20 MIL TAPE
- ⑪ BALL VALVE, BRASS
- ⑫ COMBINATION AIR AND VACUUM RELEASE VALVE.
- ⑬ AIR/VAC ENCLOSURE



\*REFER TO LIST OF APPROVED MATERIALS  
MATERIAL DESCRIPTION – SAMPLING STATION:

- ① VARIES" x 3/4" COMPRESSION TEE.
- ② ANGLE STOP WITH COMPRESSION INLET (SIZE VARIES).
- ③ METER.
- ④ METER BOX.
- ⑤ 3/4" COMPRESSION 90° ELBOW.
- ⑥ 3/4" TYPE "K" SOFT COPPER TUBING.
- ⑦ VALVE BOX PER P.W.D. STD. W-5.
- ⑧ 3/4" STRAIGHT STOP.
- ⑨ 3/4" M.I.P. x COMP. ADAPTER.
- ⑩ 3/4" F.I.P. x COMP. ADAPTER.
- ⑪ 3/4" x 18" L.F. BRASS NIPPLE WITH PIPE INSULATION.
- ⑫ 24" x 24" x 6" CONCRETE PAD.
- ⑬ 10" x 10" x 3/16" BASE PLATE.
- ⑭ 4-1/2" ANCHOR BOLTS.
- ⑮ 3/4" L.F. BRASS COUPLING.
- ⑯ 3/4" x 30" L.F. BRASS NIPPLE WITH PIPE INSULATION.
- ⑰ 3/4" BALL VALVE WITH 3/4" x 3/8" BRASS BUSHING & 3/8" M.I.P. x COMP. ADAPTER.
- ⑱ 3/8" COPPER TUBE.
- ⑲ 6" DIA. STL. PIPE WITH 12" HINGED DOOR & CLASP FOR LOCKING (PADLOCK TO BE SUPPLIED BY THE DISTRICT).

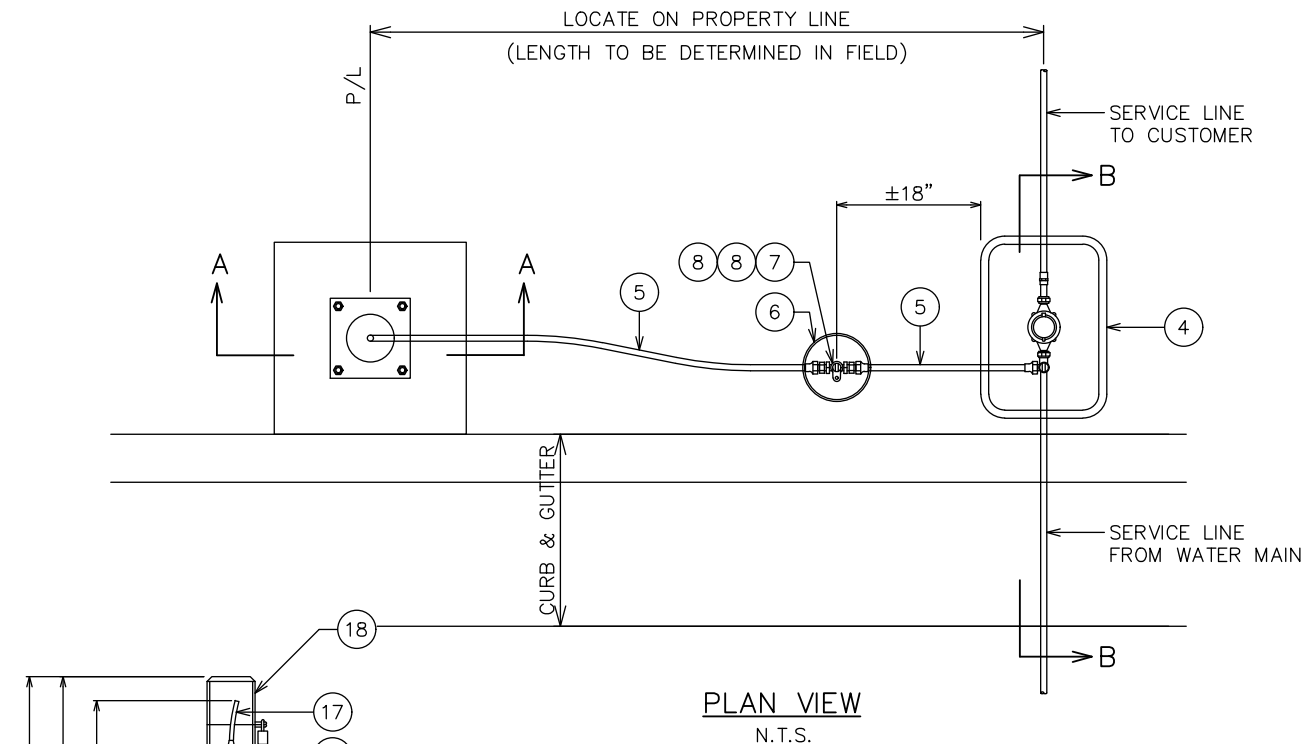


PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

## BACTERIOLOGICAL TEST STATION (TEST STATION BEHIND SIDEWALK)

W-17

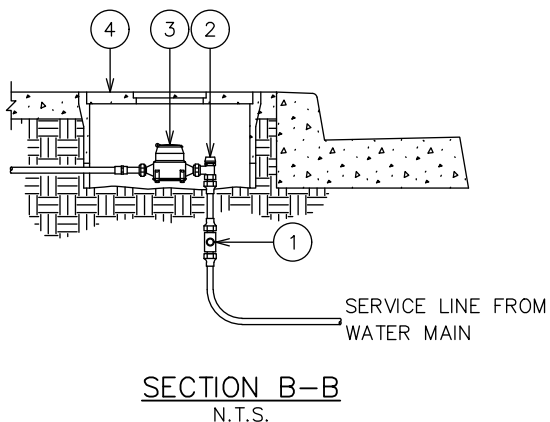
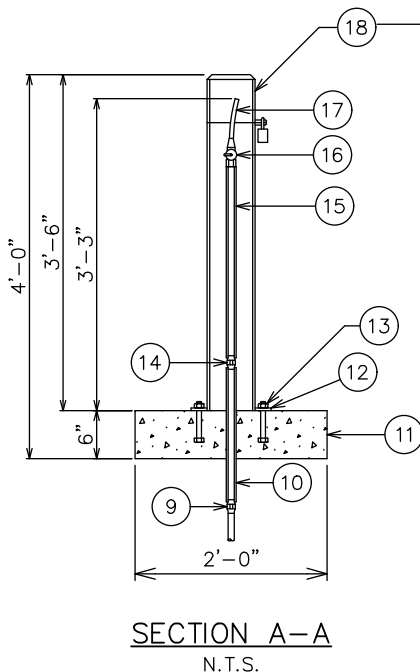


#### KEY NOTES:

IF NO CURB AND GUTTER OR IF TYPE "E" CURB (ROLLED),  
INSTALL BARRICADES PER P.W.D. STD. W-14 AS REQUIRED  
(RUSTOLEUM SAFETY YELLOW)

\*REFER TO LIST OF APPROVED MATERIALS  
MATERIAL DESCRIPTION – SAMPLING STATION:

- ① VARIES" x 3/4" COMPRESSION TEE.
- ② ANGLE STOP WITH COMPRESSION INLET (SIZE VARIES).
- ③ METER.
- ④ METER BOX.
- ⑤ 3/4" TYPE "K" SOFT COPPER TUBING.
- ⑥ VALVE BOX PER P.W.D. STD. W-5.
- ⑦ 3/4" STRAIGHT STOP.
- ⑧ 3/4" M.I.P. x COMP. ADAPTER.
- ⑨ 3/4" F.I.P. x COMP. ADAPTER.
- ⑩ 3/4"x 18" L.F. BRASS NIPPLE WITH PIPE INSULATION.
- ⑪ 24" x 24" x 6" CONCRETE PAD.
- ⑫ 10" x 10" x 3/16" BASE PLATE.
- ⑬ 4-1/2" ANCHOR BOLTS.
- ⑭ 3/4" L.F. BRASS COUPLING.
- ⑮ 3/4" x 30" L.F. BRASS NIPPLE WITH PIPE INSULATION.
- ⑯ 3/4" BALL VALVE WITH 3/4" x 3/8" BRASS BUSHING  
& 3/8" M.I.P. x COMP. ADAPTER.
- ⑰ 3/8" COPPER TUBE.
- ⑱ 6" DIA. STL. PIPE WITH 12" HINGED DOOR & CLASP  
FOR LOCKING (PADLOCK TO BE SUPPLIED BY THE DISTRICT).

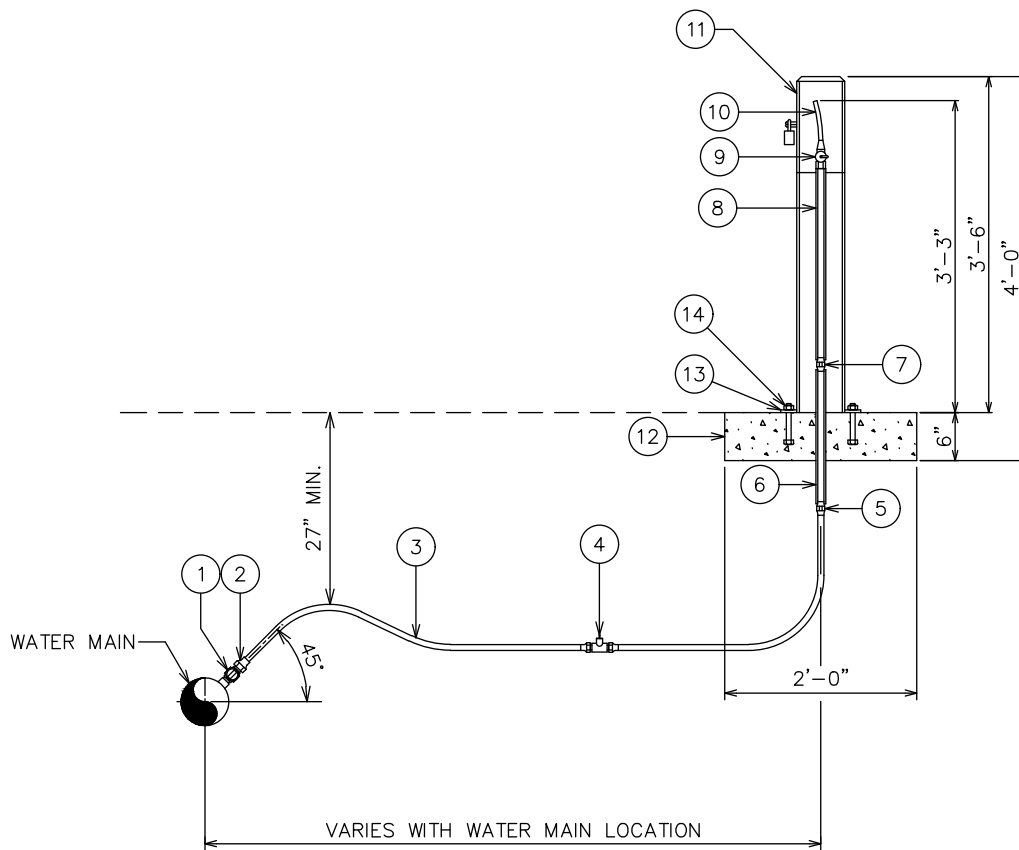


PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

BACTERIOLOGICAL TEST STATION  
(TEST STATION FOR NO SIDEWALK OR SIDEWALK WIDER THAN 5')

W-17A



#### KEY NOTES:

IF NO CURB AND GUTTER OR IF TYPE "E" CURB (ROLLED),  
INSTALL BARRICADES PER P.W.D. STD. W-14 AS REQUIRED  
(RUSTOLEUM SAFETY YELLOW)

\*REFER TO LIST OF APPROVED MATERIALS  
MATERIAL DESCRIPTION –SAMPLING STATION:

- ① CONNECTIONS SHALL BE MADE WITH MATERIALS SPECIFIED IN P.W.D. STD. W-1
- ② 3/4" BALL TYPE CORPORATION VALVE WITH MALE I.P.T. ON THE INLET. SET CORPORATION VALVE AT 45°
- ③ 3/4" TYPE "K" SOFT COPPER TUBING
- ④ 3/4" STRAIGHT STOP
- ⑤ 3/4" F.I.P. x COMP. ADAPTER
- ⑥ 3/4"x 18" L.F. BRASS NIPPLE WITH PIPE INSULATION
- ⑦ 3/4"L.F. BRASS COUPLING
- ⑧ 3/4" x 30" L.F. BRASS NIPPLE WITH PIPE INSULATION.
- ⑨ 3/4" BALL VALVE WITH 3/4" x 3/8" BRASS BUSHING & 3/8" M.I.P. x COMP. ADAPTER
- ⑩ 3/8" COPPER TUBE
- ⑪ 6" DIA. STL. PIPE WITH 12" HINGED DOOR & CLASP FOR LOCKING (PADLOCK TO BE SUPPLIED BY THE DISTRICT).
- ⑫ 24" x 24" x 6" CONCRETE PAD
- ⑬ 10" x 10" x 3/16" BASE PLATE
- ⑭ 4-1/2" ANCHOR BOLTS



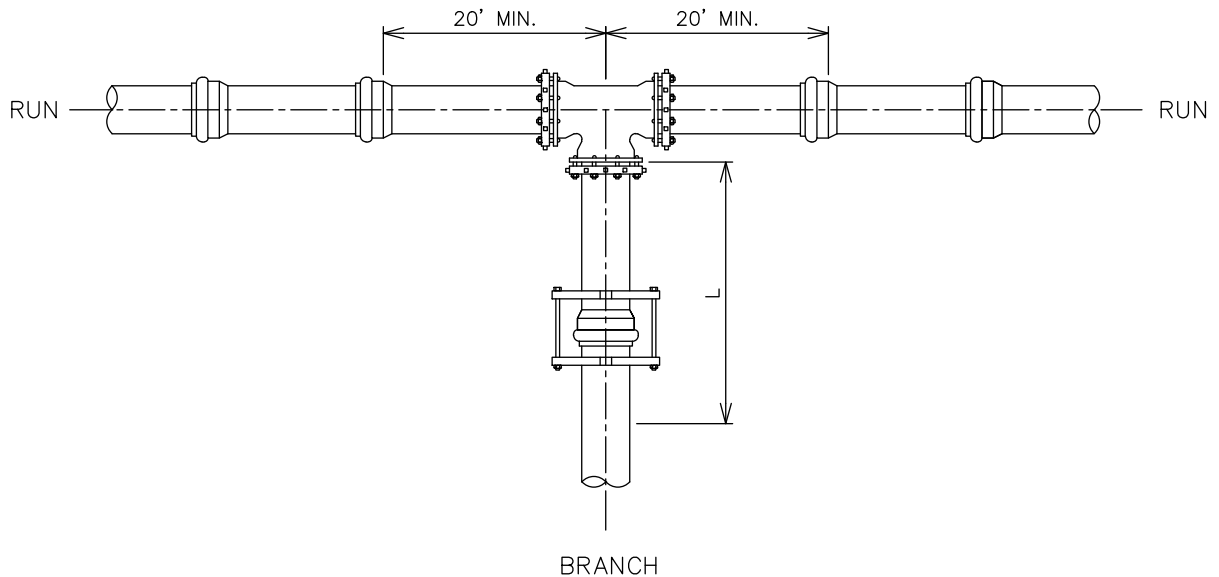
**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

#### BACTERIOLOGICAL TEST STATION (TEST STATION WITH NO METER SERVICE)

W-17B





RUN SIZE		4	6	8	10	12	14	16	18	20	24
BRANCH SIZE	4	*	*	*	*	*	*	*	*	*	*
	6		*	*	*	*	*	*	*	*	*
	8			*	*	*	*	*	*	*	*
	10				*	*	*	*	*	*	*
	12					13	*	*	*	*	*
	14						24	13	*	*	*
	16							36	25	14	*
	18								47	37	16
	20									58	39
	24										79

\* – FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

#### RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 20' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER P.W.D. SPECIFICATION.
3. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-20.



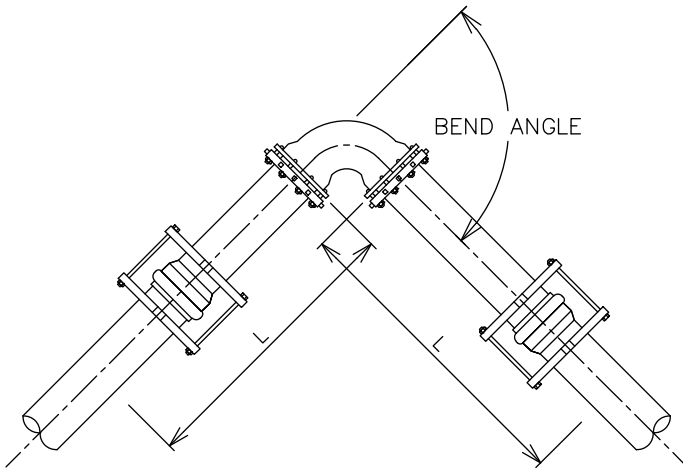
PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

#### STANDARD TEE RESTRAINT (FOR C-900 PVC PIPE)

W-18

## HORIZONTAL BEND

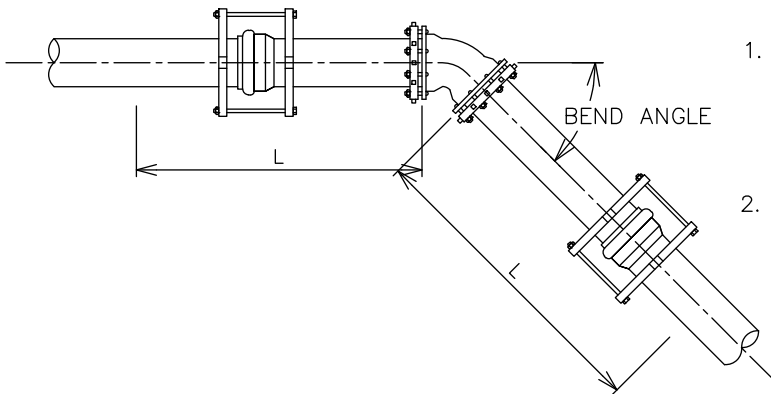


1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-20.

RESTRAINED LENGTHS, "L" (IN FEET)

		RUN SIZE						
		4	6	8	10	12	14	16
BEND ANGLE	11.25	3	3	3	4	4	5	5
	22.5	3	5	7	7	9	10	11
	45	7	11	13	15	18	20	23
	90	17	24	31	37	43	49	55

## VERTICAL BEND



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-20.

RESTRAINED LENGTHS, "L" (IN FEET)

		RUN SIZE						
		4	6	8	10	12	14	16
BEND ANGLE	11.25	5	7	9	11	13	15	17
	22.5	11	15	19	23	27	31	35
	45	23	31	40	48	56	64	72



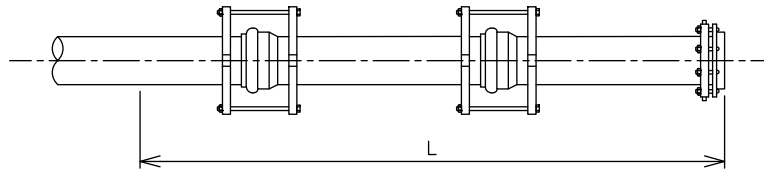
**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025    CMV  
APPROVED:

**STANDARD BEND RESTRAINT**  
(FOR C-900 PVC PIPE)

W-19

### DEAD END P.V.C. PIPE



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR LAYING CONDITIONS SEE GENERAL NOTES BELOW.

#### PIPE SIZE

4	6	8	10	12	14	16
52	73	96	115	136	155	174

RESTRAINED LENGTHS, "L" (IN FEET)

### RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN CRITERIA TYPICALLY USED WITH BACKFILL IN P.W.D.;

1. FORTY-TWO (42) INCHES MINIMUM DEPTH OF COVER.
2. A MINIMUM SAFETY FACTOR OF 1.5
3. SOIL TYPE PER P.W.D. SPECIFICATION.
4. PIPE ZONE BACKFILL FROM A DEPTH OF SIX (6) INCHES MINIMUM UNDER THE PIPE TO TWELVE (12) INCHES ABOVE THE TOP OF PIPE SHALL BE IMPORTED FILL SAND HAVING A MINIMUM SAND EQUIVALENCY OF SAE-30. PIPE ZONE AND TRENCH BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DENSITY OF THE MATERIAL AT OPTIMUM MOISTURE CONTENT.
5. IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE DISTRICT ENGINEER.

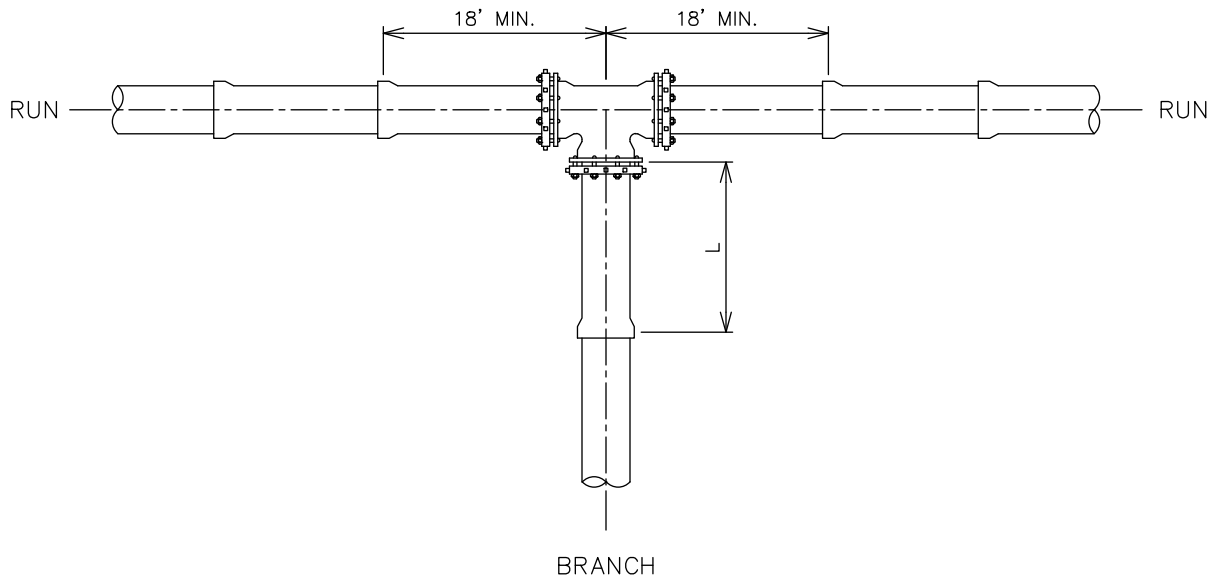


PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

### STANDARD DEAD END RESTRAINT (FOR C-900 PVC PIPE)

W-20



RUN SIZE		4	6	8	10	12	14	16	18	20	24
BRANCH SIZE	4	*	*	*	*	*	*	*	*	*	*
	6		*	*	*	*	*	*	*	*	*
	8			*	*	*	*	*	*	*	*
	10				*	*	*	*	*	*	*
	12					13	*	*	*	*	*
	14						24	13	*	*	*
	16							36	25	14	*
	18								47	37	16
	20									58	39
	24										79

\* – FOR THIS CONDITION NEED ONLY RESTRAIN THE BRANCH OUTLET OF THE TEE.

#### RESTRAINED LENGTHS, "L" (IN FEET)

1. RESTRAIN THE TWO MECHANICAL JOINTS ON THE RUN SIDES OF THE TEE. THERE SHOULD BE A FULL 18' LENGTH OF PIPE INSTALLED ON EACH SIDE OF THE RUN.
2. ALL JOINTS WITHIN THE LENGTH "L" ON THE BRANCH MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS ON PUSH-ON PIPE PER P.W.D. SPECIFICATION.
3. FOR LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-23.



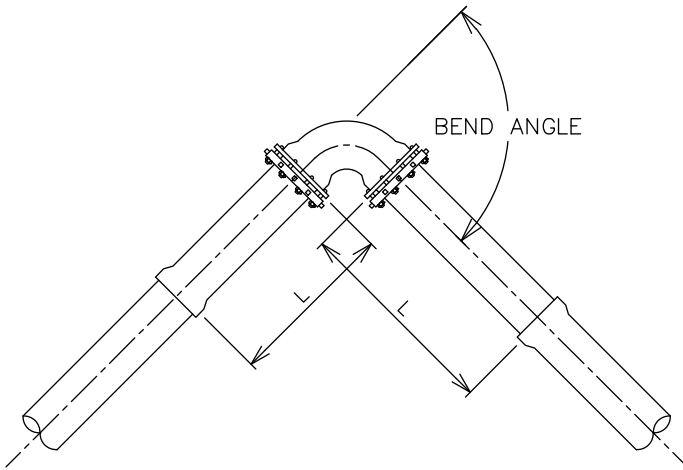
PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

#### STANDARD TEE RESTRAINT (FOR DUCTILE IRON PIPE)

W-21

## HORIZONTAL BEND

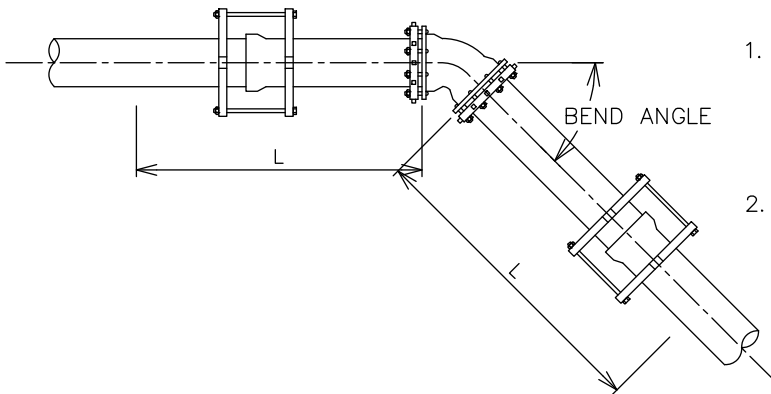


1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-23.

RESTRAINED LENGTHS, "L" (IN FEET)

BEND ANGLE	RUN SIZE							
		4	6	8	10	12	14	16
	11.25	3	3	3	4	4	4	5
	22.5	3	4	7	7	8	9	10
	45	7	9	12	15	17	19	21
	90	16	23	29	35	40	45	51

## VERTICAL BEND



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE SECTION OF GENERAL NOTES FOR USE OF RESTRAINED JOINT LENGTHS ON STANDARD DRAWING W-23.

RESTRAINED LENGTHS, "L" (IN FEET)

BEND ANGLE	RUN SIZE							
		4	6	8	10	12	14	16
	11.25	3	5	7	8	8	10	11
	22.5	7	11	12	15	17	20	22
	45	15	19	25	31	36	41	46



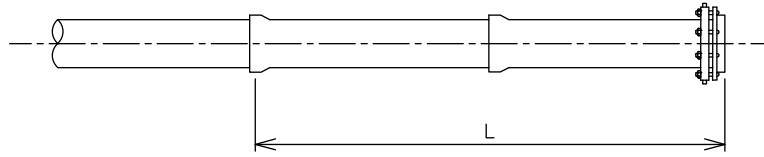
**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025    CMV  
APPROVED:

**STANDARD BEND RESTRAINT**  
(FOR DUCTILE IRON PIPE)

W-22

## DEAD END DUCTILE IRON PIPE



1. ALL JOINTS WITHIN LENGTH "L" MUST BE RESTRAINED. USE RETAINER GLAND AT MECHANICAL JOINTS AND HARNESS WITH PUSH-ON PIPE PER P.W.D. SPECIFICATION.
2. FOR TEST PRESSURES AND LAYING CONDITIONS SEE GENERAL NOTES BELOW.

PIPE SIZE

4	6	8	10	12	14	16
33	47	61	73	86	98	111

RESTRAINED LENGTHS, "L" (IN FEET)

## RESTRAINED JOINT LENGTHS USAGE GENERAL NOTES

RESTRAINED LENGTH CALCULATIONS ARE BASED ON THE FOLLOWING DESIGN CRITERIA TYPICALLY USED WITH BACKFILL IN P.W.D. ;

1. FORTY-TWO (42) INCHES MINIMUM DEPTH OF COVER.
2. A MINIMUM SAFETY FACTOR OF 1.5
3. SOIL TYPE PER P.W.D. SPECIFICATION.
4. PIPE ZONE BACKFILL FROM A DEPTH OF SIX (6) INCHES MINIMUM UNDER THE PIPE TO TWELVE (12) INCHES ABOVE THE TOP OF PIPE SHALL BE IMPORTED FILL SAND HAVING A MINIMUM SAND EQUIVALENCY OF SAE-30. PIPE ZONE AND TRENCH BACKFILL MATERIALS SHALL BE PLACED AND COMPACTED TO A MINIMUM OF 90% OF THE MAXIMUM DENSITY OF THE MATERIAL AT OPTIMUM MOISTURE CONTENT.
5. 200 PSI TEST PRESSURES FOR FOUR (4) THROUGH SIXTEEN (16) INCH SIZE PIPES.

IF ACTUAL CONDITIONS DIFFER FROM THOSE LISTED ABOVE OR THE REQUIRED RESTRAINED LENGTH CANNOT BE MET, THE RESTRAINED JOINT LENGTH SHALL BE DETERMINED BY THE DISTRICT ENGINEER.

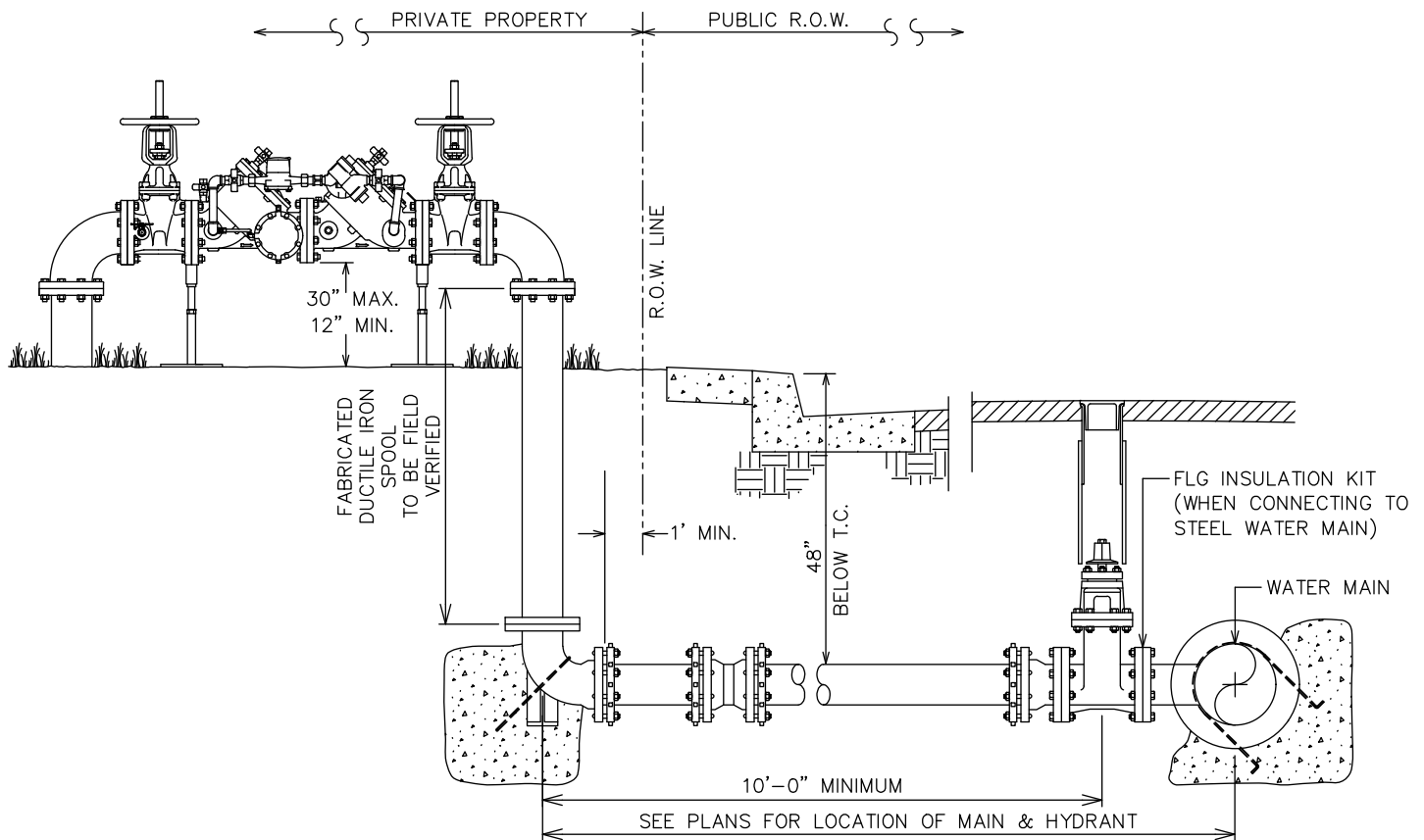


PALMDALE WATER DISTRICT  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

STANDARD DEAD END RESTRAINT  
(FOR DUCTILE IRON PIPE)

W-23



KEY NOTES:

1. PROPERTY OWNER SHALL BE RESPONSIBLE FOR MAINTENANCE INCLUDING REPAIR OR REPLACEMENT AND MUST PROVIDE RESULTS OF REQUIRED ANNUAL BACKFLOW TEST TO THE DISTRICT.
2. METER ATTACHED TO REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA) SHALL BE OWNED AND MAINTAINED BY THE DISTRICT. RPDA METER TO BE ACCESSIBLE TO THE DISTRICT AT ALL TIMES.
3. ALL UNCOATED METAL SURFACES (INCLUDING NUTS AND BOLTS) INSTALLED UNDERGROUND SHALL BE THOROUGHLY COATED W/ NO-OX GREASE AND THEN TO BE WRAPPED WITH V-BIO FILM.
4. INTERMEDIATE PIPE JOINTS IN LATERAL SHALL BE RESTRAINED WITH A MECHANICAL JOINT SLEEVE WITH RETAINING GLANDS OR JOINT RESTRAINT. PIPE SHALL BE INSTALLED HORIZONTAL OR SLOPING DOWNWARD FROM MAIN TO PROVIDE MINIMUM COVER.
5. IF THE ABSENCE OF A CURB OR WHERE TYPE "E" CURB (ROLLED) IS USED, INSTALL BARRICADES PER P.W.D. STD. W-14 AS REQUIRED.

\*REFER TO LIST OF APPROVED MATERIALS

- FLANGED GATE VALVE CL150.
- VALVE BOX PER P.W.D. STD. W-5.
- FABRICATED DUCTILE IRON SPOOL AND M.J. X FLG. 90° ELBOW, D.I., D.C.M.L., CL350 WITH RETAINING GLAND.
- REDUCED PRESSURE DETECTOR ASSEMBLY (RPDA), CURRENT USC APPROVED MODELS ONLY.
- USE 3000 PSI MIN. CONCRETE FOR THRUST BLOCKS. PLACE CONCRETE ON UNDISTURBED OR COMPACTED SOIL. THRUST BLOCKS MUST MEET REQUIREMENTS OF P.W.D. STD. W-4.
- ANCHOR ROD PER P.W.D. STD. W-4.

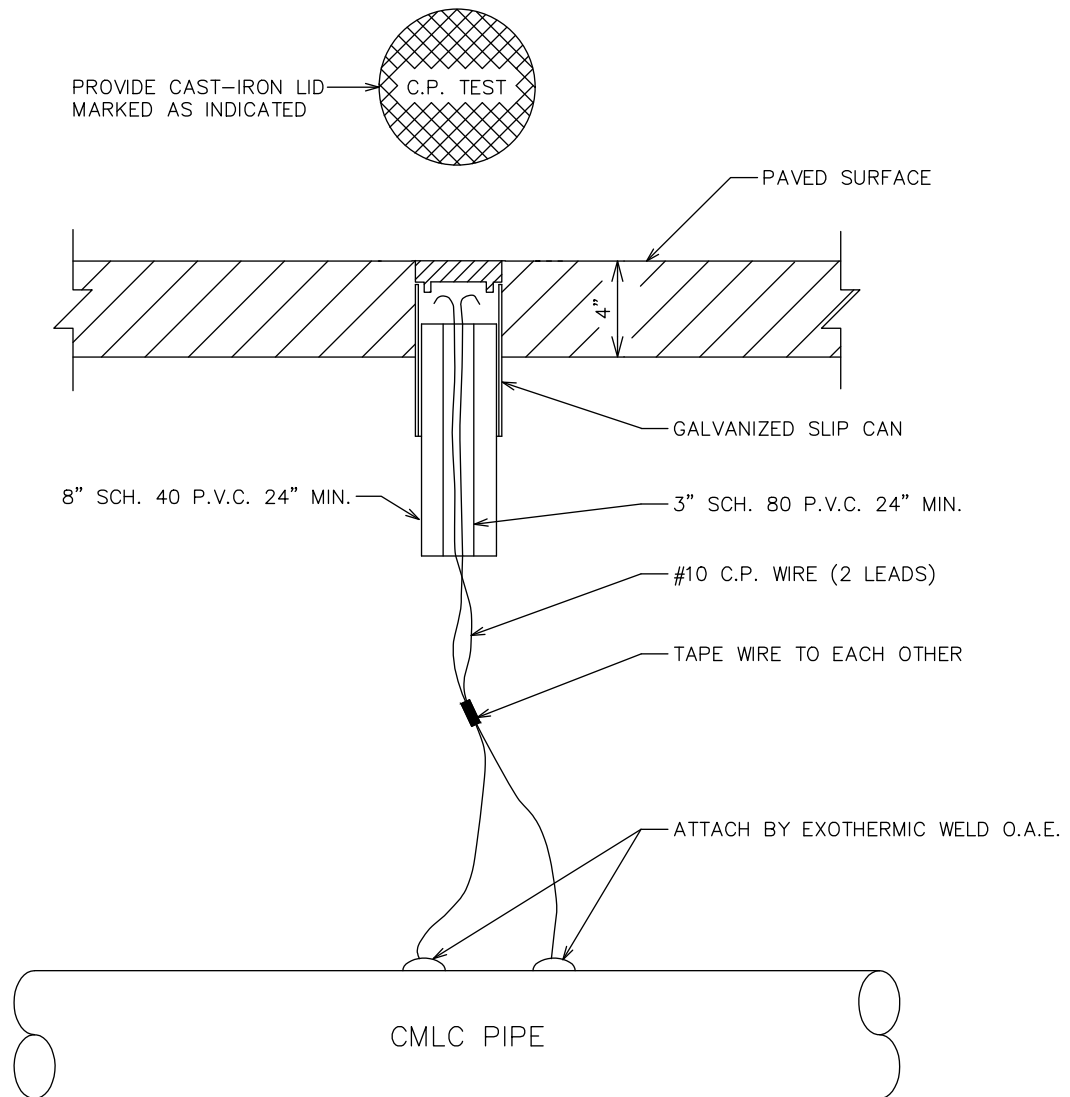


**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

## REDUCED PRESSURE DETECTOR ASSEMBLY

W-24



KEY NOTES:

1. ALL VALVE BOXES LOCATED IN UNIMPROVED STREETS OR DIRT AREA SHALL BE ENCLOSED IN 24" x 24" x 12" THICK CONCRETE PAD.
2. PUT LARGE LOOP KNOT IN CABLE WITH HEAVY SLACK.
3. TEST BEFORE AND AFTER BACKFILL BY DISTRICT.



**PALMDALE WATER DISTRICT**  
A CENTURY OF SERVICE

DATE: June 2025 CMV  
APPROVED:

**TYPICAL C.P. TEST STATION**  
(IMPROVED OR UNIMPROVED ROADS)

W-25





## LIST OF APPROVED MATERIALS

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## LIST OF APPROVED MATERIALS

**Note: All materials in direct contact with drinking water must be NSF 61 and NSF 372 certified.**

### Meter Installation

All water meters will be supplied by PWD at the contractors' expense.

**No other substitutions will be allowed.**

Description	Approved Manufacturer/Stock Number
<u>Service Connection</u> (Size of main) x (Service line size)	<u>Ductile Iron Pipe:</u> Mueller DR 2A Series Service Saddles, Smith Blair 313 Service Saddles, or Approved Equal <u>PVC Pipe:</u> Double Strap Stainless Steel Saddles Jones J-996 or Approved Equal <u>Steel Pipe:</u> 3000 LB. Weld On Half Coupling
Meter Boxes	<u>3/4" Meters:</u> 12"x20"x12" Armorcast Meter Box No. A6000485X12 w/ Armorcast Cover w/ J&R polymer concrete 1-piece lids drilled for Sensus endpoints  <u>3/4" Traffic Rated Meter Lids:</u> Armorcast Cover w/ J&R polymer concrete 1 piece lids drilled for Sensus endpoints  <u>1" Meter:</u> 13"x24"x12" Armorcast Meter Box No. A6001946PCX12 w/ Armorcast Cover w/ J&R polymer concrete 1 piece lids drilled for Sensus endpoints  <u>1" Traffic Rated Meter Lids:</u> Armorcast Cover w/ J&R polymer concrete 1 piece lids drilled for Sensus endpoints <u>1-1/2" - 2" Meter:</u> 17"x30"x12" Armorcast Meter Box No. A6001640PCX12 w/ J&R polymer concrete 1 piece lids drilled for Sensus endpoints  <u>1-1/2"- 2" Traffic Rated Meter Lids:</u> Armorcast Cover w/ J&R polymer concrete 1 piece lids drilled for Sensus endpoints Or Approved Equal
Large Meter Vault	<u>Meter:</u> Contact PWD Engineering Department
Large Meter Vault (cont.)	<u>Vault:</u> 8'W x 6'L Concrete Vault (Interior Dimensions) Jensen Pre-Cast or Approved Equal



Corporation Stop, Ball Style MIP x Comp	<u>3/4", 1", 1 1/2 " and 2"</u> Jones No E-1935 Mueller B25028 Or Approved Equal
Angle Ball Meter Valve (Angle Stop)	<u>3/4" and 1"</u> Ford No. BA43-232W-G-NL Mueller B24258 Or Approved Equal  <u>1 1/2 "and 2"</u> Jones No. E-1975W (Full Face or Drop-In Gasket) Mueller B24276 Or Approved Equal
Polywrap-C (8 Mil, use applicable size)	Northtown Or Approved Equal
V-Bio Bags	American Enhanced Polyethylene & Corrosion Control Encasement McWayne Enhanced Polyethylene & Corrosion Control Encasement US Pipe Enhanced Polyethylene & Corrosion Control Encasement Or Approved Equal
Water Meters	Contact PWD Engineering Department
Meter Flange Coupling-Customer Shut off Valve (Iron Pipe Thread by Meter Swivel Nut)	<u>3/4" and 1"</u> Jones E1908 (Short Handle) Mueller B24351N Or Approved Equal  <u>1 1/2 " and 2"</u> Ford No. CF31 (Full-Face or Drop-In Gasket)
Type "K" Softer Copper Tubing	Mueller Cerro Cambridge Lee

### Combination Air Valve Assembly

Description	Approved Manufacturer/Stock Number
(Size of main) x (Service line size) (8" or smaller Pipe) x (1" service) (10" or larger pipe) x (2" service) Double Strap Malleable Iron Saddle with Pipe Thread, as applicable.p	Mueller DR2A (For Ductile Iron Pipe) Mueller BR2S (For C900) Or Approved Equal
Ball Straight SVC Valve, Ball Style MIP x Comp	Use Applicable Size Jones No J-1900W Or Approved Equal
Type "K" Softer Copper Tubing	Mueller Cerro



	Cambridge Lee
Combination Air Release Vacuum Release Valve	A.R.I. D-040
Brass Ball Valve	Nibco T-FP-600A-LF Ball Valve Or Approved Equal
Air Release Valve Enclosure	Pipeline Products (VCAS-1830 Green) Or Approved Equal

### Backflow and Reduced Pressure Detector Assemblies

Description	Approved Manufacturer/Stock Number
Reduced Pressure Backflow Device (Domestic and Irrigation Services up to 2")	Wilkins 975XL2 Or Approved Equal (must be a USC approved device)
Reduced Pressure Backflow Device (Domestic Services 3" and larger)	All devices must be USC-approved.
Reduced Pressure Detector Assembly (Fire Services 3" or Larger)	All devices must be USC-approved.

### Ductile Iron Pipe and Fittings

Description	Approved Manufacturer/Stock Number
Ductile Iron Pipe- Double Cement lined only Class 350 for line size up to 12" and up	McWane US Pipe American Pipe Or Approved Equal
8 mil Polyethylene Wrap & 10 mil Tap	Northtown Christy's
Pipe Restraints	<u>Mechanical Restraints</u> EBBA Iron 1100 Megalug Series or Approved Equal  <u>Push on Restraint</u> Ebba Iron, Inc. Or Approved Equal  <u>Restraint Joint Gasket</u> McWayne Sure Stop 350, US Pipe Field Lock 350 or Approved Equal
Ductile Iron Fittings (Flange and Mechanical Joint fittings only)	Sigma Star Tyler Or Approved Equal
Mechanical Tapping Sleeves	Mueller H-615 or Approved Equal
Flange Insulation Kits (rubber-coated gasket kits)	Calpico, Inc. or Approved Equal



## Cement Mortar Lined and Coated Steel Pipe and Fittings

Description	Approved Manufacturer/Stock Number
Cement Mortar Lined and Coated Steel Pipe AWWA C205	Southland Pipe Corporation Imperial Pipe Or Approved Equal
Cement Mortar-Coating AWWA C205	Southland Pipe Corporation Imperial Pipe Or Approved Equal
Joints: -Rubber Gasket Joints (SS-P-385) -Lap Welded Field Joints (AWWA C206) -Flanged Ends (AWWA C207)	Southland Pipe Corporation Imperial Pipe Or Approved Equal
Steel Pipe Fittings All fittings for mains 12 inches or smaller shall be Class 150 or Class 250 9 (AWWA C207)	Southland Pipe Corporation Imperial Pipe Or Approved Equal
Tapping Sleeves	Koppl Weld Nozzle CN 100-Nozzle less than half CN 120- Nozzle half or more

## PVC Pipe and Fittings

Description	Approved Manufacturer/Stock Number
PVC Pipe C-900 AWWA C900 Minimum DR18 (235 PSI)	North American Pipe Corp Or Approved Equal
<b>Mechanical</b> Gland shall be Ductile Iron (ASTM A536-65-45-12)	EBBA Iron Megalug Series 2000PV or Approved Equal
Push On Restraint	Harness: EBBA Iron, Inc. or Approved Equal
<b>Ductile Iron Pipe Fittings</b> ANSI/AWWA C110/A21.10 Class 350	Star Tyler SIP Industries Sigma Co. or Approved Equal
Identification Wire	Duet Industries or Approved Equal
Underground Marking Tape	Terra Tape Extra Stretch 540 or Approved Equal
Connections to PVC Pipe	Jones Model NO. J-969 or Approved Equal



	(Bronze service saddle set with double stainless-steel straps)
Mechanical Tapping Sleeves	Mueller H-615 or Approved Equal

### Valves and Related Items

Description	Approved Manufacturer/Stock Number
<b>Resilient Wedge Gate Valve- up to 10"</b> Ductile iron, epoxy-coated interior and exterior body to meet AWWA C500, or AWWA C509 Flange to Flange fitting only 2" operating nut	Mueller A-2362 Clow F-6102 Kennedy KS FW Non-Rising American Series 45 Or Approved Equal
<b>Butterfly Valve- 12" and larger</b> Ductile Iron To meet AWWA C504 Rubber-Seated Flange to Flange fitting only 2" operating nut	Mueller Linesal III CL-150 Clow Style 4500 CL-150 Kennedy Style 4500 CL-150 American Series 816 Or Approved Equal
Check Valves (Seat rings shall be replaceable-either Viton or Teflon)	Prince Cushion Valves Apco Cushioned Check Valves Or Approved Equal
Check Valves (2-1/2" and smaller)	Walworth or Approved Equal
Plug Valves	Rockwell Dezurik or Approved Equal
Steel Valve Stem Extension	Pipeline Products- SX Zinc rich powder coat finish
Valve Can Riser	Sch. 40 PVC 8" Blue Brute C-900 8" Purple Brute C-900 (recycled water) Or approved AWWA C-900 equal
Hydraulic Flow Control Valve	CLA Valve

### Fire Hydrant Assemblies

Description	Approved Manufacturer/Stock Number
6" Wet Barrel Fire Hydrant Must have one (1), 4" port and two (2), 2 ½" ports All hydrants must conform to AWWA C503	Clow-Model 850 Or Approved Equal



2 Groove Breakaway Spool	Clow Tyler South Bay Foundry
Fire Hydrant Paint One (1) coat of red primer and two (2) finish coats	Rust-Oleum Safety Yellow Or Approved Equal

### 2-Inch Blow Off Assembly

Description	Approved Manufacturer/Stock Number
Brass Ball Straight SCV Valve	Jones No. J-1900W Or Approved Equal
Meter Box	<u>Armorcast Meter Box No.</u> A6001946PCX12X12  <u>Armorcast Cover w/ Hinged Reading Lid No.</u> A6001866R-H9  J&R concrete Meter Box

### 4-Inch Blow Off Assembly

Description	Approved Manufacturer/Stock Number
Wharf Head 4" x 2 1/2"  4" Brass Nipple minimum 24"	Jones Model No. J-344 H.P. Or Approved Equal

### Transition Couplings

Description	Approved Manufacturer/Stock Number
Specially made long flange coupling adapter to fit on AC (913)(914) style with minimum 12"-18" length	Smith Blair 913/914 Romac 501 Dayton Or Approved Equal
Flexible Couplings (Stainless-steel nuts and bolts)	Smith-Blair 461 Baker 212/220 Or Approved Equal
Clamp Mechanical Couplings	Victaulic Company of America Gustin-Bacon Or Approved Equal

### Other Materials



Description	Approved Manufacturer/Stock Number
Ring Flange Gasket (Below Ground Only) Full Face Paper (Above Ground Only)	NFS-61 Approved for paper
Nuts and Bolts Sets Must be A307-Zinc Plated	Tripac
Sampling Station	Armorcast Water Sampling Station 815 or Approved Equal
Tapping Sleeves (may only be used under approval of PWD Engineer)	PVC (C-900), Ductile Iron, and Asbestos Concrete sleeves shall be: Mueller H-615, H-619 Or Approved Equal
Large Meter Vault Polymer/fiberglass blend vaults Cast-in-place and concrete block vaults to be approved by PWD Engineer	Jensen Pre-Cast Or Approved Equal





# BOARD MEMORANDUM

**DATE:** July 28, 2025  
**TO:** BOARD OF DIRECTORS  
**FROM:** Mr. Dennis D. LaMoreaux, General Manager  
**RE:** ***CONSIDERATION AND POSSIBLE ACTION TO CAST BALLOT FOR ASSOCIATION OF CALIFORNIA WATER AGENCIES (ACWA) PRESIDENT, VICE PRESIDENT, AND REGION BOARD MEMBERS ELECTION FOR THE 2026-2027 TERM. (NO BUDGET IMPACT – GENERAL MANAGER LaMOREAUX)***

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The ACWA President, Vice President, and Region Board Members election ballot and candidate statements for the 2026-2027 term are attached for consideration.

The District's authorized voting representative, General Manager LaMoreaux, is asked to vote for one candidate for President, one candidate for Vice President, and the slate of Region Board Members. Write-in candidates must be an elected or appointed director of an ACWA member agency and must include a nominating/supporting resolution from their member agency's Board no later than September 19, 2025.

Supporting Documents:

- ACWA President, Vice President, and Region Board Members Voting Ballot
- Candidate Statements



# 2025 ACWA ELECTIONS

ACWA has launched the election process for the 2026-'27 term for President, Vice President, and region board members. This year, the election process for officers and region boards is combined. Voting for both sets of candidates will be done electronically by your designated voter on a single ballot. **A timeline and information on the official candidates are available using the dropdown menus below.**

## Key Election Dates

### BOARD OFFICERS & REGION BOARDS ELECTION TIMELINE

Feb. 28	April 21	June 20	July 21	Sept. 19	Sept. 26	Dec. 3
<b>Committees Appointed</b>  Board officers: Election Committee  Region: Nominating Committees	<b>Call for Candidates</b>  Nominating information sent to ACWA Membership	<b>Voter Designation &amp; Candidate Filing Deadline (Due by 5 p.m.)</b>  Board officers: Nominating resolutions & statements due  Region: Nomination forms due	<b>Election Opens</b>  Electronic ballots sent to designated voters	<b>Election Closes</b>  Electronic ballots due by 5 p.m.	<b>Results Announced</b>  2026-'27 President, Vice President & region boards announced	<b>Officers and Boards Introduced</b>  2026-'27 President, Vice President & region boards introduced at fall conference

## Board Officers' Election for President & Vice President and Region Boards for 2026-'27

Both questions below are optional.

Please vote for only **one** candidate for each seat.

To write-in your vote, select Write-in and then type out your choice. Write-in candidates must be an elected or appointed director of an ACWA member agency and must submit a nominating/support resolution from their member agency's board no later than September 19.

Deadline to submit ballots is 5 p.m. on September 19.

### ACWA President

#### Ernesto A. Avila (Election Committee's preferred candidate)

As the current Vice-President of the Association of California Water Agencies (ACWA), I am most proud of the thought, energy and collaboration that went into developing the 2025-'29 Strategic Plan. I want to be the next ACWA President to continue the momentum we have built focusing on four primary goals of Advocacy, Connections, Education and Organizational Effectiveness. This Strategic Plan is about finding new ways to benefit the members of ACWA as we navigate the shifts in water policy at the state and federal level. My commitment is to unify our collective efforts and better assert ACWA's leadership in shaping California's water policy.

☐

I have 42 years of experience with California water as a Civil Engineer, General Manager, Executive Director of three water coalitions involving over 50 water agencies, and I currently serve as CCWD Board President. I have led or supported over \$10 Billion in California water infrastructure serving over 5 million citizens and many industries today.

I have supported ACWA for over 20 years including serving as Vice President and on the Board of Directors, the Executive Committee, the Region 5 Board, the Federal Affairs Committee, the ACWA JPIA Executive Committee of the Board, the ACWA Foundation Steering Committee and Chair of the Local Government Committee.

I would be honored to represent our members as the next President of ACWA.

Learn more at: [ccwater.com/AvilaForACWAPresident](https://ccwater.com/AvilaForACWAPresident)

[Show less](#)

☐

Write-in:

## ACWA Vice President

### Carol Lee Gonzales-Brady (Election Committee's preferred candidate)

I am pleased to offer my Statement of Qualifications as a Candidate for ACWA Vice President. I'm passionate about delivering prudent fiscal and environmental stewardship and advocating for sound policy. My philosophy: Protect our water, today and tomorrow, with a diversified portfolio of both immediate and long-range strategies and solutions.

I was elected to the Rancho California Water District (RCWD)'s Board of Directors in 2017 and re-elected in 2022, serving two terms as Board President. I joined ACWA in 2017 and became a Region 9 Director in 2019, serving as Vice Chair for the 2024-25 term. I represent the Region on ACWA's Board of Directors, and in 2024 was honored to be elected by the Board to the Executive Committee.

Other committees and task forces include:

- Water Policy Task Force - Vice Chair
- Membership and Communications Committees
- Region 9 Membership Engagement Work Group - Chair
- Strategic Planning Task Force (past)
- Election Committee (past)

Committed to building alliances and cultivating partnerships, I also am a past Director of ACWA/JPIA and serve on other industry Boards including Urban Water Institute (UWI) and Southern California Water Coalition (SCWC) - Legislative Task Force co-Chair.

I earned my BS (magna cum laude) in Business Management from Pepperdine University. My professional career in procurement, contracts, and strategic management has spanned federally regulated industries including water and electric utilities. A native Californian and vineyard owner, I have given back to my community as an appointed Director on a Resource Conservation District Board and through charities, associations, and local advocacy groups such as the Southwest California Legislative Council.

It has been my honor to serve alongside my dedicated colleagues on the ACWA Board. I look forward to continuing to build upon ACWA's work to promote and advance the priorities, initiatives, and interests of our members.

Please visit [RanchoWater.com/ACWAVP](https://RanchoWater.com/ACWAVP). Thank you for your support.

[Show less](#)



Write-in:

## Region 8 Election Ballot for 2026-'27 Term

Submitted board candidate bios and headshots are available on <https://www.acwa.com/elections>

You may either vote for the slate recommended by the Region Nominating Committee or vote for individual region board members (please note rules & regulations for specific qualifications).

View full rules and regulations [HERE](#)

### Region 8 Nominating Committee Recommended Slate

Chair:

- Anthony R. Fellow, Board Member, Upper San Gabriel Valley Municipal Water District

Vice Chair:

- Scott Quady, Director, Calleguas Municipal Water District

Board Members:

- William Cooper, Vice President, Santa Clarita Valley Water Agency
- Robert W. Lewis, Board of Director, Rowland Water District
- Jacquelyn McMillan, Board Member, Metropolitan Water District of Southern California
- Chisom Obegolu, Assistant General Manager – Water Services, City of Glendale Water & Power
- Richard Wilson, Assistant General Manager – Water, Burbank Water & Power

### Nominating Committee's Recommended Slate

You may select **one** of the following.

☐

**I concur with the Region's Nominating Committee's recommended slate above.**

☐

**I do not concur with the Region's Nominating Committee's recommended slate. I will vote for individual candidates below as indicated.**

Cancel

Continue



“The Association of California Water Agencies (ACWA) truly represents the nexus of knowledge and leadership in water for California. As the current Vice-President of the Association of California Water Agencies (ACWA), I am most proud of the thought, energy and collaboration that went into developing the 2025-’29 Strategic Plan. I want to be the next ACWA President to continue the momentum we have built focusing on four primary goals of Advocacy, Connections, Education and Organizational Effectiveness. This Strategic Plan is about finding new ways to benefit the members of ACWA as we navigate the shifts in water policy at the state and federal level. My commitment is to unify our collective efforts and better assert ACWA’s leadership in shaping California’s water policy.”

– Ernesto (Ernie) Avila, P.E.

## ACWA LEADERSHIP

- Vice-President
- Executive Committee of the ACWA Board of Directors
- ACWA Strategic Plan Task Force Chair
- ACWA Region 5 Board of Directors
- ACWA JPIA Executive Committee

## ACWA COMMITTEES

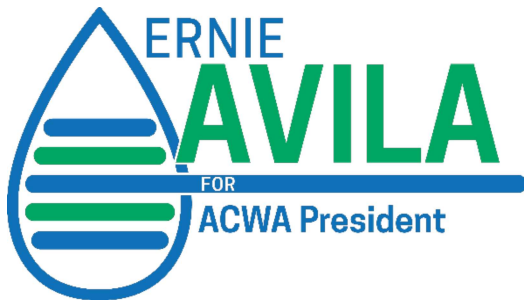
- Local Government Committee, Chair
  - Property Tax Working Group
  - Housing Densification Working Group
  - Paving Standards Working Group
- Federal Affairs Committee
- Foundation Fundraising Working Group

## CONTRA COSTA WATER DISTRICT

- Contra Costa Water District, Board President
- Operations & Engineering, Committee Chair
- East Bay Leadership Council, Director

## PROFESSIONAL EXPERIENCE

- Vice-President, Avila and Associates Consulting Engineers, Inc.
- Monterey Peninsula Water Management District, General Manager
- Director of Engineering, Contra Costa Water District
- California Urban Water Agencies, Executive Director



## Ernesto (Ernie) Avila, PE Board President Contra Costa Water District

### Recent ACWA and Regional Water Coalition Experience

**Association of CA Water Agencies (ACWA).** I have had the honor of supporting ACWA over twenty years at the regional, state and federal level. My recent ACWA experience has included serving on ACWA's:

- Vice President
- Executive Committee of the ACWA Board of Directors
- Strategic Plan Task Force Chair
- Region 5 Board of Directors
- ACWA JPIA Executive Committee of the Board
- Local Government Committee (Chair)
  - Property Tax Working Group
  - Housing Densification Working Group
  - Paving Standards Working Group
- Federal Affairs Committee
- Foundation Steering Committee
  - Foundation Fundraising Working Group



Most recently, I led ACWA's effort to develop the 2025 – 2029 Five-Year Strategic Plan. This work included revising ACWA's mission, vision and values followed by identifying four primary goals: Advocacy, Connections, Education and Organizational Effectiveness. This Plan will provide a framework to unify the ACWA community and better assert our leadership in shaping California Water Policy.

I led ACWA's assessment of potential water industry impacts associated with Sacramento-based housing initiatives including Auxiliary Dwelling Units, Commercial Properties and Transit Center Hubs and led a workshop to consider potential ACWA next steps associated with these new initiatives and their related changes to water agency fees and charges. I also participated in the ACWA Foundation Steering Committee including several related Ad Hoc committees and contributed to Federal Affairs Committee work groups associated with the Water Infrastructure Finance and Innovation Act (WIFIA).

**Multi-State Salinity Coalition (MSSC).** For over 20 years, I have served as Program Director and Board member of MSSC which consists over 30+ water agencies from New Mexico, northern and southern California, Nevada, Colorado, Arizona and Texas. The MSSC mission is to promote advancements in technologies for desalination, reuse, salinity control strategies (watersheds and agriculture), water/energy efficiencies and related policies that will assist communities in meeting their water needs. I also helped to establish relationships regarding salinity management and desalination with water agencies in Australia, Mexico and Israel. In February 2023, the MSSC awarded me with the **MSSC "Salt of**



***the Earth” National Award*** for outstanding commitment, leadership, vision and dedication to our water industry.

**Contra Costa Water District (CCWD).** As President of CCWD, I am focused on the investments needed in infrastructure to serve our community and improve water supply reliability today and into the future. The aging Contra Costa Canal, built by the Bureau of Reclamation in 1930s, is the backbone of CCWD’s water system and essential to water system reliability for the region. In order to move forward with plans to replace the aging canal with a pipeline, I worked closely with federal legislators to secure needed legislation to transfer title of the facility from Reclamation to CCWD.

**California Urban Water Agencies (CUWA).** As Executive Director, I led CUWA’s effort in the development of Department of Water Resources (DWR) Methodologies for Calculating Baseline and Compliance Urban Per Capita Water Use as part of the Water Conservation Act of 2009 (Senate Bill X7-7) with our southern and northern California water agency members. I also made certain that CUWA’s finances and practices were sound and transparent.

**Northern California Salinity Coalition.** As Executive Director, I led a coalition of ten San Francisco Bay Area water agencies in crafting grant application strategies and DWR outreach that would demonstrate the value of supporting watershed management, brackish desalination and groundwater project associated with salinity management. Working with the Coalition agencies, we secured the largest Proposition 50 grant funding for our region.

### Professional Work Experience (40 years)

- Vice-President, Avila and Associates Consulting Engineers, Inc.
- General Manager, Monterey Peninsula Water Management District
- Director of Engineering, Contra Costa Water District
- Associate Engineer, East Bay Municipal Water District
- Construction Manager, CH2M Hill
- Professional Civil Engineer (California – C41727)

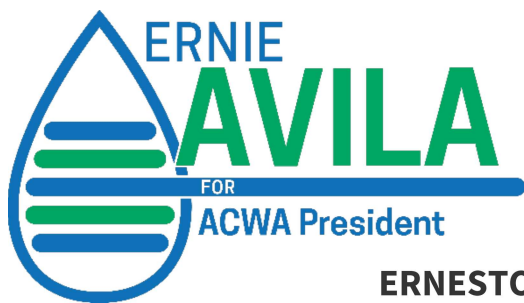
### Community Service Experience

- Contra Costa Water District, President of the Board
- John Muir Community Health Fund Board of Directors (Treasurer)
- Association of California Engineering Companies – Chair of the Healthcare Trust (non-profit)
- Knights of Columbus, Scholarship Chair
- St. Francis of Assisi School Board, President
- City of Concord, CA – Planning Commission, Chair
- City of Concord, CA – Design Review Board
- City of Walnut Creek, CA – Transportation Commission, Vice-Chair

### Education and Related Credentials

- B.S. – Civil Engineering, Santa Clara University
- M.B.A. – St. Mary’s College of California
- Professional Civil Engineer (California – C41727)
- California Farm Bureau Member





## **ERNESTO (ERNIE) AVILA | BIOGRAPHY AND QUALIFICATIONS**

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Ernesto (Ernie) A. Avila, P.E., was appointed in March 2016 to represent Division 3 for the Contra Costa Water District, which includes eastern Concord, Clayton, and part of Walnut Creek and Pleasant Hill. He began serving as President in May 2022.

Mr. Avila has over 42 years of professional experience in planning, environmental compliance, regulation, design, and construction of water, wastewater and recycled water works and municipal facilities in excess of \$10 Billion in value. He is currently Vice-President of a private civil and environmental engineering firm.

Mr. Avila has been involved with the Association of California Water Agencies (ACWA) for over twenty years at the regional, state and federal level. He currently serves as Vice President. He has also represented ACWA members on the Executive Committee of the ACWA Board of Directors, Region 5 Board, Local Government Committee (Chair), Federal Affairs Committee, ACWA Foundation Steering Committee and the ACWA JPIA Executive Committee of the Board.

Over his first year as Vice President, Mr. Avila led ACWA's effort to develop the 2025-'29 Strategic Plan which identifies four primary goals of Advocacy, Connections, Education and Organizational Effectiveness. This Plan provides clearly defined strategies and objectives to achieve each goal and 50 key performance indicators to gauge progress. The aim of this effort is to unify our collective efforts and better assert ACWA's leadership in shaping California's water policy

For the community, Mr. Avila has volunteered for many citizen-based committees / organizations including the Walnut Creek Transportation Commission, the Concord Planning Commission, the John Muir/Mount Diablo Community Health Fund, the Knights of Columbus, the East Bay Leadership Council, and the St. Francis of Assisi School Board. While working full time, he has made volunteering in the community a priority, representing his neighbors and family on important issues that affect their everyday life.

Mr. Avila is passionate about water issues in his professional life, working on a variety of issues statewide during his career. Among several relevant positions, he served as Director of Engineering at Contra Costa Water District before moving on to become General Manager of Monterey Peninsula Water Management District. He also served as Executive Director for the California Urban Water Agencies, Program Director for the Multi-State Salinity Coalition, and

is on the Executive Committee of the Association of California Water Agencies Board of Directors and ACWA JPIA. He has experience on water projects of all shapes and sizes, including water treatment plant improvements, dam retrofits, and watershed management and habitat conservation projects. In recognition of his work, Mr. Avila recently received the 2023 ***“Salt of Earth” Award*** by the Multi State Salinity Coalition for his commitment, leadership, vision and dedication to the water industry by promoting advancements in technologies for desalination, reuse, salinity control strategies, water/energy efficiencies, and related public policies that assist communities in meeting water needs.

Mr. Avila lives in Clayton with his family and is a licensed civil engineer with a Bachelor of Science in Civil Engineering from Santa Clara University and a master’s degree in Business Administration from St. Mary’s College of California. He is also a proud member of the California Farm Bureau.



## ELECT CAROL LEE GONZALES-BRADY ACWA VICE PRESIDENT

PROTECTING OUR WATER, TODAY AND TOMORROW

### BACKGROUND

As an elected Director of Rancho California Water District in Temecula, I understand that water issues are complex and we sometimes have different opinions on solutions. I serve as Vice-Chair for ACWA's Region 9, representing members - desert, coastal, residential, commercial, and agricultural - with diverse priorities and perspectives. ACWA's Regions statewide may be different, but we can agree on one thing - that the need for prudent, sustainable water management in California is critical.

I've served as a member on several Standing Committees, Sub-committees, Task Forces and Work Groups. My experience on our ACWA Board, on our Executive Committee, and on our Strategic Planning and Water Policy Task Forces has prepared me for our next steps as we execute the initiatives of our recently streamlined strategic plan. It will provide us with a clear, focused framework as we address water issues and position ACWA in its continued role as a strong, vital industry leader.

I earned my Bachelor of Science degree (magna cum laude) in Business Management from Pepperdine University. My professional career in procurement, contracts and strategic management has spanned federally regulated industries including water and electric utilities. I am committed to building relationships, partnerships and alliances with other water, business and community leaders. In addition to my work at ACWA, I serve on the Boards of Southern California Water Coalition and Urban Water Institute, and was twice appointed by our Board of Supervisors as a Director of a Resource Conservation District.

I'm a grower for local wineries, and my husband and I have lived on our family vineyard for over 20 years. I support important causes and my community through participation and memberships in charities, churches, associations, and advocacy groups such as the Farm Bureau and Southwest California Legislative Council.

You can learn more about me by visiting [RanchoWater.com/ACWAVP](https://RanchoWater.com/ACWAVP). Thank you for your support.

### RANCHO CALIFORNIA WATER DISTRICT (RCWD)

Vice President, Board of Directors  
Elected 2017; Re-elected 2022  
Past Board President (2021 & 2022)

### ASSOCIATION OF CALIFORNIA WATER AGENCIES (ACWA)

Executive Committee (2024-2025)  
Board of Directors (2024-2025)  
Region 9 Vice Chair (2024-2025)  
Region 9 Board Member (2019-2025)  
Committees: Membership, Communications, Election (past)  
Task Forces: Strategic Planning, Water Policy (Vice Chair)

### ACWA/JOINT POWERS INSURANCE AUTHORITY (JPIA)

JPIA Director, representing Rancho Water (2022-2024)

### SOUTHERN CALIFORNIA WATER COALITION (SCWC)

Board of Trustees, Water Segment (2021-present)  
Co-Chair, Legislative Task Force (2021-present)

### URBAN WATER INSTITUTE (UWI)

Board Member (2023-present)



**CAROL LEE  
GONZALES-BRADY**  
FOR ACWA VICE PRESIDENT

[RanchoWater.com/ACWAVP](https://RanchoWater.com/ACWAVP)

The ACWA Election Committee has formally endorsed and recommended Carol Lee Gonzales-Brady as the preferred candidate for ACWA Vice President for the 2026-2027 term.

**CAROL LEE GONZALES-BRADY IS PROUD TO BE  
ENDORSED BY THE FOLLOWING AGENCIES**

**ACWA ELECTION COMMITTEE**

**CHINO BASIN WATER CONSERVATION  
DISTRICT**

**COACHELLA VALLEY WATER DISTRICT**

**DESERT WATER AGENCY**

**EASTERN MUNICIPAL WATER DISTRICT**

**ELSINORE VALLEY MUNICIPAL WATER  
DISTRICT**

**FALLBROOK PUBLIC UTILITY DISTRICT**

**HELIX WATER DISTRICT**

**IMPERIAL IRRIGATION DISTRICT**

**INLAND EMPIRE UTILITIES AGENCY**

**IRVINE RANCH WATER DISTRICT**

**LAS VIRGENES MUNICIPAL WATER  
DISTRICT**

**MESA WATER DISTRICT**

**MONTE VISTA WATER DISTRICT**

**MONTECITO WATER DISTRICT**

**MOULTON NIGUEL WATER DISTRICT**

**MUNICIPAL WATER DISTRICT OF ORANGE  
COUNTY**

**OLIVENHAIN MUNICIPAL WATER DISTRICT**

**RAINBOW MUNICIPAL WATER DISTRICT**

**RANCHO CALIFORNIA WATER DISTRICT**

**SALTON SEA AUTHORITY**

**SANTA CLARITA VALLEY WATER DISTRICT**

**SANTA FE IRRIGATION DISTRICT**

**SANTA MARGARITA WATER DISTRICT**

**VALLEY CENTER MUNICIPAL WATER  
DISTRICT**

**VISTA IRRIGATION DISTRICT**

**WESTERN CANAL WATER DISTRICT**

**WESTERN MUNICIPAL WATER DISTRICT**

**YUIMA MUNICIPAL WATER DISTRICT**



## Biography and Qualifications

### Candidate for ACWA Vice President

Carol Lee Gonzales-Brady was elected to the Rancho California Water District (RCWD) Board of Directors in 2017 and re-elected in 2022, serving as Board President for two terms. Rancho Water is a Special District that provides water and wastewater services to residential, commercial, and agricultural customers. It is the 10<sup>th</sup> largest retail water district in California (based on water sales), serves more than 150,000 people, and covers 100,000 acres of service area.



Director Gonzales-Brady has been a member of the Association of California Water Agencies (ACWA) since 2017. She joined the Region 9 Board in 2019 and currently serves as Vice Chair, representing the Region on ACWA's Board of Directors. In 2024, she was elected by the Board to the Executive Committee.

She has been active on standing committees and task forces in volunteer and appointed roles such as the Membership and Communications Committees, Communications Ag Sub-Committee, Election Committee, Region 9 Membership Engagement Work Group (Chair), Strategic Planning Task Force, and Water Policy Task Force (Vice Chair). Sound water policy, aligned with the guiding principles of ACWA's Strategic Plan, will be key as ACWA navigates complex water issues and advocates on behalf of its members.

Dedicated to building alliances and cultivating partnerships, Director Gonzales-Brady serves on the Board of Trustees of Southern California Water Coalition (SCWC) and is co-Chair of their Legislative Task Force. She is also on the Board of Directors of Urban Water Institute (UWI) and is a past Director of ACWA/JPIA, representing RCWD. Prior to her election to Rancho Water's Board, she was twice appointed by the Riverside County Board of Supervisors to the Board of Directors of their Resource Conservation District.

Director Gonzales-Brady earned her Bachelor of Science degree (*magna cum laude*) from Pepperdine University's Graziadio School of Business and Management. Her international professional experience, with an emphasis in procurement, contracts, and strategic management includes federally regulated industries such as water and electric utilities, nuclear procurement, geothermal power plant design/engineering/construction, and medical device manufacturing.

A native Californian and winegrape grower in Temecula's Wine Country, Director Gonzales-Brady and her husband have lived on their vineyard for over 20 years. She is immersed in her community and supports the outreach and assistance provided by local organizations, charities, and advocacy groups. Her volunteer efforts and memberships include Temecula Winegrowers' Association, Riverside County Farm Bureau, Temecula Valley Horsemen's Association, and Southwest California Legislative Council.





# Carol Lee Gonzales-Brady

Director, Rancho California Water District

## Candidate Statement

### Candidate for ACWA Vice President

I am pleased to offer my Statement of Qualifications as a Candidate for ACWA Vice President. I'm passionate about delivering prudent fiscal and environmental stewardship and advocating for sound policy. My philosophy: Protect our water, today and tomorrow, with a diversified portfolio of both immediate and long-range strategies and solutions.

I was elected to the Rancho California Water District (RCWD)'s Board of Directors in 2017 and re-elected in 2022, serving two terms as Board President. I joined ACWA in 2017 and became a Region 9 Director in 2019, serving as Vice Chair for the 2024-25 term. I represent the Region on ACWA's Board of Directors, and in 2024 was honored to be elected by the Board to the Executive Committee.

Other committees and task forces include:

- Water Policy Task Force - Vice Chair
- Membership and Communications Committees
- Region 9 Membership Engagement Work Group - Chair
- Strategic Planning Task Force (past)
- Election Committee (past)

Committed to building alliances and cultivating partnerships, I also am a past Director of ACWA/JPIA and serve on other industry Boards including Urban Water Institute (UWI) and Southern California Water Coalition (SCWC) - Legislative Task Force co-Chair.

I earned my BS (magna cum laude) in Business Management from Pepperdine University. My professional career in procurement, contracts, and strategic management has spanned federally regulated industries including water and electric utilities. A native Californian and vineyard owner, I have given back to my community as an appointed Director on a Resource Conservation District Board and through charities, associations, and local advocacy groups such as the Southwest California Legislative Council.

It has been my honor to serve alongside my dedicated colleagues on the ACWA Board. I look forward to continuing to build upon ACWA's work to promote and advance the priorities, initiatives, and interests of our members.

Please visit [RanchoWater.com/ACWAVP](https://RanchoWater.com/ACWAVP). Thank you for your support.



42135 Winchester Road, Temecula, CA  
(951) 296-6900 [RanchoWater.com](https://RanchoWater.com)

Anthony R. Fellow, Ph.D  
Region 8 Board Candidate  
Nomination Form

### **Statement of Qualifications for ACWA Regional Chair**

#### **Describe your ACWA-related activities that help qualify you for this office:**

As a proud member of the Association of California Water Agencies (ACWA) since 1991, I bring more than three decades of active participation and leadership to this organization. Throughout these years, I have attended nearly every ACWA conference, witnessing firsthand the evolution of California's water challenges and the innovative approaches our members have brought to meet them.

Currently, I have the honor of serving as Chair of Region 8 and have been a member of the Region 8 Board for the past four years. In my tenure as Chair, I have prioritized communication, collaboration, and meaningful engagement. One of the ways I've implemented this is through regular luncheon meetings with Region 8 directors. These meetings have fostered a strong sense of teamwork and transparency, allowing us to share updates, troubleshoot challenges, and brainstorm new initiatives together.

Over the past two years, Region 8 has had an especially productive and dynamic run. A standout achievement was our highly successful *Women in Water Conference* in Pasadena. This event not only drew a significant number of participants but also succeeded in reaching and inspiring the next generation—particularly young women interested in water careers. We were honored to feature Patricia Mulroy, a globally respected leader in water policy, as a keynote speaker. Her participation underscored the depth and seriousness of our programming, reinforcing our region's role as a thought leader within ACWA.

In addition to the Women in Water event, Region 8 has consistently hosted strong and well-attended Fall and Spring membership meetings. These gatherings have provided valuable opportunities for professional development, networking, and policy discussion, and they have contributed to Region 8's reputation for organizing some of the most creative and forward-thinking regional conferences within ACWA.

With your support, I am eager to continue this momentum. My goal is to keep building on the collaborative foundation we've established, promoting inclusivity, innovation, and regional impact. Let's continue the important work of strengthening our communities, supporting water leaders, and shaping the future of California water—together.



**DR. ANTHONY R. FELLOW**

A member of the California State Assembly once introduced Dr. Tony Fellow as the “pillar of the San Gabriel Valley.” His community and professional involvement have certainly touched upon the most important elements of a community—water, education and government. Fellow was elected to the Upper San Gabriel Municipal Water District in 1990 with a wave of environmentalist who changed water politics. He was instrumental in establishing the district’s first water recycling program which would save the greater San Gabriel Valley during the nine-year drought, conservation education programs, and a reforestation project in the Angeles National Forest. His 24-year appointment as director and vice-chair of the Metropolitan Water District of Southern California gave him a wider reach to inaugurate programs that would benefit Southern California. Today he also is Chair of all water agencies in Los Angeles and Ventura counties who are members of the Association of California Water Agencies,

In 1996 he was elected to the El Monte City Council where he served for 12 years. He helped bring new businesses, such as Home Depot, to the city, as well as new housing, and made strides to beautify the city and create recreational facilities for youths, such as the Dorris Dann Recreational Center.

In 2007 Arcadia voters overwhelmingly elected Fellow to the Pasadena City College Board of Trustees, where he has served as president of the board and supported two-year free tuition for in-district students, more counselors, and greater transparency.

Fellow was born in Bridgeport, Connecticut, and grew up in El Monte. After graduating with his bachelor’s degree and Lifetime Secondary Teaching Credential, he worked as a reporter at the *San Gabriel Valley Tribune*. He was promoted to assistant city editor and columnist, and head of the political election team covering the presidencies of Gerald Ford and Jimmy Carter.

He holds a doctorate from the Walter H. Annenberg College of Communication and Journalism at the University of Southern California where he was an Annenberg Scholar. He also holds three master degrees in Communications and just completed a three year post-doctoral degree in Catholic Theology and Sacred Scriptures at St. Joseph’s College of Maine. At USC and Cal State Fullerton, he taught courses in media history, media law and First Amendment rights, international communications and media and politics. He is an international Fulbright Scholar having taught in Rome, Florence, Vercelli, Shanghai, and Hong Kong. At an international conference in Rome, he was named one of America’s Distinguished Professors.

He has served as chair of the Department of Communications and Department of Cinema and Television Arts at Cal State Fullerton, where he also has been named senior distinguished professor. He is author of *American Media History*, *Tweeting to Freedom: An Encyclopedia of Citizen Protests and Uprisings Around the World*, *Copy Editor’s Handbook for Newspapers*, and *Writing in a Multimedia World*. He is currently working on how today’s news media is destroying American democracy. He speaks frequently at the annual Broadcast Education Association conference in Las Vegas. Last year he spoke about the impact of Artificial Intelligence on the First Amendment.





## PROFILE

Master of Science Degree,  
Environmental Science (LMU)

Bachelor of Science Degree,  
Biochemistry (Cal Poly, SLO)

Engineer-In-Training (EIT),  
California Department of  
Consumer Affairs

Water Treatment Operator (2),  
State Water Resources Control  
Board

Environmental Compliance  
Inspector and Laboratory Analyst  
(4), California Water Environment  
Association

Member: American Water Works  
Association

## CONTACT

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[www.calleguas.com](http://www.calleguas.com)

EMAIL:  
[squady@calleguas.com](mailto:squady@calleguas.com)



# SCOTT QUADY

## Candidate Statement of Qualifications: ACWA Region 8

Sixteen years as a water district board member

Forty-year career as a water industry professional: private,  
municipal and non-profit organizations

Retired as an Environmental Resource Analyst

## ACWA

- Region 8, Alternate Vice-Chair since 2023
- Energy Committee
- Prior/continuing interests: Water Quality, Safe Drinking Water and Water Management Committees

## ACWA-JPIA

### Board Member Director since 2012

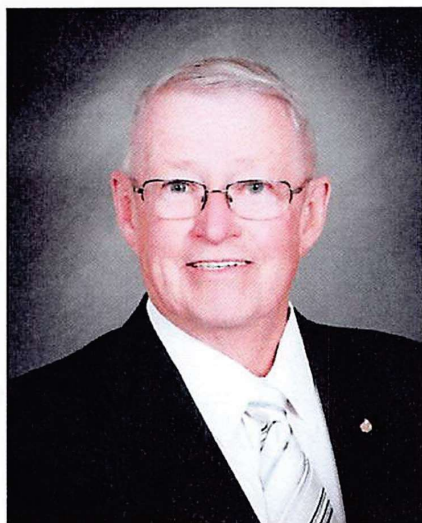
- Workers Compensation Committee since 2018
- CWIF (California Water Insurance Fund, Captive) Board: 2019 (3 yrs), 2022 (2 yrs)

## CALLEGUAS BOARD HISTORY

- First elected, 2008
- Board President, 2012-16, 2023-24
- Treasurer, 2016-22

## CALLEGUAS COMMITTEES (HISTORICAL/CURRENT)

- Chair, Finance, 2016
- Chair, Water Quality, 2012
- Member, Finance
- Alternate member, Public Engagement, Communication, and Legislative Affairs
- Member, Water Supply, Storage, and Partnership Development
- Ventura County Regional Energy Alliance, Representative (2018-2024), Alternate Representative (2025-present)



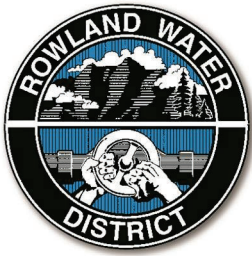
**WILLIAM COOPER**  
**SANTA CLARITA VALLEY WATER AGENCY**  
**VICE PRESIDENT OF THE BOARD OF THE DIRECTORS**

Bill Cooper is a long-time water professional having worked for the Metropolitan Water District of Southern California for about 40 years. During that time, he held various posts including the Water Treatment Section Manager overseeing the operations and maintenance of all five Metropolitan Water Treatment Plants that supply about one-half of all the water to the 19 million people in Southern California. Mr. Cooper managed some of the largest water treatment plants in the United States and was an adjunct Professor at College of the Canyons teaching the Environmental Technologies Water Treatment Program.

Mr. Cooper served on the Castaic Lake Water Agency (CLWA) Board from 1993 through 2017 and was President of the Board for five-years from 1996 to 2001. He served on various Committees and chaired the Planning and Engineering Committee. He served as the CLWA Board Vice President from 2011 through 2016 and was Vice Chair of the CLWA Agenda Planning Committee.

With the merger of water agencies Mr. Cooper was selected as the Board President for the new Santa Clarita Valley Water Agency. He served two years as President of the Board of Directors and currently serves as Vice President of the Board Chairing the Engineering and Operations Committee.

As an active participant in the Santa Clarita Valley community, Mr. Cooper is Chairman of the Child and Family Center Governing Board, serves on the Child Centers Foundation Board and was the Board Chair from 2005 through 2006. He was appointed by the Santa Clarita Mayor to the City's Elected Officials Committee on teenage alcohol and drug abuse and was a member of the Hart District Schools Site Council. He has been a member of the American Water Works Association and the Association for California Water Agencies. He is currently serving as Vice Chair of Region 8 on the ACWA Board and is serving on the ACWA Finance, Groundwater, Water Quality and the Nominating Committees.



### *Board of Directors*

JOHN E. BELLAH  
*President*

VANESSA HSU  
*Vice President*

ROBERT W. LEWIS

ANTHONY J. LIMA

SZU PEI LU-YANG

## **ACWA Region 8 Candidate Statement** **Robert W. Lewis**

Now the longest-serving board member of Rowland Water District, I bring decades of experience, collaborative leadership, and a deep understanding of the challenges and opportunities facing public water agencies in California. I respectfully submit my qualifications for continued service on the ACWA Region 8 Board.

My career in public service began with the City of Fullerton's Redevelopment Commission and has grown to include 32 years of dedicated leadership at Rowland Water District. I am proud to represent a diverse community and have worked diligently to ensure that every decision reflects sound stewardship, accountability, and a long-term view of regional water needs.



My active engagement in regional and statewide water issues includes:

- Current ACWA Region 8 Board Member, participating in shaping policies and programs that reflect the priorities of Southern California agencies.
- Current Commissioner, representing Special Districts on Los Angeles LAFCO.
- Past Voting Representative, ACWA/Joint Powers Insurance Authority, supporting risk management and financial stability for member agencies.
- Board of Commissioners, Puente Basin Water Agency, working to secure regional project funding and promote sustainable water quality solutions.
- Member, California Municipal Utilities Association (CMUA), contributing to advocacy on water and energy issues at the state level.
- Government Affairs Committee Member, San Gabriel Valley Regional Chamber of Commerce, promoting alignment between policy and community priorities.
- Original Special Districts Ad Hoc Committee Member, working to establish the LAFCO Special Districts Seat.

At Rowland Water District, I have championed initiatives to diversify our water supply portfolio, including expanding use of local groundwater for irrigation and reducing dependence on imported water. I have supported efforts to modernize infrastructure, strengthen customer outreach, and ensure long-term reliability amid growing drought and climate pressures.

As California confronts increasingly complex water challenges, ACWA's regional boards serve a critical role in connecting local realities to statewide strategies. If selected, I will continue to advocate for practical solutions, mutual support among member agencies, and a forward-looking vision that reflects the shared interests of Region 8.

It would be an honor to continue serving on the ACWA Region 8 Board. Thank you for your consideration.

### **Application for Regional 8 Board Vacancy – Jacquelyn McMillan**

As noted on the application, I have 18 years of board and committee experience for two water wholesalers in Los Angeles County (Metropolitan Water District of Southern California [MWD] and Santa Clarita Water Agency), one water wholesaler in Ventura County (Calleguas Municipal Water District [CMWD]) and one local water supplier in Los Angeles County (Santa Clarita Water Committee).

I currently serve on five key committees for MWD and have recently been appointed as an alternate on the boards for the Delta Conveyance Design and Construction Authority and the Delta Financing Authority. I am the treasurer of CMWD and chair of its Finance Committee and Communication and Outreach Committee. I am actively involved with the Association of Water Agencies of Ventura County, the Coalition of Labor, Business and Agriculture of Ventura County, Ventura County Women in Agriculture, the Ventura County Farm Bureau, the Simi Valley Chamber of Commerce, and the West Ventura County Business Alliance. I also participate in the California Special District Association and Ventura County Special District Association.

I retired as an employee of MWD in 2023 after serving 31 years as a Principal Government and Regional Affairs Representative. I have worked extensively with businesses, community leaders, and elected officials to ensure that Southern California's 19 million residents continue to have a safe, reliable, and low-cost drinking water supply. I have served as an officer, committee chair, or active member for over thirty agricultural, business, and advocacy entities in east Ventura County, the San Fernando Valley, Santa Monica, Beverly Hills, and downtown Los Angeles. I assisted these groups in developing policy positions on water that would enrich the region's business climate and quality of life for its residents.

I would be honored to serve on the Region 8 board and use my 31 years of water-related experience to enhance and expand the board's influence, educational opportunities and partnerships with other regions and external associations.



May 21, 2025

**Subject: ACWA Region 8 Board – Call for Candidates (Board Vacancy)**

Chair Fellow, Vice Chair Cooper, and members of the Region 8 Board,

I am confident that I will be a suitable candidate for the ACWA Region 8 leadership as a member of the Board. I hold a Bachelor of Science degree in Civil Engineering with an emphasis in Water Resources, a Professional Engineer license in the State of California, and a Master of Public Administration degree with an emphasis in Public Sector Management and Leadership. Additionally, I possess an acute understanding of Southern California's water landscape, particularly the challenges currently threatening the sustainability of our water future. This includes the impacts of climate change, deteriorating water infrastructure, inadequate access to funding, etc. This position on the Board will allow me to contribute my skills towards advocating for the communities and Water Agencies in the Los Angeles and Ventura County region.

I currently serve as the Assistant General Manager of Water for The City of Glendale Water and Power, a position I've held for just over a year. Prior to that, I was the Assistant Public Works Director and General Manager for The City of Glendora's Water Division. I have also held several positions during my 5-year tenure with The Metropolitan Water District of Southern California, and the City of Oklahoma City. In totality, I have been in the water industry for over 15 years.

My key responsibilities include directing the City's strategic resource planning as it relates to long and short-term financial planning, integrated water resources planning, operations, and maintenance activities for the City's water treatment and distribution systems. Critical to this is leading a multi-disciplinary team of professional and paraprofessional staff. This also involves directing activities related to groundwater recovery and local groundwater storage, meeting and coordinating with local, state, and federal organizations with responsibilities in water supply, and negotiating resource agreements for various groundwater recovery and conjunctive use programs.

During my experience as a water leader and manager, I have been able to successfully evaluate and manage the administrative and operational functions as well as implement necessary policies, programs, and procedures in line with strategically developed organizational goals and mission. I will look to do the same as a member of this Board.

Thank you for your consideration.

Sincerely,

A handwritten signature in cursive script that reads "Chisom Obegolu".

Chisom Obegolu, PE, MPA



# BOARD MEMORANDUM

**DATE:** July 28, 2025

**TO:** BOARD OF DIRECTORS

**FROM:** Mrs. Claudia Bolanos, Resource and Analytics Director

**VIA:** Mr. Dennis D. LaMoreaux, General Manager

**RE:** ***CONSIDERATION AND POSSIBLE ACTION ON AUTHORIZING THE GENERAL MANAGER TO ENTER INTO A PROFESSIONAL SERVICES AGREEMENT WITH KENNEDY-JENKS CONSULTANTS TO PREPARE THE DISTRICT'S 2025 URBAN WATER MANAGEMENT PLAN AND WATER SHORTAGE CONTINGENCY PLAN UPDATE. (\$78,440.00 – NOT-TO-EXCEED – BUDGETED – BUDGET ITEM NO. 1-02-5070-007 – RESOURCE AND ANALYTICS DIRECTOR BOLANOS)***

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## **Recommendation:**

Staff recommends that the Board authorize the General Manager to execute a Professional Services Agreement (PSA) with Kennedy-Jenks Consultants for the preparation, completion, and submission of the 2025 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan (WSCP) in an amount not-to-exceed \$78,440.00.

## **Alternative Options:**

The alternative is to re-evaluate proposals and enter into an agreement with an alternate consultant.

## **Impact of Taking No Action:**

California Water Code requires that all urban water suppliers serving over 3,000 connections or supplying more than 3,000 acre-feet per year (AFY) prepare and adopt an Urban Water Management Plan (UWMP) every five years. As part of the UWMP, agencies must also prepare and submit an updated Water Shortage Contingency Plan (WSCP), which outlines strategies and actions to respond to potential water shortages.

Failure to submit the 2025 UWMP and WSCP by the statutory deadline of July 1, 2026, would result in non-compliance with Water Code Section 10620, exposing Palmdale Water District (PWD) to several risks:

- Loss of eligibility for state grants and loans, including funding from the Department of Water Resources (DWR) and other state agencies
- Increased regulatory scrutiny or state intervention in local water planning
- Legal vulnerability in CEQA documents or water supply assessments that rely on a current UWMP for justification
- Risk of litigation or public challenges for failure to comply with state-mandated water supply planning

July 28, 2025

- Weakened regional coordination, particularly in demonstrating drought resilience and interagency agreements

Maintaining an up-to-date and DWR-compliant UWMP and WSCP is essential to securing PWD's legal standing, funding eligibility, and operational flexibility under current and future drought conditions.

**Background:**

The Urban Water Management Planning Act, established by Assembly Bill 797 (AB 797) on September 21, 1983, requires all urban water suppliers in California to prepare, adopt, and submit an Urban Water Management Plan (UWMP) to the Department of Water Resources (DWR) every five years. The UWMP is intended to ensure that suppliers, like the Palmdale Water District (PWD), have sufficient water supplies to meet both current and future demands. The next reporting deadline is July 1, 2026. At the conclusion of each planning cycle, DWR submits a report to the Legislature summarizing the status of statewide UWMPs.

To meet this requirement, on June 17, 2025, PWD issued a Request for Proposals (RFP) for the preparation of its 2025 UWMP and Water Shortage Contingency Plan (WSCP). A total of seven qualified proposals were received and evaluated using a set of weighted criteria including qualifications, experience, approach, cost, and familiarity with state regulations.

Based on the evaluation, Kennedy-Jenks (KJ) was determined to offer the best value. KJ previously completed both the 2015 and 2020 UWMPs for PWD on time and within budget, demonstrating their reliability and in-depth understanding of the District's water supply system. Their proposal clearly addressed current and emerging legislative requirements, including:

- Making Water Conservation a California Way of Life (AB 1668 & SB 606)
- Seismic Risk Assessment (SB 664)
- Urban Water Use Objective (UWUO) planning

KJ's proposal demonstrated both technical expertise and a comprehensive understanding of the regulatory framework that will shape PWD's 2025 UWMP.

Below is a summary of the cost proposals from the top three ranked firms:

<u>Consultant</u>	<u>Cost (Tasks 1–10)</u>
Kennedy-Jenks	\$78,440.00
Zanjero, LLC	\$90,675.00
Stantec	\$159,500.00

July 28, 2025

Based on qualifications, cost, and demonstrated past performance, staff recommends awarding the PSA to Kennedy-Jenks.

**Strategic Plan Initiative/Mission Statement:**

This item is under Strategic Initiative No. 1 – Water Resource Reliability.

This item directly relates to the District’s Mission Statement.

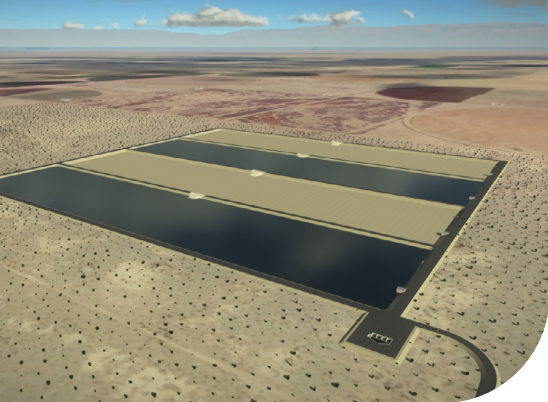
**Budget:**

This item is budgeted under the Administration Budget Item No. 1-02-5070-007 – Consultants.

**Supporting Documents:**

- Kennedy-Jenks Proposal
- Zanjero, LLC Proposal
- Stantec Proposal





**Palmdale Water District**

# 2025 Urban Water Management Plan

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**Lauren Everett Smith** (805) 973-5723 [LaurenEverett@kennedyjenks.com](mailto:LaurenEverett@kennedyjenks.com)  
2775 North Ventura Rd, Suite 202, Oxnard, CA 93036

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July 16, 2025

# Letter of Introduction

July 16, 2025

Claudia Bolanos | Resource and Analytics Director

## Palmdale Water District

2029 East Avenue Q, Palmdale, CA 93550



### **Subject: Proposal to Prepare Palmdale Water District's 2025 Urban Water Management Plan and 2025 Water Shortage Contingency Plan**

Dear Ms. Bolanos:

To comply with state regulations, secure future funding, and maintain a reliable and sustainable water supply, Palmdale Water District (District) is updating its 2025 Urban Water Management Plan (UWMP). Kennedy/Jenks Consultants, Inc. (KJ) offers the right team with the right qualifications to update this plan.

Project Manager **Lauren Everett Smith**, has managed many UWMPs in her career, including the District's 2015 and 2020 UWMPs. She is supported by local planners **Marina Magaña** and **Meredith Clement**. **The District has worked closely with Lauren on multiple UWMPs and values her familiarity with its policies, programs, and projects, and her effective collaboration with District staff.**

The District can rely on the KJ team to effectively and efficiently prepare the 2025 UWMP. **Meredith** and **Marina** are involved in developing the 2025 UWMP Guidebook, which **allows us to tap into firsthand knowledge into DWR UWMP policy and requirements.**

We look forward to working with you on this important planning project and continuing to delivering the best value to the District, your residents, and the community. **Meredith Clement**, Vice President/Principal-In-Charge/QA/QC, **MeredithClement@kennedyjenks.com**, is authorized to represent KJ in any negotiations and to sign any contract that may result. We have read and will comply with all terms and conditions of the RFP. If you have any questions regarding our proposal, please contact **Lauren** at **(805) 973-5723** or **LaurenEverett@kennedyjenks.com**. We look forward to working with you on this important UWMP update.

Very truly yours,

**Kennedy/Jenks Consultants, Inc.**

A handwritten signature in purple ink that reads 'Meredith Clement'.

**Meredith Clement**

Vice President/Principal-In-Charge/QA/QC

A handwritten signature in purple ink that reads 'Lauren Everett Smith'.

**Lauren Everett Smith**

Project Manager

## Profile of Firm

*A Century of Innovation, A Legacy of Trust. Delivering Water Planning Solutions with Local Insight and National Strength.*

Founded in 1919, KJ consistently advances and innovates in engineering technology and applied sciences to provide effective solutions for water, wastewater, recycled water, stormwater, and environmental challenges. KJ employs approximately 515 professionals across 30 offices nationwide, including a strong presence in California.

### Water Resource Planning and Supply Development

Our water resource planning teams leverage extensive experience and best practices to help clients achieve sustainable water management goals. We develop integrated strategies, forecast long-term supply and demand, assess climate change impacts, and design efficient water supply systems. Additionally, we implement innovative solutions for managing water scarcity and resource limitations.

### Local Organizational Structure

Our local team supporting the District is based in Oxnard, CA, and includes project managers, planners, and technical specialists with deep experience in urban water management planning. The project will be led by **Lauren Everett Smith**, Project Manager, supported by **Marina Magaña** and **Meredith Clement**, who are all based in California and have previously worked with the District on the 2015 and 2020 UWMPs.

### Financial Stability, Capacity, and Resources

The firm was established in 1919 and has maintained a direct continuity of ownership for over 100 years; the firm was incorporated in the State of California in December 1971. The ownership structure is private, with all shareholders being officers and individuals currently employed by the company. For the most recent three-year period, the average annual revenue derived from professional services is approximately \$94,800,000. The company's financial reports and statements have been audited by the accountancy firm of Hood & Strong of San Francisco, California.

## Litigation

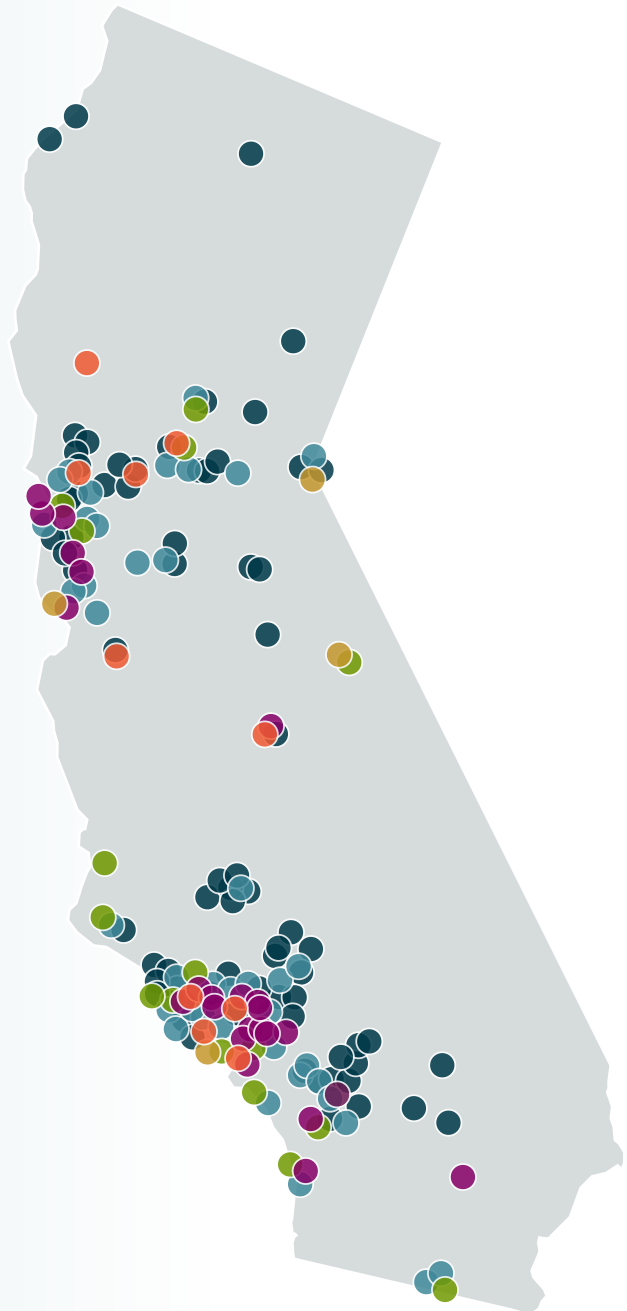
While KJ has no pending litigation or liens, it is common for consulting firms of our size (2024 Gross Revenue of approximately \$125 million) within our geographic area and fields of practice to face claims. Our policy is to maintain insurance to protect our clients and practice, and to pursue early resolution of litigation, liens or claims through negotiation, mediation, and other alternative dispute resolution methods. We have been very successful in resolving such matters and have had no judgments entered against us arising from such matters.

## Trust in KJ's Local Knowledge and History of California Water Management

KJ's proposed team brings decades of specialized experience in water management planning throughout California. Since 1985, we've completed over 140 UWMPs and are well-versed in the upcoming 2025 update requirements. With 40 years of UWMP-specific expertise, two successful UWMPs with the District, and a longstanding commitment to responsive, high-quality service, **KJ is fully prepared to meet your expectations, and the statutory deadline, with confidence and precision.**

### LEGEND

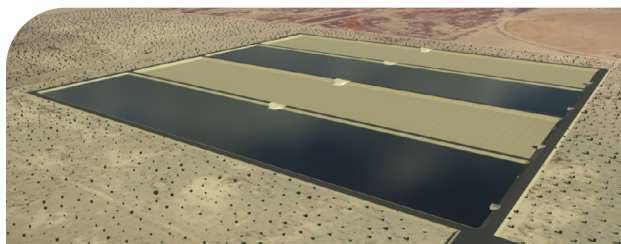
- UWMPs/Integrated Water Management Plan
- Water Master Plans
- Recycled Water Master Plans
- Wastewater Master Plans
- Groundwater Planning
- Surface Water Planning





# Qualification of the Firm

## Local Expertise You Can Rely On, Backed by Our Proven Record



**2020 Urban Water Management Plan**  
Palmdale Water District

### 2015 and 2020 Urban Water Management Plans | Palmdale Water District, CA

KJ prepared the 2015 and 2020 UWMP updates, including a Drought Risk Assessment, Water Shortage Contingency Plan (WSCP), and a Water System Seismic Risk Assessment and Mitigation Plan. Updated demand and supply projections (groundwater, surface water, and imported water) and supply reliability scenarios. Prepared DWR tables and uploaded them to DWR's database. Performed outreach to tribes, land use jurisdictions, and other stakeholders. Prepared calculations on energy intensity of water, a section on reducing dependency on Delta Water, and presided over the adoption hearing. Projects were completed on time with adjustments to budget.

#### Total

#### Project Cost

2015: \$64K

2020: \$160K

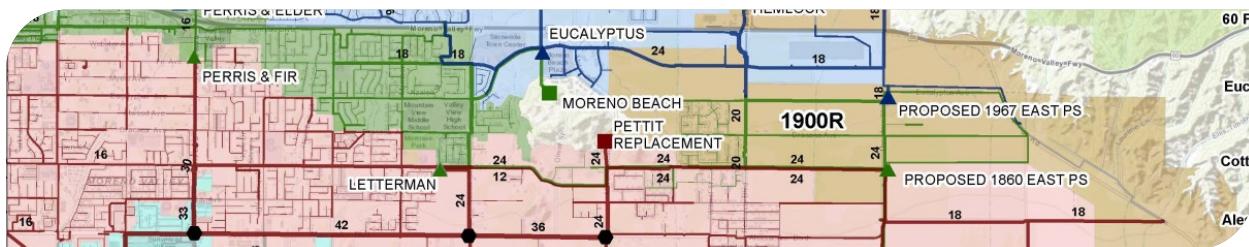
#### Work by KJ

100%

#### Project Dates

11/15–9/16

8/20–7/21



### 2020 Urban Water Management Plan | Rancho California Water District, CA

KJ prepared the 2020 UWMP for the District, whose system has a mix of surface water storage, groundwater, tribal rights, recycled water, and imported water. KJ assisted with extensive land use and water demand modeling for the growing service area. Assisted with the inaugural WSCP, the incorporation of climate change into water supply projections, and compliance with the Delta Plan. While schedule evolved during execution, project was delivered on-budget successfully and aligned with client priorities.

#### Total

#### Project Cost

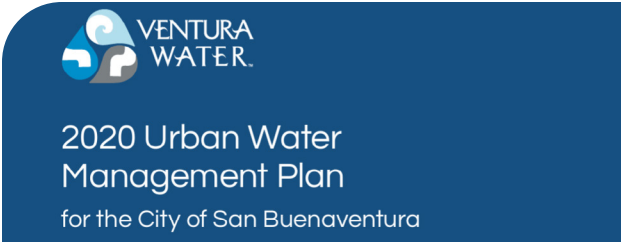
\$93K

#### Work by KJ

100%

#### Project Dates

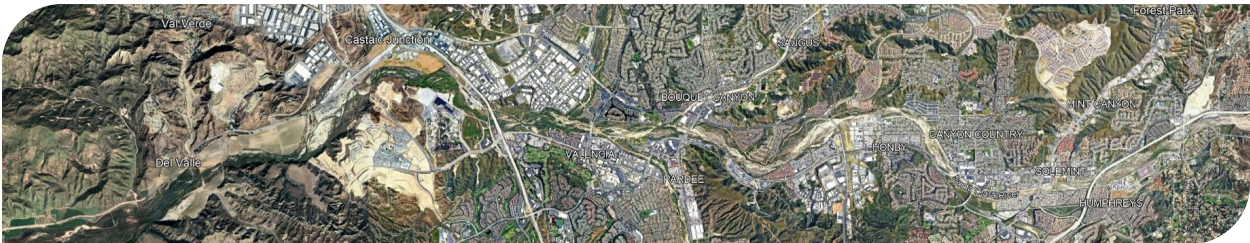
8/20–5/21



2015 and 2020 Urban Water Management Plans | City of Ventura (Ventura Water), CA

KJ prepared the 2015 and 2020 updates to the UWMP. Tasks included development of water demand forecasts based on anticipated development, coordination with City planning staff, evaluation of post-drought rebound on water demand. Calculated Water Conservation Act of 2009 (SBx7-7) interim and final 2020 targets, calculation of embedded energy of water, and evaluation of climate change vulnerabilities. Used GIS to calculate service area population. Extensive coordination with the three Groundwater Sustainability Agencies and Casitas Municipal Water District. Evaluation of past City water conservation actions and outcomes to develop the WSCP. Completed with minor schedule and budget adjustments in collaboration with the client.

<b>Total</b>
<b>Project Cost</b>
2015: \$36K
2020: \$113K
<b>Work by KJ</b>
100%
<b>Project Dates</b>
2/16–12/17
8/20–7/21



2015 and 2020 Urban Water Management Plans | Santa Clarita Valley Water Agency, CA

KJ prepared the Agency's 2015 and 2020 UWMP updates. The 2020 update incorporated new legislative amendments, which included reporting compliance with water use and water loss targets, preparing a Drought Risk Assessment, preparing additional WSCP documentation, and preparing a Water System Seismic Risk Assessment and Mitigation Plan. Both plans were delivered within budget and schedule.

<b>Total</b>
<b>Project Cost</b>
2015: \$350K
2020: \$333K
<b>Work by KJ</b>
100%
<b>Project Dates</b>
4/15–8/17
8/20–1/22

# Project Understanding

## *Navigating Today's Regulations with Tomorrow's Resilience in Mind*

The District is seeking assistance to prepare an UWMP update to comply with the 2025 Guidelines for UWMPs. Plans must be adopted and submitted to DWR by July 1, 2026.

The Urban Water Management Plan Act has not undergone significant changes since 2020, and the required content and process of the UWMP will be similar to 2020. However, there have been other related laws, legislation, and planning that will affect how the District assesses demands and supplies.

### **These include the following, explained below in further detail:**

- |  |   |
|--|---|
| 1. Making Water Conservation a California Way of Life (AB 1668 and SB 606) | 4. Completion of Local Groundwater Sustainability Plans |
| 2. Reporting for Compliance with Water Loss Standard                       | 5. Continued Compliance with SBx7-7 Targets             |
| 3. Annual Water Shortage Assessments & Water Shortage Contingency Plan     | 6. Seismic Risk Assessment (SB 664)                     |

### **1. Making Water Conservation a California Way of Life (AB 1668 and SB 606):**

Rulemaking for Making Water Conservation a California Way of Life concluded July 3, 2024. For simplicity, the Making Water Conservation a California Way of Life regulation is hereafter referred to as the California Water Use Objective (CWUO). The CWUO framework establishes individual efficiency goals for each urban retail water supplier based on the supplier's unique service area characteristics. The intent is to reduce urban water use and adapt to climate change. In some instances, suppliers may adjust their objectives to account for direct potable reuse, seasonal tourism, and emergency response. Starting in 2027, suppliers need to meet the overall objective. The CWUO regulation also has provisions requiring water suppliers to undertake Commercial, Industrial, and Institutional (CII) performance measures.

- 2. Reporting Compliance with Water Loss Standard:** Though a separate regulation from the UWMP Act, within the 2025 UWMP a supplier must report a summary of the past 5 years of water loss audit reports, report total system water losses for the current year and projected losses for future years, describe programs to assess and manage distribution system real loss in the last five years, and provide data demonstrating whether the supplier will meet its water loss performance standard.
- 3. Annual Water Shortage Assessments & Water Shortage Contingency Plan:** The process of preparing the Annual Water Shortage Report comes from the current Water Shortage Contingency Plan. Water supply and demand data and projections provided in the 2025 UWMP must be consistent with past reporting. The update is also an opportunity to note necessary changes to the WSCP and the drought response actions (demand reduction and/or supply enhancement) proposed by the District.
- 4. Completion of Local Groundwater Sustainability Plans (SGMA, AB 1739, SB1168, and SB1319):** UWMPs must show consistency with Groundwater Sustainability Plan (GSP) supply projections. Given the District overlies an adjudicated basin, this regulation does not apply and a summary of groundwater conditions within the District will be provided instead.
- 5. Continued Compliance with SBx7-7 Targets:** Senate Bill 7 of Special Extended Legislative Session 7 (SBx7-7) introduced standards for water use based on gallons per capita per day. SBx7-7 was alternatively called “20 by 2020,” which encapsulated the idea that the regulation intended to reduce water use by 20 percent by the year 2020. Despite the tie to the year 2020, SBx7-7 does not have a sunset clause, and suppliers must demonstrate compliance with SBx7-7 targets in the 2025 UWMP. This means that areas that have been annexed into the District's service area since 2020, the SBx7-7 baselines, targets, and 2025 systemwide gallons per capita per day (gpcd) must be calculated.
- 6. Seismic Risk Assessment (SB 664):** Similar to the 2020 UWMP, the 2025 UWMP must include a seismic risk assessment and mitigation plan to assess the vulnerability of each of the various water system facilities and mitigate those vulnerabilities. KJ will utilize the seismic evaluation we prepared for the 2020 UWMP and the 2021 Local Hazard Mitigation Plan to meet this requirement.



## Technical Approach

We will develop the UWMP using a data-driven methodology integrating water demand and supply analyses, scenario modeling, and GIS mapping for spatial insights. The work plan emphasizes compliance with state regulations, efficiency in resource allocation, and active collaboration with the District.

### *Focused on What Matters Most: Cost and Schedule*

Project Manager **Lauren** will implement our approach to effectively manage the project budget and avoid cost overruns, maintain schedule integrity, and prevent delays. **Lauren** will communicate what you expect, minimize revisions, and hold our team accountable.



### Structured Budget Management

To avoid cost overruns, we will implement:

- ▶ **Clear Scope Definition:** At project initiation, we will confirm project goals, deliverables, and boundaries to prevent scope creep.
- ▶ **Milestone-Based Budget Tracking:** Budget allocations will be tied to key milestones (e.g., completion of each UWMP section, public draft, final submittal).
- ▶ **Monthly Progress Reports and Calls:** These will include financial summaries, earned value metrics, and forecasts to completion.



### Schedule Management and Risk Mitigation

For timely delivery, our schedule management approach includes:

- ▶ **Detailed Project Schedule:** A Gantt-style schedule with dependencies, deadlines, and responsible parties will guide execution. Tasks will be parsed according to UWMP sections to allow parallel progress.
- ▶ **Section-Based Workflows:** We can maintain momentum by approaching the UWMP in modular sections even if one area experiences delays. This also allows for early review and feedback on completed sections.



## Collaborative Communication

We will emphasize transparent and frequent communication with District staff:

- ▶ **Coordination Calls:** We will review progress, discuss data needs, and align on the next steps.
- ▶ **Stakeholder Engagement:** We will coordinate closely with District staff to create a UWMP that reflects local priorities and regulatory expectations.



## Quality Assurance and Adaptability

- ▶ **QA/QC Reviews:** All deliverables will undergo internal QA/QC before submission to the District for accuracy and completeness.
- ▶ **Adaptability to DWR Guidelines:** We will monitor the release of the final 2025 UWMP Guidebook and adjust our scope and deliverables accordingly.

## Scope of Work

### Task 1 – Project Administration and Management

#### Task 1.1 - Project Administration and Management

Project management activities will include project setup, coordinating staff and resources, budget tracking, preparation and review of monthly invoices, and ongoing communication and coordination with the District and the project team) regarding project status and priorities. KJ will conduct internal quality assurance/quality control (QA/QC) reviews of all deliverables before submitting them to the District for review to meet KJ standards for quality.

#### Task 1.1 Deliverables:

- Monthly Progress Reports that summarize work completed per task, upcoming monthly activities, schedule updates, information needed, and status of project completion and budget.
- Preparation of a Project Schedule with key project milestones.

#### Task 1.2 – Project Kickoff Meeting

KJ proposes to lead a kickoff meeting with the Project Manager, Technical Lead, and key staff to review the project objectives, budget, and schedule, and establish communication protocols for the

UWMP activities. The kickoff meeting will also provide an opportunity to review the request for information under Task 2 and discuss any potential data gaps.

#### **Task 1.2 Deliverables:**

- Meeting agenda and meeting minutes.

#### **Task 1.3 – Monthly Check-In Calls**

KJ proposes conducting monthly check-in calls with the District to provide progress updates and address pending matters. KJ will provide an agenda and prepare and disseminate meeting notes to the District following each conference call.

#### **Task 1.3 Deliverables:**

- Meeting agendas and meeting minutes.

### **Task 2 – Data Collection and Literature Review**

This task aims to gather and review available data necessary to satisfy known UWMP requirements. KJ will prepare a combined information request to gather relevant information from the District. KJ will review background information collected for the District service area, water supply, water demand, and water policies. The 2020 UWMP, 2020 WSCP, and the

District's Strategic Water Resources Plan will serve as primary reference documents.

#### **Task 2 Assumptions:**

- The above information is readily available from the District and will be provided to KJ within 4 weeks of the data request and in digital format when available.
- KJ will handle all sensitive documents and data appropriately.

#### **Task 2 Deliverables:**

- Request For Information.

### **Task 3 – Legislative Requirements and UWMP Outline**

New legislative requirements are not currently anticipated for the 2025 UWMP. However, we proposed to preemptively address Making Conservation a California Way of Life legislation and the forthcoming objective reporting and provide that in the UWMP update. A report outline will be prepared based on the 2020 UWMP, with any suggested changes that DWR may pose in the forthcoming 2025 UWMP Guidelines.

### **Task 4 – Demand Projections**

KJ will describe past, current, and projected water demands, meeting all

requirements as described in CWC §10631. KJ will describe the service area, including current and projected population, climate, and other social, economic, and demographic factors affecting water management planning.

### **Task 5 – Draft 2025 WSCP**

KJ will update the District's 2025 WSCP to meet the applicable State requirements, utilizing the 2020 WSCP and updated conservation documentation identified in Task 2. As required under the UWMP guidelines, a WSCP is prepared as a separate document and incorporated into the 2025 UWMP. The purpose of the WSCP is to prepare for drought, water supply reductions, failure of a water distribution system, other emergencies, or regulatory statutes, rules, regulations, or policies reducing water supplies by state and federal agencies. The WSCP is the basis for the Water Shortage Assessment Report, due annually.

### **Task 6 – Draft UWMP and WSCP**

KJ will prepare the District's 2025 UWMP to meet the applicable State requirements. The following subject areas are anticipated to be included in the UWMP but may differ based on the requirements of the final guidelines, anticipated in Fall 2025.

#### **Task 6.1 – UWMP Introduction and Agency Coordination**

KJ will update the 2020 UWMP introduction to describe the preparation of the 2025 UWMP, coordination with, and notification of, appropriate agencies, and public outreach. KJ proposes sending out notices of the UWMP preparation early in the process and providing the name and contact information of the District's project manager, with a specific request that the recipient participate in the 2025 UWMP development. KJ will develop a letter to accompany the notices that gives background on the UWMP, a schedule showing the anticipated UWMP development meetings, and opportunities to participate.

#### **Task 6.2 – Update Service Area and Demand Characteristics**

KJ will review and update the existing description of the District's service area to satisfy the requirements of the Urban Water Management Planning Act and subsequent amendments. Land use, population, and water consumption estimates and projections will be updated based on the information provided in Task 2 as well as land use and population data collected and calculated by KJ. New graphics and figures will be prepared.

Land use changes will be incorporated into demand projections, and water savings from codes and standards will be calculated. Population and water demand projections will be presented in 5-year increments for a 25-year period, through 2050. This will be the water demand projection based on existing trends and will be compared against the CWUO as part of Task 4. Climate and demographics descriptions will be reviewed and updated, as needed. A detailed discussion of anticipated supply under a normal water year, single dry year, and multiple dry year will be provided.

Using data provided by the District, KJ will report on compliance with SBx7-7 mandates. There are two SBx7-7 compliance pathways: (1) if the water service area had no annexations since 2020, DWR will just ask the District to denote they were in compliance in 2020 OR (2) if there were annexations it is necessary to recalculate the baseline gpcd, target gpcd, and actual 2025 gpcd, and compare the actual to the target.

### **Task 6.3 – Water Demand Management Measures Implementation**

Based on the District's 2020 UWMP and updates provided by the District, KJ will summarize the water demand

management goals, programs implemented to date, overall progress, and effectiveness of the current program. The analysis for the 2020 UWMP will include reporting of distribution system water loss for each of the five years preceding the plan update.

### **Task 6.4 – Evaluate Changes in Demand Needed to Comply with CWUO**

KJ will use a simple spreadsheet analysis, based on the District's past Water Use Objective Reporting to evaluate the need for additional conservation in the District's service area by 2027, 2030, 2035, 2040, 2045, and 2050, and any appropriate adjustments to the water demand projections from Task 4.

### **Task 6.5 – Update Water Resources and Supply Outlook**

KJ will work with District staff to collect, review, update, and format information related to the existing description of the District's system water supplies, including imported water, potable groundwater, and recycled water. The water supply reliability analysis will compare the District's projected supply and demands for the average water year, single dry water year, and multiple dry water years through 2050.

### **Task 6.6 – Climate Change Impacts and Drought Risk Assessment**

In its guidance, DWR encourages UWMPs to consider the impacts of climate change. As in the past, water suppliers will be required to include an assessment of the reliability of water supplies during normal, dry, and multiple dry years as compared to demand. KJ proposes using historical drought hydrology (e.g., past changes in supplies and demands during drought), and plausible changes due to climate change impacts, as well as any anticipated regulatory changes, to evaluate supplies and demands over a 5-year drought.

### **Task 6.7 – Calculate Energy Intensity of Water**

KJ will calculate the energy intensity for the water management operations within the District's control. For this assessment, water entering the District's distribution system will be compared to energy consumed over a selected one-year timeframe. Energy consumption will be calculated based on electric and gas expenditures during the timeframe as reported in budget records and related per-unit costs for each energy source.

### **Task 6.8 – Update Seismic Evaluation**

KJ will review the 2020 Seismic Risk Evaluation and Mitigation report included in the 2020 WSCP Appendix C and has the 2021 Local Hazard Mitigation Plan to update the seismic evaluation for the 2025 UWMP. The updated seismic risk evaluation will capture the most available geological seismic hazards as it relates to advancements in the probability of occurrence of seismic activity and the degree of impact if seismic activity were to occur at the facilities identified in the previous report.

### **Task 6.9 – Prepare Draft UWMP and WSCP**

The following steps are to prepare the Draft UWMP and WSCP:

#### **Preliminary Draft**

KJ will prepare a preliminary draft of the UWMP and WSCP. An electronic copy of the Preliminary Draft UWMP/WSCP will be provided to the District, including all tables, figures, and appendices for internal staff review. It is assumed that the District will provide one set of consolidated comments. Tables will be prepared using DWR templates.

#### **Second Preliminary Draft**

The Second Preliminary Draft will reflect the District's comments on the Preliminary



Draft and will be reviewed by the District before being sent to the District and stakeholders for public review. The Second Preliminary Draft will be prepared as chapters are completed then compiled into a complete UWMP (and WSCP) before electronic submittal to the District.

### Public Draft

Following staff review of the Second Preliminary Draft, KJ will prepare the Public Draft of the UWMP and WSCP for District and Stakeholder Review. The documents will be prepared in electronic format to be made available on the District's website.

### Public Notification

KJ will prepare a notification letter template and coordinate with the District to issue public notifications, including newspaper notifications.

### Task 7 – Final UWMP and WSCP

Following public review, and as necessary, KJ will propose changes to the Public Draft UWMP and WSCP. KJ will prepare a presentation for the Board. Details of the public draft and any changes made resulting from stakeholder comments will be presented in a public hearing for Board consideration. After the Board has approved the Final UWMP and WSCP, KJ will provide the District with 15 hard

copies of the final document and an electronic copy.

### Task 8 – DWR Submittal

Following the adoption by the District, KJ will upload the UWMP and necessary attachments via the online DWR portal prior to the deadline of July 1, 2026, to comply with the UWMP Act. It also assumed the District will make the DWR submittal UWMP available to the public and land use agencies.

### Task 9 – UWMP Addendum

KJ has budgeted 6 hours to assist with clarifications to DWR after DWR UWMP submittal. Following DWR's review, KJ will work with District staff to revise (if necessary) the UWMP. Clarifications and minor changes do not require that the UWMP be “re-adopted”, but more significant changes would require proposed changes be given public and agency notice, recirculated for public review, and re-adopted. The final deliverable(s) will be determined based on DWR comments.

#### Tasks 6 through 9 Deliverables:

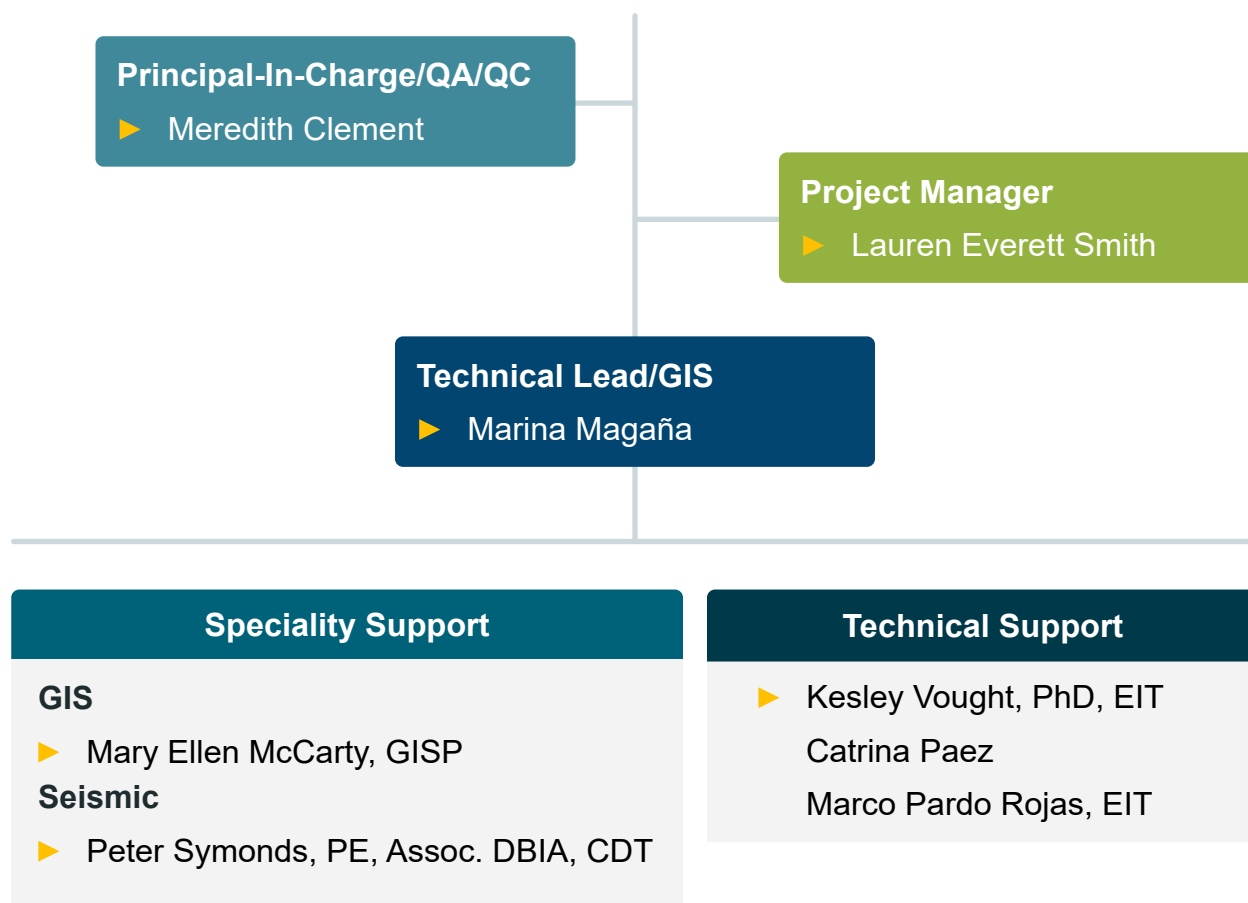
- Preliminary, Second, Public Draft and Final UWMP/WSCP (electronic and hardcopies as noted).
- Public Notifications.
- Addendum deliverables as needed.

# Project Staffing and Availability

## A Dedicated Team with the Experience and Availability to Deliver

The KJ team brings trusted local expertise and a long-standing partnership with the District. Led by **Lauren** and supported by local planners, our team delivers efficient, cost-effective solutions grounded in a deep understanding of the District's water system and regulatory needs. Full resumes highlighting key member's unique qualifications are included in the Appendix.

### Palmdale Water District



### LEGEND

▶ Key Personnel



## KJ is Ready to Deliver for the District

Our experienced professionals are ready to begin immediately. Explore the expertise behind our team in the biographies below and discover why KJ is uniquely equipped to lead the District's UWMP Update with precision, purpose, and trusted results.



► **Lauren Everett Smith** Project Manager | Availability: 25% | Oxnard, CA

Lauren has over 23 years of experience in water resource planning, particularly in Southern California. Her experience includes UWMPs, Integrated Regional Water Management Plans, grant applications and management, CEQA, and water supply and demand evaluations. In 2015 and 2020, she managed UWMPs for the Palmdale Water District, San Geronio Pass Water Agency, Santa Clarita Valley Water Agency, and Twentynine Palms Water District, participating in many others.

### Specific Responsibilities

Lauren will provide day-to-day contact with the District and members of the project team. Lauren will oversee all aspects of the project and be available to meet with the District, facilitate workshops, and guide the high-level decisions.



► **Meredith Clement** Principal-In-Charge/QA/QC | Availability: 10% | Oxnard, CA

Meredith is a seasoned expert in water and urban planning, including work on more than 20 UWMPs in the last five years. Her work on the UWMP Guidebook Committee provides direct insight into DWR's policies and requirements. She oversees with a strong understanding of the region's diverse water supplies, groundwater, surface water, and water reuse and is well-versed in the surrounding political sensitivities.

### Specific Responsibilities

Meredith will lead quality control reviews to ensure all deliverables have been reviewed by discipline experts not directly connected to the project to assure KJ's highest quality standards are maintained.



► **Marina Magaña** Technical Lead | Availability: 75% | Oxnard, CA

Marina has over 10 years of experience in water resources planning, including Urban Water Management Plans, Annual Water Supply and Demand Assessments, Water Master Plans, and feasibility studies.

#### Specific Responsibilities

Marina will be working the members of the project team and will oversee aspects of the project.



► **Mary Ellen McCarthy, GISP** GIS | Availability: 30% | Whitefish, MT

Mary Ellen is a GIS Analyst and Water Resources Planner who excels in geospatial database design, spatial analytics, online mapping, and cartography. She creates multiuser editing environments and interprets utility plans, site designs, elevation models, and infrastructure networks for GIS applications.

#### Specific Responsibilities

Mary Ellen will support the District by developing and managing geospatial datasets, producing planning maps, and conducting spatial analyses to inform water demand projections and infrastructure planning.



► **Peter Symonds, PE, Assoc. DBIA, CDT** Seismic | Availability: 10% | Walnut Creek, CA

Peter is a structural engineer specializing in the seismic analysis, design, and rehabilitation of buildings and water-containing structures. His work includes tanks and facilities subject to static, hydrodynamic, and seismic loads. He has authored several KJ guide specifications and leads the structural group's technical development program.

#### Specific Responsibilities

Peter will coordinate condition assessments, review documentation, site investigations, structural analysis and evaluation, and develop alternatives at various lifecycle stages.



► **Kelsey Vought, PhD, EIT** Technical Support | Availability: 30% | Tampa, FL

Dr. Kelsey Vought is a process engineer with broad experience in municipal and agricultural wastewater treatment. Her work supports integrated urban water planning by developing biological treatment models that inform system design, capacity planning, and cost evaluation. At KJ, she has contributed to regional studies using A2O and CMAS modeling and designed treatment trains for various flow scenarios.

#### Specific Responsibilities

Kelsey will work alongside Marina providing technical support to the District plan.



**Catrina Paez** Technical Support | Availability: 30% | Oxnard, CA

Catrina is a Water Resources Specialist with 14 years of experience in environmental and water resource research. She consults on DWR's IRWM Grant Program, supply and demand forecasting, and storm water permitting. She has prepared Urban Water Management Plans for several agencies, including Santa Clarita Valley Water Agency and the City of Thousand Oaks.

#### Specific Responsibilities

Catrina will provide technical support for the District's UWMP.



**Marco Pardo Rojas, EIT** Technical Support | Availability: 50% | Murrieta, CA

Marco excels in agenda preparation, writing, data management, and reporting. His strong communication skills and attention to detail make him a key asset in coordinating and preparing presentations for pipeline and planning projects in Southern California.

#### Specific Responsibilities

Marco will be technical support to Marina and the District to provide quality results.

# Work Plan

## A Structured, Streamlined, and State-Compliant Work Plan Built for Results, Not Rework

The following work plan outlines the key elements and technical considerations required to complete the UWMP Update. Our approach is designed to directly address each element with proven methodologies, tailored strategies, and a deep understanding of current regulatory requirements and best practices.



### 1 Project Initiation and Planning

- ▶ **Kickoff Meeting:** Establish project objectives, develop and discuss scope, data needed, project schedule, and roles.
- ▶ **Review of Regulatory Requirements:** Ensure alignment with California's Department of Water Resources guidelines.
- ▶ **Data Collection Framework:** Identify necessary datasets, including water supply, demand projections, conservation efforts, and water resources planning conducted by the District and relevant stakeholders.
- ▶ **Notice of Preparation of the UWMP:** Provide notification to relevant stakeholders of the preparation of the UWMP and request participation in the public review of the draft UWMP in Spring 2026.
- ▶ **Establish Communication Protocols:** Throughout the project, provide weekly progress updates to the District and detailed monthly progress reports, as well as periodic conference calls to discuss the development of the UWMP and public outreach efforts.

## 2

## Data Gathering and Analysis

- ▶ **Water Demand Forecasting:** Utilize historical water and land use data, growth projections, water loss data, wholesale water agreements, and climate considerations to estimate future water needs.
- ▶ **Supply Analysis:** Evaluate existing water sources, reliability, future supplies, and potential shortages.
- ▶ **Climate Resilience Assessment:** Integrate climate change impacts into the water supply and demand models.
- ▶ **Conservation and Efficiency Strategies:** Analyze current and future programs and recommend enhancements for demand management measures and meeting state water use objectives.

## 3

## Development of UWMP Sections

- ▶ **Baseline Conditions and System Description:** Document existing infrastructure and service area characteristics.
- ▶ **Water Supply and Demand Outlook:** Detail water demands, supply sources, compliance with SBx7-7 Targets, conformance with the Water Shortage Contingency Plan, strategies for achieving water service reliability during various drought scenario and water demand management measures.
- ▶ **Implementation Plan:** Outline measures for achieving UWMP objectives, including funding mechanisms.

## 4

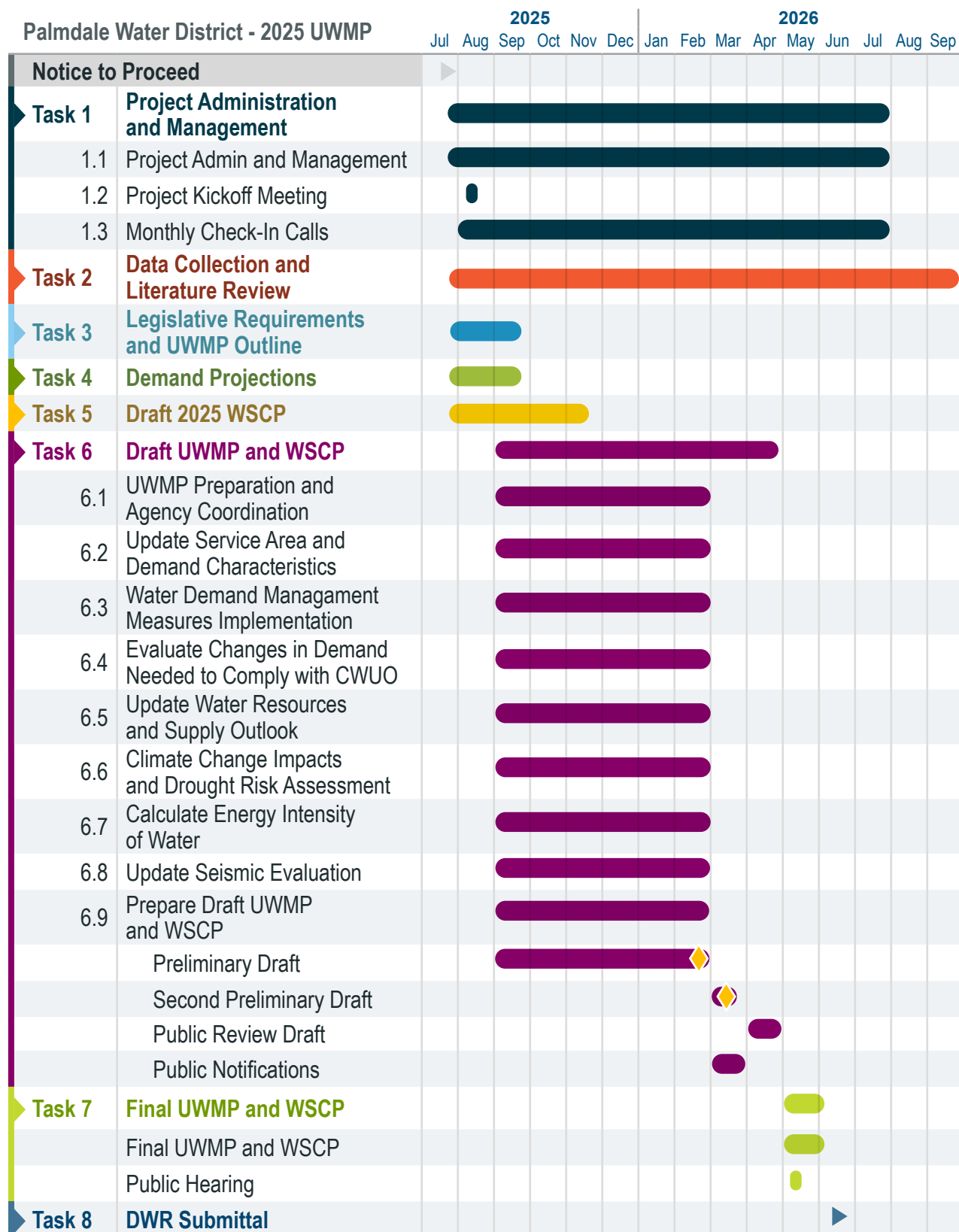
**Stakeholder Engagement and Public Outreach**

- ▶ **Agency Coordination:** Under the District's direction, collaborate with local municipalities, water districts, and regional planning bodies.
- ▶ **Public Workshops and Meetings:** Provide public notice of the draft UWMP and gather feedback from stakeholders to refine the UWMP for Board adoption.
- ▶ **Documentation and Reporting:** Prepare an Outreach and Communication Plan to detail public review requirements under the Water Code, including clear protocols identifying the parties involved, timeline, process for coordination with the District and interested parties, and the delivery and submission of draft UWMPs to relevant parties, including the California State Library, DWR, and cities and counties within the District's service area.

## 5

**Review, Compliance, and Submission**

- ▶ **Internal Review and Quality Assurance:** Conduct technical and compliance checks before finalizing drafts for District review.
- ▶ **Regulatory Submission:** Ensure adherence to DWR formatting and submission requirements and submit to DWR via DWR Portal.
- ▶ **Ongoing Monitoring and Updates:** Establish a framework for periodic UWMP updates to adapt to changing conditions.

**LEGEND**

▶ One Day

■ Multiple Days

◆ Deliverable

# Fee Schedule

## Proposal Fee Estimate

Kennedy Jenks

CLIENT Name: Palmdale Water District  
PROJECT Description: 2025 Urban Water Management Plan

January 1, 2024 Rate Schedule												KJ	KJ	KJ			
	Eng-Sci-8 (Peter)	Eng-Sci-7 (Mereditth)	Eng-Sci-6 (Lauren)	Eng-Sci-5 (Cadrina)	Eng-Sci-4 (Ellen)	Eng-Sci-2 (Kelsey, Marco)	Project Administrator	Admin. Asst.			Labor	ODCs	ODCs Markup	Total Labor	Total Expenses	Total Labor + Subs + Expenses	
Classification:	\$325	\$305	\$280	\$260	\$235	\$190	\$140	\$130		Total	Fees	Fees	10%			Fees	
Hourly Rate:																	
Task 1 - Project Administration and Management																	
Project Management	0	0	24	2			4	0	30	\$7,800	\$0	\$0	\$7,800	\$0	\$7,800		
QA/QC	0	4	0	0			0	0	4	\$1,220	\$0	\$0	\$1,220	\$0	\$1,220		
Project Kick-off Meeting	0	0	4	0			0	0	6	\$1,590	\$0	\$0	\$1,590	\$0	\$1,590		
Monthly Check-in Calls (9)	0	0	12	0			0	0	16	\$4,300	\$0	\$0	\$4,300	\$0	\$4,300		
Task 1 - Subtotal	0	4	40	2			4	0	56	\$14,910	\$0	\$0	\$14,910	\$0	\$14,910		
Task 2. Data Collection and Literature Review																	
Data Collection and Background Information Review	0	0	2	0			0	0	6	\$1,500	\$0	\$0	\$1,500	\$0	\$1,500		
Task 2 - Subtotal	0	0	2	0			0	0	6	\$1,500	\$0	\$0	\$1,500	\$0	\$1,500		
Task 3. Legislative Requirements and UWMP Outline																	
Legislative Requirements and UWMP Outline	0	0	1	0			0	0	6	\$1,275	\$0	\$0	\$1,275	\$0	\$1,275		
Task 3 - Subtotal	0	0	1	0			0	0	6	\$1,275	\$0	\$0	\$1,275	\$0	\$1,275		
Task 4. Demand Projections																	
Demand Projections	0	0	2	0			0	0	16	\$3,490	\$0	\$0	\$3,490	\$0	\$3,490		
Task 4 - Subtotal	0	0	2	0			0	0	16	\$3,490	\$0	\$0	\$3,490	\$0	\$3,490		
Task 5 - Update the 2025 Water Shortage Contingency Plan																	
2025 Water Shortage Contingency Plan	0	0	6	4			0	0	22	\$5,180	\$0	\$0	\$5,180	\$0	\$5,180		
Task 5 - Subtotal	0	0	6	4			0	0	22	\$5,180	\$0	\$0	\$5,180	\$0	\$5,180		
Task 6 - Prepare the Draft 2025 UWMP and WSCP																	
UWMP Introduction and Agency Coordination	0	0	0	0			0	0	6	\$1,320	\$0	\$0	\$1,320	\$0	\$1,320		
Update Service Area and Demand Characteristics	0	0	1	0	12	2	0	0	15	\$3,480	\$0	\$0	\$3,480	\$0	\$3,480		
Water Demand Management Measures Implementation	0	0	1	0			0	0	9	\$1,980	\$0	\$0	\$1,980	\$0	\$1,980		
Evaluate Changes in Demand Needed to Comply with CWOU	0	0	4	0			0	0	8	\$2,060	\$0	\$0	\$2,060	\$0	\$2,060		
Update Water Resources and Supply Outlook	0	0	4	0		16	0	0	28	\$6,040	\$0	\$0	\$6,040	\$0	\$6,040		
Climate Change Impacts and Drought Risk Assessment	0	0	0	0			0	0	12	\$2,460	\$0	\$0	\$2,460	\$0	\$2,460		
Calculate Energy Intensity of Water	0	0	0	0			0	0	4	\$850	\$0	\$0	\$850	\$0	\$850		
Update Seismic Evaluation	8	0	0	0			0	0	12	\$3,360	\$0	\$0	\$3,360	\$0	\$3,360		
Prepare Draft UWMP and WSCP	0	0	16	2	22	40	0	8	88	\$18,810	\$500	\$50	\$18,810	\$550	\$19,360		
Task 6 - Subtotal	8	0	26	2	60	78	0	8	182	\$40,380	\$500	\$50	\$40,380	\$550	\$40,910		
Task 7 - Final UWMP and WSCP																	
Final UWMP and WSCP	0	0	4	2			0	6	26	\$5,350	\$500	\$50	\$5,350	\$550	\$5,900		
Public Hearing	0	0	8	0			0	0	8	\$2,240	\$500	\$50	\$2,240	\$550	\$2,790		
Task 7 - Subtotal	0	0	12	2			0	6	34	\$7,590	\$1,000	\$100	\$7,590	\$1,100	\$8,690		
Task 8 - DWR Submittal																	
DWR Submittal		0	1	0			0	0	4	\$985	\$0	\$0	\$985	\$0	\$985		
Task 8 - Subtotal	0	0	1	0			0	0	4	\$985	\$0	\$0	\$985	\$0	\$985		
Task 9 - UWMP Addendum																	
UWMP Addendum		0	2	0			0	0	6	\$1,500	\$0	\$0	\$1,500	\$0	\$1,500		
Task 9 - Subtotal	0	0	2	0			0	0	6	\$1,500	\$0	\$0	\$1,500	\$0	\$1,500		
Total	8	4	92	10	94	106	4	14	332	\$ 76,790	\$ 1,500	\$ 150	\$ 76,790	\$ 1,650	\$ 78,440		



## Unique Qualities and Qualifications

KJ has a long history of developing UWMPs for multiple clients, recognizing the importance these documents have on water suppliers, planning water supplies, evaluating water demands, and being the basis of water supply assessments for developers.

**Lauren** takes great pride in being introduced to the District through managing the first Antelope Valley Integrated Water Management Plan in 2008. The familiar and welcomed relationship continued with managing the successful 2015 and 2020 Urban Water Management Plans for the District. In 2020, the requirements for the 2020 UWMP were broadened, requiring a Water Shortage Contingency Plan and Seismic Evaluation. **KJ was pleased to deliver these new requirements to the District concisely and efficiently.**

Our staff, **Meredith** and **Marina**, participate in the DWR Guidebook committees for UWMP updates, including the 2025 Guidebook, and have a keen insight into new requirements or where we can stay the course with requirements of previous UWMP cycles.

## References

### REFERENCE 1

**Jennifer Tribo, Assistant General Manager**  
City of Ventura (Ventura Water)  
(805) 652-4563 | JTribo@cityofventura.ca.gov

### REFERENCE 2

**Jeff Kirshberg, PhD, PE, Director of Planning**  
Rancho California Water District  
(951) 296-6973 | KirshbergJ@ranchowater.com

### REFERENCE 3

**Sarah Fleury, Water Resources Planner**  
Santa Clarita Valley Water Agency  
(661) 297-1600 | SFleury@scvwa.org

## Accepts the District's Professional Services Agreement

KJ accepts the terms of the Professional Services Agreement with no requested changes.



Lauren Everett Smith

Project Manager

Professional Summary

Lauren is a water resources specialist with over 23 years of experience in environmental and regulatory compliance providing research and technical support for a diverse range of water resource and watershed related projects. Her experience includes water supply and demand management planning, UWMP analyses and updates, integrated water resource planning, California Environmental Quality Act analyses, water resource studies, State Water Project transfers, groundwater banking programs, and water supply assessments.

Years of Experience

23

Education

BS, Environmental Studies, University of California, Santa Barbara, 1999

MS, Environmental Science and Management, University of California, Santa Barbara, 2001

Project Experience

- 2015 & 2020 UWMP, Palmdale Water District, Palmdale, CA | *Project Manager*

Managed the preparation of the 2015 and 2020 updates to the Palmdale Water District Urban Water Management Plan. The plan provides an assessment of water supplies and demands for a State Water Project contractor and retail agency over a 25-year planning horizon.
- 2015 & 2020 UWMP Update, Twentynine Palms Water District, Twentynine Palms, CA | *Project Manager*

Managed the preparation of the 2015 and 2020 updates to the Twentynine Palms Water District Urban Water Management Plan. The plan provides an assessment of water supplies and demands for a groundwater dependent water purveyor within a disadvantaged community. The 2015 UWMP was very complex and evaluated both wholesale and retail water purveyor requirements with significant stakeholder interest.
- 2020 UWMP Update, Santa Clarita Valley Water Agency, Santa Clarita, CA | *Project Manager*

Managed a team that prepared the 2015 and 2020 updates to the Santa Clarita Valley’s Regional Urban Water Management Plan

on behalf of Santa Clarita Valley Water Agency and purveyors. The plan provides an assessment of water supplies and demands available to the agency and purveyors over a 25-year planning horizon.

**2020 UWMP Update, Joshua Basin Water District, Joshua Tree, CA | *Project Manager***

Managed the preparation of the 2020 Urban Water Management Plan. The plan provides an assessment of water supplies and demands for a groundwater dependent water purveyor within a disadvantaged community.

**Water Supply Assessment, City of Oxnard Planning and Environmental Services, Oxnard, CA |**

*Urban/Regional Planner*

Prepared a Water Supply Assessment (WSA) pursuant to the requirements of Section 10910 of the California Water Code (Senate Bills 610 [SB 610] and 221 [SB 221]) for the proposed South Ormond Beach, Jones Ranch and Sakioka Farms developments in the City of Oxnard. The Code requires a Water Supply Assessment (WSA) be prepared for any development with more than 500 residential units, or equivalent water demand for shopping centers, business establishments, and commercial developments. These developments will occupy 2,500 residential units and thus requires a WSA.

**Water Supply Assessment, Lebec County Water Agency, Lebec, CA | *Urban/Regional Planner***

This project involved a peer review of documentation that could support the determination of a water supply assessment. The objectives of the peer review were to provide the Lebec County Water District with a critical evaluation of the key assumptions and parameters that formed the basis for the technical studies provided to KJ and identification of the issues about which reviewing agencies would be most concerned should these technical studies be submitted as supporting documentation for a water supply assessment for the proposed development. Responsibilities included reviewing the documents to identify consistency with the requirements of SB 610/221.

**Completion of Water Master Plan, City of Oxnard Planning and Environmental Services, Oxnard, CA | *Urban/Regional Planner***

Provided technical support toward the water supply and demand evaluation and assessment for the City of Oxnard in completing its next update to the Water Master Plan.



# Marina Magaña

Technical Lead

## Professional Summary

Marina is a Technical Lead with over 10 years of experience in water resources planning, such as UWMPs Annual Water Supply and Demand Assessments, and feasibility studies. Marina also specializes in providing grant application and grant administration support to water agencies in California.

### Years of Experience

10

### Education

BA, Environmental Studies, Minor in GIS. \*Departmental Honors, University of California, Los Angeles, 2014

### Memberships/Affiliations

American Public Works Association  
WaterReuse Association  
Association of Environmental Professionals

### Project Experience

#### 2020 UWMP, Palmdale Water District, Palmdale, CA | Planning Support

Served as an author of the 2020 Urban Water Management Plan for Palmdale Water District. Updated, revised, and developed plan sections based on collected data and discussion with the district, including, but not limited to, water supply and demand projections, water supply reliability, recycled water, demand management measures, and water shortage contingency plan. Presented the UWMP and findings at the Public Hearing. Conducted final UWMP submittal and assisted with the distribution to neighboring agencies.

#### 2025 Ventura Water Demand Factors Study, Water, Ventura, CA |

*Project Manager*

Developing methodology to assign water demand factors based on new requirements from the California Department of Water Resources. Overseeing GIS analysis to determine unit demands for 2025-2030 analysis. Preparing a draft and final Water Demand Factors Study to present to the Water Commission.

#### 2020 UWMP Update, Ventura County Waterworks District No. 8, Simi Valley, CA | Primary Author and Deputy Project Manager

Served as the primary author for the 2020 update to the City of Simi Valley’s Urban Water Management Plan. Tasks included developing demand projections based on land-use changes, evaluating future

water supply projections based on forecasts from the Metropolitan Water District of Southern California, and preparing demand management, climate change, and long-term supply reliability sections. Drafted and conducted analyses for primary report sections, including but not limited to demand management measures and water efficiency plan.

**2020 UWMP Update, City of San Buenaventura, Ventura, CA | *Planning Support***

Collected and analyzed water quality and managed compliance with state and federal laws. Prepared planning and policy documents and implemented water resources programs for water system planning, wellhead protection, water conservation, wastewater system planning, water quality, and emergency management. Managed water supply demand/forecasting and well infrastructure efficiency through the SCADA system. Liaison and coordinate with regulatory agencies, neighboring cities, and local jurisdictions, and represent the City at all drinking water, wastewater, and recycled water committees and regional groups. Wrote proposals, project reports, informational brochures, and other documents related to water resource subjects. Provided technical expertise internally and externally and provided guidance in the interpretation and application of local, state, and water-related issues.

**2020 UWMP Update, Joshua Basin Water District, Joshua Tree, CA | *Planning Support***

Assisted with the preparation and submittal of the 2020 Urban Water Management Plan for Joshua Basin Water District. Drafted and conducted analyses for primary report sections, including but not limited to demand management measures, water supply, and water demand sections.

**2021 Water Efficiency Plan, Ventura Water, Ventura, CA | *Planning Support***

Served as the primary author of the 2021 Water Efficiency Plan for Ventura Water. Updated, revised, and developed plan sections based on collected data and discussions with Ventura staff.



# Meredith Clement

Principal-In-Charge/QA/QC

## Professional Summary

Meredith has 27 years of environmental consulting experience on projects throughout California, having worked on more than 20 UWMPs in the last five years. She has particular expertise in water planning, urban planning, grant and loan funding for infrastructure, and environmental compliance documentation, including California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA).

### Years of Experience

27

### 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

### Project Experience

#### 2020 UWMP, Ventura County Waterworks District No. 8, Simi Valley, CA |

QA/QC

Updated the demand projections for the City of Simi Valley and surrounding unincorporated county, coordinated with Calleguas Municipal Water District on water supply reliability, and assisted with update to the District’s WSCP.

#### 2020 UWMP & WSCP, Rancho California Water District, Rancho California, CA | *Project Manager*

Prepared the 2020 UWMP for the District, whose system has a mix of surface water storage, groundwater, tribal rights, recycled water, and imported water. KJ assisted with extensive land use and water demand modeling for the growing service area. Assisted with the inaugural WSCP, the incorporation of climate change into water supply projections, and compliance with the Delta Plan.

#### 2015 & 2020 UWMPs, City of Ventura, Ventura, CA | *Project Manager*

Prepared the 2015 and 2020 updates to City of Ventura’s existing UWMP. Tasks included evaluating future land use scenarios, forecasting water demands and evaluating supplies from several proposed water reliability projects.

**Memberships**

American Public  
Works Association  
(APWA)

Association of  
Environmental

Professionals

American Water  
Works Association  
(AWWA)

**2015 & 2020 UWMPs, Joshua Basin Water District, Joshua Tree, CA | QA/QC**

Prepared urban water management plan for small desert community of Joshua Tree. The 2015 plan was the first Urban Water Management Plan for the District and work included developing baseline water use and demand data. Unique issues for this plan included properly accounting for seasonality of population.

**2015 UWMP Update, City of Simi Valley, Simi Valley, CA | Project Manager**

Updated the demand projections for the City of Simi Valley and surrounding unincorporated county, coordinated with Calleguas Municipal Water District on water supply reliability, and assisted with update to the District's Water Shortage Contingency Plan.

**2015 UWMP Update, Joshua Basin Water District, Joshua Tree, CA |**

*Project Manager*

Prepared UWMP for the small desert community of Joshua Tree. This was the first UWMP for the District and work included developing baseline water use and demand data. Unique issues for this plan included properly accounting for seasonality of population.

**2010 UWMP Update, Review, and Assistance, Camrosa Water District, Camarillo, CA | QA/QC Reviewer**

Reviewed the administrative draft of UWMP prepared by Camrosa Water District staff. Camrosa's water supply includes a large non-potable system, potable system, and recycled water system, all of which require different reporting in an UWMP. Compared plan against requirements of the water code and assisted Camrosa with adding clarity to document. Prepared sections on demand management measures. Prepared calculations and tables for per capita daily water use.

**2015 UWMP Update, Las Virgenes Municipal Water District, Calabasas, CA |**

*QA/QC Reviewer*

Acted as the QA/QC reviewer for the Las Virgenes' 2015 UWMP Update.





Mary Ellen McCarty, GISP  
GIS

Professional Summary

Mary Ellen is a GIS Analyst and Water Resources Planner with 19 years of experience in geospatial database design, reproducible spatial analytics, online mapping, and print cartography. She provides efficient geospatial data management in ArcGIS Enterprise and is consumable across all GIS software platforms. With experience in ArcSDE administration, she is familiar with building multi-user editing environments that allow seamless data collection in mobile and desktop applications. She has experience interpreting utility plans, site designs, digital elevation models, and infrastructure networks for use in GIS.

Years of  
Experience

19

Education

BA, Liberal Arts,  
University of  
North Carolina  
Greensboro, 2000  
  
MS, Community and  
Regional Planning,  
Temple University,  
2015  
  
PBC, Geographic  
Information Systems  
& Science, North  
Carolina State  
University, 2004

Project Experience

Solano One Water Master Plan, Solano County Department of Resource  
Management, Fairfield, CA | GIS Analyst

Took data layers from multiple agencies to develop an online mapping tool (tool) and viewing experience to help coordinate infrastructure for water resources planning. Tool showed boundaries and facilities of 35 irrigation districts, flood control districts, reclamation districts, municipal water districts, cities, military bases, and wastewater collection systems, incorporating topography, parcel data, zoning data, and agricultural planning areas designated by the County. The tool was also used to understand the legal and infrastructural opportunities and constraints when evaluating new projects.

Recycled Water System Master Plan, City of Redwood City,  
Redwood City, CA | GIS Analyst

Geospatial support to plan pipeline routing concepts and tank alternatives. The project Involved mapping existing pipelines, customer demand and project constraints. Online and print mapping projects were provided.



**Certifications**

Geographical  
Information Systems  
Professional (GISP)

**Memberships/  
Affiliations**

Green Infrastructure  
Leadership  
Exchange

**Update Population Evaluation, Inland Empire Utilities Agency, Chino, CA |***GIS Analyst*

Created a guidance document that compared population data resources. Measured IEUA's service populations using SCAG and US Census data and created projection tables showing current and future demand.

**Groundwater Study, City of Thousand Oaks, Thousand Oaks, CA |***GIS Analyst*

Created Map Figures that displayed proposed pipelines and booster stations.

**Enterprise Database Design and Administration, Philadelphia Water****Department, Green Stormwater Infrastructure Unit, Philadelphia, PA |***GIS Analyst/Planner*

Designed and administered an enterprise geodatabase for siting green stormwater infrastructure projects within a version-controlled editing environment allowing for multiple editors and conflict reconciliation. Additional components included a standardized base map that utilized Attribute Assistant to create unique IDs, record editor credentials, autofill fields based on location, and calculate acres.

**Hydrographic and Watershed Mapping, Philadelphia Water Department,****Office Of Watersheds, Philadelphia, PA |***GIS Analyst*

Created geospatial data and underlying database structure to represent surface water features in Philadelphia's major watersheds, subwatersheds to stormwater outfalls, and historical water features of the mid-19th century.

**Central Regional Wastewater System Corrosion Management Plan - Program Management, Trinity River Authority of Texas, Arlington, TX |***GIS Analyst*

Manages sewer collections system pipeline and manhole data within mapping applications to help support pipe inspections.



**Peter Symonds, PE, Assoc. DBIA, CDT**  
Seismic

**Professional Summary**

Peter specializes in structural analysis and design of buildings and tank structures in earthquake regions. He analyzes, designs, and rehabilitates water-containing structures under static and hydrodynamic loads. He has authored several guide specifications for KJ and manages the structural group's technical development program.

**Years of  
Experience**

20

**Education**

BS, Civil  
Engineering,  
University of  
California, Berkeley,  
2003

MS, Civil  
Engineering,  
University of  
California, Davis,  
2004

**Registrations**

Professional  
Engineer - Civil -  
California (70891)

**Project Experience**

**2020 Urban Water Management Plan, Palmdale Water District, Palmdale, CA |**  
*Seismic Engineer*

Led the urban water management plan by assessing the vulnerability of water distribution networks to seismic activity. Recommend the design of earthquake-resilient structures, conducted risk analysis, and implemented mitigation strategies. Evaluated the potential impact of earthquakes on pipes, reservoirs, and treatment facilities, using historical data and simulations to predict system failures and identify critical points in the network.

**2020 Urban Water Management Plan, Santa Clarita Valley Water Agency, Santa Clarita, CA |** *Seismic Engineer*

Played a vital role in the urban water management plan by assessing the vulnerability of water distribution networks to seismic activity, designing earthquake-resilient structures, conducting risk analysis, and implementing mitigation strategies. Evaluated the potential impact of earthquakes on pipes, reservoirs, and treatment facilities, using historical data and simulations to predict system failures and identify critical points in the network.

**Santa Rosa Master Plan, City of Burbank Water & Power, Burbank, CA | Structural Designer**

Conducted comprehensive seismic, structural, corrosion, and safety assessments of 22 flat bottom steel tanks (18 potable water and four recycled water) across 14 sites. Performed observations and inspections to record damage and document deficiencies. Developed recommendations for seismic rehabilitation and provided structural design assistance for tank reviews.

**Recycled Water Tank Final Design for Recycled Water Vista Canyon Project, Santa Clarita Valley****Water Agency, Santa Clarita, CA | Structural Designer**

Led the structural design for twin 0.48 MG Recycled Water tanks for the District. Identified slope stability issues and potential solutions in conjunction with the geotechnical engineer. Discussed the seismic parameters appropriate for Recycled Water with the Owner and how they differ from Potable Water.

**Banking and Blending Study, Antelope Valley East Kern (AVEK) Water Agency, Palmdale, CA |***Structural Designer*

AVEK is implementing an \$80 million water banking program with two separate water banks, the 1,475-acre Westside Water Bank and the 80-acre Eastside Water Bank. The Westside site can recharge up to 50,000 ac-ft/year over 500 acres of agricultural land and currently can extract 25 mgd with 11 potable recovery wells. The Eastside site can recharge up to 5,000 ac-ft/year in three 2-acre recharge ponds and extract up to 6 mgd with 3 potable recovery wells. Over 5 years, KJ managed seven subconsultants with 15 subagreements, and prepared eight design packages for \$34 million in construction.

**Work Stress Design (WSD) – Seismic Vulnerability Assessment Report (SVAR), Sammamish Plateau****Water and Sewer District, Sammamish, WA | Structural Designer**

Performed a condition assessment and probabilistic seismic vulnerability assessment of District facilities, including welded steel and concrete storage tanks, concrete masonry well houses and treatment facilities, and concrete masonry lift stations. Provided vulnerability curves and assessments of the expected performance of structures for several scenarios to assess which areas of the District needed rehabilitation.



**Kelsey Vought, PhD, EIT**  
Technical Support

**Professional Summary**

Dr. Kelsey Vought is a wastewater process engineer with national experience in municipal and agricultural wastewater treatment. Kelsey has extensive experience in diverse treatment projects, such as planning new wastewater treatment plants, developing specifications, designing process mechanical systems, and evaluating processes for cost and feasibility.

**Years of  
Experience**

1

**Education**

BS, Civil  
Engineering, Purdue  
University, 2020  
  
PhD, Agricultural  
and Biological  
Engineering,  
University of Florida,  
2024

**Project Experience**

**2025 Public Health Goal Exceedance Report, City of San Buenaventura,  
Ventura, CA | *Water Treatment Engineer***

Identified drinking water contaminants in the Ventura drinking water supply that exceed public health goals and evaluated the associated treatment cost. Communicated potential health risks, treatment costs, current efforts to reduce the identified contaminants, and recommended action.

**Update the Groundwater Treatment Implementation Plan, Santa Clarita Valley  
Water Agency, Santa Clarita, CA | *Water Treatment Engineer***

Developed cost estimates for implementing VOC, PFAS, and perchlorate treatment at drinking water wells. Prioritized well treatment implementation based on cost, demand, and staff inputs. Documented well the history and identified barriers to implementation.

**Renewable Natural Gas Feasibility Study, City of Ellensburg, WA |  
*Wastewater Process Engineer***

Evaluated viable technology for implementing a low-flow renewable natural gas upgrading system for anaerobic digestion biogas. Conducted a life cycle cost analysis to identify the net present value, annual worth, and break-even cost of the technology.

**IWW Costs Enhanced PFAS Removal, National Council for Air and Stream Improvement, Cary, NC |***Wastewater Process Engineer*

Produced a comprehensive analysis of the costs associated with PFAS removal from pulp and paper (P&P) wastewater using granular activated carbon (GAC), ion exchange (IX), and reverse osmosis (RO). Evaluated existing PFAS removal and destruction technologies and their viability for P&P wastewater. Combined a nationwide P&P wastewater characterization for PFAS, organics, metals, and other contaminants with literature-supported breakthrough data to optimize the treatment process planning.

**Red Oak Creek Regional Wastewater System Plant Expansion (as a subconsultant), Trinity River****Authority, Arlington, TX |** *Wastewater Process Engineer*

Developed the preliminary design of the solids handling system expansion to 8 mgd, including sludge storage and dewatering. Compared aeration and mixing technologies for sludge storage through an alternative analysis. Evaluated existing centrifuge dewatering capacity, equipment, and space requirements.

**Mountain Creek Regional WW System Regionalization Study (as a subconsultant), Trinity River****Authority, Dallas, TX |** *Wastewater Process Engineer*

Developed A2O and CMAS wastewater treatment trains for a new wastewater treatment plant (Mountain View Wastewater Treatment Facility) at 6, 9, and 12 mgd average annual flow rates. Designed 6, 9, and 12 mgd expansion alternatives to the existing Mountain Creek Wastewater Treatment Facility. Compared the capital costs of building a new treatment facility versus expanding the existing facility for each of the three flow scenarios. Communicated design recommendations and costs in a technical report.

**Denton Creek Regional Wastewater System Treatment Plant Expansion Project****(as a subconsultant), Trinity River Authority, Roanoke, TX |** *Wastewater Process Engineer*

Designed the process mechanical components of the headworks, including the pretreatment unit (PTU) and screens, to accommodate the plant expansion to 24.4 mgd. Developed specifications and pre-selection package materials for drum screens reaching peak flows up to 95 mgs.



Proposal to Prepare Palmdale Water District's  
**2025 Urban Water Management Plan**

July 2025

Submitted by:



701 University Avenue, Suite 205  
Sacramento, California 95825





701 University Avenue, Suite 205  
Sacramento, California 95825

July 10, 2025

Palmdale Water District

Attention: Claudia Bolanos, Resource and Analytics Director

2029 East Avenue Q

Palmdale, CA 93550

Submitted electronically to: <https://secure.procurenow.com/portal/palmdalewater>

RE: Palmdale Water District 2025 Urban Water Management Plan (UWMP)

Palmdale Water District (Palmdale) stands at a water supply crossroad. With the Bay-Delta Water Quality Control Plan pending, climate variability altering precipitation patterns and runoff, and the Delta Reform Act increasing scrutiny on imported water supplies, Palmdale may be presented with water supply changes that it cannot control. Palmdale's 2025 UWMP presents an opportunity for a *"fresh set of eyes"* from Zanjero's water planning experts to evaluate Palmdale's existing water planning efforts and to address those efforts in a public process in front of the public and Palmdale's governing board.

Zanjero is pleased to submit this proposal for Consulting Services to the Palmdale Water District to prepare its 2025 Urban Water Management Plan (UWMP) update. Zanjero is extraordinarily experienced in urban water supply planning and, in particular, Urban Water Management Plan development and adoption. Zanjero has written portions of the California Department of Water Resources' last two UWMP Guidebooks and has successfully completed over 100 UWMPs for clients throughout California. In short, we are UWMP experts with an unmatched resume in UWMP understanding, authoring, and adoption.

Zanjero is a unique consulting firm – combining legal and engineering water supply expertise in one business. We take pride in providing strategic water services and



UWMP Proposal

resolving complex water planning and management issues for our clients throughout California and the American West. We bridge the gap between conventional law firms and engineering firms by synthesizing the legal, technical, economic, and political elements that permeate every water issue and water plan. Zanjero's action tag line, **Advise-Manage-Solve**, embodies our approach to addressing our clients' water management issues.

Zanjero's staff is poised to complete Palmdale's UWMP. Gwyn-Mohr Tully, J.D. will be the Project Manager for this project and Greg Young, P.E. will provide Quality Assurance and Quality Control as our statewide UWMP Principal-in-Charge. Both Zanjero Principals assigned to Palmdale's UWMP have over 30 years of water planning experience. Robert Heather will be the Deputy Project Manager and lead Zanjero's support staff in tackling the key issues. Our team of experts will deeply analyze Palmdale's water asset portfolio and project water supply reliability for Palmdale's users across a minimum 25-year planning horizon – five years in excess of the statutory requirement – in order to better position Palmdale for its urban growth objectives. Zanjero will handle all public notice and public hearing requirements in coordination with Palmdale's staff. We anticipate bi-monthly interaction with Palmdale's UWMP team and completion of Palmdale's final UWMP no later than June of 2026.

We meet the requirements for this UWMP proposal and accept Palmdale's professional services agreement. Thank you for the opportunity to respond to your request. Please contact either of us directly through the options listed below should you have any questions or require further information.

Sincerely,

*Gwyn-Mohr Tully, J.D.*

*Greg Young, P.E.*

Gwyn-Mohr Tully, J.D., Principal  
Phone: (916) 834-9199  
gtully@zanjeroams.com

Greg Young, P.E., Principal  
Phone: (916) 769-3749  
gyoung@zanjeroams.com





## Section 1: Firm Profile

Zanjero is a niche strategic water management and planning firm offering customized water consulting services to meet the needs of our clients. We are acknowledged leaders in water resources management consulting with a unique approach to addressing the legal, economic, technical, and political aspects of water planning. Zanjero's 17-person staff combines water resources engineering, water law, water policy and public outreach in a single firm. Zanjero possesses highly technical, yet practical knowledge of:

- *Comprehensive Water Management Planning*
- *Water Rights, Contracts, and Entitlements*
- *Water Transfers and Exchanges*
- *Water Diversion and Use Analyses*
- *Water Resource Legislative and Policy Support*
- *System Infrastructure and Modeling*
- *Statewide Water Conveyance*
- *Urban, Environmental, and Agricultural Water Demand Analyses*
- *Water Conservation and Recycling*
- *Alternative Water Supply Investigations*
- *BDWQCP, Delta Reform Act, and SGMA Analysis and Implementation*

We are, and have always been, financially solvent and continue to grow our staff to support our niche comprehensive water planning expertise. There are no lawsuits or litigation pending against Zanjero now or at any time in the past 20 years. Furthermore, no project has had a claim or settlement paid during that time.

We are proud of our work and value our relationships with our clients. Perhaps most importantly, our clients routinely say Zanjero's Principals and Staff are "**good and fun people to work with.**" We spend time to engage with our clients and to *listen*.


Sometimes the lowest-level staff person or the "new guy" has an extremely insightful thought that can affect project outcomes. In other words, our staff and our clients' staff have experts that can improve our deliverables – and we believe that thoughtful integration with diverse viewpoints is critical.

## Section 2: Firm Qualification

Since our firm’s inception, Zanjero has served hundreds of clients with thousands of projects throughout California and the American West. These clients span all levels of government, private business, and NGOs. That experience has allowed us to build trusted relationships with influential decision-makers in the water resources realm. Zanjero’s broad water management understanding and personal relationships with statewide decision-makers gives us unparalleled insights into the needs and challenges of our clients’ water management issues.

For example, we were the lead consultants preparing the California Department of Water Resources (DWR) 2020 Urban Water Management Planning Guidebook (Guidebook). Our experience formulating the 2015 and 2020 Guidebooks as well as completing 35 Urban Water Management Plans during the 2020 UWMP cycle makes Zanjero the industry leader in analyzing and preparing comprehensive and legally compliant UWMPs, WSCPs, and WMPs.

Zanjero’s team is extraordinarily qualified to develop, present, and deliver Palmdale’s 2025 UWMP. The experience of our team members perfectly aligns with the UWMP elements, and we know what should be in and what should be left out of the publicly adopted document. Shown on the following page is a summary table with Zanjero’s team members’ experience related to UWMPs that aligns with the task assignments noted in our proposed Work Plan. The right column shows a representative list of Zanjero’s 2020 Completed UWMPs. All of our 2020 UWMPs were completed on time and on budget. The three representative projects extracted from this list show Zanjero’s qualifications for Palmdale’s UWMP and are noteworthy because they involve State Water Project supplies and diverse water portfolios that will inform Palmdale’s water asset portfolio management needs in this cycle.

		Urban Water Management Plan Activities										2020 Representative UWMPs
		Comprehensive demand determination and projections	Review of water rights, contracts and agreements	Evaluate water supply reliability under normal and dry conditions	Research water systems, service areas, and delivery configurations	Evaluate groundwater systems, GSAs, and GSPs	Analyze water supply ordinances and policies	Analyze water conservation activities and data	Prepare water shortage scenarios and WSCPs	Conduct public outreach and public hearings	Prepare draft and final UWMPs and associated water plans	
Zanjero Staff Expertise	Gwyn-Mohr Tully, JD	•	•	•	•	•	•	•	•	•	•	City of Benicia
	Greg Young, PE	•	•	•	•	•	•	•	•	•	•	El Dorado Irrigation District
	Jim Crowley, PE	•	•	•	•	•	•	•	•	•	•	City of Vallejo
	Katie Carlson					•	•					City of Yreka
	Robert Heather, EIT	•	•	•	•	•	•	•	•	•	•	San Juan Water District
	Kris Olof, EIT	•	•	•	•	•	•	•	•	•	•	City of Yuba City
	Galen Davis	•	•	•	•	•	•	•	•	•	•	Elk Grove Water District
	Adriel Ramirez	•	•	•	•	•	•	•	•		•	City of West Sacramento
	Katrina Starbird	•	•	•	•	•	•	•	•		•	Carmichael Water District
	Tyler Mar	•	•	•	•	•	•	•	•		•	Sacramento County Water Agency
	Savanna Sanders	•			•	•		•	•	•		Golden State Water Company (16 plans)
	Olive Ellringer	•			•			•	•		•	Mojave Water Agency
	Omar Samara	•	•	•	•	•	•	•	•		•	San Geronio Pass Water Agency
	Jennie McCarl										•	City of Hesperia

## Pertinent Project Experience

### San Geronio Pass Water Agency 2020 UWMP

Between August 2020 and June 2021, we completed San Geronio Pass Water Agency's 2020 UWMP for \$92,280. We were 100% responsible for drafting and adopting the UWMP and completed the plan on time and on budget. The work required aggregating water supply and demand issues for SGPWA retail agencies over a 50-year planning horizon, developing an approach for the Delta Reform Act requirements based upon imported SWP water supplies and other imported supplies, and projecting supply reliability over the 50-year planning horizon to jump start alternative water supply investigations. Work led to acquiring new water supplies and focusing future water asset acquisition efforts.

### Mojave Water Agency 2020 UWMP

Beginning in August 2020 and finishing on time in June 2021, we worked with Mojave Water Agency to complete their 2020 UWMP for \$92,280. We were 100% responsible for drafting and adopting the UWMP and completed the plan on time and on budget. The work required aggregating water supply and demand issues for 45 retail agencies in the MWA service area, assessing the complexities of the three groundwater

adjudications in the Agency's service area and groundwater banking activities, and preparing DRA compliance materials in anticipation of reduced delta diversions. The work led to a full strategic plan and the organization and preparation of a single and fully integrated wholesale-retail Urban Water Management Plan for the 2025 cycle (currently being prepared by Zanjero).

### **Sacramento County Water Agency 2020 UWMP**

We completed SCWA's 2020 UWMP for \$99,890 on time and on budget. This project was completed between August 2020 and June 2021. We were 100% responsible for drafting and adopting the UWMP and completed the plan on time and on budget. The work required addressing water supplies and demands in SCWA's seven distinct service areas – all with unique water assets and demand characteristics. Zanjero not only prepared the plans but discovered *a new water supply* that SCWA did not know that it could deliver within two of its service areas – North Delta Water Agency contract supply. Zanjero helped secure the supply and SCWA now delivers that supply to its customers. Zanjero's work included assessing recycled water assets, groundwater supplies (in anticipation of SGMA GSP development in three basins touched by SCWA), and opportunities for developing SCWA's asset portfolio through direct delivery, groundwater storage, and conjunctive use projects. The strategic water planning work with SCWA that was started in the 2020 UWMP cycle is ongoing and recently resulted in the preparation of a five-year and 50-year Decision Support Tool (DST) that will assist SCWA in leveraging its water assets in its supply portfolio both to meet customer needs and support financial objectives.

## **Section 3: Project Understanding**

Zanjero uses a unique approach in addressing water planning and management issues. We disaggregate issues into *Legal, Economic, Political, and Technical* (LEPT) factors to work through water management details. We then reaggregate our LEPT findings to provide strategic guidance to clients to further their water interests. The figure below shows how we think about water issues in the Urban Water Management Planning context.

Figure 1 – LEPT Factors in Strategic Water Planning



This LEPT disaggregation and then reaggregation allows an urban purveyor's management and staff to fully digest the key issues that impact their water asset portfolios. For example, characterizing and understanding the legal opportunities associated with Palmdale's water asset portfolio and the economic realities of the portfolio will help Palmdale make better water asset management decisions. We readily acknowledge that Palmdale's local staff and management have insights into their water asset portfolios that Zanjero does not know but, once we understand those insights, we can assist in leveraging them to support water asset management objectives.

In the UWMP development and implementation process, Zanjero will conduct "the easy part" by gathering and assessing water demands, water supplies, and all other UWMP criteria (see our Work Plan described below). However, the hard part is anticipating how these UWMPs may be used by Palmdale or others in the future and crafting language and strategies that achieve Palmdale's objectives.

For example, in the Bay-Delta Water Quality Control Plan process, the State Board Staff aggregated the information from urban purveyors' UWMPs in populating the SacWAM

model that is the basis for State Board decision-making on the impacts of potential delta flows. The mischaracterized supplies in many of the UWMPs that were formally adopted by the governing bodies in public hearings are now incorporated into the SWRCB's model. How is an urban water purveyor supposed to dispute the model inputs when those inputs are based on information provided by the urban water purveyor itself and formally adopted by its governing body? Zanjero's UWMP's anticipate these unintended uses of this public document by carefully analyzing data, presenting results, and crafting report language. This understanding is critically important for Palmdale Water District at this particular point in time.

### Additional UWMP Innovations

Zanjero encourages all of our clients to use the Urban Water Management Plan as much more than a “check the box” exercise to fulfill a state law requirement. The UWMP provides an urban supplier with many opportunities that most consulting firms choose to ignore. Below is a list of the innovative approaches that urban purveyors should consider in developing an UWMP:

- ***Integrate Specific Land Use Plans:*** The UWMP can incorporate the water supply and demand analyses that are needed for specific land use plans that are required to adopt Water Supply Assessments under Water Code sections 10910. Where specific plans are desired and ripe, the UWMP provides an opportunity to prepare and adopt technical analyses that might otherwise be more controversial in alternative settings.
- ***WC 1005.4 Conjunctive Use Accounting:*** Water Code section 1005.4 allows urban water purveyors to organize and claim special rights to groundwater supplies that are left in the ground when the suppliers use surface water supplies instead. This quantification and inclusion in the UWMP provides a placeholder for the actual filings that the urban purveyor can complete at a later time.
- ***WC 1011 Water Conservation Accounting:*** Water Code section 1011 allows urban water purveyors to legally claim “beneficial use” for water that they do not use because of water conservation actions. Although water conservation is

mandated under the UWMP Act, the claim of beneficial use under WC 1011 is a separate step that should be incorporated into an UWMP.

- **Address BDWQCP and Voluntary Agreement Outcomes into UWMP:** The UWMP allows an urban purveyor to investigate and address potential water supply outcomes from statewide regulatory actions. The BDWQCP SacWAM model shows significant cutbacks to long-term SWP supplies. Addressing these issues (potentially with alternative supplies) in the UWMP is paramount.
- **Alternative Project Analysis:** The public hearing and formal board adoption of a UWMP allows urban purveyors to publicly-vet and formally adopt water projects that might otherwise draw more scrutiny absent the UWMP. The characterization of those projects in the UWMP allows urban purveyors to “jumpstart” a project planning effort. We encourage purveyors to include projects, even if still conceptual in nature, in the UWMP to give them more validity when formally proposed to the governing body.
- **Delta Reform Act (DRA):** The Delta Stewardship Council is an independent state agency that is slowly expanding its jurisdictional influence. The DRA requires “reduced delta reliance” and “increased regional self-reliance” for water purveyors that use water imported from the Delta. Although the UWMP has reporting DRA reporting requirements, carefully analyzing the long-term opportunities for urban purveyors under the DRA requires definitive approaches to water supply characterizations knowing that the DSC is looking to curtail imported asset deliveries.
- **Prepare 50-Year Planning Assessments:** The UWMP Act requires urban purveyors to prepare water reliability assessments for a 20-year planning horizon. This legal requirement is important, but strategically inappropriate in preparing UWMPs. Adding five years of planning allows for the UWMP findings to be useful in land use planning on July 2 (one day after submittal to DWR). But adding much longer-term planning assessments (like 50 years) provides water supply and management guidance that can legitimize activities for at least five years after plan adoption and potentially an additional 25-years after that.

- **Identify Projects and Prepare CEQA to Support Projects:** Zanjero has assisted urban water purveyors in using the UWMP to identify specific projects for development – physical projects and water transfers – and develop and prepare CEQA to meet those project requirements. This extra step can accomplish two things at once – meeting the requirements under the UWMP Act and initiating projects that would otherwise require a separate legal and administrative process. Preparing CEQA to support these activities may align with a qualified exemption (categorical or statutory) or may best be carried out with an initial study and subsequent Negative Declaration, Mitigated Negative Declaration, or full-scale Environmental Impact Report (EIR).

None of these additional items are currently provided in our proposed Work Plan and may not be desired by Palmdale at this time. Nevertheless, if these extra items are potentially of interest, Zanjero has the capability to develop and implement them in a cost-effective and efficient manner.

## Section 4: Project Staffing & Availability

Gwyn-Mohr Tully, J.D. will be the Project Manager for this project and be ultimately responsible for all aspects of the 2025 UWMP, including all substantive investigations and documents, client interactions, and public outreach, as well as directing the water supply analysis in the UWMP. Robert Heather, as the Deputy Project Manager, will drive the project timeline and oversee the water demand analysis in the UWMP. Greg Young, P.E., will be the engineer who will stamp the Final UWMP before submission. Zanjero uses this approach to ensure consistency and security in its UWMP efforts and provide comprehensive Quality Assurance and Quality Control of final work products.

Zanjero's engineers, engineers in training, water planners, and communications specialists will support the 2025 UWMP as well. Jim Crowley, P.E., Kris Olof, Adriel Ramirez, Mitch Dion, Jordan Smith, P.E., and Omar Samara, Ph.D. will support the data assessment, water demand, and water supply sufficiency analysis. In particular, Omar will conduct the day-to-day activities associated with the water demand analysis. Other



staff will provide additional support as needed based upon issues that arise and overall UWMP understanding based upon past experience. Galen Davis, Tyler Mar, and Olive Ellringer will support the UWMP-required system overview analysis, water supply analysis, water supply sufficiency analysis, and water shortage contingency plan. Galen will conduct day-to-day activities associated with the water supply analysis.

Katie Carlson and Savanna Sanders will drive the public outreach effort and prepare materials for the public hearing. Katie is a Behavior Science expert and conducts large-scale public meetings in a variety of forums. Katie will be supported by Savanna in preparing materials and supporting the meetings – a job they excel at for numerous existing clients. Gwyn-Mohr, the Project Manager, will give all presentations in public forums unless otherwise directed by District Staff.

Gwyn-Mohr and Robert will be responsible for project deliverables and Gwyn-Mohr will provide QA/QC to ensure that documents meet statewide UWMP reporting obligations. Jennie McCarl will support the preparation of document deliverables. There may be additional individual assignments within these specific areas that will be refined after the contract is awarded and formally discussed with District Team leadership. Resumes for our team are provided in **Appendix A**.

## Organizational Chart

Zanjero's Organizational Chart for the UWMP Project is shown on the next page.



## Section 5: Work Plan

Zanjero will complete the following tasks to provide Palmdale with a completed UWMP that (a) complies with the Urban Water Management Planning Act under the California Water Code and DWR UWMP Guidebook requirements and (b) provides a reference document that synthesizes the District's short-term and long-term water management planning objectives.

Organizing the UWMP effort is the critical starting point to ensure timely and accurate project completion. Zanjero will use Palmdale's 2020 UWMP as the fundamental starting point for completing the 2025 UWMP, reusing as much as possible for efficiency. In addition, we anticipate that the basic facts in Palmdale's recent water production and use data are readily available and can be used as foundational information for the 2025 UWMP. Accordingly, the following tasks describe the approach to be followed for the UWMP, Furthermore, our description of tasks on the following

pages fully satisfies the tasks provided as a guideline in the Request for Proposal.

## Task 1: Project Administration & Management

### Task 1.1 - Communication

Coordination between District staff and Zanjero will be key as part of the 2025 UWMP process. Zanjero will be in communication with the District via telephone and email on a regular basis.

### Task 1.2 - Meetings

Zanjero will organize and facilitate a project kick-off meeting, where UWMP requirements, project goals, opportunities, constraints, information needs, roles, responsibilities, project coordination, schedule, and expectations will be discussed. Based upon the proposed Project Timeline to complete the 2025 UWMP Update by June of 2026, Zanjero anticipates scheduling the kick-off meeting shortly after contract approval. Two important topics that will be discussed at this meeting include: (1) the specific long-term water management objectives in preparing the 2025 UWMP; and (2) the fundamental changes for the 2025 UWMP and obligations in addressing these changes. Zanjero anticipates this meeting lasting no more than 90 minutes. Although an in-person meeting would be preferable, the meeting could be conducted remotely.

Additionally, Zanjero will organize and facilitate regular coordination meetings with the District for purposes of completing the 2025 UWMP efforts. Zanjero will develop agendas for the various meetings and will provide meeting notes/summaries to the District within five business days following the meetings.

### Task 1.3 - Project Management

Zanjero will provide project management services for the 2025 UWMP Update, including organizing communication platforms (e.g., video conferencing) for consultation, maintaining budget accounting and invoicing, and meeting expectations of the project timeline.

## Task 2: Data Collection and Review of 2020 UWMP

### Task 2.1 – Reference Materials

Zanjero will work with the District to gather all necessary reference documents that

should be incorporated into the 2025 UWMP. Critical items to address for the 2025 UWMP include: (1) important considerations related to water rights and water supply contracts as well as the opportunities to leverage water assets for revenue and regional reliability; and (2) water planning and management strategies related to interactions among wholesalers and retailers and other regional urban water purveyors. The existing system description and other basic information from the 2020 UWMP will be the fundamental reference material for the 2025 UWMP Update.

### **Task 2.2 – Data Request**

In addition to focusing on the documents provided above, Zanjero will request water use data from 2021 through 2025, including but not limited to annual water loss audit reports, Urban Water Use Objective (UWUO) reports, Safe and Affordable Funding for Equity and Resilience (SAFER) Reports/Clearinghouse Annual Inventory Repots (CAIR), Electronic Annual Reports (eAR) filings through the State's DRINC portal, as well as Reclamation Audit Reports. These data provide the fundamental platform for completing the water demand analyses and water supply availability analyses (presented below). Specifically, these data provide the foundation for: (1) assessing whether mandated conservation reductions were maintained (e.g. 20% by 2020 for the retail service), (2) completing the Drought Risk Assessment, (3) assessing water supply availability, (4) tracking UWUO and Water Loss Standard compliance, and (5) finalizing the long-term demand projections that incorporate issues like climate change.

### **Task 2.3 – Document Overview/Review Meeting (up to four)**

Upon drafting the various planning documents (UWMP and WSCP), Zanjero will meet with District staff to review the approach, assumptions, and results of various planning exercises incorporated into the 2025 UWMP, including (but not limited to) the Reliability Assessment, WSCP, demand projections, and supply options to incorporate into the planning documents. Zanjero anticipates robust cooperation, and these meetings will be used to coordinate development of the draft and final versions of the various planning materials and documents.

## Task 3: Legislative Requirements and UWMP Outline

### **Task 3.1 – Identify new requirements.**

Once the 2025 UWMP requirements are finalized by the State, Zanjero will identify any new requirements for this cycle.

### **Task 3.2 – Provide an outline of 2025 UWMP document.**

Because the initial draft is due very early in 2026, this document will represent the fundamental findings of the UWMP and an explanation of the methodology and steps that will be employed to complete the administrative draft in compliance with DWR requirements. Our goal is to provide PWD ample time to review the major assumptions that are planned.

### **Task 3.3 – Identify areas for improvement**

Using PWD's 2020 UWMP, Zanjero will identify content and layout improvements for 2025 while complying with all applicable requirements from DWR.

## Task 4: Demand Projections

### **Task 4.1 – Projected Water Demand**

Zanjero will develop the following information as part of this task:

- |   |   |
|---|---|
| • <i>Water System/Service Area Description</i>                          | • <i>Demand analysis for use in the Annual Assessment (WC 10632.1)</i>  |
| • <i>Current and Future Population Estimates</i>                        | • <i>Evaluation of Historic, Current and Projected Future Conservation and Demand Management Measures (DMM)</i> |
| • <i>Water Demand and Conservation Projections (annual and monthly)</i> | • <i>System Water Loss Report</i>   |
| • <i>Demand Analysis for the Drought Risk Assessment (WC 10635(b))</i>  | • <i>Senate Bill x7-7 and Per Capita Water Usage Analysis</i>   |

#### **Task 4.1.1. – Water System/Service Area Descriptions**

Zanjero will use the water system and service area description contained in the 2020 UWMP as the basis for this section in the 2025 UWMP Update. In addition, Zanjero proposes reusing existing service area maps and diagrams in order to reduce expenses

and maintain consistency with existing documents. If necessary, Zanjero will incorporate additional water system information and develop new maps and diagrams after consultation with the District. Zanjero will include the District's water service and service area description into the Administrative Draft 2025 UWMP, Public Review Draft 2025 UWMP, and Final 2025 UWMP.

#### *Task 4.1.2 – Current and Future Population Estimates*

Zanjero will utilize existing data sources to develop current and future population estimates for the District's 2025 UWMP. Sources may include DWR's population reporting tool, United States Census Bureau, and California Department of Finance.

#### *Task 4.1.3 – Water Demand and Conservation Projections*

Zanjero will provide a comprehensive water demand analysis that will represent the monthly water demands under various hydrological conditions through 2030, annual projected water use in five-year increments to 2050 and provide the basis for the Drought Risk Assessment (DRA) and Annual Assessment (AA) efforts.

#### *Task 4.1.4 – Evaluation of Historic, Current and Projected Future Water Conservation and Demand Management Measures (DMMs)*

Zanjero will examine water conservation and demand management considerations employed by PWD. Zanjero may help the District develop additional demand management measures to meet future water reduction objectives. Proposed measures will be based upon Zanjero's experience with similarly situated water purveyors and the ability of the District to coordinate actions with other local agencies. Zanjero will draft a narrative for the 2025 UWMP describing the District's DMMs in compliance with Water Code §10631(e)(1). This narrative will be based upon readily available information provided by the District regarding its DMM implementation over the past five years, and its intended actions into the near future.

#### *Task 4.1.5 – System Water Loss Report*

Zanjero, in coordination with the District, will incorporate required water loss information into the 2025 UWMP Update as appropriate. We recommend identifying this water in

the 2025 UWMP consistent with AWWA protocols as “non-revenue water.” Zanjero will provide a system water loss narrative, as well as the District’s plan for achieving compliance with the Water Loss Standard for the 2025 UWMP.

#### *Task 4.1.6 – Senate Bill x7-7 and Per Capita Water Usage Analysis*

SB x7-7 mandates that all retail water suppliers comply with a reduction in per-capita use by 2020, with reporting in the 2020 UWMP providing the evidence of meeting previously established targets. Zanjero will evaluate the actual gross water use in 2025 for the retail service area in comparison to this target and incorporate this analysis into the 2025 UWMP.

#### *Task 4.1.7 – Energy Intensity*

Zanjero will utilize data received to report the “Energy Intensity” (expressed as unit of energy per unit of water produced) and incorporate into the UWMPs, pursuant to Water Code §10631.2(a).

### **Task 4.2 – Water Supply Availability**

Zanjero will develop a comprehensive assessment of the District’s current and future water supply availability. The following information will be developed for compliance with statutory requirements:

- *Water Supply Projections*
- *Complete Comprehensive Water Supply Table*
- *Potential Supplemental Water Supplies*
- *Recycled Water Supply*
- *Current and Future Groundwater Supplies*
- *Water Quality Data*
- *Water Transfers and Exchanges*
- *Climate Change Considerations*
- *Supply versus Demand Assessment*

#### *Task 4.2.1 – Water Supply Projections*

Zanjero will prepare a comprehensive water supply analysis consistent with all statutory requirements and addressing the District’s short-term and long-term water supply reliability from its water rights water and SWP supply. Zanjero will prepare a monthly

water supply assessment characterizing and evaluating (a) 2025 water supplies; (b) a normal year water supply; (c) a single dry year water supply; (d) the water supply during five consecutive dry years; and (e) a water supply analysis in five-year increments from 2025 through 2050. Zanjero's water supply analysis will provide the basis for preparing the District's WSCP. Also, Zanjero will prepare complete water supply projection tables and qualitative water supply analysis for inclusion in the District's 2025 UWMP.

#### *Task 4.2.2 – Potential Supplemental Water Supplies*

The District has significant water supplies under multiple hydrologic scenarios. However, risks do exist for the PWD service area based upon its portfolio distribution. As part of this task, Zanjero will examine opportunities for the District to augment its water supplies. Zanjero will also examine the potential to use non-potable supplies in the District. Zanjero will address these types of supplemental water supply issues in accordance with the District's direction. Zanjero will provide a supplemental water supply narrative for the 2025 UWMP.

#### *Task 4.2.3 – Recycled Water Supply*

To save time and money, Zanjero will review the 2020 recycled water discussion, consult with the District, and update the element as appropriate for the 2025 UWMP.

#### *Task 4.2.4 – Current and Future Groundwater Supplies*

The District is within the Antelope Valley Groundwater Basin and uses additional surface water derived from Littlerock Dam Reservoir and the SWP. Although the groundwater supply analysis in this section must align with the Groundwater Sustainability Plan, it must also assess conjunctive use, groundwater storage, and surface supply integration to support long-term preservation and reliability objectives (including compliance with the Delta Reform Act). This discussion will be included in the District's 2025 UWMP after significant consultation with District Staff.

#### *Task 4.2.5 – Water Quality Data*

Zanjero will use the water quality analysis developed in the District's 2020 UWMP as the baseline assessment of water quality issues in the 2025 UWMP. Zanjero will work



with the District to address any additional water quality considerations and provide a narrative for the 2025 UWMP.

#### *Task 4.2.6 – Water Transfers and Exchanges*

Zanjero will revisit the District's opportunities to transfer and exchange water supplies. Zanjero will work with District staff to discuss potential opportunities, such as conservation-based transfers, and will provide a water transfer and exchange narrative for the 2025 UWMP reflecting these conversations.

#### *Task 4.2.7 – Climate Change Considerations*

Climate considerations are becoming one of the most pressing issues in assessing long-term water reliability. Zanjero will synthesize DWR's Guidebook recommendations for climate change considerations with the District's climate change activities and evaluate the impact to the District's future water supply projections. Zanjero will provide a climate change narrative in the 2025 UWMP.

#### *Task 4.2.8 – Supply versus Demand Assessment*

The supply versus demand assessment provides the fundamental conclusions that drive urban water management planning and all legal requirements incorporated in the Urban Water Management Planning Act. A robust assessment is derived from the water demand and water supply analyses. More specifically, if the demand analysis is accurate and the supply analysis is factual, then the integrated supply and demand analysis will be straightforward and correct. The analysis will be the technical backbone for the District's Drought Risk Assessment, Annual Assessment, and WSCP. Accordingly, Zanjero will provide the necessary analytical rigor to all aspects of the 2025 UWMP in order to provide a logical and thoughtful final supply versus demand assessment. The final deliverable here will be a comprehensive analysis that incorporates the information from all other sections and represents a practical examination of the District's service reliability. This assessment will be incorporated directly into the Administrative Draft 2025 UWMP and include the completion of all tables required by DWR.

## Task 5 –Water Shortage Contingency Plan

Zanjero will analyze the District's current and future water conservation actions, refine the WSCP to meet statutory criteria, and address the statutory seismic vulnerability requirements.

### Task 5.1 – Water Conservation Assessment

Zanjero will assess the District's ongoing water conservation activities as they apply to the District's current demands. Zanjero will use the information developed for the 2025 UWMP to inform this assessment. In addition, Zanjero will assess the opportunities for the District to further engage in water conservation actions that would impact short-term and long-term water supply planning. Zanjero will examine the indoor and outdoor water conservation actions that may be required under legislative mandates, such as indoor water use targets.

### Task 5.2 – Water Shortage Contingency Plan

Zanjero will work with District staff to review the existing WSCP for incorporation into the 2025 UWMP Update. Zanjero's experience in demand management will offer unique insight into any revisions contemplated. Zanjero will evaluate PWD's current Water Shortage Contingency Plan and incorporate the activities within this plan into the UWMP context. The WSCP is the mechanism activated by PWD when water shortages manifest due to natural conditions or regulatory actions. The WSCP has mechanisms to mandate reductions in water use in percentage allocations based upon the stage of the WSCP declared. These reductions impact demand calculations and can be used to buffer supply reliability findings in times of water shortage. Accordingly, the WSCP is an important component of UWMP supply planning.

### Task 5.3 – Seismic Vulnerability Assessment

Additionally, Zanjero will prepare a brief narrative discussing the local County hazard mitigation plan and its relationship to the seismic risk to the District's water delivery infrastructure.

## Task 6: Draft and Final Draft 2025 UWMPs

### **Task 6.1 – Prepare Administrative Draft 2025 UWMP**

Zanjero will utilize the independent chapter deliverables developed to construct the Administrative Draft 2025 UWMP, including the creation of new graphics and figures as well as all necessary appendices and DWR tables. This draft will incorporate all relevant information gathered in the 2025 UWMP process and will have been thoroughly vetted with the District prior to inclusion. Zanjero will prepare the Administrative Draft 2025 UWMP as though it is a final document that will be submitted to DWR for review. This high professional standard is imperative to providing the District with a definitive UWMP that can be critically reviewed and studied by relevant District staff. Electronic versions in Word and PDF formats will be provided to the District.

### **Task 6.2 – Prepare Public Review Draft**

Upon completion of the District's review of the Administrative Draft 2025 UWMP, Zanjero will prepare the Public Review Draft 2025 UWMP. This draft will be widely distributed as directed by the District. Zanjero will, at a minimum, follow the statutory guidelines for notice and distribution of the Public Review Draft 2025 UWMP. Zanjero will also coordinate with the District on additional direct Public Review Draft distribution in accordance with Government Code §6066, as well as publication on the District's website, if desired, in order to solicit additional comments from interested stakeholders.

### **Task 6.3 - 2025 UWMP Notice**

Zanjero will work with the District to prepare notification to interested stakeholders and other neighboring water purveyors of the intent to develop its 2025 UWMP. Although this action is not required by statute, Water Code §10642 encourages "active involvement of diverse social, cultural, and economic elements of the populations within the service area prior to and during the preparation of both the [UWMP] and the water shortage contingency plan." The notification contemplated in this section will be a simple form letter or form email that can be easily distributed to stakeholders and public agencies. We also suggest including a notice of intent to initiate the UWMP process in a Board Meeting agenda. This task is specifically identified as an initial action that is related to the broader public outreach actions and legally required public notice actions

considered in later tasks. Zanjero will prepare relevant notice material, and the District will be responsible for distributing as appropriate.

### Task 7: Attend Public Hearing

Zanjero will attend the District's public hearing on the public review draft and will assist the District in soliciting and organizing public comments related to the Public Review Draft 2025 UWMP. Zanjero will present materials at the public hearing on behalf of the District and will be available to help answer questions.

### Task 8: Final 2025 UWMP

#### **Task 8.1 – Prepare Final 2025 UWMP**

Zanjero will gather any comments received on the Public Review Draft (and hearing) and coordinate changes to the Final 2025 UWMP, if any, with the District. Zanjero will provide the District with fifteen bound paper copies (without appendices); all electronic data files used in preparation of the UWMP; an electronic file in Adobe PDF format with appendices; and an electronic file in Microsoft Word format.

### Task 9: Plan Submittal

Upon the District's adoption of the Final 2025 UWMP, Zanjero will formally submit to DWR, the California State Library, and other stakeholders, as necessary. Zanjero will use DWR's online reporting database to complete all database tables and facilitate acceptance by DWR of the submitted UWMP.

### Task 10: Revisions

Zanjero will be responsible for addressing any concerns raised by DWR during its acceptance process, including the preparation of addendum materials as may be appropriate.

## Section 6: Fee Schedule

Task Description	Principal	Sr Planner/Engineer	Planner/Engineer	Comms Director	Admin	Total
1. Project Administration/ Management	10	0	0	0	10	20
2. Data Collection & Review of 2020 UWMP	10	13	3	0	2	28
3. Legislative Requirements & UWMP Outline	6	4	10	0	0	20
4. Demand & Supply Projections	17	49	64	0	0	130
Tasks 4.1.1 – 4.1.7	5	23	40	0	0	
Tasks 4.2.1 – 4.2.8	12	26	24	0	0	
5. WSCP	8	9	13	0	0	30
6. Draft & Final Draft UWMPs	20	24	30	0	12	86
7. Attend Public Hearing	4	3	0	4	0	11
8. Final 2025 UWMP	6	6	4	0	4	20
9. Plan Submittal	3	4	4	0	4	15
10. Revisions	2	4	2	0	1	9
Total Labor Hours	86	116	130	4	33	360
Labor Rates (\$/hour)	\$330	\$240	\$225	\$270	\$125	
Total Labor Costs	\$28,380	\$27,840	\$29,250	\$1,080	\$4,125	
Direct Costs (printing)						\$550

<b>Project Total:</b>	<b>\$91,225</b>
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## Section 7: Unique Qualities or Qualifications

Zanjero is likely the most unique water consulting firm in all of California. No other consulting firm that we are aware of statewide has a practicing water rights lawyer and no other consulting firm has the breadth and depth of water planning experience that Zanjero has developed.

- Zanjero represents the State of Nebraska in an interstate water dispute with the State of Colorado and are retained experts in the United States Supreme Court case Texas v. New Mexico where the two states are disputing use of the Rio Grande River.
- We have deeply analyzed “The Law of the River” under the Colorado River Compact (and sub-compacts).
- We are experts on the Truckee River Operating Agreement and interstate issues on the Truckee and Walker Rivers between California and Nevada.
- We are Klamath River system experts (interstate water body in Oregon and California) and are implementing the Klamath Hydroelectric Settlement Agreement on behalf of our client – the City of Yreka.
- We are implementing the Sustainable Groundwater Management Act in all areas of California including developing and implementing multi-benefit land re-purposing efforts in the Central Valley and California Coast.
- We drafted the Delta Plan for the Delta Protection Commission and were instrumental in the creation of the Delta Reform Act.
- We are active in other “big picture” water supply activities in California like contesting the Bay-Delta Water Quality Control Plan for numerous clients.
- We organize and execute water transfers for both sellers and buyers throughout California – especially for SWP contractors.

## Section 8: References

We are proud to include three references from 2020 UWMP client projects as well as other ongoing projects that are aligned with the Districts’ 2025 UWMP. The references

provided offer insights into our past performance and our ability to deliver results that meet or exceed each client's expectations. If additional references are desired, we are more than happy to provide them.

<b>1. Client:</b>	<b>City of Sacramento</b>
Project(s):	Water Asset Preservation, Water Reporting Optimization and 2025 Urban Water Management Plan
Contact:	Brett Ewart, Water Policy and Planning Supervisor Dept. of Utilities Michael Voss, City Attorney's Office 1395 35 <sup>th</sup> Avenue, Sacramento CA 95822
Phone:	(916) 808-1725
Email:	<a href="mailto:bewart@cityofsacramento.org">bewart@cityofsacramento.org</a> , <a href="mailto:mvoss@cityofsacramento.org">mvoss@cityofsacramento.org</a>
<b>2. Client:</b>	<b>City of West Sacramento</b>
Project(s):	2020 UWMP, 2025 Water Master Plan, 2022-2027 Strategic Water Program Management
Contact:	Chris Kania, Water Treatment Plant Superintendent 1110 West Capitol Ave, West Sacramento CA 95691
Phone:	(916) 617-4870
Email:	<a href="mailto:chrisk@cityofwestsacramento.org">chrisk@cityofwestsacramento.org</a>
<b>3. Client:</b>	<b>San Geronio Pass Water Agency</b>
Project(s):	2020 UWMP and Reduced Delta Reliance Appendix and 2024-25 Water Supply Strategic Program
Contact:	Lance Eckhart, General Manager 1210 Beaumont Ave, Beaumont CA 92223
Phone:	(951) 845-2577
Email:	<a href="mailto:leckhart@sgpwa.com">leckhart@sgpwa.com</a>

## Section 9: Acceptance of Professional Services Agreement

Zanjero accepts the terms of Palmdale Water District's Professional Services Agreement.



# Appendix A: Resumes



# Gwyn-Mohr Tully, J.D.

## Principal



Gwyn-Mohr is a licensed attorney in California with over 30 years of experience in surface and subsurface hydrology, law, and policy. He consults with public agencies and private clients on developing and implementing water resource management plans and individual water projects. In this context, Gwyn-Mohr has conducted water rights investigations, assessed contractual water obligations, negotiated water transfers, prepared water settlements, evaluated surface and subsurface water supplies, organized regulatory and political actions, researched historical water rights and supplies, and conducted and coordinated high-level stakeholder interactions. Gwyn-Mohr wrote an Amicus Brief to the California Supreme Court in the case *Barstow v. Mojave* on the fundamental underpinnings of California Water Rights law.

### **Relevant Project Experience**

**2012 and 2023 City of Yreka Water Right Permit Extensions.** Developed strategic approach to engaging SWRCB on water right permit extensions. Prepared Petition for Permit Extension as well as supporting technical and CEQA documents. Coordinated efforts for City in context of Klamath Dam Removal and hydroelectric power production in a FERC licensed facility on Fall Creek (source of City's supply). Resolved protests to petitions, including California DFW comments related to fish hatchery and endangered species in Klamath River system.

**Water Management Strategy, Water Rights Permit Extension, CVP Contract Negotiation, and Water Transfers, City of West Sacramento.** Analyzed the City's water assets and assessed potential to maximize utility and monetize unused portions. Identified issues with City's water right Permit and prepared a full strategic plan for Permit extension for the City in coordination with City Counsel. Negotiated WIIN Act conversion of CVP Contract and prepared detailed water management analysis for negotiation team. Bought and sold water assets – most recently acquiring a critical dry year supply from the City of Sacramento. Water Management Strategy is ongoing.

**Water Management Strategy, Sacramento County Water Agency.** Researched and analyzed all details of SCWA's water asset portfolio. Discovered new water assets available to SCWA to exercise for use in service area that had not been identified by special water rights counsel or consultants. Organized actions for quantifying and reporting water conservation and conjunctive use to better preserve water assets. Coordinated water management actions with Senior Staff and SCWA Board and prepared conservation strategy for 2022. Water Management Strategy is ongoing.

**Two Permit Extensions for North Yuba Water District.** We analyzed NYWD's water supplies and demands after previous special counsel and consultants were removed. We assessed the Permit Extension status and coordinated a strategic plan for engaging SWRCB for renewal. Engagement with SWRCB resulted in an extended period to demonstrate reasonable and beneficial use for both water permits. Most recently, SWRCB addressed the approach provided in NYWD's Strategic Plan and asked NYWD to amend draft Orders to demonstrate its projected uses for the revised 20-year permit extension periods.

### **Expertise**

- Comprehensive water resources planning
- Water rights assessments and analysis
- Policy assessment and development
- Water transactions, negotiations, and agreements
- Deep understanding of statewide water issues and regulatory framework
- Analysis of CVP and SWP system operations
- Expert on interstate water agreements and adjudications
- Complex document drafting and analysis
- Synthesis of technical, legal, and political issues associated with water supply reliability

### **Active Registration**

California State Bar No. 199525

### **Education**

J.D., University of the Pacific,  
McGeorge School of Law

M.A., Geography (hydrology)  
University of Montana

B.A., Geography  
University of California, Berkeley

# Greg Young, P.E.

## Principal

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Mr. Young is a registered civil engineer with over 32 years of extensive experience in strategic water resource management and planning. Mr. Young helps clients develop workable solutions that meet their fundamental water planning objectives, with experience and skill gained from his work throughout California and other western states. Mr. Young provides expertise to local agricultural and urban water purveyors, public agencies, non-profits, and private interests on matters ranging from water use forecasting to SGMA compliance, to water asset management and water rights reporting, to aiding clients with the purchase or sale of water assets, to drafting legally supportable documents for use in CEQA and NEPA compliance efforts. Through all this work, Mr. Young focuses on providing objective-based facts that help his clients make informed decisions regarding the reliable management of their vital water resources.

### ***Relevant Project Experience***

**2020 UWMP development and submittal, 30 clients.** Led efforts to prepare multifunctional Urban Water Management Plans for 30 clients throughout the State, ranging from retail and wholesale water suppliers in Southern California to retail suppliers in the Bay Area and Sacramento Valley. With varied water supply and customer demand conditions, each client required unique considerations and analysis. Critical components included land-use based demand forecasting and comprehensive water supply assessment and characterization. For each client, managed the process including submittal to state agencies.

**Advisor and guidance development for 2015 and 2020 UWMP Guidebook, CA Department of Water Resources, Sacramento CA.** Leading efforts with DWR personnel to revise and update the 2020 UWMP Guidebook to (1) clarify and improve prior guidance and (2) develop new guidance and tools to address several new UWMP Act requirements. Developed demand forecast methodology guidance text and example scenarios for inclusion in the 2015 UWMP Guidebook as Appendix K.

**Madera County and Merced County GSA Technical Consultant and Strategist.** Acting as the GSA technical lead and providing strategic planning associated with SGMA compliance, working directly for County management. Duties include developing groundwater sustainability concepts, facilitating stakeholder and GSA communications and public meetings, drafting materials, evaluating proposals and concepts from other GSAs, formulating groundwater allocation approaches, and initiating GSP implementation actions.

**Water Supply Assessment development, multiple clients.** Over the past decade, drafted legally defensible documents for projects throughout California including most recently for Madera County, City of Sunnyvale, Sacramento County, Yuba City, El Dorado Irrigation District, San Benito County, and City of Brisbane. Each WSA involves comprehensive demand analysis, characterization and analysis of water supplies, and close coordination among land-use authority, EIR consultant, project proponent and water supplier.

### ***Expertise***

- UWMP preparation
- UWMP guidance and tool development
- Comprehensive water resources planning
- SGMA compliance
- SB 610 WSA preparation
- Coordinating and facilitating complex water management and planning efforts
- Comprehensive understanding of ag and urban water use
- Water use forecasting
- Policy assessment and development
- In-depth technical understanding of California water facilities and management
- Water transfer specialist
- Water rights analysis
- Expert witness

### ***Active Registration***

Registered Engineer: CA #C51255

### ***Education***

B.S., Agricultural Engineering  
California Polytechnic State  
University, San Luis Obispo

# Jim Crowley, P.E.

## Principal

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Jim Crowley has over 33 years of experience working in all aspects of water, wastewater, and power development projects. These projects include master plans, capital improvement plans, capacity evaluations, renovations and expansions, integrated water resource plans, climate adaption strategies, financial analysis, hydropower analysis, energy market strategies, conservation program analysis, and operations support to assist utilities in developing and implementing capital improvement projects. Mr. Crowley also has a depth of experience in management consulting, assisting utilities in assessing, evaluating, developing, and implementing strategic efforts to optimize both annual operations and long-term capital costs to strengthen utility resiliency.

### ***Relevant Project Experience***

**Plan for Water Process, Nevada Irrigation District.** Served as program manager to design and implement a multi-stakeholder, multi-partner water resources strategy project to envision the District's role, purpose, and services within the community in 50 years, and develop a comprehensive strategy and implementation plan to achieve that vision.

**Water Resources Strategy Program, Marina Coast Water District.** Serving as program manager and technical support to develop a comprehensive water resources supply strategy. This project is investigating all potential supply management strategies, supply augmentation options, demand management efforts, and strategic partnership opportunities to enhance supply availability and reliability within the District

**Water Management Initiative, Amman Miyahuna Water and Sewer, Ministry of Water and Irrigation, Jordan.** Starting in 2007, Mr. Crowley has supported the Directorate of Amman and Jordan in developing and implementing water utility governance and practices to ensure sustainable water resources operations. The project began developing a business plan for the newly formed Amman water and wastewater utility, Miyahuna, including a detailed analysis of capital project needs, development of 5-year \$400 million CIP, and organizational development of the engineering and construction implementation program plan. We continue to provide implementation support.

**County-Wide Water Master Plan, Placer County Water Agency.** The project developed eight Water Resource Elements similar to a general plan, as follows: Unserved Areas, Water System Infrastructure Reliability, Water Supply Reliability, Renewable Energy Development, Watershed Stewardship, Agriculture, Conservation and Water Use Efficiency, and Public Education and Outreach. A needs assessment and strategic business implementation plan was developed for each element. A grant and loan funding program like the DWR IRWMP was developed to assist other water agencies throughout the county to implement projects that support the element goals. Project developed specific master plans and studies to support the element needs analysis and strategic plans.

### ***Expertise***

- Water, sewer, recycled water master planning
- CIP development and program management
- Asset management
- UWMP development
- Integrated water resource planning
- Computerized maintenance management systems
- Demand analysis and forecasting
- Econometric analysis
- Energy strategy and analysis
- Utility management consulting, optimization, organizational efficiency
- Grant application, support, and implementation
- Policy assessment and development
- International development water resources and utility consulting

### ***Active Registration***

Registered Engineer: CA #C52181

### ***Education***

M.S., Environmental Engineering  
San Jose State University

B.S., Civil Engineering  
Santa Clara University

# Robert A. Heather, E.I.T.

## Senior Water Resources Planner



Robert is a Certified Engineer in Training with experience in water rights investigations and research, water accounting, water use efficiency strategic planning, water quality data collection, Geographic Information System (GIS), interpretations of geophysical well logs, electrical power market participation, and regulatory, legislative, and judicial compliance. He has both participated in and managed projects, and his understanding of time and resource allocation have been implemented in all of his projects. Robert is highly skilled in communication and organization and provides great strategic and technical assistance in all phases of the planning, management, and/or implementation of various water resource projects.

### ***Relevant Project Experience***

**Santa Margarita River Watershed Watermaster-Assistant.** Basin-wide water accounting, water rights research, data collection, record retention, stakeholder interaction, and production of Court ordered annual report as well as administering the Modified Final Judgement and Decree, subsequent Interlocutory Judgements, and orders of the Court.

**Water Right Change Petition (Permit 21112) for El Dorado Irrigation District.** Project Engineer assisting in the development of water rights accounting priority to show the District's ability to produce water under the change petition. Utilized the flexibility of water rights possessed by the District in order to optimize production and operations associated with the change petition in various hydrologic year types while meeting all permit conditions and District demands. Contributed to the development of the overall Project Description to be incorporated in future modeling and an Environmental Impact Report (EIR).

**Lake Nacimiento Operational Investigation for Nacimiento Regional Water Management Advisory Committee.** Investigate the operations of Lake Nacimiento with respect to water rights requirements. Researched local hydrology as well as historical and current operations to determine possible violations of applicable State Water Resource Control Board and other regulatory agency permit conditions. The investigation aimed to inform the Committee with respect to any possible legal course of action.

**Hydrologic Modeling of FERC Project No. 184 System for El Dorado Irrigation District.** Project Engineer assisting in the preliminary hydrologic modeling to determine the probability of a particular Hydrologic Year Type. The determination helps the district plan for the upcoming year, including possible operational and permit requirements stemming from the determination.

**2020 UWMP and WSCP development and submittal, multiple clients.** Supported efforts to prepare multifunctional Urban Water Management Plans (UWMPs) and Water Shortage Contingency Plans (WSCPs) for eight clients throughout the State, ranging from retail and wholesale water suppliers in Southern California to retail suppliers in the Bay Area and Sacramento Valley. With varied water supply and customer demand conditions, each client required unique considerations and analysis. Critical components included land-use based demand forecasting and comprehensive water supply assessment and characterization. For each client, managed the process including submittal to state agencies.

### ***Expertise***

- Judicial, Regulatory, and Legislative Compliance
- Water rights analysis
- Water use forecasting
- Comprehensive water resources planning
- CIP development and program management
- Asset management
- UWMP development
- Grant application, support, and implementation
- Inspection data entry, analysis, and reporting
- Microsoft Excel
- Geographic Information Systems

### ***Registrations & Affiliations***

Certified Engineer in Training,  
Certificate No. 158487

American Society of Civil Engineers

Mountain Counties Water Resources  
Association

### ***Education***

B.S., Civil Engineering  
California State University, Sacramento

# Jordan Smith, P.E.

## Managing Water Resources Planner

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Jordan is a registered civil engineer with expertise in planning, design, and construction. He has an in-depth understanding of the regulations and requirements of California Environmental Quality Act (CEQA), the EPA, Army Corp, and State Water Quality Control Boards and has assisted clients in navigating projects through the required permitting agencies.

### ***Relevant Project Experience***

**Engineer, State of California.** At the Public Utilities Commission, Jordan analyzed risk mitigation efforts and spending efficiencies of investor-owned utilities. During his time at the State Water Board, he worked with hydropower relicensing, and managed CEQA projects when the State Water Board is the lead Agency. He also prepared technical studies for water resources and environmental impacts, including in-stream habitat and greenhouse gas emissions.

**Senior Water Resource Engineer, EIP, a division of PBS&J.** Analyzed water supply and water quality for SB 610 and 221 assessments, Integrated Water Resource Management Plans, Source Water Protection Plans, Resource Management Plans, and CEQA. Development of GIS based water demand analysis. Grew engineering technical staff in the water resources group.

**Assistant Engineer to Senior Engineer, Brown and Caldwell.** Designed wastewater treatment and conveyance systems. Co-authored the EPA Land Application Manual. Worked with stakeholder process for San Francisco PUC as technical support for stormwater treatment feasibility. Performed economic analysis of infrastructure and water quality analysis. Developed MS Excel based nitrogen balance still used by RWQCB. Authored Reports of Waste Discharge for industrial and municipal clients for NPDES permitting and Waste Discharge Requirements.

### ***Expertise***

- Risk mitigation efforts
- Water supply, water demand, and water quality analysis
- Legal, risk management, and regulatory issues
- Permitting strategies for water, wastewater and air quality
- Engineering design standards

### ***Active Registration***

Registered Engineer: CA  
#CE62354

### ***Education***

M.S., Agricultural Engineering  
University of Georgia

B.A., Agricultural Engineering  
California Polytechnic State  
University, San Luis Obispo

# Mitch Dion

## Managing Water Resources Planner

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Mitch is a seasoned, innovative, and politically agile leader embracing fiscally sound, measured and responsible solutions.

### ***Relevant Project Experience***

**Consultant (Sacramento and San Diego).** Adjunct senior executive providing technical veracity and applying quantification decision tools for a variety of service areas. Supervising teams, provided technical program management, administrative support and development services for communities up to 300,000 people. Manage CIP, special projects and diverse portfolio of water and energy assets, oversee projects and analysis of legislative and planning proposals while enhancing strategic affairs. Conduct performance audit and cost of service study to address rates. Participate and led regional teams addressing; SGMA, discharge permitting, conjunctive use, aquifer storage and recovery, solid waste and energy management.

**Assistant General Manager, Pasadena Water & Power, CA.** Oversee complex utility operations and services for City. Provide technical and administrative direction to executives and managers. Coordinate legal, risk management and regulatory issues. Represent City on numerous local, regional and state wide boards and stakeholder groups. Conduct analysis and provide recommendations to City Council on legislative and policy issues. Awarded Champion of Change by Outward Bound Adventures for inclusion and diversity in the Outdoors.

**Director of Community Development (Public Works and Planning), Douglas County, NV.** Manage diverse department consisting of Planning, Engineering, Building Official, Roads, and Utilities Divisions providing general government and municipal services for the County. Responsible to coordinate the public services delivery and champion economic development initiatives balancing the distinctive challenges of rural Nevada while addressing services in rapidly urbanizing areas, including the Casino core and tourism for Lake Tahoe. Oversee and administer the National Flood Insurance program and address flood map impacts to the community.

### ***Expertise***

- CIP development and program management
- Asset management
- Integrated water resource planning
- Utility operations
- Legal, risk management, and regulatory issues
- Capital planning
- Cost of service study and rate analyses
- Performance audits

### ***Education***

M.S. Systems Management, R&D  
University of Southern California

B.A., Environmental Studies California  
State University, Sacramento



# Omar Samara, Ph.D.

## Water Resources Planner



Omar is an agricultural engineer by training and holds a Ph.D. in Biological Systems Engineering from the University of California, Davis where he completed his dissertation, *“Evaluation of Agrivoltaic Systems for Enhanced Agricultural Resource Sustainability.”* Over 10 years of experience and expertise in agriculture gives him deep insights into water use, environmental sustainability, and long-term planning. His work as a Water Resources Planner with Zanjero provides guidance to clients on strategies for enhancing their water resource sustainability. Omar specializes in complex sustainability issues that sit within the Food-Water-Energy Nexus that encompasses many of California’s sustainability challenges.

### **Relevant Project Experience**

**Development of Decision Support Tools for Strategic Water Planning.** Developed decision support tools for strategic water resource planning which facilitate analysis of water supplies and demands over multi-year and multi-decade timeframes to assist water resource planning bodies to analyze various scenarios to their water resource portfolios to make decisions and investments in the short term to meet long term challenges.

**Urban Water Management, Drought Plan and Groundwater Sustainability Plan Development.** Developed urban Water management plans in compliance with the 1983 California Urban Water Management Planning Act. Developed drought and water shortage risk plans in compliance with California Senate Bill 552. Developed Groundwater sustainability plans in compliance with the Sustainable Groundwater Management Act. Provided comprehensive analysis of water issues relating to urban water management and drought risk to advise municipal entities on strategies for managing water resources under adverse conditions. Developed GIS tools to assist municipal entities in evaluating certain drought risks to take preemptive action and prevent impacts of water shortage.

**Scientific and Engineering Analysis of Water Issues.** Conducted hydrologic analysis of issues like the Bay-Delta Plan using sound engineering decision-making processes and mathematical modeling principles to assist clients in understanding how proposed changes to the Bay-Delta Plan could impact their long-term water resource planning. Performed scientific analysis to produce academic quality reports on how certain issues, such as Golden Mussels, may impact clients and their water resource portfolios, alongside providing information on pathways to address challenges.

### **Multi-Benefit Land Repurposing Experience for Enhancing Agricultural Sustainability.**

Worked with clients to develop multi-benefit land repurposing programs to balance competing demands of agricultural land use and water resource sustainability. Analyzed projects to evaluate their feasibility and applicability to program objectives. Utilized agricultural expertise to provide technical assistance to applicants to assist them in successful applications which help them succeed and support multi-benefit land uses.

### **Expertise**

- Comprehensive water resources planning
- Sustainability with the Food- Water-Energy Nexus
- Scientific, Engineering, and Mathematical Modeling and Analysis
- Agricultural Water Use and Practice
- Californian Agricultural Practice
- Development of Sustainable Technologies
- Analysis of Bay-Delta Plan
- Development of Decision Support Tools for Long-Term Strategic Planning
- Drought and Urban Water Plan Development
- Documentation, Technical Report Writing, Professional Presentations
- Geographic Information Systems (GIS) Mapping and Analysis

### **Education**

Ph.D., Biological Systems Engineering,  
University of California, Davis

B.S., Engineering Sciences  
California State University, Bakersfield

# Galen Davis

## Senior Water Resources Planner



Galen is a Senior Water Resources Planner and Sustainability Consultant with deep experience working on complex water resource projects. He provides strategic advisory services to a range of clients on long-term water supply planning, regulatory compliance, drought mitigation, water rights, groundwater management, and conservation planning. He has developed innovative supply and demand modeling, contributed to numerous urban water management plans, and advised in a technical, legal, and political capacity on many sustainability-focused water resource projects. Galen has extensive experience in technical writing and data analysis and has provided assessments for multi-disciplinary projects including infrastructure, permitting, watershed management, and multi-stakeholder collaborations. He brings extensive leadership experience in product and project management and business development in the natural resources and technology sectors.

### ***Relevant Project Experience***

**Urban Water Management Plans (UWMPs) for seven Northern California water suppliers during the 2015 and 2020 cycles.** Compiled and presented technical data on water demand management, usage, forecasting, and recommendations for meeting conservation targets. Analyzed system descriptions and climate change issues related to UWMP development. Drafted portions of UWMPs to meet statutory criteria and guidebook recommendations.

**Water Optimization Analysis and Urban Water Use Objective Development, City of Vallejo.** Evaluation of City's State Water Project and existing water rights in context of broader county-wide area. Investigation and analysis of SWP North Bay Aqueduct. Assess wholesale water demand items and provide input on resolution. Analyze opportunities to increase beneficial use. Prepare analysis of City's per capita water use and potential strategies to comply with state regulations.

**Water Master Plan, Mojave Water Agency.** Analyze regional population growth trends, regional land use trends, and water use trends within the Mojave Water Agency service area to inform future water demand forecasts as part of the Master Planning effort.

**Water Asset Portfolio Review, City of Fairfield.** A highly complex and challenging strategic planning effort assessing short- and long-term water resource solutions to meet existing and future water demands. Review City's existing water asset portfolio. Develop Solano Project memo for supply portfolio review.

### ***Expertise***

- Climate Change Assessments
- Technical writing
- Water System description development
- Conservation and resource analyses
- Data assessment

### ***Education***

B.S., Conservation & Resource Studies,  
University of California, Berkeley

Certificate: Urban Water Innovations for  
Environmental Sustainability  
University of British Columbia



# Kris Olof, E.I.T.

## Senior Water Resources Planner



Mr. Olof graduated from U.C. Davis with a degree in Civil Engineering and a minor in Construction Engineering and Management. Mr. Olof's education and experience in water resources engineering and planning, water quality management, and cartography provide an ideal foundation for the specialties offered by Tully & Young. Combining previous experience in rural small businesses, residential construction, farming, and the California wine industry with an engineering degree gives Mr. Olof practical tools and a unique perspective on water issues. Mr. Olof has helped clients assess and solve water resource management and planning challenges by pre-emptively identifying complex water issues and providing feasible solutions.

### ***Relevant Project Experience***

**Resource Planner, San Juan Water District, 25 Year Demand Projections.** Assess current land use and water use data for wholesale and retail service areas combined with building codes to project water demands out 25 years for master planning. Analyze capacity of current treatment infrastructure and identify potential additional wholesale supply capacity.

**Resource Planner and Design Engineer, El Dorado Irrigation District, Engineering and Planning Staff Support.** Provide staff support in engineering, planning, and operations. Guide and advise staff on water system modeling, hydrologic modeling, water rights support, recycled water modeling, water transfer support, USGS gauge reporting and compliance, meter and flow analysis, Urban Water Management Plans, and SB 610 documents.

**Resource Planner, City of Tracy, Title 22 Water Recycling Project.** Develop materials for the larger Title 22 Engineering Report for the use of recycled water for the City of Tracy. Work with regulatory agencies to obtain approvals for operation of a reclaimed water system in compliance with evolving policy.

**Resource Planner, Department of Water Resources, Policy Development.** Provide Guidebook revisions for new regulations and development of revised DWP UWMP reporting tables template. Develop "method 4" weather normalization for GPCD calculations and development of Guidebook appendix section on land use-based water demand analysis and projection.

**Resource Planner, 2018 American River Watershed Water Transfer Program.** Develop data for and drafting the Regional Water Transfer opportunity. Evaluate the participating agency options for water asset inclusion in transfer program. Assess groundwater substitution opportunities with participating agencies and quantify availability of substitution water. Analyze regulatory requirements for groundwater basin management recovery.

### ***Expertise***

- Hydrological data assessment and analysis
- SB 610 WSA preparation
- UWMP preparation
- DWR GPCD Weather Normalization
- Recycled Water Permitting
- Title 22 Engineering Reports
- DWP Grant Management
- Project Manager for Well Construction
- Cartographic/Geospatial Analysis
- Water right reporting
- Climate impact of water use
- Legal compliance of data analysis and calculations
- Project data and plan review

### ***Active Registration***

California EIT#138353

### ***Education***

B.S., Civil Engineering  
University of California, Davis

# Katie Carlson

## Communications Director



Katie is an experienced and accomplished communications professional with expertise in strategic public relations, integrated marketing, and community outreach. She has nearly 20 years of experience working with public agencies and nonprofits at a local, regional, and statewide scale to develop innovative solutions for complex problems in public health and safety, wildfire preparedness, and other social issues. She draws from a broad toolkit to create strategic programs, including research, brand development, messaging, partnership development, stakeholder outreach, content creation, and media planning. In recent years, Katie has honed a particular focus in building community-level collaboratives to address issues arising out of the pandemic. She has been recognized in this work for being able to successfully align diverse interests and stakeholders around shared goals and objectives. For each client and project undertaken, Katie offers creative problem solving and adept communication, combining strategic vision and execution to maximize results.

### **Relevant Project Experience**

**Nevada Irrigation District RWMP Update.** Provided strategic communications and outreach services for a comprehensive community engagement process to update the District's 50-year Raw Water Master Plan. Led and developed the project brand coined "Plan for Water", including brand identity, messaging, and all communications assets. Advised and supported District staff to plan and execute a paid, earned, and owned outreach strategy to further program objectives.

**Nevada Irrigation District Marketing and Communications.** Developed a communications plan to help elevate the District's internal and external communications program. Services included a brand update, messaging strategy, recommendations for website improvements, and creation of new communications tools and assets.

**Placer Collaborative Network Disaster Plan.** Developed a blueprint for community involvement in a wildfire disaster response plan for Placer County. Included strategies for leveraging and aligning resources across stakeholder groups, including government, nonprofit and corporate entities.

**Placer County Health & Human Services Harm Reduction.** Led and developed community outreach campaigns to address public health and economic resilience issues arising from the pandemic. Projects included a collaborative program across local governments for rent and utility assistance, equity and access for harm reduction resources, a mental health collaborative, and securing grant funding for programs supporting at-risk and vulnerable populations.

**CAL FIRE Wildfire Preparedness and Prevention.** Developed and managed the statewide "Ready for Wildfire" campaign. The comprehensive communications program included engagement and messaging strategies for internal and external audiences, including local fire jurisdictions, fire councils, stakeholders, homeowners, and residents.

### **Expertise**

- Strategic communications
- Public outreach campaigns
- Stakeholder and influencer engagement
- Behavior change marketing
- Brand strategy and creative direction
- Multi-media advertising campaigns
- Grass-roots collaboration and partnership development

### **Education**

B.A., Humanities and Human & Cultural Geography, University of Colorado at Boulder

### **Awards & Recognitions**

- 2022 Award of Distinction from the California Association of Public Information Officers (CAPIO) for Excellence in Public Information & Communications
- California Association of Counties (CSAC) 2021 Innovation Awards Program Challenge Award, Disaster/Emergency Response & Management
- Numerous Awards and Top Honors from the Public Relations Society of America (PRSA) for Excellence in Communications
- Multiple Caltrans "Excellence in Transportation" Awards

# Savanna Sanders

## Water Resources Planner



Savanna is a senior water resources analyst with experience in water quality, water supply availability, and water-related legal assessments. She has prepared detailed written assessments for water supply investigations and has significant experience in water quality issues related to environmental site assessments.

### ***Relevant Project Experience***

**Nebraska Department of Natural Resources Data Analysis.** Researched and developed information for the State of Nebraska related to the 1923 South Platte River Compact. Analyzed historical information related to the Compact and assessed information for purposes of developing the Perkins County Canal as identified in the Compact. Prepared extensive written materials to support substantive analysis of water availability and cost-benefit assessments.

**Watermaster Services, San Diego and Riverside Counties.** Analyzing and preparing water availability and water use among the participants in the Santa Margarita River Basin adjudication. Drafted reporting materials for the Watermaster and coordinated data and information with the Project Team. Assessed and aggregated data to determine water supply availability and reporting requirements for entities subject to the Watermaster's jurisdiction.

**CREtelligent.** Drafted due diligence assessments, such as Phase 1 and Phase II Environmental Site Assessments, Lead Risk Assessments, and Environmental Transaction Screens for commercial, residential, agricultural, and industrial sites. Located property information, utilized remote sensors, and analyzed historical resources such as historical aerial photographs, city directories, topographical maps, and fire insurance maps to identify any potential environmental concerns. Managed production of all types of environmental assessments. Reviewing regulatory files pertaining to recognized sites of concern.

**City of Woodland GIS Technical Intern.** Field data collection of GPS waypoints of the construction process of sewer, storm, water, and electrical pipelines using Trimble Units. Collaborated with project managers and inspectors on public and private development plans. Used ArcGIS to edit data and create maps of the new and old development throughout the City of Woodland. Assisted in editing a digital interactive map of the City of Woodland to communicate with all city workers and create accurate maps for future repairs and new construction.

**350 Sacramento & Environmental Council of Sacramento, internship.** Data collection and analysis of two projects spanning the six-county Sacramento region and the cities within. Following CEQA 15064.4, 15183.5 (b), greenhouse gas reduction requirements, to ensure compliance with statewide greenhouse gas emissions standards. Parameters were established to determine enforceability on project proponents following credibility, ambiguity, funding, deferred mitigation, partnership, planning, and scheduling. Under a supervisor, assisted with development of tabular analyses of the City of Galt's draft CAP.

### ***Expertise***

- Data collection, curation, and analysis
- Field monitoring and surveying
- ArcGIS
- QUIRE Technical Report Writing
- Extensive knowledge of California Water Code, CEQA and NEPA
- Administrative Procedure Act (APA) Rulemaking

### ***Education***

M.S.L., Environmental & Water Law  
University of the Pacific, McGeorge School of Law

B.S., Environmental Policy Analysis & Planning  
University of California, Davis

# Adriel Ramirez, REHS

## Water Resources Planner

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Adriel is a water resource planner with experience in state-wide water planning, water resource management, SGMA and groundwater management, regulatory compliance, and environmental fieldwork. He has experience implementing Groundwater Sustainability Plans, investigating and approving groundwater well and on-site wastewater treatment system permits, developing regulations, assessing data, performing field work, preparing reports, and communicating with clients. Adriel continues Zanjero's ability to advise, manage, and solve the resource management issues faced by our clients. He is also currently pursuing a Master of Science in Water Resource Management from Fresno State, further expanding his skills and ability to advise clients.

### ***Relevant Project Experience***

**Mojave Water Agency Demand Forecasting.** Analyze regional population growth trends, regional land use trends, and water use trends within the Mojave Water Agency service area to inform future water demand forecasts as part of the Master Planning effort.

**Watermaster Services, San Diego and Riverside Counties.** Research legal documents pertinent to the Santa Margarita River Basin adjudication. Determine methods for quantifying the water use of private domestic well users with the Anza subbasin. Analyze aerial imagery, domestic well inventory, and OpenET data to inform quantification.

**Merced Subbasin GSA Strategic Support.** Acting as one of the primary staff for the GSA, provided daily strategic support by guiding the development, establishment, and implementation of the GSA's programs and management actions necessary to meet the goals outlined in the Merced Subbasin GSP. Duties included the facilitation of Board meetings, policy development and implementation, budget administration, website management, contract administration, stakeholder engagement, and development of outreach materials.

**Merced County Water Well Permitting.** Functioned as Merced County's Water Well Program lead by completing all technical analyses necessary to approve public water system, irrigation, domestic, monitoring, and cathodic protection wells. Ensured Merced County's compliance with Executive Order N-3-23 by conducting outreach to stakeholders, local GSA's, neighboring Counties, and well drillers. Created updated permitting forms, documentation, and GIS layers to further aid compliance with executive order.

**Merced County Environmental Health Land Use.** Led Merced County's Environmental Land Use program by completing all permitting and analyses relevant to domestic and industrial development in the unincorporated areas of Merced County. Designed and permitted on-site wastewater treatment systems for both domestic and industrial uses as well as assisted users in securing access to sufficient potable water for their projects. Duties included reviewing building permit applications, calculating wastewater flows, presenting at planning commission and municipal advisory council meetings, and reviewing relevant CEQA documents.

### ***Expertise***

- Environmental law interpretation
- SGMA compliance
- GSP implementation
- Inspection data entry, analysis, and reporting
- Policy assessment, development, and implementation
- Stakeholder outreach and engagement
- On-site wastewater treatment system design and permitting
- Water well construction analysis and permitting
- Fluent in English and Spanish

### ***Active Registration***

California REHS #9367

### ***Education***

M.S., Water Resource Management  
California State University, Fresno

B.A., Biological Sciences  
California State University, San Jose

# Olive Ellringer

## Water Resources Planner

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Olive has a background in irrigation design, water resource management, and sustainability. While at Cal Poly, Olive completed minors in agribusiness and water science along with her degree. She has hands-on experience in designing efficient irrigation systems and collaborating with clients to implement effective water solutions.

### ***Relevant Project Experience***

**City of Vacaville Recycled Water Planning.** Assessment of current wastewater treatment level, uses of recycled water, and recycled water rights under applicable California law. Identification of different recycled water use options to support the City's wastewater leveraging objectives. Analysis of identified recycled water use options to compare key components and guide the best alternatives that meet project objectives.

**Water Supply Assessment Preparation.** Supported efforts to prepare several Water Supply Assessments as part of the CEQA process for different new housing developments. Assisted in drafting of the document and applicable research as needed for assessment completion.

**Eau Claire County Sustainability Intern.** Implemented a large grant-funded program at twelve elementary schools across the district to promote lifelong sustainability and education. Collaborated with multiple county-wide partners to secure additional support and resources for the program. Data collection and analysis for grant reporting.

**Irrigation System Design.** Consulted with farmers to assess irrigation and water management needs to ensure alignment with operational goals and maximize system efficiency. Designed custom irrigation systems, including field surveys and layouts and pump and well installations. Assisted in coordination with the NRCS to secure funding for sustainable irrigation projects.

### ***Expertise***

- Recycled water regulations
- Water Supply Assessments
- Project implementation
- Irrigation management & design

### ***Education***

B.S., Agricultural Systems Management,  
California Polytechnic State University,  
San Luis Obispo

M.S., Water Resource Management,  
California State University, Fresno  
Expected May 2027





# **2025 Urban Water Management Plan Proposal**

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**Stantec Consulting Services Inc.**  
**Carrie Poytress, PE**  
**200 E. Carrillo Street, Suite 101**  
**Santa Barbara, CA 93101**  
**805-308-9158; [carrie.poytress@stantec.com](mailto:carrie.poytress@stantec.com)**  
**July 16, 2025**

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## C. Letter of Introduction

Since the preparation of the 2020 Urban Water Management Plan (UWMP), Palmdale Water District (District) has made significant strides to develop projects that will improve its future water resiliency and water storage capabilities with the Palmdale Ditch Conversion Project, Sedimentation Removal Project behind Littlerock Dam, and the Pure Water Antelope Valley Program. With our experienced water resources planning team and our in-depth knowledge of your infrastructure and water supply portfolio, Stantec Consulting Services Inc. (Stantec) will provide a transparent and accurate UWMP to help you continue to plan for long-term sustainability.

Our project team members have industry leading water resources planning experience, familiarity with the District's infrastructure, and leadership to successfully deliver the UWMP. Our proposed project manager, **Carrie Poytress, PE**, has a proven history of supporting water resources efforts and will work with **Tama Snow, PE**, our principal-in-charge (PIC) and internal technical reviewer. Tama knows the District and its infrastructure and water supply portfolio having led the preparation of the feasibility study that led to the Pure Water Antelope Valley Program. Our core planning team **Jonny Zukowski, PE, Gabrielle Kasman, EIT, and Robert Hunter**, have multiple years of experience working together on UWMP preparation, drought management measures, and strong GIS capabilities.

We understand the UWMP deliverables and deadlines set by the State and the District and will submit the final report prior to the July 1, 2026 deadline. We have read and will comply with the terms and conditions of the request for proposal, and the signers below are authorized to represent Stantec in negotiations and sign the contract. We have reviewed your proposed professional services agreement and take no exceptions. If you have any questions or need additional information, please contact Tama Snow directly.



**Carrie Poytress P.E.**  
Project Manager  
Direct: (805) 308-9158  
carrie.poytress@stantec.com



**Tama Snow, P.E.**  
Vice President  
Direct: (925) 627-4547  
tama.snow@stantec.com



## D.Profile of Firm

Stantec is a publicly traded company in good financial health and one of the top 10 global design firms. For us, achieving this rank means being recognized for the quality of our work among the top companies, worldwide, in our industry. Stantec is actively involved in the management and development of water resources. We focus on protecting and restoring sensitive water resources, developing new sources of water, and managing risks associated with sedimentation and flooding. Our holistic approach to developing and managing water resources balances environmental, social, and economic needs. We consider the inter-dependent management of surface water and groundwater, and how that impacts your water's quantity and quality.

Since 1954, our local knowledge and relationships, coupled with our world-class expertise, have allowed us to meet our clients' needs in more creative and personalized ways. With 10 offices in Southern California, we are here for you.

There are no unsatisfied judgments or arbitration awards outstanding against Stantec. Stantec does have some legal proceedings, lawsuits, or claims pending. These are a normal part of the professional services industry. All have been reported to Stantec's insurers who are in the process of adjusting/managing them. None will have a material effect on the financial position of the company or its ability to undertake this assignment. Of great comfort to our clients is the fact that Stantec seeks to deal with client concerns and claims promptly and fairly through its Risk Management group. As a public company, Stantec has substantial assets and maintains a high professional liability insurance limit. Stantec's claim history has resulted in relatively low insurance premiums when compared with firms of similar size and character.

Stantec is community of approximately

- 32,000 engineers and scientists in 450 locations globally
- 1,700 water resources staff in the United States
- 250 water resources staff in California

## E. Qualifications of the Firm

Table 1 below includes four relevant projects completed by our firm, our project manager, and project engineers that are similar in nature to your project. Each project includes a project description with a summary of the work performed, total project cost, percentage of work Stantec was responsible for, project performance dates, and a statement of the firm's adherence to the schedule and budget. Key team members are stated accordingly. We encourage you to contact our team's client references for more information about our contributions to the success of these projects.

*Table 1- Relevant Project Experience*

<b>Project 1: County of Ventura 2020 UWMP and Water System Master Plan</b>	
<b>Client:</b> County of Ventura, Waterworks District No. 1	<b>Key Personnel:</b> Jonny Zukowski- Technical Lead Carrie Poytress- QA/QC
<b>Location:</b> Ventura, California	Stantec Responsibility: 96%
<b>Project Date:</b> 2020-2022	Stantec adhered to the project schedule and budget.
<b>Total Project Cost:</b> \$262,670	
<b>Project Description:</b> Stantec prepared the 2020 Urban Water Management Plan (UWMP) and the 2020 Domestic Water System Master Plan for the Ventura County Waterworks District No. 1. The 2020 UWMP made updates to the District's 2015 UWMP and added significant changes including: drought risk assessment and the five consecutive dry-year water reliability assessment, seismic risk analysis, energy use information, water loss reporting for five years, water shortage contingency plan, consistency with groundwater sustainability plans, lay description, and water use efficiency and conservation. To help meet future demands, the District is planning two water projects: the Stockton Reservoir project will increase water storage capacity by constructing an additional reservoir along with infrastructure, and the Moorpark Desalter Project aims to lower the dependence on imported water. The Domestic Water System Master Plan (DWSMP) is	

a planning document to guide improvements to the District's water infrastructure. To aid the purpose and objectives of that DWSMP, Stantec developed a new hydraulic model using Innovyze InfoWater Pro. Future scenarios for every five years until 2045 were developed from demand projections described in the 2020 UWMP. Hydraulic modeling concluded there are deficiencies within the District's distribution system regarding pipeline velocities during peak hour demand (PHD) and fire flow requirements and high working pressures within zone boundaries of the distribution system. Stantec developed Capital Improvement Projects (CIPs) to mitigate these deficiencies.

### **Project 2: United 2020 Urban Water Management Plan**

**Client:** United Water  
Conservation District

**Key Personnel:**

Jonny Zukowski- Project Technical Lead  
Carrie Poytress- QA/QC

**Location:** Oxnard, California

**Stantec Responsibility:** 100%

**Project Date:** 2020-2022

Stantec adhered to the project schedule and budget.

**Total Engineering Cost:** \$90,900

### **Project Description:**

Stantec prepared the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan. The 2020 UWMP added significant changes including: drought risk assessment and the five consecutive dry-year water reliability assessment, seismic risk analysis, energy use information, water loss reporting for five years, water shortage contingency plan, consistency with groundwater sustainability plans, lay description, and water use efficiency and conservation.

The population that United serves is projected to increase over the next 20 years.

United closely manages their supplies through metering, public education and outreach, conservation, and other demand measures. United executed agreements with Casitas Municipal Water District and the City of Ventura for State Water Project (SWP) water. UWCD is assessing recycled water opportunities to offset groundwater pumping and expand its water supply portfolio. As part of this effort, the District secured conditional approval for recycled water distribution and use in the Pumping Trough Pipeline system. This project could yield up to 6,000 acre-feet per year for agricultural irrigation.

<b>Project 3: High Desert Water Bank (HDWB)</b>	
<b>Client:</b> Antelope Valley-East Kern (AVEK) Water Agency	<b>Key Personnel:</b> Tama Snow – PIC &-QA/QC Joseph Long – Project Manager/ Technical Lead
<b>Location:</b> Antelope Valley, California	<b>Stantec Responsibility:</b> 80%
<b>Project Date:</b> 2020–Current	Stantec adhered to the project schedule and budget.
<b>Total Project Cost:</b> Project Engineering Cost: \$3,270,000	
<b>Project Description:</b> <p>The HDWB will provide up to 70,000 acre-feet or annual groundwater storage with a maximum capacity of 280,000 acre-feet improving the area’s drought resiliency capabilities. This groundwater recharge project consists of a new 250 cfs capacity SWP turnout, pumps, pipelines, recharge basins, and electrical facilities. The HDWB effort symbolizes a different investment strategy for AVEK: partnering with the Metropolitan Water District of Southern California (MWDSC) to improve drought resiliency and, expand AVEK’s opportunities to improve regional water management.</p> <p>Stantec, as the prime consultant, is leading the project team that includes Montgomery and Associates who conducted the hydrogeological modeling, Dahl Consultants who completed the permitting and design for the state water project turnout, and Kleinfelder. who provided geotechnical investigations, seismic ground, soil collapse and soil liquefaction analyses.</p> <p>Beginning with our work on the value engineering (VE) study, our team reviewed and developed recommendations for improved project efficiency and effectiveness in design, construction, and operation.</p> <p>Our team developed a groundwater model which included early implementation of four pilot recovery wells to refine data to improve the groundwater model’s predictability in the groundwater basin, groundwater quality, and potential groundwater yield for water recovery production. Onsite infrastructure improvements included a water delivery/ recovery conveyance system to provide water deliveries to the groundwater recharge</p>	

basins and from the groundwater recovery well field. A 100 cfs pump station has been included in the overall project design to facilitate water deliveries to elevated portions of the site where gravity flow was not feasible. The team designed a new 250 cfs capacity aqueduct turn-out/in facility reviewed for approval by the California DWR. The project incorporated 28 production wells using vertical turbine well pumps with variable frequency drives to improve pump performance and minimize power requirements. The project will take advantage of surplus water supplies associated with the SWP system, providing water supply stability during periods of extended droughts or in the event of a water supply interruption along the SWP.

#### **Project 4: Las Virgenes 2020 UWMP**

**Client:** Las Virgenes Municipal Water District

**Key Personnel:**

Jonny Zukowski- Project Technical Lead  
Carrie Poytress- QA/QC

**Location:** Calabasas, California

**Stantec Responsibility:** 100%

**Project Date:** 2020-2022

Stantec adhered to the project schedule and budget.

**Total Project Cost:** \$64,023

**Project Description:**

Stantec updated the District's 2020 UWMP and added significant changes including: drought risk assessment and the five consecutive dry-year water reliability assessment, seismic risk analysis, energy use information, water loss reporting for five years, water shortage contingency plan, consistency with groundwater sustainability plans, lay description, and water use efficiency and conservation. To help meet future demands, the District is planning multiple projects including the Pure Water Project, interconnections, pumping upgrades, and the Tapia Total Maximum Daily Load Compliance project.

## F. Project Understanding

California urban water suppliers are required to update and submit an Urban Water Management Plan (UWMP) every five years. UWMPs are meant to support long-term resource planning for water suppliers to evaluate existing and future supplies and demands of their customers. The historic drought that unfolded over the last ten years has severely tested the robustness and resiliency of California's water system.

Palmdale Water District (PWD) has been providing water service to its customers since 1918. In 2012, the Palmdale Recycled Water Authority (PRWA), comprised of members from the City of Palmdale and PWD, was established to manage recycled water that is generated and used within the Palmdale area for landscape irrigation. PWD is located within the City of Palmdale, provides service to an area of approximately 40 square miles to the City of Palmdale and unincorporated areas in Los Angeles County. PWD receives water from three main sources: ground water, Littlerock Dam Reservoir (LRD); and the State Water Project (SWP). PWD has embarked on the Palmdale Ditch Conversion Project that will save approximately 1500 acre-feet per year in evaporation and percolation losses as well as the Pure Water Antelope Valley (AV) project that will further purify 4.75 million gallons per day of tertiary treated (Title 22) wastewater to produce water that will be injected into the local groundwater aquifer, thereby improving over drafting of the basin and supplementing PWD's existing water supplies.

In 2018, Senate Bill (SB) 606 and Assembly Bill (AB) 1668 amended existing law to establish long-term improvements in water conservation and drought planning to adapt to climate change resulting in longer and more intense droughts in California. SB 606 and AB 1668 have four primary goals:

- ✓ Use Water More Wisely
- ✓ Eliminate Water Waste
- ✓ Strengthen Local Drought Resilience
- ✓ Improve Agricultural Water Use Efficiency and Drought Planning

The UWMP is compiled in accordance with Division 6 Part 2.6 of the California Water Code §10610-10656 and §10608. Per California Department of Water Resources (DWR), the UWMP must include the following:

- An assessment of the reliability of water sources over a 20-year planning time frame
- A description of demand management measures
- A water shortage contingency plan
- A discussion of the use and planned use of recycled water

To meet the State’s requirements and the needs of the District the UWMP will include an analysis of:

- Water demand analysis of 20 years (this UWMP will project to 2045)
- Water supply analysis (to meet demand)- including recycled water
- Drought management measures (as defined by State criteria) and related to the PWD Water Surplus and Drought Management (WSDM) Plan
- Water conservation- Implementation of “Best Management Practices.” Stantec will consult with the District staff for new or revised water allocation and conservation policies including *Conservation as a California Way of Life*.
- Relationship to the District’s UWMP and PWD Regional Water Plan
- Other matters as defined by DWR for the 2025 UWMP

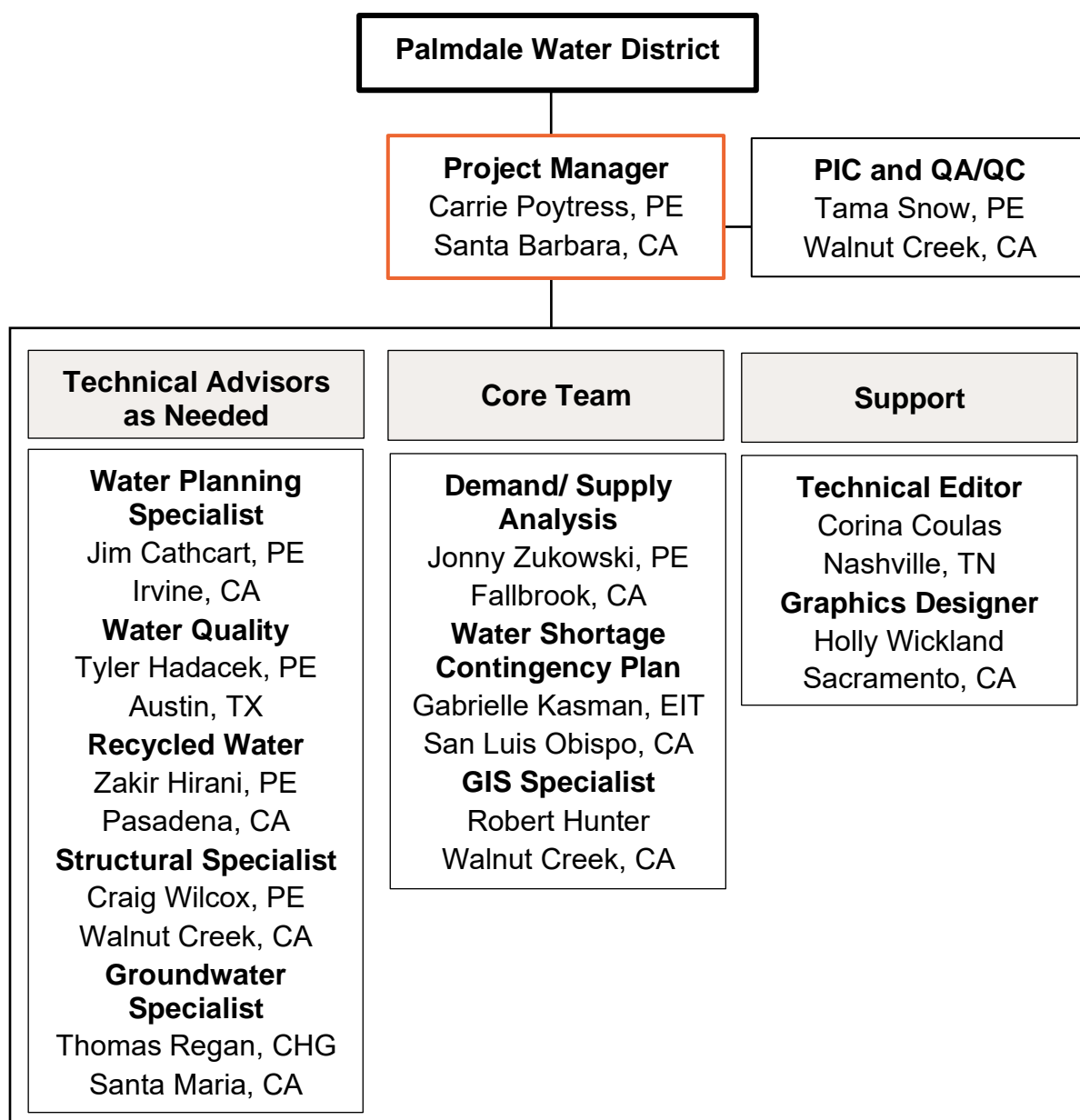
Elements of the UWMP as defined by DWR includes:

- |                                       |   |
|---------------------------------------|---|
| • Plan Preparation                    | • Water Shortage Contingency Plan         |
| • Service Area Description            | (related to adopted District Drought      |
| • Water Supply                        | Management Plan and the                   |
| • Water Demand                        | PWDWSDM Plan)                             |
| • Supply Reliability                  | • Conservation measures                   |
| • Wastewater, Recycling, and Recycled | Coordination with local cities, counties, |
| Water Storage                         | and PWD                                   |
| • Supply and Demand Comparison        |   |

## G. Project Staffing and Availability

Our organization chart shows the project team members below. The Core Team and Project Manager have 50% availability, and all other team members have 20% availability to work on the project. This project team was selected for their capabilities, prior experience in working together to prepare UWMP's, and their knowledge of PWD. Resumes for the team, except for the support staff, are included in Appendix A.

Figure 1. Organizational Chart





## **H. Work Plan**

The Urban Water Management Plan (UWMP) will be compiled in accordance with Division 6 Part 2.6 of the California Water Code §10610-10656 and §10608. The Guidelines for the 2025 UWMP have not yet been released by DWR; the following scope of work represents our best estimate of effort and cost based on previous UWMP guidelines. While no significant variances are expected, potential planning, legislation, and laws may impact how PWD makes an assessment of demands and supplies such as Making Conservation a Way of Life Regulation, compliance with the Water Loss Performance Standards Regulation, and coordination with Groundwater Sustainability Plans - Antelope Valley Watermaster. When DWR guidelines are released, Stantec will review the scope and fees proposed herein and adjust as necessary to define a 2025 UWMP that meets DWR guidelines and requirements. Any changes to this scope and fee will be discussed with District staff in advance of proceeding with the work.

### **Task 1 Project Administration and Management**

#### **1.1 Communication**

Stantec's project manager will be the main point of contact for the District team and will manage the day-to-day activities of the Project team. Our Project Manager will coordinate directly with the District and participating agencies on project issues, updates, meetings, and schedule.

#### **1.2 Meetings**

Stantec will organize, attend and conduct the required meetings and workshops as described below in Table 2. Stantec will prepare the required meeting agendas and materials that will be provided to the District prior to the meeting. Stantec will prepare and circulate draft meeting minutes within five working days after each meeting to the District for review and comment. Meeting minutes will be considered final after five working days from the initial distribution for review.

*Table 2. Proposed Meetings*

<b>Meeting / Workshop</b>	<b>Description</b>	<b>Number of Meetings /Duration Each</b>
Project Kick-Off Meeting	Meeting to discuss the approach, schedule, and contacts. Stantec will prepare an initial Request for Information (RFI) for existing information.	One meeting, two hours, conference call
Project Status Meetings	Stantec's PM will attend five conference calls. Technical specialties may attend, as needed.	Five conference calls

### **1.3 Project Administration**

Stantec will prepare monthly status reports. Each month, Stantec will prepare a status report for the District Project Manager consisting of a brief one to two paragraph email summarizing the activities accomplished during the previous month, the activities anticipated to be accomplished during the upcoming week, critical items, and/or decisions that need to be addressed to maintain the progression of the Project. Monthly status reports will provide more details summarizing the work completed and reviewing work status as it relates to budget, schedule, and items of work. The monthly status report will accompany the monthly invoicing of the Project to the District. Monthly invoices will include a budget tracker table that provides the budget spent and remaining, along with the percentage of the overall project that is complete.

### **1.4 Quality Assurance /Quality Control**

The Stantec team will implement a Quality Assurance / Quality Control (QA/QC) plan to provide review of all deliverables associated with the Project. Our QA/QC will be performed by internal staff with specific expertise in the subject matter being reviewed. Quality review documents will be developed to provide records of review and resolution of internal comments prior to delivery to the District.

#### **Task 1 Deliverables:**

- Meeting Agendas
- Meeting Minutes
- Monthly Status Report and Invoices

## **Task 2 Data/ Information Collection and Review of 2020 UWMP**

Stantec has a deep understanding of the District's water supply and water demands having completed the feasibility study for what led to the Pure Water AV Program that Stantec is the Owner's Advisor for. In addition, Stantec is preparing numerous grant and loan applications for the District and routinely utilizes data from the UWMP as well as information from the District's other planning documents. Our data collection effort and time to mobilize will be minimized with our in-depth knowledge of the District's water supplies and demands. Stantec will review background information including the previous 2020 UWMP and other relevant existing documents regarding PWD's service area, water supply and demand, and policies. The objective is to collect data to satisfy the new and/or updated requirements of the 2025 UWMP and updates from the 2020 UWMP. Stantec assumes data will be available in electronic Excel and/or GIS formats. In addition, Stantec will review the relevant reports and support data.

### **Task 2 Deliverables:**

- Data Request Log

## **Task 3 Legislative Requirements and UWMP Outline**

Stantec will identify any new legislative requirements for the 2025 UWMP as compared with the 2020 UWMP. Stantec will prepare an outline of the 2025 UWMP in compliance with the forthcoming 2025 UWMP Guidebook to be released by DWR. Stantec will review the PWD 2020 UWMP content and layout and identify content and layout improvements while still maintaining compliance and consistency with applicable legislative and regulatory requirements of the State of California.

## **Task 4 Demand Projections**

Water Code §10631(e) requires water suppliers to quantify past, current, and projected water demands in five-year increments for the next 20 years. Stantec will document historical usage and prepare updated water demand projections through year 2045. The following subtasks will be performed:

## 4.1 Demands

### ***Document Historical Water Usage by User Class***

Stantec will update the historical water billing data from the previous UWMP using monthly billing data from 2020 through 2024. Water consumption statistics per meter by user class (such as mean, median standard deviation, percentiles) will be updated.

### ***Update Indoor/ Outdoor and Seasonal Demand Analysis***

Stantec will use updated climate and water usage data to update the indoor/outdoor and seasonal water demand analysis presented in the previous UWMP. These data will be used to estimate water conservation potential.

### ***Develop Water Demand Factors***

Stantec will review existing water demand factors used in previous planning documents and compare them with the recent water usage data. These demand factors will be revised if needed to reflect current usage trends.

### ***Prepare Water Demand Projections***

Using growth projections, the land use plans, and planned development information, Stantec will prepare an updated water demand projection for the period of 2025-2045 using the water demand factors developed in Task 4.3.5. Demand projections will account for the water savings due to efficiency and implementation of demand management measures. Stantec will include distribution system water loss for each of the five years preceding the plan update.

### ***Document Existing Water Conservation Measures***

In the 2025 UWMP, actual water use must be demonstrated, as compared to the previously established 2025 target. Based on information provided, Stantec will update the data and methods used to establish baseline, target, and actual gallons per capita per day use within the framework of the SB X7-7 Verification Form.

Water Code §10631(e) requires water suppliers to provide a description of their water demand management measures (DMMs) including:

- 1) each DMM currently being implemented or scheduled for implementation,
- 2) a schedule for implementing all DMMs,
- 3) a description of the methods used to evaluate the effectiveness of DMMs, and
- 4) an estimate of existing conservation savings and the effect of the savings on the supplier's ability to further reduce demand.

Stantec will meet with District staff and obtain the current Best Management Practices (BMP) reporting, and prepare the demand management narrative to summarize current programs, progress, and effectiveness of current programs. Stantec will review the BMPs and make recommendations to the District for future BMP implementation.

## **4.2 Factors Affecting Water Management Planning**

### ***Document Population Growth Projections***

Stantec will document the historical population for the past 20 years and the projected population, housing, and employment growth for the District service area through 2045. The projections will be based on the most current DWR GIS projection tool and will be adjusted to match the District's service area. Growth projections will be tabulated report.

### ***Document Land Use Plans***

Stantec will review PWD's general plan, the relevant specific plan of Los Angeles County, and neighboring cities to update the current demand projections and timing for these plans. The timing of projected developments will be based on the District's current development status reports and readily available information from City and County planning departments.

### ***Low Income Households***

Water code §10631.1 requires the water use projections to include projected water use for single-family and multifamily residential housing needed for lower income households. The intent of identifying water use for lower income households will assist a supplier with the requirement under §65589.7 of the Government Code to grant priority for the provision of service to housing units affordable to lower income households.

## 4.3 Supply

### ***Evaluate Existing Water Supplies***

Stantec will prepare the following descriptions of each existing water source:

- historical monthly and annual usage (2015-2024)
- projected supply over the next 20 years in normal, single dry year, and droughts lasting at least 5 years, as well as more frequent and severe periods of droughts
- contracts, water rights, or other proof for the expected supply
- supply reliability and vulnerability to seasonal or climatic shortage
- water quality summary
- cost of purchased and produced water

### ***Future Water Supply Opportunities***

Water Code §10631(b) requires the water supplier to identify and quantify planned sources of water. This task will revisit and update options presented in the 2020 UWMP and identify additional supply options to be considered to meet future demands for the next 20 years per by the District. Stantec will include the Pure Water AV project.

### ***Describe Currently Planned Water Supplies***

Stantec will prepare descriptions of the currently planned water supply projects.

### ***Describe Water Transfer and Exchange Opportunities***

Water Code §10631(c) requires water suppliers to describe opportunities for short- or long-term water transfers or exchanges. Stantec will summarize existing water transfers conducted by the District. Other opportunities for water transfers or exchanges will be identified based on the review of available data and feedback from the District.

### ***Describe Desalinated Water Opportunities***

Water Code §10631(g) requires water suppliers to describe opportunities for development of desalinated water including ocean water, brackish water, and groundwater as a long-term supply. Stantec will identify and describe such opportunities as may currently exist for the District.

***Identify Preferred Water Supply Options***

Water Code §10631(f) requires water suppliers to include a description of all water supply projects that may be undertaken to meet the total projected water use. Stantec will review the 2020 UWMP results and make necessary adjustments to the recommended water supply projects as described by the District.

***Summarize Recycled Water Plan***

Water Code §10633(a-g) requires water suppliers to provide information on recycled water and its potential use in the service area. Stantec will extract relevant information from previous recycled water plans and supporting planning documents and incorporate the following information in the UWMP report:

- Description of LACSD's wastewater collection and treatment system in the District's service area.
- Summary of the agreement the District has with LACSD for tertiary treated water.
- Description of the type, place, and quantity of recycled water currently being used in the District's service area.
- Description and quantification of the Pure Water AV project.
- Projected use of recycled water within the supplier's service area at the end of 5, 10, 15, 20, and 25 years, and a description of the actual use of recycled water in comparison to uses previously projected.
- Description of actions, including financial incentives, which may be taken to encourage the use of recycled water, and the projected results of these actions in terms of acre-feet of recycled water used per year.

***Summarize Current and Projected Water Supply Plan***

Water Code §10635 requires a water supplier to assess water supply reliability during normal, dry, and multiple dry years. This assessment compares the total water supplies available to the District with the total projected demand over the next 20 years. Stantec will prepare this assessment and develop a recommended plan.

***Compare Water Demand Projections and Existing Supplies***

Stantec will prepare tables and text comparing the existing water supplies with the projected water demands, to indicate the need and timing for additional supplies, made in five-year increments between 2025 and 2045 in normal, single dry, and multiple dry years. Stantec will identify the timing and magnitude of the water supply needs.

***Describe Water Quality Impacts and Reliability***

Water Code §10634 requires the UWMP to include information relating to the quality of existing water sources and the way quality affects water management strategies and supply reliability. Stantec will prepare a discussion of important water quality factors that affect or could affect existing water supplies and will quantify, to the extent practicable, the potential effect that quality degradation could have on supply reliability.

***Describe Overall Water Supply Reliability for Planning Period***

Stantec will summarize the preferred water supply plan and will document the projected supply reliability for normal, single dry year, and multiple dry years in five-year increments from 2020 through 2045.

**Task 5    Water Shortage Contingency Plan**

Stantec will review and update PWD's 2020 Water Shortage Contingency Plan (WSCP) to comply with Water Code §10632 and make appropriate revisions consistent with the UWMP updates. Stantec will provide a recommendation for the six standard water shortage levels based on water supply conditions and shortage response actions that align with each level.

***Seismic Risk Assessment and Mitigation Plan***

Water Code §10632.5 requires water suppliers to provide a seismic risk assessment and mitigation plan. Stantec will review PWD's 2021 Local Hazard Mitigation Plan for compliance with the 2025 UWMP update. Stantec will prepare the narrative updates in the 2025 UWMP to comply with current regulations. Stantec has excluded field work and any quantitative seismic evaluations from the scope of work.



## **Task 6 Draft and Final Draft 2025 UWMP**

Stantec will prepare the 2025 UWMP and WSCP plans and submit to the District for review consistent with the DWR's 2025 UWMP published guidelines that are anticipated to be available in July 2025. Supplemental information developed as part of the water supply update will be documented in appendices to the UWMP report. Stantec will prepare new graphics and figures for the 2025 UWMP as well as tables for review and comment. Stantec will complete the DWR preparation checklist.

Stantec will schedule a teleconference to discuss the District's comments on the draft plan. Stantec will receive, review, and incorporate agreed upon comments from the draft UWMP into the final draft report. The final draft report will be submitted to PWD for adoption. It is anticipated that the final draft report will be made available for review at the District's office, on the District's web site, and through e-mail to interested parties.

Stantec will prepare the public hearing notices and notices of availability as required. These notes will be sent at least 60 days prior to the public hearing.

### **Task 6 Deliverables:**

- One electronic copy (MS Word) of the draft report.
- One electronic (MS Word and PDF) copy of the final draft report.
- Five (5) printed hard copies will be provided for the final draft report.
- Public hearing notices and notices of availability (PDF).

## **Task 7 Attend Public Hearing**

Stantec will prepare a PowerPoint presentation for the public hearing of the final draft 2025 UWMP. Stantec will attend one Board meeting in-person and the required public hearing in-person to capture and incorporate any comments from the Board or public and support PWD staff in providing recommendations of the plan.

### **Task 7 Deliverables:**

- One electronic copy (PowerPoint and PDF) presentation for the public hearing

## **Task 8 Final 2025 UWMP**

Following the public hearing on the final draft 2025 UWMP and WSCP Update, Stantec will incorporate approved comments from the public meeting, make revisions as appropriate, and prepare the Final 2025 UWMP and WSCP Update. Stantec will use DWR's UWMP checklist to confirm the documents are complete. Stantec will include the adoption resolution in the UWMP for the UWMP and WSCP.

### **Task 8 Deliverables:**

- Fifteen (15) printed hard copies
- One electronic (PDF) ADA compliant copy will be provided of the final report.
- Individual electronic files for report text, figures, tables and graphics (MS Word, Excel, or another appropriate format).

## **Task 9 Plan Submittal**

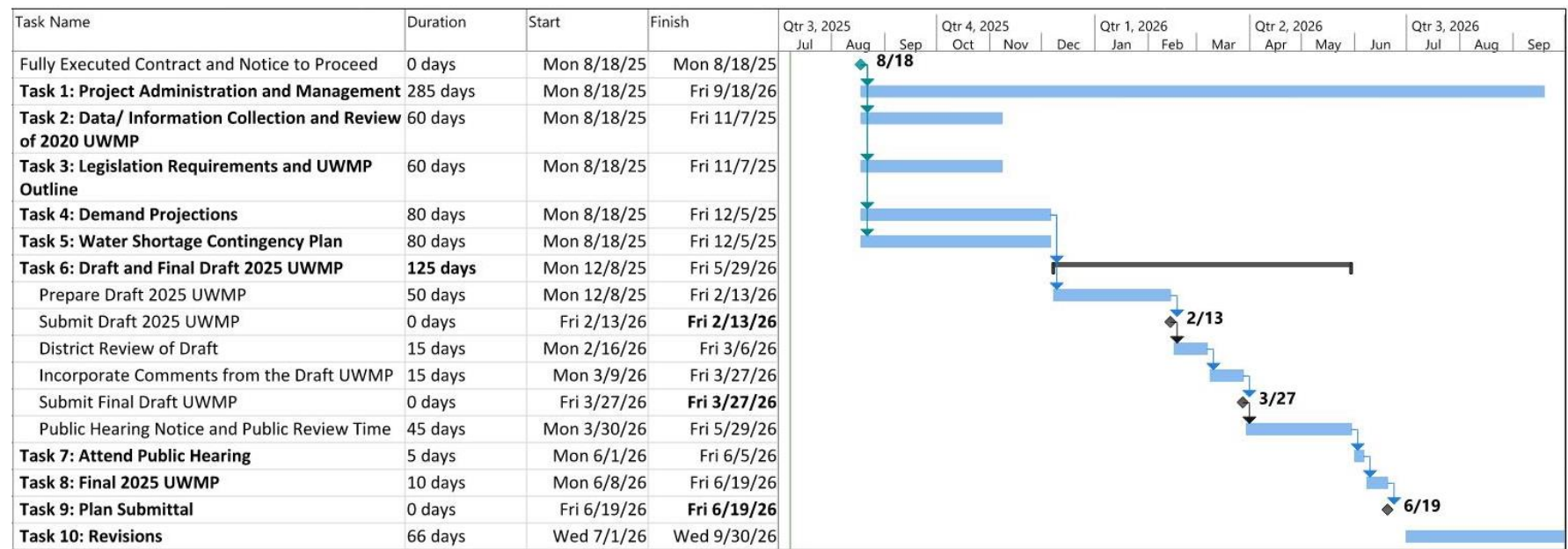
The approved final 2025 UWMP is required to be submitted to DWR 30 days after District Board adoption and prior to the deadline of July 1, 2026. Stantec will submit the final UWMP plan to DWR, the California State Library, and any city or county within which PWD provides water within 30 days of adoption.

## **Task 10 Revisions**

Stantec will be responsible for any follow-up work required if DWR does not find the report to be acceptable (non-compliance) or in the event DWR requires changes in the report. Stantec will follow the guidebook for amending an adopted UWMP or Water Shortage Contingency Plan. Stantec will respond/revise the UWMP to the satisfaction of PWD and DWR within 3 months of receiving comments from DWR.

## Schedule

Below is a proposed Gantt chart style schedule with key project tasks for completing the PWD final draft 2025 UWMP by April 1, 2026, as requested to allow for District notifications, public review, and adoption. The final UWMP will be submitted before the DWR deadline of July 1, 2026. While preparing the Task 4 of the 2025 UWMP Update and the draft report within Task 6, status meetings and progress deliverables will be scheduled as sections are written to receive District input and approval.



## I. Fee Schedule

Below is the proposed fee schedule by task as outlined in the work plan. The fee schedule includes the hourly rates for each team member, estimated hours, and expenses for printing and milage costs Stantec team members to attend the in-person Board meeting and public hearing. Stantec's 2025 standard schedule of billing rates is also included for reference.

Table 3. Stantec's Proposed Fee Schedule

		<i>PIC &amp; QA/QC</i>	<i>Project Manager</i>	<i>Technical Lead</i>	<i>EIT</i>	<i>GIS</i>	<i>Tech. Editor</i>	<i>Graphics Designer</i>	<i>Expenses</i>	
<b>Last Name Billing Level Project Billing Rate Total Units</b>		Snow	Poytress	Zukowski	Kasman	Hunter	Coulas	Wickland		
		18	15	14	10	08	08	11		
		\$320	\$274	\$250	\$180	\$150	\$150	\$160		<b>Total</b>
		26	162	176	228	52	26	12	\$8,132	682
<b>Task</b>	<b>Task Name</b>									<b>Hours</b>
1	Project Admin. & Management	22	100	40						162
2	Data/ Info Coll. & Review		4	24	40					68
3	Leg. Req. & UWMP Outline		2	8	16					26
4	Demand Projections		12	48	96	24				180
5	WSCP		8	20	20	8	4	2		62
6	Draft & Final Draft 2025 UWMP		12	16	40	16	12	8	\$2,100	104
7	Attend Public Hearing	4	10	8	4				\$782	26
8	Final 2025 UWMP		2	4	4	4	4	2	\$5,250	20
9	Plan Submittal		8				4			12
10	Revisions		4	8	8		2			22

## J. Unique Qualities or Qualifications

Stantec Consulting Services Inc. is a leading global water design firm with a strong track record in developing UWMPs throughout Southern California. In addition to the projects listed in the experience section, Stantec also prepared UWMPs for the Municipal Water District of Orange County (MWDOC) and its member agencies, Central Basin and West Basin Municipal Water Districts, Inland Empire Utilities Agency, and several local cities. All of these UWMPs were delivered on time, in full compliance with DWR's schedule. Our successful collaboration with MWDOC and its 24 retail water agencies to complete comprehensive UWMPs in 2015 is a strong testament to our reliability and expertise. **Jim Cathcart, PE**, one of our technical advisors, has four decades of experience and has worked on over 30 UWMPs in the past 10 years.

Our project team members bring extensive industry expertise and local insight to ensure the successful delivery of this plan. Stantec's proposed PIC, Tama Snow, led the High Desert Water Bank Project for Antelope Valley East Kern Water Agency and is highly knowledgeable about local water supply conditions.

Stantec has been actively involved in the Pure Water Antelope Valley (Pure Water AV) Program, having been retained by PWD to provide program management services for this regional water augmentation initiative. As part of our role, we have completed several planning studies to help define the scope and direction of the Program. This includes a comprehensive summary of major project components, as well as the identification of key drivers, potential risks, and critical milestones needed for successful implementation, based on the most current available information. Our direct involvement in the Program gives us a distinct advantage—we are already deeply familiar with the District's system, operational context, and long-term water management goals. This insight allows us to move forward efficiently in supporting the update of 2025 UWMP.

## K. References

Table 4 lists three client references that include their name, title, email, and phone number. We understand that PWD reserves the right to check other references beyond these three provided.

*Table 4. References*

<b>Client</b>	<b>Reference Information</b>
Las Virgenes Municipal Water District	Oliver Slosser, Program Manager 4232 Las Virgenes Road Calabasas, CA 91302 oslosser@lvmwd.com 818-251-2143
United Water Conservation District	Maryam Bral, Chief Engineer 1701 North Lombard Street, Suite 200 Oxnard, CA 93030 maryamb@unitedwater.org 805-525-4431
Antelope Valley East Kern Water Agency	Matthew Knudson, General Manager 6450 W. Avenue N Palmdale, CA 93551 mknudson@avek.org 661-349-7310

## L. Accept the District's Professional Services Agreement

Stantec accepts the Standard Professional Services Agreement that was provided with the request for proposals with no changes.

# Appendix A Resumes



## Carrie Poytress PE

Project Manager

23 years of experience · Santa Barbara, California

Carrie has over 20 years of civil engineering experience focused on water resources from concept through construction. Based on her project management and water design experience, she is a catalyst for creative team collaboration, focusing on the health of the project. In addition to managing project schedules, costs, quality, and scope, she addressed and resolves changes quickly to minimize project impact. By anticipating potential gaps and challenges early, Carrie can mitigate risks and resolve conflicts with consultants, management, and invested community members. Her approach adopts clear and concise communication with shareholders to regularly consult, obtain approval, share information, and provide reports as needed. Carrie will proactively facilitate management and project teams in the decision-making process, to avoid project delays. Many of Carrie's projects have required extensive coordination with multiple jurisdictions and consideration of complex and unique sites.

### EDUCATION

B.S., Environmental Engineering, California Polytechnic University, San Luis Obispo, California, 2002

### REGISTRATIONS

Professional Engineer #70345, State of California

### PROJECT EXPERIENCE

#### WATER

County of Ventura 2020 UWMP and Water System Master Plan | Ventura County Waterworks District No. 1 | Moorpark, CA, USA | 2020 | QA/QC

Stantec prepared the 2020 Urban Water Management Plan (UWMP) and the 2020 Domestic Water System Master Plan for the Ventura County Waterworks District No. 1. Carrie performed quality assurance and quality control for the supply analysis, seismic risk assessment, and the water shortage contingency plan of the 2020 UWMP. Carrie also reviewed the Domestic Water System Master plan which was a central comprehensive planning document to guide improvements to the district's water infrastructure.

United Water Conservation District 2020 Urban Water Management Plan | United Water Conservation District | Oxnard, CA, USA | 2020 | QA/QC

Stantec prepared the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan. The 2020 UWMP made updates to the District's 2015 UWMP and added significant changes including: drought risk assessment and the five consecutive dry-year water reliability assessment, seismic risk analysis, energy use information, water loss reporting for five years, water shortage contingency plan, consistency with groundwater sustainability plans, lay description, and water use efficiency and conservation. Carrie was directly responsible for the quality assurance and quality control of the 2020 UWMP.

Santa Barbara Annual Water Main Replacement Project | City of Santa Barbara | Santa Barbara, CA | Present | Project Manager

Stantec is providing survey, drafting, and engineering design services to support the City's annual water main replacement projects. The City of Santa Barbara has an annual goal to replace six miles of the water distribution system through this program. Changes in operating conditions, coupled with aging infrastructure, has resulted in a significant increase in water main breaks. Since 2021, Carrie has provided quality control of the construction documents and guidance during construction of the water main replacements. And in 2023, Carrie took over the Project Manager role.

Las Virgenes Municipal Water District 2020 Urban Water Management Plan | Las Virgenes Municipal Water District | Calabasas, CA, USA | 2020 | QA/QC

Stantec prepared the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan. The 2020 UWMP made updates to the District's 2015 UWMP and added significant changes including: drought risk assessment and the five consecutive dry-year water reliability assessment, seismic risk analysis, energy use information, water loss reporting for five years, water shortage contingency plan, consistency with groundwater sustainability plans, lay description, and water use efficiency and conservation. Carrie was directly responsible for the quality assurance and quality control of the 2020 UWMP.



**Oliver P. Roemer Water Filtration Facility Expansion (Phase 1) | West Valley Water District | Pasadena, California | Assistant Project Technical Lead**

Stantec is working closely with PCL Construction on this design-build project to expand the Oliver P. Roemer Water Filtration Facility from 14.4 to 21.6 MGD. Stantec/PCL designed the facility upgrades and expansions on an accelerated schedule. This included identifying and placing an early design focus on project elements that allowed construction to begin on key portions of the plant. Overall project scope included design, engineering services during construction, startup and commissioning support. As the assistant project technical lead, Carrie oversaw the integration of all the project disciplines and focused on the civil elements of the project including site pipelines, tank connections, roadways, access, and coordination with the City of Rialto.

**Mission Hills Raw Water Tank and Well | Mission Hills Community Services District | Lompoc, California, United States | Project Manager**

Stantec is providing topographic survey, preliminary design, and final design services for a new raw water storage tank, booster pump station, and potable water well to serve the new Burton Ranch housing area. The new tank will add operational flexibility, provide a stable flow through the water treatment plant, and add system storage to reduce well run times.

**Highway 101 HOV Drainage | Santa Barbara County Association of Governments | Montecito, California, United States | Client Manager**

Stantec is providing hydrologic and hydraulic modeling of the multiple creeks from Carpinteria to Santa Barbara for the Highway 101 high occupancy vehicle lanes addition. The hydrologic modeling directly impacts the design of the highway expansion. As the client manager, Carrie coordinated with both the Stantec modeling team, client, Caltrans, and County Flood Control to meet the aggressive deadlines for the multi-phase project.

**Sacramento Railyards | Sacramento, California, United States | 2023 | Design Engineer**

Prepared a water and sewer study that analyzed the onsite water and sewer infrastructure for proposed redevelopment for the Sacramento Railyards Central Shops that covered approximately 17 acres. The analysis included calculating potable water and fire water demands, sewer generation rates, phasing the redevelopment, the offsite infrastructure capacities, and preparing separate water and sewer models.

**State Water Project Interconnection and Pipeline Blending Station | City of Ventura | Ventura, CA | Present | Project Engineer**

Components of this project include approximately seven miles of 30-inch diameter conveyance pipeline for the City. This pipeline encompasses coordination with multiple agencies and provides a connection from Casitas Municipal Water District to Ventura, a future turnout for United Water Conservation District, and a blending station located near the Ventura Water connection to combine water from the Saticoy Water Conditioning Facility and State Water Project treated water at the Metropolitan Water District's Jensen Water Filtration Plant.

**Santa Barbara Ranch Water System | Santa Barbara County, California | 2016 | Design Engineer**

Design Engineer for the water system engineer's report and on-call design services for necessary upgrades. Responsibilities include piping layout design, construction drawings, researching existing surface water, groundwater, and imported water systems, interviewing water treatment operator, and writing engineer's report.

**Santa Barbara High School Wellhead Project | Santa Barbara, CA | 2016 | Design Engineer**

Design Engineer for equipping an existing well within a tight existing site area. Responsibilities included selecting the pump, piping layout design, construction drawings and specifications. The well will be used as both a groundwater source and aquifer storage and recovery.

**Tesoro Drinking Water Wells Feasibility Study | South Gate, California | 2016 | Design Engineer**

Design Engineer for well relocation feasibility study. Responsibilities included analyzing the suggested relocation properties, evaluating piping alignments, determining infrastructure requirements for each alternative, and generating probable costs for each option.

**City of Benicia Cordelia Raw Water Pump Station | Solano County, California | 2015 | Design Engineer**

Design Engineer for booster pump station upgrade recommendations. Responsibilities included updating and calibrating water model of pump station and pipeline, creating a system curve, writing reports, selecting booster pumps that meet the current 4 MGD and future 16 MGD flows, and recommending an operation strategy.

**Las Varas Ranch - Edwards Reservoir | Estate of Tim Doheny | Santa Barbara, Santa Barbara County, California | Ongoing | Design Engineer/ Project Manager**

Project Engineer for an annual surveillance analysis and report to the State Division of Dam Safety to monitor the reservoir water surface elevation, subsurface flow under the dam, and seepage flow rate through the dam.

**Alisal Guest Ranch Outpost Project | Alisal Guest Ranch and Resort | Solvang, CA | Project Manager**

Carrie was the project Manager for a water demands analysis for the Outpost, that proposed to add accommodations for approximately 40 guest glamping units, and amenities including reception, dining facility, saloon, event barn, and pool spa. The Project also includes accessory structures, landscaping, and associated improvements for utilities, drainage, access, and parking. She prepared a technical memo presenting the estimated water use and sewer generation for both the existing Ranch and the proposed accommodations. These estimates were used to anticipate water and sewer costs and identify infrastructure improvements per City of Solvang's recommendations. Carrie also helped the Guest Ranch discuss the options prior to the City's water moratorium.

**Alisal Ranch Irrigation Line from Alisal River Course to Alisal Bridge | Alisal Guest Ranch & Resort | Solvang, Santa Barbara County, California | 2015 | Design Engineer**

Design Engineer for an irrigation supply line from the Alisal River Golf Course to the Alisal Road Bridge that proposed the initial routing options, selection of best alignment, bridge connection selection, preparation of construction drawings and details, and coordination with the City to avoid sensitive cultural and biological resources.

**Casey/Meyer Shared Water System | Casey, Michael | Gaviota, Santa Barbara County, California | 2008 | Design Engineer**

Design Engineer for private shared water system for the Casey and Meyer residences. Analyzed existing well and designed new water storage for domestic and fire uses, booster pump station, reverse osmosis system, waste discharge, distribution piping, booster pumps, and hydropneumatic tanks. Prepared construction cost estimates, preliminary drawings, and coordinated with the County of Santa Barbara for permits.

**Hydro-Pneumatic Zone Expansion, South Bay Well Upgrade, Booster Pump Station Upgrade (Contract 9) | Los Osos Community Services District | Los Osos, San Luis Obispo County, California | 2008 | Design Engineer**

Design Engineer for a new booster pump station that replaced the hydro-pneumatic system to increase system pressure, expand the pressure zone and increase fire protection. Tasks included selecting the two 2160 GPM pumps, and three 625 GPM VFD pumps, piping layout in the building, and piping connections to the existing system.

**VTTM 52796 Pico Canyon Water System | Valencia Water Company | Santa Clarita, Los Angeles County, California | 2015 | Design Engineer**

Design Engineer that performed water system modeling for a proposed development that required a new water zone to be created with a pump station and storage tanks.

**Community Water System Evaluation | Montecito Sea Meadow Homeowners | Montecito, Santa Barbara County, California | 2015 | Project Manager and Design Engineer**

Carrie analyzed a private well water system to determine necessary upgrades, evaluated the supply versus the demand, and updated the water system operating manual. The 35 connections are individual, multi-acre estates in a private, gated community adjacent to the Pacific Ocean.

**La Vista Grande Waterline Relocation | Fidelity National Title Insurance Company | Santa Barbara, Santa Barbara County, California | 2014 | Project Manager and Design Engineer**

Project Manager and Design Engineer for the relocation of a 16-inch diameter City water main across public and private property with steep terrain. Responsibilities included the alignment selection, preparation of construction drawings, and extensive coordination with the homeowners, City, Title Companies, and contractors.

**Rosario Park Water Systems Upgrade | Rosario Park Mutual Water Company | Santa Barbara, Santa Barbara County, California | 2014 | Design Engineer**

Design Engineer for the installation of a new water supply well, supply pipeline, and increased storage capacity for a small community water system. Additional tasks include coordinating with the 25 property owners, hydro- geologist, and civil design of well site area .

**Ortega Groundwater Treatment Plant Upgrades | City of Santa Barbara | Santa Barbara, Santa Barbara County, California | 2013 | Assistant Construction Manager**

Assistant Construction Manager for \$5 million City of Santa Barbara public works project to demolish existing antiquated equipment and install a new pressure vessel, vertical tanks, filter media, disinfection equipment, control systems and pumps, as well as incidental sitework, well rehabilitation, concrete flatwork, building modifications, landscaping, trenching and paving.

## **WASTEWATER**

**El Estero Water Resources Center Chlorine Contact Chamber Rehabilitation | City of Santa Barbara | Santa Barbara, California, United States | Project Manager**

The City of Santa Barbara's wastewater existing chlorine contact chamber was in need of rehabilitation including providing for redundancy for future needs. Stantec was hired to prepare an alternatives analysis and final design documents to provide redundancy and improve performance of the disinfection process. Carrie was the project manager for the final design documents.

**Los Olivos Septic to Sewer Preliminary Design | Los Olivos Community Services District | Los Olivos, CA | Present | Design Engineer/ Project Manager**

Carrie is the design engineer for the Los Olivos sewer collection system to provide sewer service to the three zones of the community which are all currently utilizing septic systems. The project includes coordination with a packaged wastewater treatment manufacturer. Carrie took on the project management role as design progressed.

**MSD Capital Improvement Projects \* | Montecito Sanitary District | Montecito | 2021 | Project Manager**

Engineering Manager with Montecito Sanitary District developed the Capital Improvement Project program that identified and prioritized projects over the next ten years. Developed a cost estimate for each project and presented the information to the District's Board of Directors at key decision making points.

**Lilac and Oak Grove Sewer Main Extension\* | Montecito Sanitary District | Montecito, California, United States | USD 2M | 2021 | Engineering Manager- Montecito Sanitary District**

Engineering Manager for the Montecito Sanitary District responsible for this project from concept through the bidding stage. Designed the Lilac and Oak Grove sewer main extension to serve 22 properties along Lilac Drive, Oak Grove Drive, and East Valley Road (Highway 192). The extension included approximately 3,822 linear feet of 8-inch sewer pipe, 19 manholes, and 22 sewer laterals within an extremely rocky area. Submitted and received the Caltrans encroachment construction permit for the portion of the project in Highway 192. Made numerous presentation to the District Board at all stages of the project.

**Romero Canyon Road Sewer Main Extension-Phase 2\* | Montecito Sanitary District | Montecito, California, United States | 2021 | Engineering Manager- Montecito Sanitary District**

Engineering Manager for the Montecito Sanitary District responsible for all phases of this project from concept through construction. Prepared the design plans, specifications, and bid documents, reviewed the contract documents, managed the contractor, performed construction observation services, met with property owners to help with lateral locations, and presented this project to the District Board at key points throughout the project for their approval.

**Riven Rock Community Low Pressure Force Main\* | Montecito Sanitary District | Montecito, California, United States | 2021 | Engineering Manager- Montecito Sanitary District**

Engineering Manager for the Montecito Sanitary District responsible for initiating this project with the property owners in the community to serve 10 properties via a low-pressure force main system. Contracted with a surveyor for topographic information and designed the low-pressure system to serve the larger neighborhood since these properties could not be served by a gravity sewer main extension. Prepared the design drawings, specifications, and bid documents, managed the contractor, performed construction observation services, and performed project management duties for this project.

**Ortega Ridge Road Sewer Main Extension\* | Summerland Sanitary District | Montecito, California, United States | 2020 | Engineering Manager- Montecito Sanitary District**

Engineering Manager with Montecito Sanitary District coordinated with Summerland Sanitary District to serve two parcels within the Montecito Sanitary District to be served by Summerland Sanitary District. Helped prepare and negotiate a flow exchange agreement between the two Districts. Prepared the design drawings, specifications, and bid documents, managed the contractor, performed construction observations, and coordinated with the property owners and neighbors.

**Olive Road Sewer Main Extension\* | Montecito Sanitary District | Montecito, California, United States | 2019 | Engineering Manager- Montecito Sanitary District**

Engineering Manager for Montecito Sanitary District responsible for the project from conception through construction. Coordinated with property owners to initiate the sewer main extension project, designed the extension, hired the surveyor, managed the project, prepared the design drawings and specifications, prepared the bid documents, reviewed contractor bidding information, performed construction observation, managed the construction, and presented the status of the project to the District Board at each stage.

**1356 East Valley Road Sewer Relocation\* | Montecito Sanitary District | Montecito | USD 25k | 2020 | Engineering Manager- Montecito Sanitary District**

Engineering Manager with Montecito Sanitary District negotiated with property owner for sewer main relocation, designed sewer main relocation, prepared drawings and specifications, coordinated with contractor, and provided construction observation services.

**Romero Canyon Road Sewer Main Extension-Phase 1\* | Montecito Sanitary District | Montecito, California, United States | 2017 | Engineering Manager- Montecito Sanitary District**

Engineering Manager for the Montecito Sanitary District responsible for all phases of this project from concept through construction. Determined how to serve the numerous properties in the neighborhood but decided that a phased approach was necessary based on property owner interest. Prepared the design plans, specifications, and bid documents, reviewed the contract documents, managed the contractor, performed construction observation services, and presented this project to the District Board at key points throughout the project for their approval.

**Miramar Lift Station and Force Main Project\* | Montecito Sanitary District | Montecito, California, United States | USD 5M | 2019 | Engineering Manager- Montecito Sanitary District**

Engineering Manager for the Montecito Sanitary District responsible for writing the request for proposal and helping to select a design engineer for the Miramar Lift Station Project, managing the consultants contracts, reviewing plans and specifications, bidding the construction project, meeting with the developer, managing the developer and District agreements, construction observation services, managing the contractor, coordinating with other construction work adjacent to the project, and making presentations to the District Board and the community at key points during the project. This triplex dry well-wet well lift station with diesel generator and the dual force mains only serve the Miramar Hotel and was paid for by the developer as part of the conditions of approval for the hotel development.

**North Shore at Mandalay Bay | Trimark Pacific Homes, L.P. | Oxnard, Ventura County, California | 2016 | Design Engineer**

Wastewater Design Engineer for lift station and connection to existing public facilities for this 90-acre mixed use development. The project also included mass grading, environmental mitigation, final grading, storm drain, paving, and water system design.

**Carpinteria Bluffs Sewer Main Replacement | Carpinteria Sanitary District | Carpinteria, Santa Barbara County, California | 2012 | Project Engineer**

Project Engineer for final design approximately 7,700 linear feet of 12-inch to 6-inch diameter sewer along with thirty (30) concrete sewer manholes in public right of way and on private properties, 170 linear feet of bore and jack of 24-inch diameter steel casing in Caltrans right of way, laser guided boring of 514 linear feet of 10-inch sewer on private and public property, and directional drill installation of 465 linear feet of 8-inch and 6-inch diameter HDPE sewer siphon under Carpinteria Creek. Coordinated with Caltrans for easement, biologist for constructability.

**Atascadero Lift Station #6 | City of Atascadero | Atascadero, San Luis Obispo County, California | 2014 | Project Engineer**

Project Engineer that provided flow calculations, design for the lift station replacement, and preparation of the construction documents, including subconsultant coordination. The flow calculations included analysis of the City of Atascadero's existing sewer model, creating a sub-model of the project area, and researching potential infiltration and inflow. The project included demolition of the existing lift station, a new lift station, a propane tank, security fence, and electrical controls panel.

**South Coast Beach Communities Septic to Sewer Conversion Project | Carpinteria Sanitary District | Carpinteria, Santa Barbara County, California | 2014 | Project Engineer**

Project Engineer: Preliminary design of pump stations and preparation of exhibits, reports, and cost estimates. The project will replace private septic systems with private pump stations and community sewer force main systems that discharge into existing Carpinteria Sanitary District facilities for 130 private residences within the beachfront communities of Rincon Point, Sandyland Cove and Sandpoint Road.

**Firestone Road Lift Station and Sewer Force Main | Goleta Sanitary District | Goleta, Santa Barbara County, California | 2011 | Design Engineer**

Design Engineer for the project that included 2,000 LF of 15-inch gravity sewer main in Firestone Road, bore and jack of a 30-inch steel casing pipe across Hollister Avenue, and sewer lift station to replace an existing Goleta Sanitary District lift station and City of Santa Barbara Airport lift station.

**McMillan Sewerline Upgrade | City of San Luis Obispo | San Luis Obispo, San Luis Obispo County, California | 2010 | Project Engineer**

Project Engineer for the installation of a new 18-inch sewer trunk line underneath a Union Pacific Railroad Crossing in the City of San Luis Obispo. Responsibilities included fast track design and preparation of construction documents. This project won the California Central Coast Chapter of APWA's 2011 Project of the Year Award for Emergency Construction under \$2 million.

**Fairview Avenue and San Pedro Creek Sewer Replacement and Relocation Project | Goleta Sanitary District | Goleta, Santa Barbara County, California | 2011 | Construction Administration**

Construction administration for the replacement of approximately 285 linear feet of 36-inch diameter and 3,260 FT of 30-inch diameter trunk sewer, 19 manholes, bore and jack of a 54-inch steel casing pipe, trenchless rehabilitation of approximately 49 linear feet of 30-inch sewer and 2,230 FT of 15-inch sewer and rehabilitation of 13 manholes.

**Public Sewer Main Extension at 915 Cima Del Mundo | Joseph, George & Vicky | Santa Barbara, Santa Barbara County, California | 2012 | Project Manager/ Design Engineer**

Project Manager/ Design Engineer for an 8-inch sewer main extension in a private road. Special consideration for the alignment was taken due to the narrow road to maintain access during construction, existing water main separation, protection of the existing oak trees, and the existing roadway improvements. The project also included coordination with Montecito Sanitary District, Montecito Water District and the architect for the residence for which this sewer main extension is required.

**Wildlife Care Network Private Sewer Force Main System | Wildlife Care Network | Goleta, Santa Barbara County, California | 2010 | Project Manager/Design Engineer**

Project Manager and Design Engineer for a private sewer pump station and 2500-foot long force main system to discharge into a district gravity sewer. The project required annexation and extensive coordination with the sewer district.

**Braemar Ranch Sewer Expansion Feasibility Study | City of Santa Barbara | Santa Barbara, Santa Barbara County, California | 2006 | Project Engineer**

Project Engineer responsible for research, calculations, exhibits, report writing, and cost estimates for sewer feasibility study to connect approximately 100 properties to the City of Santa Barbara existing sewer system.

**Marborg Septic Receiving System | Marborg Industries | Santa Barbara, Santa Barbara County, California | 2006 | Project Manager/Design Engineer**

Project Engineer for the upgrade of Marborg's septic receiving station. Responsibilities included equipment selection and sizing, piping and tank layout, construction plan preparation, coordination with the City of Santa Barbara and Marborg, and preparation of cost estimates for the proposed project elements.



**Digester Heating System Upgrades (EMWD)\* | Eastern Municipal Water District | California | 2004 | Design Engineer**

Design Engineer that prepared drawings and specifications for the installation of new heat exchanges, hot water circulations pumps, and modifications to the existing heating system piping at three water reclamation facilities.

**SBMWD Reclamation Study\* | San Bernardino Municipal Water District | San Bernardino, San Bernardino County, California | 2004 | Project Engineer**

Project Engineer responsible for researching future water and recycled water needs, mapped potential recycled water users and pipelines, modeled water pipelines, and analyzed recycled water treatment options.

**Temecula Valley Expansion to 16 MGD Project (EMWD)\* | Eastern Municipal Water District | Temecula, Riverside County, California | 2004 | Design Engineer**

Design Engineer that sized equipment, calculated design conditions and flows, prepared drawings and specifications for the dual media tertiary filters, chlorine contact basins, and backwash return water pump station for Eastern Municipal Water District.

**CALIFORNIA ENVIRONMENTAL QUALITY ACT (CEQA)**

**City of Fountain Valley Water Supply Assessment | City of Fountain Valley | Fountain Valley, CA | Project Manager**

Carrie was the Project Manager and QA/QC reviewer for the Water Supply Assessment for the 1680 Magnolia Housing Project in Fountain Valley to evaluate if the City's potable water supplies would meet projected demand, including additional needs from the project, through 2045. She calculated the Project's additional water demand and analyzed supply adequacy for normal and dry year conditions based on the City's water supply resources and projected potential shortfalls for extended dry periods, recommending additional water sourcing to ensure reliable future supply. The Water Supply Assessment was used as supporting documentation for the utilities and hydrology sections of an EIR.

**City of Seal Beach Housing Programmatic EIR | City of Seal Beach | Seal Beach, CA | Water Supply Engineer**

Carrie played a key role in preparing a Water Supply Assessment and the Utilities and Hydrology sections of the EIR for the City of Seal Beach's Housing Element Updates Project. Carrie reviewed the calculations for current and projected water demand, assessed drought resiliency strategies, and evaluated future water supply reliability. She also wrote the comprehensive report detailing technical findings and the Utilities and Hydrology sections of the EIR.

**STORMWATER**

**Laguna Channel Pump Station and Channel Renovation Project | City of Santa Barbara Public Works Department | Santa Barbara, California, United States | Present | Project Manager**

Project Manager and quality control engineer for a modification and repair project for the Laguna pump station and channel which is an important storm water pump station that prevents flooding for downtown Santa Barbara. The role included reviewing all project documents including drawings, specifications, cost estimate, and permitting packages and managing the project through the multiple scope changes and FEMA approval process.

**WASTEWATER RECLAMATION AND REUSE**

**Recycled Water Pilot Project\* | Montecito Sanitary District | Montecito, California, United States | USD 250k | 2021 | Engineering Manager- Montecito Sanitary District**

Engineering Manager at Montecito Sanitary District responsible for initiating this project, selecting the equipment, coordinating with the manufacturers during design, helping with the piping installation, commissioning of the system, helping to prepare standard operating procedures, initiating a sampling and testing schedule, reviewing sample results with the laboratory manager, operational data review, and trouble shooting operational issues. The pilot project used secondary clarifier effluent as the feed water which was pumping into a feed water tank, then pumped through a disc filter for preliminary filtration, ultrafiltration, a bag filter, reverse osmosis, and disinfection. The recycled water produced was used for process water at the wastewater treatment plant and for sewer cleaning purposes to reduce the amount of potable water used while leaning how to operate a recycled water system and understanding the impacts of the variable feed water quality.

**PERMITTING AND REGULATORY COMPLIANCE**

**Coastal Development Plan\* | Montecito Sanitary District | Montecito | USD 200k | 2020 | Engineering Manager- Montecito Sanitary District**

Engineering Manager with Montecito Sanitary District developed Coastal Development Plan for the District's wastewater treatment plant property for the proposed Essential Services Building, Recycled Water, and Solar projects and the existing Maintenance and Laboratory Buildings. Coordinated with consultants to create the mitigated negative declaration document, addressed public comments on the environmental document, prepared the site plans, and submitted the application to the County for the Development Plan. Gave multiple presentations to community stakeholders and the District's Board of Directors at key points throughout the project.

## DISASTER RECOVERY

Thomas Fire Debris Flow\* | Montecito Sanitary District | Montecito, California, United States | AED 2M | 2018 | Engineering Manager with Montecito Sanitary District

Engineering Manager with Montecito Sanitary District helped with disaster response and recovery after the January 9, 2018 Thomas Fire Debris Flow that impacted the community, filled the sewer system with mud, and destroyed three gravity main sewer crossings at three creeks. Gathered record drawings for the sewer facilities, coordinated with the Collections team and consultant for daily inspections, prepared maps of impacted properties, checked daily records of what was inspected, cleaned, and video inspected, and helped to determine critical projects. The District permanently repaired the three crossings prior to the phased reopening of the community. In addition, reviewed projects information and costs for submittal to FEMA for reimbursement.

Emergency Force Main Replacement | Goleta Sanitary District | Goleta, Santa Barbara County, California | 2011 | Design Engineer

Design Engineer for a fast-tracked project that included design of 2000 FT of sewer force main in Firestone Road and removal of an existing sewer main from San Pedro Creek as part of the County of Santa Barbara State of Emergency related to the Gap Fire.

MSD Protective Measures | Montecito Sanitary District | Montecito, CA | USD 1.2M | Project Manager

There are four locations within the Montecito Sanitary District (District) sewer collection system that became vulnerable to potential damage/ failure due to the impacts of the January 2023 storm event. The District classified these vulnerable facilities into four projects. Stantec provided surveying services, alternatives analysis, management of environmental analysis and permitting services, final design of the protective measures, prepared HEC-RAS hydraulic analysis, submitted a no-rise certification, bidding support, and construction support services. This project included extensive coordination with multiple property owners, FEMA, County Flood Control, State Water Resources Control Board, US Army Corps of Engineers, National Marine Fisheries Service, and the CA Department of Fish and Wildlife.

## MILITARY INFRASTRUCTURE

VAFB San Antonio Plant Well & Pump Station Replacement | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2014 | Design Engineer

Design Engineer for a replacement booster pump station capable of supplying 3,200 gpm which includes the installation of 4 VFD pumps. This pump station is mission critical and feeds the main water reservoirs for the entire base, and is the only water supply system during maintenance periods of the State Water system.

VAFB Repair Arguello Waterline B Tank to C Tank | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2013 | Design Engineer

Design Engineer for pipe material selection, sizing calculations, and water model analysis for the replacement of 2 miles of 12 inch waterline, rehabilitation of an existing 750,000 gallon reservoir and full design analysis of the water system to provide long term recommendations. Ms. Poytress worked closely with the team of engineers in the preparation of plans, specifications, and cost estimates. In addition, Ms. Poytress coordinated with base personnel to perform a full site investigation to determine the most efficient design approach.

VAFB Water Model Upgrade | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2013 | Design Engineer

Design Engineer for the upgrade of an existing steady state water model to an extended period simulation. Worked closely with base operations personnel to understand the existing water system and update the model with new demand data, building and water main construction/abandonment, and pump station information. Performed site visits, record drawing research, interviews with base personnel and consultants who have worked on the water system, including the SCADA consultants.

VAFB 4MG Tanks | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2012 | Design Engineer

Design Engineer responsible for preparation of design documents and estimated costs for the replacement of two 4MG Water Tanks at the Main Reservoir (Buildings 20221/20222) located at Vandenberg Air Force Base. Worked with Vandenberg AFB to construct a new pump station facility with variable speed pumps and motor control center, with a proposed water storage transfer pump to be included within the facility. The project required replacing piping, valves and controls and constructing the facility to provide proper clearance between piping/valves and exterior walls.

VAFB Water Tank Design Stratification Circulators | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2012 | Project Manager/Design Engineer

Project Manager and Design Engineer for the design of tank mixers in three potable water tanks on South Base. Project objective was to evaluate the effectiveness of water circulation in existing water supply tanks. Tasks included preparation of mixing alternatives report, design of mixers at three tanks, coordination with electrical engineer for solar and grid-powered mixers, and preparation of construction documents.

## POST-SECONDARY EDUCATION

UCSB San Joaquin Apartments and Precinct Improvements #986470 | University of California, Santa Barbara | Goleta, Santa Barbara County, California | 2015 | Design Engineer

Design Engineer that performed water system modeling, researched existing utilities, designed water and sewer alignments and profiles to coordinate with existing utilities and proposed dry utilities, and designed sewer pump station. This project required extensive coordination with four different architects for the multi-building complex as well as other consultants and Goleta Water District and Goleta West Sanitary District for their separate approvals.

UCSB Sierra Madre Student Housing | University of California, Santa Barbara | Santa Barbara, Santa Barbara County, California | 2014 | Utility Designer

Design Engineer for the water and sewer systems to serve the multi-building UCSB housing development. Tasks included water modeling, water analysis report, sewer flow calculations, preparation of construction drawings, limited construction administration, and coordination with Goleta Water District, Goleta West Sanitary District, and UCSB.

UCSB North Campus Faculty Housing Utilities Design | University of California, Santa Barbara | Santa Barbara, Santa Barbara County, California | 2014 | Design Engineer

Design Engineer for multi-phase project that specific tasks included design of the water and sewer piping alignments and preparation of construction documents, cost estimates, coordination with multiple sub-consultants, and guiding the project through the Goleta Water and Goleta West Sanitary District's approval processes.

UCSB BioEngineering Building | Moore Ruble Yudell Architects (MRY) | Santa Barbara, Santa Barbara County, California | 2012 | Design Engineer

Design Engineer responsible for utility alignments, utility coordination, and utility cost estimates for the new BioEngineering building in the center of campus. The utility coordination also included integrating with other proposed projects adjacent to the project site.

Pomona College Parking Structure | Claremont, Los Angeles County, California | 2011 | Engineer

Design Engineer for three detention basins along the eastern and western sides of the site to detain the stormwater runoff. Designed outfall structures to connect to the existing storm drain system in First Street for overflow conditions.

UCSB Main Campus Infrastructure Renewal Project, Phase I and II | University of California, Santa Barbara | Santa Barbara, Santa Barbara County, California | 2011 | Design Engineer

Design Engineer responsible for WaterCAD and SewerCAD modeling of entire UCSB campus, existing and future demand calculations, preparation of exhibits, preparation of water and sewer plan and profiles, cost estimates for proposed phased project, and preparation of phased construction drawings.

UCSB Portola Dining Commons Grease Interceptor Alternatives | University of California, Santa Barbara | Santa Barbara, CA | Project Manager

UCSB's Portola Dining Commons grease interceptor and sewer lift station had persistent maintenance issues due to grease bypassing the interceptor and clogging the lift station pumps. Carrie researched best management practices, calculated the optimal grease interceptor size, and conducted an alternatives analysis to recommend long-term solutions for preventing blockages, minimizing manual operations, and reducing maintenance frequency. She presented multiple construction alternatives and maintenance recommendations that had the least impact on the dining commons operations.

## ROADWAYS

College Heights Blvd CM & Inspection | City of Ridgecrest | Ridgecrest, Santa Cruz County, California | 2012 | Construction Office Engineer

Construction Management for Phase I and II improvements. Tasks included Caltrans project closeout documents and approval.

Cathedral Oaks Crib Wall Emergency Repair Project | City of Goleta | Goleta, California, United States | 2024-Present | Project Manager

Carrie led the design team for the replacement of two crib walls along Cathedral Oaks Road that compromised the bike path and roadway safety. She collaborated with the geotechnical engineers to interpret site testing results and assisted in alternatives analysis for the wall system, considering cost, schedule, and site constraints to recommend a durable, long-term solution. She also worked closely with the landscape architects and the City to provide linear park concepts adjacent to the new wall. This project included wall concepts and final design submittals.

## RESIDENTIAL DEVELOPMENT

Joshua Ranch Palmdale | CV Communities | Palmdale, Los Angeles County, California | 2016 | Project Engineer

Design Engineer for two 400K-gallon water storage tanks, one 600K-gallon water storage tank at separate location, vertical turbine pump station to create a new water zone, and water modeling to analyze the proposed water system for a 334 lot subdivision.

VTTM 64843 Sewer Area Study (Formerly Tract 60057) | Pacific Communities Builder, Inc. | Lancaster, Los Angeles County, California | 2014 | Design Engineer

Design Engineer for a sewer area study for a revised 488 lot development to connect to the City of Lancaster's sewer system.



## Tama Snow PE

Principal-in-Charge

33 years of experience · Walnut Creek, California

Successful water projects have two things in common – great engineers and great communicators. Tama is both. For over 33 years she has been planning and executing projects that improve water resources management capabilities for public, private, and regulatory clients. Well respected in the industry, she is known as someone who pays close attention to details, is responsive to client needs and doesn't lose sight of the big picture. Tama seeks to improve the balance between human and environmental water needs—to serve the greater good. She loves helping clients develop strategic and sustainable solutions to their challenges. And over the years, having seen how intensive public scrutiny to innovative water projects in California have delayed and even prevented project implementation, she has become an expert in public outreach and communications.

### EDUCATION

Masters of Engineering, Cal-Poly Pomona, Pomona, CA, 2001

Bachelor of Science in Civil Engineering, University of California at Irvine, Irvine, CA, 1991

Bachelor of Arts in Mathematics, University of California Riverside, Riverside, CA, 1988

### REGISTRATIONS

Engineer #C 056934, State of California, 1997

### PROJECT EXPERIENCE

#### MASTER PLANNING

Indio Water Authority Water Master Plan (WMP)\* | Indio Water Authority | Indio, California | QA/QC

Tama reviewed all deliverables prior to submitting to client. The 2018 WMP was prepared as an update to the Authority's 2012 Water Master Plan Update. The Authority typically performs a comprehensive update of its WMP every five years to capture changes in water conveyance infrastructure, service population, water demands, planned developments, and water-related regulations to update their capital improvement program (CIP). As the City of Indio continues to grow amid increasingly restrictive water supply conditions, water master planning has become even more vital for the Authority to address system deficiencies, improve operations and efficiency, and develop the necessary supply to meet future demands.

Master Plan Update | South Coast Water District | Senior Project Engineer

Tama updated and prepared a comprehensive, combined water, wastewater and recycled water master plan. Scope included identifying system deficiencies and improvements needed and prepared a prioritized Capital Improvement Plan. Oversaw the wastewater modeling efforts and prepared the technical memoranda and provided overall QA/QC on draft master plan write-up.

Updates to Water and Wastewater Master Plans\* | Lake Arrowhead Community Services District | Lake Arrowhead, California | Project Engineer

Tama evaluated conditions of existing potable water pump stations and reservoirs and made recommendations to client.

Johnson Utilities Comprehensive Planning Study \* | EPCOR/Johnson Utilities | Project Manager

For Johnson Utilities, Tama prepared an Integrated Water, Wastewater, Reclaimed Water and Water Resources Comprehensive Planning Study to provide the utility with a capital improvement plan (CIP) to address the numerous pressing and immediate needs, including water quality and water pressure issues and sanitary sewer overflows. Identifying improvements needed to the water, wastewater and recycled water systems to address current issues as well as prepare the Utility for future growth over a five-year, 10-year and build-out horizon.

Johnson Utilities Comprehensive Planning Study\* | EPCOR/Johnson Utilities | San Tan Valley, Arizona, United States | Project Manager

Tama prepared an Integrated Water, Wastewater, Reclaimed Water and Water Resources Comprehensive Planning Study (CPS) to provide the utility with a capital improvement plan to address the numerous pressing and immediate needs, including water quality and water pressure issues and sanitary sewer overflows and determining best reuse of the recycled water of different qualities produced at three wastewater treatment plants. Improvements needed to the water, wastewater and recycled water systems were identified to address current issues, as well as prepare the Utility for future growth over 3-year, 5-year, 10-year, and build-out planning horizons. Best use of recycled water included groundwater recharge, identifying recycled water customers and conducting a cost feasibility analyses.

*\* denotes projects completed with other firms*



**Buena Yard Facility Improvements \* | Buena Sanitation District | Vista, California, United States | Project Manager**

Tama conducted a comprehensive Facility Planning Study and preliminary design to repurpose the Buena Sanitation District's Buena Yard (previously Shadowridge Water Reclamation Plant) as an emergency wastewater storage and satellite maintenance facility. This Study and the preliminary design included conducting a condition assessment of existing assets, preparing an evaluation of emergency wastewater storage capabilities, hydraulic analysis, hazardous materials study, and preparing a facility plan to bring the complex up to current building codes and evaluate the use of space to repurpose the existing building. A detailed opinion of cost estimate and construction implementation plan was also prepared.

**PUMP STATION**

**1050 Zone Pump Station | Moulton Niguel Water District | Laguna Niguel, California, United States | Project Engineer**

Tama worked with the District to prepare plans and specifications for the 1050 Zone pump station that will provide additional system reliability, as well as back-up fire flow. The project includes an environmental survey, preparation of environmental documents, surveying, geotechnical, civil, mechanical, electrical, I&C, SCADA, and completing a preliminary design report and construction plans and specifications for a 500-GPM pump station and 3,000-GPM fire flow as well as design of a new pump station building, chemical building and approximately one-mile of 16-inch suction and discharge pipelines. Tama was responsible for overseeing the development and completion of the preliminary design report.

**Lake Forest Zone B to C Pump Station | Irvine Ranch Water District | Lake Forest, California, United States | Design Manager**

Tama was a key team member in preparing construction plans and specifications for a new recycled water pump station, decommissioning of an existing pump station, modifications to the electrical and I&C and design of an emergency interconnection to Santa Margarita Water District's Recycled Water System. She was responsible for project coordination, preparation of preliminary design report and preparing plans and specifications for the 30%, 60%, 90%, and 100% submittals.

**Orange Park Acres Pump Station\* | Irvine Ranch Water District | Irvine, California | Project Engineer**

Tama prepared construction plans and technical specifications for the construction of well head equipment, pump station, wet well, sodium hypochlorite, and ammonia injection systems. Her primary responsibility was to provide front-end documents and technical specifications.

**Orange Park Acres Pump Station\* | Irvine Ranch Water District | Orange, CA**

The project entailed preparation of construction plans and technical specifications and providing engineering services during construction for the construction of well head equipment, pump station, wet well, sodium hypochlorite, and ammonia injection systems for the Irvine Ranch Water District. Tama was primarily responsible for preparing front end documents and technical specifications.

**WATER TREATMENT**

**Reservoirs 1 & 2, Pumps, Controls and Chemical System Assessment\* | Santa Margarita Water District | Costa Mesa, California, United States | Project Manager**

Tama completed an assessment of the condition and operation of the pumps and controls system at two domestic water reservoirs. She developed a plan for removal and testing of pumps as well as completed an evaluation of the existing chemical dosing system. Tama also prepared a preliminary design report and 30-percent design plans and specifications to replace the existing chemical feed systems and install new reservoir mixers.

**Chemical System Improvements at Lake Mission Viejo Advanced Water Treatment Facility | Santa Margarita Water District | Mission Viejo, California | 2019 | Project Manager**

The existing chemical feed storage and metering system in the Support Building at District's Lake Mission Viejo Advanced Purified Water Treatment Facility needed to be modified to address safety and maintenance concerns as well as evaluate the existing chemical storage. Engineering services were provided to evaluate the existing chemical storage and feed systems at the Facility and prepared the necessary drawings for improvements.

**Water Treatment Plant Project\* | City of Lemoore | Lemoore, CA | Project Manager**

Tama led the progressive design build services for two water treatment plants. She assisted Filanc with 60 percent design and guaranteed maximum price was completed in 60 days. The project included evaluating site layout on a constricted site, hydraulic analyses, evaluating pump replacement for existing groundwater wells, and evaluating complex treatment options. Tama managed multiple disciplines including structural, electrical, instrumentation and controls, civil, geotechnical, surveying and developed strategies to save capital cost for the client. Construction cost was estimated at approximately \$35 million.

As-Needed Professional Engineering Services |  
Palmdale Water District | Palmdale, California |  
Project Manager

Tama is serving as the Project Manager for Palmdale Water District's As-Needed Professional Engineering Services Contract. To date [current as of January 2022], Stantec has completed Task Order 1, which included the timely completion of a grant application for the Bureau of Reclamation WaterSMART Water and Energy Efficiency (WEEG) grant program. This task order was completed on time under a tight deadline and completed well under budget. Task Order 2 will include staff augmentation services to provide plan review.

## **RECYCLED WATER**

Port of Long Beach Recycled Water Study | Port of Long Beach | Long Beach, California, United States |  
Quality Assurance/Quality Control Review

Stantec was retained by the Port of Long Beach to prepare a storm water harvesting study and recycled water feasibility study. The recycled water feasibility study included identifying and evaluating alternative sources of recycled water that could be available to supply the PolB customers, evaluating the feasibility of constructing a wastewater treatment plant to be owned and operated by the POLB, as well as identifying potential recycled water customers, identifying acceptable recycled water uses and preparing an engineer's estimate of probable construction costs for the various identified alternatives.

Program Management Services for the West Basin Municipal Water District's Recycled Water Program | West Basin Municipal Water District (WBMWD) | Various Cities in Los Angeles County, California |  
Program Manager

Tama oversaw a team that worked as an extension to the District staff during the initial phases of the WBMWD Recycled Water Program. Responsibilities included coordinating multiple pipeline design packages with design consultants to manage schedule, budget, and scope, and coordinating independent QA/QC reviews. In addition, Tama identified and contacted over 200 irrigation and industrial customers to discuss conversion to recycled water and address public concerns and water quality issues. Tasks included estimating recycled water use and conducting cost/benefit analyses to determine payback periods to install recycled water extensions, as well as estimating on-site retrofit costs. The team prepared on-site retrofit drawings and industrial engineers reports to obtain approval from State and County Department of Health Services for conversion to recycled water.

Program Management Services - Pure Water Antelope Valley | Palmdale Water District | Palmdale, California | 2022-Current | Program Manager

Stantec was retained by the Palmdale Water District to manage and provide planning services for the \$200M, Pure Water Antelope Valley Recycled Water Program. Since 2022, the services being provided under this program include preparation of an initial feasibility study to evaluate alternatives to utilize 5 million gallons per day of recycled water, preparation of twelve technical memorandums that have included background review and conducting a data gap analysis, conveyance routing and infrastructure needs, recycled water quality analysis, evaluation of delivery methods for multiple construction contracts, design of a 250 gallon per minute advanced water treatment demonstration facility, groundwater modeling, equipment procurement, estimating construction costs, obtaining regulatory approval, and stakeholder engagement, market soundings and preparation of bridging documents. The Pure Water Antelope Valley Program will utilize 5 million gallons per day of recycled water from the Los Angeles County Sanitation District's Palmdale Water Reclamation Plant. The recycled water will be advanced treated utilizing microfiltration, reverse osmosis, and ultraviolet advanced oxidation and injected into the groundwater basin.

## **INDUSTRIAL WATER AND WASTEWATER**

El Centro Generating Station Zero Liquid Discharge | Imperial Irrigation District | El Centro, California | USD 34M | 2022 -2025 | Project Manager

The Imperial Irrigation District (IID) retained Stantec to prepare a feasibility study to evaluate water treatment requirements to remove Thallium and selenium at their El Centro Generating Station. A water quality analysis was completed, and 8 alternatives were developed. Subsequently, IID hired Stantec to complete the construction plans, specifications and engineer's estimate of probable construction costs for the water treatment plant and brine ponds

## **WATER DAMS & RESERVOIRS**

Lindley Reservoir Replacement | City of Escondido | Escondido, California, United States | Project Manager

Scope included the design and construction of two 1.5-MG prestressed concrete reservoirs. Stantec is currently providing engineering services during construction. Tama is in charge of coordinating shop drawing review, responses to requests for clarification and information, conflict resolution, and managing project budget and schedule

Permitting, Design and Construction Services for Sediment Removal at Littlerock Dam Reservoir | Palmdale Water District | Palmdale, California | Principal-in-Charge

Tama is serving as the Principal-in-Charge for the District's Sediment Removal at Littlerock Dam Reservoir Project. This is a five-year contract to annually prepare and update plans and specifications to ultimately remove over 1.2 million cubic yards of sediment from the Littlerock Dam Reservoir. Stantec is a subconsultant for this project and responsible for completing the master plan and annually updating the sediment removal plan. Tama is responsible for resourcing staff for this project and ensuring that staff are following Stantec's comprehensive QA/QC process. The first deliverable was submitted on time.

As-Needed Technical Services Contract for Dam Projects | City of San Diego Public Utilities Department | San Diego, CA | 2021-Present | Principal in Charge

Tama serves as the Principal in Charge on the ongoing as-needed contract providing technical civil engineering services to City of San Diego owned dams. She oversees effective communication between the client and the Stantec team, verifying that individual task orders are properly resourced and are completed on time and within budget.

## FEASIBILITY STUDIES

Recycled Water Program Development Feasibility Study | City of Coachella Valley | Palm Desert, California, United States | Project Manager

Tama developed a recycled water program feasibility study for the participating agencies that included the Coachella Water Authority, Mission Springs Water District, Indio Water Authority and Valley Sanitation District. She evaluated project alternatives, comprising of identifying best use of recycled water for groundwater recharge, groundwater injection, industrial reuse and landscape irrigation. Tama also evaluated modifications to four existing wastewater treatment plants for each recycled water application. She prepared Pilot Test Protocol and conducted a bench scale pilot test utilizing an ultrafiltration membrane as a pretreatment to reverse osmosis. Objectives of the pilot study were to determine filterability of the effluent, permeability to determine fouling potential, Fluorescence Excitation Emissions Matrix (FEEMs) was measured to compare and correlate fouling propensity of the wastewater process and the effective removal of the membrane before and after filtration, temperature, pH, Conductivity, BOD, TSS, particle size, and turbidity before and after filtration were measured to verify the differences in wastewater effluents and determine filterability. Grant and loan opportunities were identified that matched project alternatives to priority projects identified in the study. An AACEI Class 4 cost estimate for each alternative was also developed.

Feasibility Study to Develop the Simi Valley Basin as a Potable Water Resource\* | City of Simi Valley | Simi Valley, CA | Project Manager

Tama evaluated utilizing groundwater from the Simi Valley Basin, which is of naturally poor quality, high in salinity, and requires treatment or blending with imported water to make it suitable for use as a potable water supply. The Study presented three alternatives to develop the Simi Valley Basin as a potable water supply. The alternatives evaluated well locations, treatment plant locations, treatment requirements, distribution system requirements, brine discharge requirements, and the capital, engineering and annual operations and maintenance (O&M) costs. Tama helped the District prepare a successful application to obtain a grant from the United States Bureau of Reclamation to cover 50% of the costs of the Study.

Surface Water Augmentation Feasibility Study | Palmdale Water District | Palmdale, California | Project Manager

Tama served as the project manager to conduct a high-level evaluation of the feasibility of using recycled water from the Palmdale Water Reclamation Plant—that is owned and operated by the County Sanitation District No. 20 of Los Angeles County (CSDLAC)—for surface water augmentation at Palmdale Lake and/or groundwater injection. The scope of work included evaluating regulatory requirements and infrastructure needs and preparation of a planning level opinion of probable construction costs. A technical memorandum was completed summarizing the alternatives, which led to the District releasing an RFP for Program Management Services for the Palmdale Regional Water Augmentation Program.

Feasibility Study to Develop the Simi Valley Basin as a Potable Water Resource\* | Simi Valley Basin | Simi Valley, California | Project Manager

Tama evaluated utilizing groundwater from the Simi Valley Basin. Groundwater across most of the Basin is of naturally poor quality and high in salinity, requiring treatment or blending with imported water to make it suitable for use as a potable water supply. The Study presented three alternatives to develop the Basin as a potable water supply. These alternatives evaluated well locations, treatment plant locations, type of treatment required, distribution system requirements, brine discharge requirements, and the capital, engineering, and annual O&M costs. Tama assisted the District with preparing and obtaining a grant from the US Bureau of Reclamation to cover 50% of the Study costs.

## **HVAC DESIGN**

HVAC Improvements at Lake Mission Viejo Advanced Water Treatment Facility\* | Santa Margarita Water District | Mission Viejo, California, United States | Project Manager

The existing ventilation system in the Support Building at the District's Facility needed to be upgraded to improve air circulation and ventilation. There was a noticeable chemical odor in the room and equipment was corroding. Tama provided engineering services to evaluate the existing heating and ventilation system (HVAC) and make recommendations for improvements. She calculated the necessary air exchange rates necessary to meet current ANSI/ASHRAE Standards to provide improved ventilation and air circulation in the Support Room, recommended locations for new vents and exhaust fans.

## **ASSESSMENTS, INSPECTIONS AND REHABILITATION**

Chloramine Booster Stations at Three Domestic Water Reservoirs\* | Irvine Ranch Water District (IRWD) | Irvine, CA

Tama assessed the condition and operation of the pumps and controls system at two domestic water reservoirs, developed a plan for removal and testing of pumps, and completed an evaluation of the existing chemical dosing system. She prepared a preliminary design report and 30 percent design plans and specifications to replace the existing chemical feed systems and install new reservoir mixers.

## **HYDRAULIC MODELING**

Hydraulic Modeling On-Call Services | Otay Water District | Spring Valley, California

Utilizing Otay Water District's (OWD) existing hydraulic model and data from OWD's GIS and SCADA systems, Tama conducted a steady state and extended period dynamic modeling analyses of the existing and future potable water and recycled water systems, performing pressure surge analyses for pressure zones or pipelines, identifying improvements and recommendations to remedy identified system deficiencies to meet future conditions and conducting fire flow analyses.

## **PIPING SYSTEMS DESIGN**

Professional Engineering Design for Five Potable Water Pipeline Replacements\* | City of Spring Valley | Spring Valley, CA | Principal-in-Charge

For Otay Water District, Tama is providing engineering services to replace five potable water pipeline segments within the District's service area. Key project issues included an accelerated design and construction schedule to beat County of San Diego repaving moratoriums. The project is currently underway.

## **CONVEYANCE - WATER STORAGE RESERVOIRS & TANKS**

Stockdale West Wellhead Equipping and Conveyance Facilities\* | Irvine Ranch Water District | Bakersfield, CA | Senior Project Engineer

Tama prepared a preliminary design report to address nitrification issues in three domestic water reservoirs. She also supplied design plans and specifications to retrofit existing reservoirs with chloramine booster stations. Additionally, engineering services during construction were provided.

High Desert Water Bank (HDWB) | Antelope Valley East Kern Water Agency | Antelope Valley, California | Quality Assurance/Quality Control

The Stantec team is providing the planning and engineering design services for the High Desert Water Bank Project. The scope of services includes hydrogeology modeling, design and construction oversight of pilot wells, design and construction oversight for monitoring wells, design of recharge basins, design of turn-in and turnout into the California aqueduct, and design of conveyance facilities and wellhead equipment. Phase 1 planning has been completed and Phase 2 is underway. Tama is providing internal financial project oversight and QA/QC review.

## **CONVEYANCE - PIPELINES & DISTRIBUTION**

Offsite Pipelines for the Irvine Lake Pipeline North Conversion Project\* | Irvine Ranch Water District | Orange, CA | Project Manager

The project entailed preparation of a preliminary design report, construction plans and specifications for the design of 5 miles of 42-inch CML&C recycled water pipelines on Santiago Canyon and Jamboree Roads for the Irvine Ranch Water District. The project required extensive coordination with the City of Orange and particular attention to traffic control due to the high volume of traffic in the project areas. Tama provided assistance during bidding and engineering services during construction.

Program Management Services for the Orange County Water District's Groundwater Replenishment System, | Orange County Water District and Orange County Sanitation District | Orange County, California | Assistant Program Manager and Senior Project Engineer

As a senior project engineer while working in the planning department at the Orange County Water District (OCWD), Tama was the assistant program manager for OCWD's 100,000 acre-foot per year groundwater replenishment system project. Tama's responsibilities included overseeing preparation of environmental documents and planning and feasibility studies being prepared by engineering consultants; developing RFPs, scopes of work, economic analyses, and budgets; participating in consultant selection; coordinating activities with health and regulatory agencies; and preparing grant applications to the State Water Resources Control Board and California Energy Commission. She was also the technical spokesperson for the public outreach program.





## Jonny Zukowski PE

Senior Civil Engineer

15 years of experience · Fallbrook, California

Specializing in water resources, Jonny's 15 years of experience cover a wide-ranging scope of water, wastewater, and civil engineering projects for private and public improvements. He has extensive experience in grading, drainage, water pipeline rehabilitation and design, ground water well design, hydraulic modeling, fire suppression system design, wastewater conveyance, construction cost estimations, technical report writing and developing construction documents. His experience involves coordination with numerous municipalities within the Counties of Santa Barbara, Ventura, and Los Angeles. Jonny is well versed with numerous types of specialized computing software including AutoCAD Civil3D®, Microsoft Office, HydroCAD, ArcGIS, WaterGEMS, SewerGEMS, InfoWater and SWMM.

### EDUCATION

BS, Civil Engineering, San Diego State University, San Diego, California, 2008

### REGISTRATIONS

Professional Engineer #83306, State of California

### PROJECT EXPERIENCE

#### WATER

United Water Conservation District 2020 Urban Water Management Plan | United Water Conservation District | Oxnard, CA, USA | USD 90.9k | 2020 | Project Engineer

Stantec prepared the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan. The 2020 UWMP made updates to the District's 2015 UWMP and added significant changes including: drought risk assessment and the five consecutive dry-year water reliability assessment, seismic risk analysis, energy use information, water loss reporting for five years, water shortage contingency plan, consistency with groundwater sustainability plans, lay description, and water use efficiency and conservation. Jonny was directly responsible for the supply analysis, seismic risk analysis, and water shortage contingency plan sections of the 2020 UWMP.

County of Ventura 2020 UMWP and Water System Master Plan | Ventura County Waterworks District No. 1 | Moorpark, CA, USA | USD 262.7k | 2020 | Project Engineer

Stantec prepared the 2020 Urban Water Management Plan (UWMP) and the 2020 Domestic Water System Master Plan for the Ventura County Waterworks District No. 1. The 2020 UWMP made updates to the District's 2015 UWMP and added significant changes including: drought risk assessment and the five consecutive dry-year water reliability assessment, seismic risk analysis, energy use information, water loss reporting for five years, water shortage contingency plan, consistency with groundwater sustainability plans, lay description, and water use efficiency and conservation. Jonny was directly responsible for the supply analysis, seismic risk assessment, and the water shortage contingency plan of the 2020 UWMP. Jonny was also the author of the Domestic Water System Master plan and developed a new hydraulic model using Innovyze InfoWater Pro for VCWWD No. 1 to aid the purposes and objectives of the Domestic Water System Master Plan. The DWSMP was a central comprehensive planning document to guide improvements to the district's water infrastructure.

Las Virgenes Municipal Water District 2020 Urban Water Management Plan | Las Virgenes Municipal Water District | Calabasas, CA, USA | 2020 | Project Engineer

Stantec prepared the 2020 Urban Water Management Plan (UWMP) and Water Shortage Contingency Plan. The 2020 UWMP made updates to the District's 2015 UWMP and added significant changes including: drought risk assessment and the five consecutive dry-year water reliability assessment, seismic risk analysis, energy use information, water loss reporting for five years, water shortage contingency plan, consistency with groundwater sustainability plans, lay description, and water use efficiency and conservation. Jonny was directly responsible for the supply analysis, seismic risk assessment, and water shortage contingency plan sections of the 2020 UWMP.

Alisal Ranch Irrigation Line from Alisal River Course to Alisal Bridge | Alisal Guest Ranch & Resort | Solvang, Santa Barbara County, California | 2015 | Design Engineer

Jonny was the design engineer for an irrigation supply line that ran from the Alisal River Golf Course to the Alisal Bridge. He performed base mapping, the initial routing options, selection of best alignment, bridge connection selection, waterline design, and construction plan production.

**Paradiso Del Mar - McCaw Property | Santa Barbara, California | Design Engineer**

Jonny provided waterline design and drafting services for the construction of 0.9 miles of water, recycled water and dry utility lines comprising of multiply direction changes and two bridge crossings.

**High School Well Project | Santa Barbara, California | Design Engineer**

Jonny was the design engineer for equipping an existing groundwater well. Scope of work included hydraulic calculations and recommendations for equipping the well, construction documents for well head site and piping design, electrical and controls, and Aquifer Storage Recovery (ASR) design.

**Elings Park Recycled Water Booster Pump Station | Santa Barbara, California | Design Engineer**

Jonny designed a booster pump station for the City of Santa Barbara's recycled water system. The scope of work includes hydraulic calculations, electrical design, preparation of construction documents including plans, specifications, and estimates, bid support, and construction support.

**CI 4030 and CI 5041 Waterline Replacement, Protection and Looping Project | City of Thousand Oaks | Thousand Oaks, Ventura County, California | 2014 | Design Engineer**

Jonny provided waterline alignment, grading and drainage design, and cost and quantity estimation, as well as construction plan production. The project upgraded multiple waterlines throughout the City of Thousand Oaks.

**Phase III Recycled Water Distribution Transmission | Santa Maria Energy, LLC | Orcutt, Santa Barbara County, California | 2014 | Engineering Technician**

Jonny provided drafting services and site investigation for the construction of 11 miles of 16-inch recycled water transmission main, two new booster pump stations, and a future storage tank site.

**Rosario Park Water Systems Upgrade | Rosario Park Mutual Water Company | Santa Barbara, Santa Barbara County, California | 2014 | Design Engineer**

Jonny designed and oversaw construction for a new water supply well, supply pipeline, and increased storage capacity on a small community water system. He performed grading design on well site areas and water line profiling, as well as prepared construction plans.

**Valle Verde Well Project | City of Santa Barbara | Santa Barbara, Santa Barbara County, California | 2014 | Engineering Technician**

Jonny prepared construction documents for the piping upgrades to the treatment building and distribution system, as well as the quantity and cost estimation. This project upgraded the existing system so it could connect to the recycled water system.

**North Base 2-Mile Waterline Replacement Phase II - Final Engineering | Vandenberg AFB, Santa Barbara County, California | 2013 | Design Engineer**

Jonny designed the construction documents for the replacement of 2 miles of 12-inch HDPE waterline. He provided water line alignment and design, base mapping, and prepared plans, specifications, and cost estimates.

**Waller Park Recycled Water Supply Study | Laguna County Sanitation District | Santa Maria, Santa Barbara County, California | 2013 | Engineering Technician**

Jonny provided the preliminary design, analysis, and drafting services determining the feasibility of providing a recycled water supply to a nearby county park—Waller Park. The analysis included alignment alternatives, irrigation demand, storage capacity, existing utility and easement research, coordination with the Santa Maria Airport and FAA for a possible directional drill under an existing taxiway, hydraulic calculations, and cost estimates.

**Sycamore Vista Water Main Replacement | City of Santa Barbara | Santa Barbara, Santa Barbara County, California | 2012 | Engineering Technician**

Jonny provided drafting services and performed quantity and cost estimation for the design of a 6-inch HDPE waterline. The project was constructed in a highly active landslide and fire hazard area.

**North Valley Regional Water Infrastructure | Los Angeles County, California | 2011 | Engineering Technician**

Jonny prepared traffic control plans to support the construction of 4.75 miles of 24-inch steel and 0.75 miles of 12-inch pvc recycled water pipelines. The project was managed by the Army Corps of Engineers for the City of Lancaster's benefit.

**Cabrillo and APS Water Line Replacement Project | Santa Barbara, California | Design Engineer**

Jonny provided utility investigation and basemapping along with waterline design and drafting services for replacing the existing water lines in various locations within the City of Santa Barbara.

**City of Santa Barbara Water Main Replacement Projects | City of Santa Barbara | Santa Barbara, CA, USA | USD 73M | 2020 | Project Technical Lead**

Jonny is a design engineer and the technical lead for the City's annual water replacement projects. The scope of work includes survey and preparation of construction design documents for each fiscal year for the replacement of three to six miles of water main. Since 2016 Jonny's team has prepared construction documents for the replacement of over 25 miles of water main including the design of a raw water transmission main via horizontal directional drill method within the City of Santa Barbara inclusive of 10 separate projects and counting.

**State Water Project Interconnection and Pipeline Blending Station | City of Ventura | Ventura, CA | Civil Engineer**

Jonny is a project engineer on a design team for this ongoing project and was responsible for the design of 3.5 miles of 36-inch diameter conveyance pipeline, including a flow control station and connection to a chemical blending station at the City's Saticoy Conditioning Facility. This pipeline encompasses coordination with multiple agencies and provides a State Water connection to Metropolitan Water District through Casitas Municipal Water District and also provides a future turnout for United Water Conservation District. The blending station will combine groundwater from the Saticoy Water Conditioning Facility and State Water from treated the Metropolitan Water District's Jensen Water Filtration Plant.

**Elings Park Recycled Water Booster Pump Station | City of Santa Barbara | Santa Barbara, CA, USA | 2015 | Project Engineer**

Jonny designed a booster pump station for the City of Santa Barbara's recycled water system. The scope of work includes hydraulic calculations, pump station design, grading and civil site work, pavement design, retaining wall design, and preparation of construction documents including plans, specifications, and estimates, bid support, and construction support.

**Phase IV Recycled Water to Waller Park | Santa Maria, California, United States**

Jonny was a design engineer for the design of a recycled water main to supply Waller Park, a nearby County Park facility. The project includes design and developing construction documents for 3.5 miles of 12-inch recycled water main, a 1.0 MG storage tank, and a booster pump station for park irrigation. The project involved alignment analysis, hydraulic calculations, bore and jack design. The one-million-gallon storage tank will be utilized to store recycled water on demand for irrigation at Waller Park. An existing well will be retrofitted to be a backup supply if the recycled water is unavailable.

**Rancho San Carlos Water System Project | Rancho San Carlos LLC | Montecito, California, United States | 2021 | Project Engineer**

Jonny was responsible for the design, construction documents, and engineering services during construction for the water system serving Rancho San Carlos. The project involved multiple connections to Montecito Water District, domestic water distribution piping, connections to three existing irrigation reservoirs and irrigation distribution mains, and various firewater systems to serve the Multiple structures on site.

## **WASTEWATER**

**Ojai Valley Sewer District Sewer Model Upgrade | Ojai Valley Sanitary District | Ojai, Ventura County, California | 2015 | Engineering Technician**

Jonny provided atlas mapping, sewer system investigation, and preliminary sewer modeling services for the upgrade of an existing steady state sewer model in an outdated program to an extended period simulation in Bentley Sewer Gems.

**Mission Hills CSD Sewer Replacement Project | Santa Barbara, California | Design Engineer**

Jonny was the design engineer for designing a proposed horizontally directional drilled 15 inch sewer main to replace a critical sewer transmission sewer main connecting into the districts headworks. Jonny provided sewer alignment design, drafting services, and worked closely with the project team providing an analysis of the available options for replacement due to the project site constraints and depth of the existing system.

**El Estero Wastewater Treatment Plant Secondary Treatment Project | Santa Barbara, California | Design Engineer**

Jonny provided design and construction documents for the replacement design of the waste activated sludge and the combined secondary scum and waste mixed liquor distribution pipelines through the existing wastewater treatment plant.

**OVSD WWTP Filter Upgrade and Nitrate Reduction Project | Ojai Valley Sanitation District | Ojai, California, United States | 2021 | Project Engineer**

Jonny was the Civil lead for wastewater treatment plant upgrades that included new denitrification filters, new micro-c storage, and secondary effluent and finished effluent conveyance piping. Jonny was directly responsible for the construction documents for all site civil grading, drainage, and buried pipeline design from the existing filter building to the new micro-c and denitrification filter structures.

**City of Santa Barbara Hitchcock Way Sewer Replacement Project | City of Santa Barbara | Santa Barbara, California, United States | 2017 | Project Engineer**

Originally the State Street Sewer Project, Jonny was the project engineer for multiple sewer force mains and sewer rerouting alignments. Eventually the project was narrowed down to involve construction documents for the design for the rerouting of the State Street sewer down Hitchcock way. Jonny provided design and construction documents for a sewer trunk replacement and new polymer concrete manhole to replace an existing siphon below Mission Creek within Hitchcock Way.

Rancho San Carlos Septic to Sewer Project | Rancho San Carlos, LLC. | Montecito, California, United States | Project Engineer

Jonny was responsible for the design, construction documents, and engineering services during construction for the wastewater system serving Rancho San Carlos. The project involved a connection to Montecito Water District within Caltrans ROW, abandoning existing onsite septic systems, designing sewer mains, laterals, and manholes to serve multiple structures on site and crossing an existing historical bridge.

## **DRAINAGE AND STORMWATER PLANNING & DESIGN**

West Green Canyon - Unit II Channel and Storm Drain Design | County of Santa Barbara | Santa Maria, Santa Barbara County, California | 2016 | Engineering Technician

For this evolving project design, Jonny completed the construction plans and cost and quantity estimates. Originally proposed by the County as a parallel system consisting of an open channel and stormwater pipeline, evaluation revealed that construction expenses could be reduced significantly. The final design includes 2 miles of upgraded unlined channel and two additional 72-inch-diameter culverts penetrating the U.S. Army Corps of Engineers levee.

Storm Drain Improvements at Various Locations | City of San Luis Obispo | San Luis Obispo, San Luis Obispo County, California | 2013 | Engineering Technician

Jonny assisted with design documents for the repair and replacement of storm drains at sixteen locations. These designs included plan and profiles, new catch basins, cross gutters, curb ramps, and special details.

Skyway Center Project | Santa Maria, California | Design Engineer

Jonny was the design engineer for the proposed redevelopment of Skyway business center. Jonny assisted with all civil support for the preliminary and construction plans. The work included grading and drainage, ADA compliance, stormwater quality requirements, utilities, erosion control, and off-site improvements, including sewer and water.

Chevron San Diego | Chevron | San Diego, California | Design Engineer

Jonny designed and developed grading, drainage, pavement, and utility improvements along with construction documents and complied stormwater quality requirements for the construction of a new retail building and gasoline pump station. The project also included coordinating with multiple disciplines, approval from Caltrans for design work within their ROW, and approvals through the City of San Diego.

Pacific Palisades Village - Intersection of Swathmore Street and Sunset Boulevard | Pacific Palisades, California | Design Engineer

Jonny provided Storm Drain Design, utility investigation, and construction cost estimation for a Village of Pacific Palisades development following applicable County and City of Los Angeles codes and standards.

## **JUSTICE**

Santa Barbara County Northern Branch Jail | Santa Maria, Santa Barbara County, California | 2018 | Design Engineer

Jonny's responsibilities included the drafting for the water, recycled water, and sewer systems. He designed and created construction documents for the recycled water reservoir and pump station, fire water, sewer lift station with rake bar screen, onsite wet utilities and the two mile long offsite wet utilities. The facility is designed to have utility services, onsite drainage, grading, security and access, and frontage improvements within the public right of way. The first phase of the project will provide for a 376-bed facility while the finished facility will provide 1520 beds. The project is funded through AB900, requiring specific submittal procedures and review processes. Extensive coordination is required with the multiple permitting agencies.

## **K-12**

Dunn School Student Leadership Center | Dunn School | Los Olivos, Santa Barbara County, California | Ongoing | Design Engineer

Jonny assisted in the preliminary quantity estimation, grading design, and parking lot layout for a private elementary school.

Dunn School/Onsite Wastewater Treatment System Engineering | Dunn School | Los Olivos, Santa Barbara County, California | 2014 | Design Engineer

Jonny provided base mapping, sewer alignment and system design, site investigation, quantity and cost estimation and construction plan production for a private elementary school.

Pioneer Valley High School Concrete Repairs | Santa Maria, Santa Barbara County, California | 2013 | Design Engineer

Jonny provided site investigation, survey assistance, grading and drainage design, and cost and quantity estimation, as well as construction plan production for an existing storm drain outlet and access road at a public high school.

Orcutt Union School District ADA Improvements | Orcutt, Santa Barbara County, California | 2012 | Engineering Technician

Jonny provided grading and drainage design and drafting services for Accessibility Upgrades at five elementary schools.



## **MILITARY INFRASTRUCTURE**

VAFB San Antonio Plant Well & Pump Station Replacement | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2014 | Engineering Technician

Jonny performed drafting services, site development, grading and drainage design, and field investigation. This replacement booster pump station capable of supplying 3,200 gpm, included the installation of 4 VFD pumps. This station is critical for missions and feeds the main water reservoirs for the entire base. It is the only source of water supply during maintenance periods on the State Water system.

VAFB Repair Arguello Waterline B Tank to C Tank | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2013 | Engineering Technician

Jonny helped replace 2 miles of a 12-inch waterline, the rehabilitate an existing 750,000-gallon reservoir, and a perform full design analysis of the water system that provides long-term recommendations to the base. His tasks included waterline design, quantity and cost estimation, field investigation, and drafting services.

VAFB Water Model Upgrade | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2013 | Engineering Technician

Jonny provided irrigation area calculations and drafting services for the upgrade of an existing steady state water model to an extended period simulation.

VAFB Replace Sewer Main Laterals & Manholes - Phase II | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2012 | Engineering Technician

Jonny's tasks included field investigation, sewer system design, quantity and cost estimation, report writing and drafting services. This project replaced sewer mains, laterals and manholes at VAFB.

VAFB Replace/Install 3-Phase Voltage Line Regulators at Corral Road Switchyard | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2012 | Engineering Technician

Jonny provided grading and drainage design, erosion control, and drafting services for this replacement project. The project installed two 3-Phase 70 kV voltage regulators at the Corral Road Switchyard, which is point where VAFB receives its power from Pacific Gas & Electric. Prior to replacement, this location required excessive use of the Load Tap Changers at all of the downstream substations because of the variability of the incoming electrical feed.

VAFB Replace/Install 3-Phase Voltage Line Regulators at Substations A, B, C, D, E and the Corral Road Switchyard | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2012 | Engineering Technician

Jonny was the design engineer for the replacement design of all 70 kV switches at Substations A, B, C, D, E, and the Corral Road Switchyard. He performed base mapping, grading, drainage design, quantity and cost estimation, and construction plan production. The project enhanced reliability by providing corrosion-resistant switches.

VAFB San Antonio Water Wellfield Study | Vandenberg Air Force Base (VAFB) | Vandenberg AFB, Santa Barbara County, California | 2011 | Engineering Technician

While the VAFB conducted an analysis and planning study on the base's existing well and water supply, Jonny performed related drafting and field investigation services.

## **POST-SECONDARY EDUCATION**

UCSB San Joaquin Apartments and Precinct Improvements #986470 | University of California, Santa Barbara | Goleta, Santa Barbara County, California | 2015 | Design Engineer

For this multi-use building complex, Jonny researched existing utilities, and produced construction plans. He designed water and sewer alignments as well as profiles to coordinate with existing utilities and proposed dry utilities. The project required extensive coordination with four different architects, consultants, the Goleta Water District and the Goleta West Sanitary District for their separate approvals.

UCSB Sierra Madre Student Housing | University of California, Santa Barbara | Santa Barbara, Santa Barbara County, California | 2015 | Engineering Technician

Jonny designed the water and sewer piping alignments and prepared the construction documents for this multi-building project. The water and sewer system was designed to serve the UCSB housing development.

USCB Portola Dining Commons Grease Interceptor Project | University of California Santa Barbara | Goleta, California, United States | 2024 | Project Engineer

Jonny provided a detailed analysis and technical memorandum for the replacement of the existing grease interceptor and the Portola Dining Commons including various options for intercepting fats, oils, and grease from the grease waste system and conceptual construction costs for each option.

# Gabrielle Kasman E.I.T

Environmental Engineer, E.I.T

5 years of experience · Santa Barbara, California

Gabrielle has more than 5 years of experience working for Stantec in the environmental engineering and water resources fields. As an Environmental Engineer-in-Training, Gabrielle works with a Water Resource team to prepare final design plans and specifications for water and wastewater treatment plants, collections system, and water distribution systems. Previously, Gabrielle worked as intern with Stantec on an Environmental Services team where she gained experience with spill prevention control, soil vapor extraction systems, soil and groundwater sampling, and environmental services report writing and data management.

Gabrielle has completed her M.S. in Civil and Environmental Engineering with a specialization in Water Resources at California Polytechnic State University and is proficient in a variety of specialized computer applications including AutoCAD Civil 3D, ArcGIS, HEC-RAS, HEC-HMS, and SWMM.

## EDUCATION

Master of Science, Civil & Environmental Engineering | Water Resources, California Polytechnic State University, San Luis Obispo, CA, United States, 2022

Bachelor of Science, Environmental Engineering, California Polytechnic State University, San Luis Obispo, CA, United States, 2021

## PROJECT EXPERIENCE

### WATER PIPELINES & DISTRIBUTION

Santa Barbara Annual Water Main Replacement Project | City of Santa Barbara | Santa Barbara, California, United States | 2022-Present | Design Engineer, E.I.T

Gabrielle is a design engineer for the City of Santa Barbara's annual water replacement projects. The scope of work includes survey and preparation of construction design documents for replacing three to six miles of the water distribution system each fiscal year. Gabrielle provides existing utility investigation, drafting services, alignment design, and cost estimation for replacing the existing water mains in various locations within the City.

Sea Meadow - Water Design Services | Sea Meadow Home Owners Association | Montecito, California, United States | 2023-2024 | Engineer, E.I.T

Gabrielle prepared site layout plans of Stantec's proposed upgrades to the Sea Meadow community's private well water system, specifically the 3-inch water meter, backflow device, and connection to the Montecito Water District system for backup water supply. Additionally, she collaborated with a design team to develop specification notes and an installation detail for the backflow device.

Rancho San Carlos | Montecito, California, United States | 2022-2023 | Design Engineer, E.I.T

Gabrielle contributed to the design and creation of construction documents for the fire water system per Montecito Fire Protect District standards. Gabrielle also created an exhibit of the fire water alignment within the Caltrans R.O.W to facilitate the application for an encroachment permit.

State Water Project Interconnection and Pipeline Blending Station | City of Ventura | Ventura, California, United States | 2022-2023 | Engineer, E.I.T

Gabrielle assisted in drafting the final design plans for approximately seven miles of a 36-inch diameter conveyance pipeline, intended to provide a connection from Casitas Municipal Water District to Ventura. She also contributed to creating the construction documents for a blending station aimed at combining water from the Saticoy Water Conditioning Facility and State Water Project treated water at the Metropolitan Water District's Jensen Water Filtration Plant.

### WATER STORAGE RESERVOIRS & TANKS

Mission Hills Raw Water Tank and Well Building Design | Mission Hills Community Services District | Lompoc, California, United States | 2023-2024 | Design Engineer, E.I.T

Gabrielle provided drafting services and grading designs for the proposed site plans of a raw water tank, a booster pump station, a well building, and associated piping. The raw water storage tank was designed to stabilize the flow through the water treatment plant and add storage for times the well may be out of service, while a new potable water well was needed to serve the proposed Burton Ranch Development.

1200 Hot Springs Lane Water System | Montecito, CA | 2022-2023 | Engineer, E.I.T

Gabrielle prepared a technical memo and water system design plans for modifications to the existing water system, including an additional water storage tank with tank foundation and connection piping, for the proposed redevelopment of the property. Gabrielle also assisted in calculating the proposed domestic water and fire water storage demand to determine water storage requirements.

Alisal Guest Ranch - Water Demands TM and Project Support | Alisal Guest Ranch and Resort | Solvang, California, United States | 2022-2023 | Engineer, E.I.T

Gabrielle created a technical memo presenting the estimated water use and sewer generation for both the existing Ranch and the proposed accommodations (approximately forty new guest units and additional amenities, including reception, dining facility, saloon, event barn and a pool spa). These estimates were used to anticipate water and sewer costs and identify infrastructure improvements per City recommendations.

## **SANITARY SEWERS AND FORCEMAINS**

UCSB Portola Dining Commons - Grease Interceptor Alternatives | University of California, Santa Barbara | Santa Barbara, California, United States | 2024 | Engineer, EIT

Gabrielle developed a detailed project report for UCSB's Portola Dining Commons to address persistent grease interceptor and sewer lift station maintenance issues. She researched best management practices, calculated optimal grease interceptor sizing, and conducted an alternatives analysis to recommend long-term solutions for preventing blockages, minimizing manual operations, and reducing maintenance frequency. She also delivered AutoCAD design drawings to present alternatives and final recommendations.

MSD Channel Drive FM Improvements | Montecito Sanitary District | Montecito, California, United States | 2024-Present | Engineer, EIT

Gabrielle is assisting in the redesign of a force main system for the Channel Drive Lift Station after a pipe break on the 6-inch diameter CIP force main. The new design will have two new 6-inch diameter force mains, along with a manifold and valving to optimize flow switching and maintenance access.

Camp Hess Kramer | Wilshire Boulevard Temple | Malibu, Ventura County, California | 2022-Present | Engineer, E.I.T

Gabrielle collaborated closely with the lead design engineer of the wet utility improvements for the Camp Hess Kramer/Gindling Hilltop Camp, which was largely destroyed by the Woolsey Fire and subsequent heavy rains between December 2018 and March 2019. Gabrielle's responsibilities included drafting the proposed wastewater system and water system (for domestic use, irrigation, and fire storage) throughout portions of the approximately 187-acre site.

3-62: Westminster Boulevard Force Main Replacement Design | Orange County Sanitation District | Orange County, California, United States | USD 27M | 2023 | Engineer, E.I.T

Stantec was hired by the Orange County Sanitation District (OC San) to complete the preliminary and final design to replace approximately 2.8 miles of two aging sewer force mains. These mains extended from the Seal Beach Pump Station in the City of Seal Beach to a siphon discharge structure in the City of Westminster. Gabrielle was tasked with helping finalize the OC San 3-62 record drawings by addressing redlines from the contractor's as-builts.

El Capitan Ranch | El Capitan Ranch | Goleta, California, United States | 2023-Present | Engineer, E.I.T

Gabrielle prepared technical memos detailing the estimated wastewater influent loading, water use (domestic and irrigation), and fire water demand. These estimates were used to work with a packaged treatment plant manufacturer to provide options for onsite wastewater treatment based on desired wastewater effluent and recycled water quality level and evaluate if additional onsite storage is required.

Montecito Sanitary District Protective Measures of District Facilities | Montecito Sanitary District | Montecito, California, United States | 2023-Present | Engineer, E.I.T

Gabrielle worked with a design team to produce technical memos and construction documents outlining proposed protective measures for vulnerable locations within the Montecito Sanitary District sewer collection system, which were at risk of damage or failure following the January 2023 storm event. Gabrielle created design plans of the grading extents and installation recommendations for each of the four project locations (two sewer lines and two sewer manholes).

## **WATER RESOURCE ANALYSIS AND PLANNING**

Stonewater Solar Power and Battery Energy Storage System Project Water Supply Assessment | Riverside County Planning Department | Riverside, California, United States | 2024

Gabrielle authored a comprehensive Water Supply Assessment for the Stonewater Solar Power and Battery Energy Storage System Project, ensuring that Indio Water Authority's (IWA's) resources could meet projected demand increases and city-wide needs through 2045. Gabrielle conducted a detailed analysis of supply adequacy from the Indio Subbasin under normal and extended dry conditions and provided recommendations based on the IWA's groundwater pumping capacity to support reliable, long-term water planning.

City of Fountain Valley Water Supply Assessment |  
City of Fountain Valley | Fountain Valley, California,  
United States | 2024 | Engineer, EIT

Gabrielle conducted a Water Supply Assessment for the 1680 Magnolia Housing Project in Fountain Valley, CA, to evaluate if the City's potable water supplies would meet projected demand, including additional needs from the project, through 2045. She calculated the Project's additional water demand and analyzed supply adequacy for normal and dry year conditions based on the City's water supply resources and projected potential shortfalls for extended dry periods, recommending additional water sourcing to ensure reliable future supply.

City of Seal Beach Water Supply Assessment | City  
of Seal Beach | Seal Beach, California, United  
States | 2024 | Engineer, EIT

Gabrielle played a key role in preparing a Water Supply Assessment report for the City of Seal Beach's Housing Element Updates Project. Gabrielle conducted calculations for current and projected water demand, assessed drought resiliency strategies, and evaluated future water supply reliability. She also drafted a comprehensive report detailing technical findings and recommendations for sustainable water management.

## **BANK STABILIZATION AND EROSION CONTROL**

Montecito Sanitary District Protective Measures of  
District Facilities Project | Montecito Sanitary District  
| Montecito, California, United States | 2024

Gabrielle supported the preparation of a comprehensive project report for the Montecito Sanitary District to safeguard four critical sewer infrastructure sites affected by recent storm damage. She assisted in site-specific hydraulic analyses, evaluated protective alternatives, and developed design recommendations to mitigate erosion risks and secure vulnerable manholes and pipelines. She also played a key role in the delivery of a phased design package, including technical memoranda and AutoCAD design documents, to ensure the district's infrastructure resilience against future storm events.

City of Santa Barbara 30-Year Waterfront Adaptation  
Plan | City of Santa Barbara | Santa Barbara,  
California, United States | 2024-Present | Engineer,  
EIT

Gabrielle is assisting in a 30-year climate adaptation project for Santa Barbara's coastline, focusing on resilience measures for sea level rise, coastal erosion, and storm flooding impacts. She is supporting in hazard definition, exposure analysis, and development of adaptation strategies to address Santa Barbara's unique waterfront needs, balancing regulatory and community priorities.

Cathedral Oaks Crib Wall Emergency Repair Project  
| City of Goleta | Goleta, California, United States |  
2024-Present | Engineer, EIT

Gabrielle is contributing to the design and analysis for the structural repair of crib walls along Cathedral Oaks Road, assessing erosion, subsidence, and soil stability issues that compromised roadway safety. She is collaborating with geotechnical engineers to interpret site testing results and assisting in alternatives analysis for wall systems, evaluating feasibility of secant pile, soldier pile, and soil nail walls, considering cost, schedule, and site constraints to recommend a durable, long-term solution.

## **WASTEWATER TREATMENT**

El Estero Water Resource Center Chlorine Contact  
Chamber Improvements Project | City of Santa  
Barbara | Santa Barbara, California, United States |  
2024 | Engineer, E.I.T

Gabrielle provided drafting services for final design documents of improvements to the existing Chlorine Contact Chamber at the El Estero Water Resources Center, including providing for redundancy and increasing performance of the disinfection process.

## **GROUNDWATER MONITORING AND REPORTING**

Quarterly Monitoring and Sampling Reporting |  
Various Industrial Companies | San Luis Obispo,  
California, United States | 2019-2022 |  
Environmental Engineering Intern

Gabrielle assisted in environmental compliance, management, and remediation services for major oil and gas clients, refineries, private developers, and cities through managing lab and field data for air, soil, groundwater, and surface water medias and collaborating with scientists, geologists, and project specialists on deliverables— including design reports, health and safety plans, and permit applications.



# Robert Hunter

GIS Analyst

3 years of experience · Walnut Creek, California

Robert specializes in the use of GIS technologies to provide solutions to geospatial challenges, using the latest GIS technologies to provide cartographic support, asset management database administration, field data collection and web-based map or dashboard design. With a background in asset management and map production, Robert focuses on bringing the best GIS techniques to client challenges and prides himself on ensuring challenges are resolved in a timely, effective and professional manner, and uses the power of GIS to make data management, visualization and communication available to individuals at all levels of expertise.

California High Speed Rail Construction Package 4 | Central Valley, CA | 2024-2025 | GIS Analyst2024

- Generate figures to be used in project reports and presentations to client
- Manage geodatabase containing project data; ensure data used for figures and analysis is current and authoritative from verifiable sources and metadata is updated
- Migrate modeling products into GIS environment to be maintained and presented in figures

## EMPLOYMENT HISTORY

### Central Contra Costa Sanitary District

GIS Technician

2023 - 2024 · 1 year

Asset management, map production, web GIS administration, field data collection

## EDUCATION

B.A. Psychology - Behavioral Analysis, University of Nevada, Reno, Reno, Nevada, USA, 2017

A.S. Geographic Information Systmes/Global Positioning Systems, Diablo Valley College, Pleasant Hill, California, USA, 2023

## PROJECT EXPERIENCE

### GEOGRAPHIC INFORMATION SYSTEMS (GIS)

San Joaquin River Restoration Program Landowner Outreach and Support | California, United States | 2024-2025 | GIS Support

- Created geodatabase and Field Map application to support a field inspection project
- Created ArcGIS Online application to monitor and review collected field data
- Generated figures used to communicate work order instructions to subcontractor

Los Banos Wastewater Treatment Plant Inspection | City of Los Banos | Los Banos, California, United States | 2024 | GIS Analyst

- Create geodatabase to facilitate erosion inspection located on site of the Los Banos Wastewater Treatment Plant
- Create web application to display inspection progress
- Create figures to show client inspection results included
- Packaged and delivered geodatabase to client

Toho GIS Infrastructure Support | Toho Water Authority | St. Cloud, Florida, United States | 2024-2025 | GIS Analyst

- Review historical engineering design/as-built documents to extract built utility information
- Geolocated construction project extent areas, determined type of constructed utility and detailed pertinent asset as-built information
- Created GIS layer index of relevant engineering documents to facilitate utility digitizing efforts in GIS environment





## Craig J Wilcox PE, SE, LEED AP BD+C

Structural Engineer

43 years of experience · Walnut Creek, California

Craig has 43 years of experience in structural engineering and design, including the design of reservoirs, water treatment plants, pump stations, water and sewer pipelines, and industrial and commercial facilities—including more than 100 major structures in California. He regularly serves as the expert structural engineer for underground and above ground water containing structures and facilities and has performed seismic evaluation studies, developed design criteria, structurally designed, technically peer reviewed, forensic researched, value engineered and performed structural field observations of many new and existing major structures. In addition to being a licensed structural and civil engineer, Craig is past chairman of the American Society of Civil Engineers (ASCE) Design Practice Committee, and twice past chairman of SEAONC Construction Quality Assurance Committee. He practices from the intersection of seismic engineering, advanced analysis, and design technology, to deliver cost-efficient, high-performance projects/programs. Craig has led and managed many of Stantec's ambitious projects, garnering regional and national recognition for innovation and engineering excellence in seismic design.

Craig's experience includes QA/QC on more than 20 projects. He has designed/reviewed 100+ major, seismically resilient structures. He has provided change management on 10 large (\$50+ million) projects and worked on 10 alternative delivery projects valued at over \$100M. He has designed 16 conventional water treatment plants, including 14 plant rebuilds. He has saved clients more than \$1B through value engineering.

### EDUCATION

BS/BSc, Architectural Engineering, California Polytechnic State University San Luis Obispo, San Luis Obispo, California, USA, 1982

### REGISTRATIONS

Registered Civil Engineer #40005, State of California, Issued 8/23/1995; Expires 12/31/2025

Professional Structural Engineer #3195, State of California, Issued 11/18/1988, Expires 12/31/2025

### PROJECT EXPERIENCE

#### WATER TREATMENT

Lancaster Water Treatment Plant | Sanitation Districts of Los Angeles County | Lancaster, California | Structural Engineer

Craig served as Structural Group Leader and Engineer for the Antelope Valley California 4 Water Treatment Plants Expansion Project. The project involves the addition of ozonation, flocculation/sedimentation basins, and chemical facilities of reinforced concrete and concrete block structures supported on cast in drilled hole piers.

Pure Water San Diego Program | City of San Diego Public Utilities Department | San Diego, California, United States | 2015-Present | Structural Engineer

Craig served as a structural quality control engineer for a \$3B phased, multi-year program that uses proven technology to produce a safe, reliable, and cost-effective water supply for the City of San Diego. The program encompasses numerous treatment plant, pump station, and pipeline projects. Craig provided structural engineering guidance and quality control for design improvements to a building, equipment foundations, equipment and tank anchorage, pipe racks, and all associated structural elements. Each of these improvements included alternatives analysis, value engineering, plan development, and quality reviews of plans and specifications to meet standards.

Treatment Plant Expansion and Treated Water Reservoir | San Francisco Public Utilities Commission (SFPUC) | San Francisco, California | Principal Structural Engineer

Craig was responsible for the structural design of the reinforced concrete deep excavated, multiple chambered 3-MG cast-in-place reinforced concrete chlorine contactor, 18.7-MG concrete treated water reservoir, flocculation sedimentation basins, filter basins, pump station, canopy structures, miscellaneous plant tie-ins, and minor structures. Structural design incorporates site-specific seismic ground motions for 1.5 times gravity horizontal accelerations from the adjacent Calaveras fault and an importance factor of  $I = 1.5$ . The project was awarded the 2014 National APWA Project of the year for projects over \$75 million.

Groundwater Replenishment Systems Advanced Water Treatment Facility | Orange County Water and Sanitation Districts | Orange County, California | Principal Structural Engineer

Craig was accountable for structural design in conformance with site-specific seismic criteria per the 2000 IBC. Adjacent to the Santa Ana River, the site is underlain by liquefiable sands requiring over

5,000 piles to be driven to dense sands below. The multi-story buildings house microfiltration, reverse osmosis, clear wells, and chemical facilities. The buildings have post-Northridge earthquake new steel moment resisting frames per FEMA 350, braced frames, and reinforced concrete shear wall lateral systems.

**Vineyard Water Treatment Plant | Sacramento County Water Authority | Sacramento, California | Structural Engineer**

Serving as structural engineer, Mr. Wilcox performed structural and seismic engineering analysis, design, and consultation during the design of this new 100-mgd treatment plant. The new water treatment plant included the design and construction of three separate 2-story steel special concentric braced frame administration buildings, large concrete masonry, and steel-framed roof warehouses, along with maintenance facilities for trucks and equipment. The construction included chemical storage and injection facilities, a 20MG rectangular reinforced concrete clearwell, pump station, filters, flocculation and sedimentation basins, and wash water facilities.

**CS-879 Sunol Valley Water Treatment Plant (WTP) Expansion and Treated Water Reservoir (TWR) | San Francisco Public Utilities Commission | San Francisco, California, United States | USD 103M | Lead Structural Engineer**

As part of a project to increase the capacity of the Sunol Valley Water Treatment Plant from 120 to 160 MGD, Craig served as Structural Engineer for a new 18.7-MG treated water reservoir and a 5 MG-rectangular concrete reservoir. The treated water reservoir is a pre-stressed circular concrete tank measuring 340 feet in diameter. This design provides excellent seismic strength (a major fault that could generate a magnitude 7.2 earthquake is less than 1,000 feet from the reservoir) with a minimum amount of concrete. The perimeter walls are only 14 inches thick. CFD modeling was used to evaluate alternative inlet/outlet configurations, resulting in design optimizations that saved more than \$0.5 million. Structural modeling included three-foot-diameter cast-in-place drilled hole piles to bedrock, while seismic retrofits included reinforced shotcrete wall strengthening, fiberglass wall strengthening, and pipe gallery process pipe diagonal bracing.

**Groundwater Replenishment Systems Advanced Water Treatment Facility | Orange County Water and Sanitation District (OCWSD) | Orange County, California | USD 80M | Principal Structural Engineer**

This innovative large scale water reuse project was designed in conformance with site-specific seismic criteria per the 2000 IBC. Adjacent to the Santa Ana River, the site is underlain by liquefiable sands requiring over 5,000 piles to be placed into dense sands below. The multiple story buildings house microfiltration, reverse osmosis, clearwells, pump stations and chemical facilities. The buildings have post-Northridge earthquake new steel moment resisting frames per FEMA 350, braced frames, and reinforced concrete shear wall lateral systems. (Staff Time 2002-2006),

**Lake Oswego-Tigard Water Treatment Plant (LO-T WTP) Expansion | Lake Oswego-Tigard Water**

**Partnership | Lake Oswego, Oregon | USD 68M | Structural lead**

Craig instituted a robust seismically-reliable design with a complete demolition of the existing WTP and construction of a new state-of-the-art WTP within the existing plant's footprint – all while keeping the existing plant online and providing safe drinking water. Our team utilized collaborative workshops and BIM-driven design methodology to facilitate early stakeholder involvement, resulting in successful incorporation of public amenities into the final design.

**DAMS & LEVEES**

**San Vicente Dam Raise | San Diego County Water Authority (SDCWA) | Lakeside, California, US | USD 20.4M | Gate Hoist Engineer**

Craig provided structural and seismic design, utilizing site specific seismic accelerations attenuated up through the abutment rock and dam structure into the 222-foot-tall outlet tower, as well as valve structures, energy dissipation building, and deep pipeline excavations. The San Vicente Dam Raise Project raised the existing 220-foot-high concrete gravity dam by 117 feet and add 152,000 acre-feet of water storage to the San Diego County Water Authority's system. Craig performed numerous services for the project including: RCC dam design review; inlet/ outlet works design; QA/QC reviews with the internal design team technical review committee, owner's board of senior consultants, and the DSOD. | Design-Bid-Build | 2015 | \$300,000, Design Fee |

**Big Tujunga Dam Seismic Rehabilitation and Spillway Modification | Los Angeles County Department of Public Works | Los Angeles, California | 2004–2011 | Mechanical Advisor**

The dam required modifications to strengthen it for seismic events and to create additional spillway capacity. Work involved buttressing of the downstream side of the dam with mass concrete, raising the parapet wall, modifying the spillway, installing new bypass valves, replacing the control building, automated instrumentation, and other civil, mechanical, and electrical work. This project produced an integrated and optimal design to store flood flows and manage releases over a wide range of reservoir levels and inflow conditions. Craig oversaw the structural engineering and design and provided construction support for the three-story, reinforced concrete valve house on the face of the concrete arch dam and for the two-story, steel-framed special concentric braced control house above the dam south abutment. In addition to providing engineering services during construction, Craig also provided QC for seismic issues related to the dam and proposed a number of alternatives for seismic rehabilitation, ultimately providing optimized and efficient design solutions for the rehabilitation of the dam and spillway. He prepared and completed the final design of the concept that was approved by the State of California Department of Water Resources Division of Safety of Dams. Craig designed all structures to exceed site-specific seismic accelerations and per Los Angeles Building Code and IBC 2003. The project structural design was completed 20% under budget. Design-Bid-Build | \$100 Million, Construction Cost

**Calero Dam Seismic Retrofit | Santa Clara Valley Water District | Santa Clara County, CA | 2024–Present | Lead Hydraulic Engineer**

The Calero Dam Seismic Retrofit Project (CDSRP) aims to address structural deficiencies and enhance dam safety and increase the storage capacity by satisfying DSOD's requirements. Stantec is currently designing the major project facilities, including the main dam and auxiliary dam, outlet works, spillway, valve yard levee, and breach of fellows' dike for a useful life of at least 50 years without requiring major repairs. Craig is leading the structural design of the reinforced concrete outlet works and spillway developing the optimal alternatives for the demanding high seismic and landslide conditions present at this challenging site. Design-Bid-Build | \$250 Million, Estimated Construction Cost

**Seismic analysis for the Lenihan Dam Outlet Modification | Santa Clara Valley Water District | Santa Clara Valley, California | Principal Structural Engineer**

Principal Structural Engineer for the Santa Clara Valley Water District structural design, seismic analysis for the Lenihan Dam Outlet Modification. This project won the September 2009 American Society of Civil Engineers Outstanding Project in the Large Project Category. This project also won the Associated General Contractors of America, Special Recognition Winner of the 2010 Marvin M Black Excellence in Engineering Partnership. The energy dissipation structure designed by Mr. Wilcox operates at full capacity during the Winter and Spring of each year now.

**American River Pump Station and Los Vaqueros Reservoir Enlargement Feasibility Study | Bureau of Reclamation, Mid-Pacific Region | Livermore, CA | Structural Group Leader/Engineer**

Oversaw the reinforced concrete American River pump station structure and the Los Vaqueros Reservoir Enlargement Feasibility Study delta intake pump station. Supervised electrical, architectural, civil, mechanical, instrumentation and structural staff. Supervised construction of conveyance facilities, including a 430-cfs intake structure and pump station, fish screens, expanded 670-cfs CCWD transfer facility, and 23 miles of 132-inch-diameter pipeline with 7,500 linear feet of tunneled pipeline. Implemented lessons learned from previous Los Vaqueros intake and pipeline design. Enlargement Feasibility Study determined the practicality and construction cost estimate of new intake design. CONTRACT - IDIQ for Water Resources Planning and Engineering - Bureau of Reclamation, Mid-Pacific Region (01CS20210B and BRPS/06CS204097B)

**Folsom Modification and Folsom Dam Raise Projects | USACE, Sacramento District | Folsom, California | Structural Engineer**

Designed new gate hoists that required steel framing and multiple loading conditions. Supervised mechanical engineering staff of 3 in addition to the structural staff that designed the winding drums, electric motors and wire rope cables to serve as the lifting mechanism for the steel gates. Project is currently being bid. The steel gates are designed to be lifted with the aid of the geared drums for even

and fluid lifting from both sides of the gates and to prevent binding. Design was completed on time and within budget. CONTRACT - IDIQ for Watershed and Ecosystem Planning Studies for Civil Works - USACE, Sacramento District (DACW05-01-D-0018)

**WATER**

**San Joaquin River Restoration Program | US Bureau of Reclamation - Sacramento | Sacramento/San Joaquin County, California, United States | 2017 | Lead Structural Engineer**

One of the largest U.S. river restoration programs, the project covered more than 152 miles of the San Joaquin River. Craig was the structural design lead for the Temperance Flat Dam hydropower feasibility study on the San Joaquin river above Friant dam. He also provided design and QA/QC services for another river restoration civil infrastructure within this task order.

**Seismic Evaluation and Retrofit of a Round 3-MG Steel Reservoir | Santa Clara Valley Water District | Santa Clara, California | Principal Engineer**

Mr. Wilcox served as principal structural engineer for this innovative retrofit project that included perimeter Teflon-coated steel bands and large flexible Eba-Iron inlet and outlet connections. The retrofit of this steel tank clearwell had to be done with the tank in service, so the external steel banding was the selected solution. The only off-line time period was while the 48-in diameter Eba-Iron inlet and outlets were installed. Reinforced concrete ringwall strengthening and anchor bolts were also critical elements added during the retrofit.

**As-Needed Wastewater Technical Services | South County Regional Wastewater Authority | Sacramento, California | Structural Engineer**

Craig performed structural and seismic engineering analysis, design, and consultation for the design of the Ultraviolet (UV) Disinfection Facility that includes reinforced concrete channels and a steel frame with monorail overhead. Work involved the design of large diameter pipe differential settlement remediation with cast-in-drilled hole reinforced concrete piers and grade beam additions. Reinforced concrete vaults and outfall structures were also included.

**Pacific Bell Post Earthquake Building Occupancy Resumption Emergency Inspection Program | City of San Francisco | San Francisco, California | Structural Engineer**

Structural Engineer for the development of the Pacific Bell Post Earthquake Building Occupancy Resumption Emergency Inspection Program for nine San Francisco low, mid and high rise equipment buildings that include emergency generation and uninterrupted power supply systems.

**Seismic Modifications | City of Oakland | Oakland, CA | Structural Engineer**

Structural Engineer for the seismic modifications to two 15-story, 265 foot tall telecommunications equipment and office buildings in Oakland, California. Responsible for extensive additions of reinforced concrete and shotcrete to existing building and basement walls. Mr. Wilcox also provided construction support for this \$120 million project.



**Design & Construction Drawings of a 200,000-square-foot Office Building | Amdahl, North San Jose | North San Jose, CA | Project Engineer**

Project Engineer for design and construction drawings of a 200,000-square-foot office building for Amdahl in North San Jose. It is a five-story steel-frame building with an eccentrically-braced frame, lateral-load-resisting system.

**Structural Design, Computer Operations Facility Building | Beale, Clark, and Vandenberg Air Force bases | Beale, Clark, and Vandenberg Air Force bases | Project Engineer**

Project Engineer responsible for the structural design and construction drawings for a Computer Operations Facility building at Beale, Clark, and Vandenberg Air Force bases. Each building was of identical design, single-story, approximately 15,000 square feet, with reinforced concrete block bearing walls and a steel frame roof.

**Design & Construction Drawings, 160-bed Bachelor Enlisted Quarters (BEQ) | Lemoore Naval Air Station | Lemoore Naval Air Station, CA | Design Engineer**

Design Engineer for the structural design and construction drawings for a 160-bed Bachelor Enlisted Quarters (BEQ) and assembly hall at Lemoore Naval Air Station, California. This three-story building has reinforced concrete masonry bearing walls supporting prestressed, precast concrete plank floors and roof, with a steel-frame roof over the main assembly hall.

**Olivenhain-Hodges ESP / Pumped Storage Projects | San Diego Clean Water Authority, CA | San Diego, CA | Structural Engineer**

Craig participated in the planning phase and continual structural engineering tasks during the final design phase of the project, and also is providing engineering services during construction. The major features of the pumped storage project consist of a 5,700-foot-long pressure tunnel, with a 10-foot inside diameter, in very hard rock which will connect to the existing inlet / outlet structure in the Olivenhain Reservoir, a two-unit, 40 megawatt (MW) pit type pump house with reversible Francis pump-turbines, tailrace tunnel and inlet / outlet structure in Lake Hodges. In addition to the engineering activities, Mr. Wilcox has participated in the design and value engineering workshops performed for the project. Ongoing activities include managing the submittal review process of the contractor design and drawings for the major structural elements, design review and engineering assistance during construction for the site preparation and tunnel design-build construction contract and completion of the pump house contract documents.

**Tulloch 3rd Unit Addition Hydro | Tri-Dam Project | Stanislaus River, California, US | USD 19.5M | 2012 | Project Structural Engineer**

Project Structural Engineer for the Tulloch Dam added hydroelectric generator facility to complete construction in 2012. This 5 MW generator will provide spring runoff peaking power to the Tulloch hydroelectric plant. The 80 foot tall structure is reinforced concrete and founded in bedrock at the toe of the dam. The facility is designed to the 2006 edition of the IBC.

**Robert A. Skinner 1 MW Photovoltaic Pedestal Project | Metropolitan Water District | Principal Structural Engineer**

Principal Structural Engineer for the Southern California Metropolitan Water District Robert A. Skinner 1 MW Photovoltaic pedestal mounted tracking power plant Project. This project included independent foundations for each PV device of a large area and was designed to the MWD structural design criteria and 2006 IBC. This project won the American Council of Engineering Companies Engineering Excellence of Merit.

**Rapid Seismic Evaluation, Calleguas Water District | Calleguas Water District | Simi Valley, California | Principal Engineer**

Principal Engineer for the Calleguas Water District rapid seismic evaluation of four existing 3- to 7-MG steel reservoirs. The evaluation proposed retrofits including thickened tank shells, new perimeter reinforced concrete ring walls and anchor bolts as well as flexible inlet and outlet connections.

**San Bernardino Municipal Water Department Rapid Seismic Evaluation | San Bernardino Municipal Water Department | San Bernardino, California | Principal Engineer**

Craig was responsible for the rapid seismic evaluation of 19 existing steel and reinforced concrete reservoirs. The evaluation proposed retrofits including thickened tank shells, new perimeter reinforced concrete ring walls and anchor bolts as well as flexible inlet and outlet connections.

**Diablo Hills 4-MG | Contra Costa Water District | Contra Costa, California | Principal Engineer**

Principal Engineer for the design and construction observation of the Contra Costa Water District, Diablo Hills 4-MG reinforced concrete rectangular buried reservoir. This unique reservoir was constructed underneath a golf course during a short construction duration..

**ASCE 2012 Outstanding Water Resources Project - Patterson Irrigation District (PID) Fish Screen Intake Project | Patterson Irrigation District, Patterson | Patterson, California | Design Engineer**

The fish screening facility was constructed to prevent anadromous fish and other species including Steelhead trout and Chinook salmon, from entering the district's pumps. Mr. Wilcox directed conceptual design, preliminary design, final design, and permitting and engineering services during construction. The project included construction of a pile-supported 195 cubic feet per second pump station with a concrete-constructed frame and top deck and riverside mounted fish screens. The 101-year-old district serves hundreds of farms on 13,500 acres in the Patterson area. This facility will aid the district in maintaining access to its historic water rights.

**ASCE 2012 Outstanding Energy Project - Los Vaqueros Energy Recovery Project | Contra Costa Water District, Concord | Concord, California | Design structural engineer**

The Los Vaqueros Energy Recovery Project is a 1-megawatt hydroelectric generation facility designed to capture excess hydraulic energy in the Contra

Costa Water District's (CCWD) existing Los Vaqueros Pipeline to offset a portion of CCWD's electrical energy usage and reduce reliance on carbon-based energy. As the concept design structural engineer, Mr. Wilcox developed the project concept and provided design documents comprising conceptual powerhouse arrangement drawings and turbine-generator equipment specifications that were used as the basis for design-build teams to develop equipment procurement and construction cost proposals. MWH was retained for the duration of the project as owner's engineer providing technical advisory services, during equipment manufacturing, construction, startup and commissioning.

**Sacramento Lower Northwest Interceptor | Sacramento County Wastewater Authority | Sacramento, CA | Structural Engineer and Quality Reviews**

Craig provided structural and seismic design and submittal review for shaft excavations, interceptors and pipeline interconnections for deep excavations and reinforced concrete construction. The Upper Northwest Interceptor program includes 25 miles of interceptor sewer split into nine sections. Diameters range from 120 inches at the lower end to 24 inches at the upper end. Stantec prepared the long range planning documents for the entire program and the predesign report for Sections 1, 2, 3, and 4. Stantec also provided full service construction management for Sections 5, 6, and 7, and is providing construction management for Section 9.

**4 MG Miramonte Reservoir | City of Mountainview, CA | Mountainview, California | Structural Engineer**

Structural Engineer for the construction support services of the recently completed City of Mountainview cast-in-place reinforced concrete rectangular 4 MG Miramonte Reservoir. This reservoir has a cast in place concrete roof wearing slab over insulation that is supported on the structural roof slab.

**4 MG South Cordelia Reservoir | City of Fairfield, CA | Fairfield, California | Lead Structural Engineer**

Mr. Wilcox served as structural engineer for the design and construction support services of the recently completed City of Fairfield cast-in-place concrete 4 MG South Cordelia Reservoir. This reservoir is buried with 2 feet of earth cover to insulate the concrete roof from thermal movements.

**5MG and 1MG DYK Reservoirs | City of Pittsburg, CA | Pittsburg, California | Lead Structural Engineer**

Mr. Wilcox served as principal structural engineer for these two innovative replacement reservoirs that included replacing an existing 6 MG reservoir by building the smaller 1 MG reservoir first then demolishing the 6 MG reservoir and installing the 5MG reservoir within a smaller foot print. The design is compliant with AWWA D110 and ACI 350.3.

**5MG DYK Reservoir | East Valley Municipal Water District, San Bernardino CA | San Bernardino, California | Principal Structural Engineer**

Mr. Wilcox served as principal structural engineer for this 5 MG buried reservoir constructed within 500 yards of an active trace of the San Andreas Fault.

The site specific design acceleration exceeded 1g and the design is in compliance with AWWA D110.

**CS-777.B – As Needed Engineering Design Services | San Francisco Public Utilities Commission (SFPUC) | San Francisco, California | Structural Engineer**

Serving as structural engineer, Mr. Wilcox performed structural and seismic engineering consultation during the design and construction of Sunset Reservoir under Task Order 21. He also reviewed and evaluated the existing structure of Pulgas Reservoir under Task Order 26. His work has included consultations, memorandums reviewing the Conceptual Engineering Report and preliminary designs, actual field investigations of in-situ conditions, and recommendations for structural seismic renovations. Harry Tracy WTP short-term project; the Sunol Valley Chemical Injection Evaluation; the Tesla ultraviolet (UV) and Chemical Feed Facility Preliminary Design assistance; UV pilot testing assistance for the Tesla UV Facility; and several staff support task orders for the Water Quality Engineering department. He also participated in the Harry Tracy WTP long term project that included evaluation of options and design of improvements to the plant's coagulation and flocculation processes and sizing of the new treated water reservoir.

**San Joaquin Pipeline System Services CS-840 | San Francisco Public Utilities Commission | San Joaquin Valley, California, United States | USD 271M | Lead Structural Engineer**

Craig served as the lead structural engineer for this project and conducted various scoping meetings/work, including some for the PCCP Oakdale Portal Vicinity Pipe and the California Aqueduct Crossing Bridge Pipeline. He was also responsible for conducting preliminary structural schematic design engineering and benefit/cost analyses on several structures including bank scour protection, pump station, deep fixed head pipe piles, and soldier pile walls. The project included 10.3 miles (16.6 km) of new 78-inch diameter (1,981-mm-diameter) pipe for the western end and 6.7 miles (10.8 km) of new 78-inch (1,981-mm-diameter) diameter pipe for the eastern end, plus two new crossover facilities that included in-line valves and cross over valves and piping.

**Rapid Seismic Evaluation, Dynamic Analysis and Steel Retrofit Design of the Van Nuys Anheuser-Busch Brewery Facility | Anheuser-Busch Brewery facility, CA | Van Nuys, California | Project Structural Engineer**

Project Structural Engineer for the rapid seismic evaluation and dynamic analysis and steel retrofit design of the Van Nuys, Anheuser-Busch Brewery facility following the 1994 Northridge Earthquake. The analysis using SAP software and design was in accordance to the site specific seismic response spectra.

**1920 San Francisco Office Building | San Francisco, CA | San Francisco, California | Principal Structural Engineer**

Principal Structural Engineer for the construction wall shoring and demolition procedure to save the

three story exterior walls of a reinforced concrete heavy 1920 San Francisco office building. Shoring design included temporary procedures to stabilize the building for occupancy and installation of a new foundation. Interior demolition procedure included step-by-step procedure to insure the safety of the workforce and adjacent property.

**Seismic Modifications | Oakland, CA | Oakland, California | Structural Engineer**

Structural Engineer for the seismic modifications to two 15-story high rise, 265 foot tall telecommunications equipment and office buildings in Oakland, California. Responsible for extensive additions of reinforced concrete and shotcrete to existing building and basement walls. Mr. Wilcox also provided construction support for this \$120 million project.

**Structural Heavy Jacking, Shoring, Design and Construction Procedures for the Northridge Fashion Center | Northridge Fashion Center | Northridge Fashion Center, CA | Project Structural Engineer**

Project Structural Engineer for the structural heavy jacking, shoring, design and construction procedures for the Northridge Fashion Center, 300,000 square foot Broadway Department Store, failed reinforced concrete columns following the 1994 Northridge Earthquake. Three stories of failed concrete beams and columns were shored under emergency conditions for this masonry building. The building was then jacked up to a foot high for the placement of new steel columns. The store was reopened in 9 months rather than being demolished and replaced that would have taken 2 years.

**Grimes Canyon and Conejo Valley Reservoirs | Calleguas Water District | Thousand Oaks, California | Principal Engineer**

Mr. Wilcox was responsible for design of both 5MG reservoirs for the Calleguas Water District. One reservoir is a reinforced concrete below grade structure and the other is a steel above-grade reservoir. The high seismic accelerations at these two sites required innovative designs for connections of these round plain shaped reservoirs. Mr. Wilcox also led the design of the carbon fiber retrofit of PCCP pipe.

**Concrete 16-MG Eastridge Reservoir | City of Fairfield | Fairfield, California | Structural Engineer**

Mr. Wilcox provided design and construction support services for this cast-in-place reservoir. This is a signature MWH square reinforced concrete hopper bottom reservoir.

**Sunset Reservoir Seismic Retrofit | San Francisco Public Utilities Commission | San Francisco, California | USD 2.9M | 2012 | Lead Structural Engineer & Quality Reviewer**

Craig served as Structural Engineer on the retrofit of this 89-MG reinforced concrete Sunset Reservoir under Task Order 21. His work has included consultations, memorandums reviewing the Conceptual Engineering Report and preliminary designs, actual field investigations of in-situ conditions, and recommendations for structural seismic renovations. The project consisted of concrete repair, flow improvements, and a new

ramp. The seismic retrofit primarily focused on adding reinforced concrete moment frames, shear walls and stainless steel braced frames with a roof structure of over 550,000 sf of concrete. Seismic design criteria included FEMA 356, ASCE 41 and ATC-40 step-by-step, non-linear analysis for special concrete moment frames. Inclusion of a 5MW photovoltaic facility on the roof was also designed for and reviewed structurally.

**Reclamation Plant Filter Expansion Project | South County Regional Water Authority | Gilroy, California | Principal Structural Engineer**

Mr. Wilcox served as principal structural engineer for this project, which included filter expansion reinforced concrete basins, channels, and facilities designed to the District's structural design criteria and the California Building Code.

**Hetch Hetchy High Voltage Towers Foundation Evaluation | San Francisco Public Utilities Commission (SFPUC) | San Francisco, California | Lead Structural Engineer**

Serving as structural engineer, Mr. Wilcox performed structural, excavation constructability and feasibility studies for the Moccasin to Newark Towers to be excavated adjacent to for the installations of the new 96-inch diameter pipeline #4. Evaluation included slurry/secant pile, sheet piles, soldier beam and lagging, injection grouting and micropiles along with tower base intertie bracing.

**Colorado River Aqueduct Danby Lake High Voltage Towers Evaluation | Metropolitan Water District of Southern California (MWDSC) | Los Angeles, California | Lead Structural Engineer**

Serving as structural engineer, Mr. Wilcox performed structural, conductor break, wind and seismic engineering analysis, evaluation, design and consultation during the Investigation and Evaluation portions of this project. This multi-phase project analyzed the wooden piles for eccentric loading due to deterioration, conductor breaks and wind loading to determine useful life and alternative procedures to increase the longevity of the piles, pile caps, and steel towers. Mr. Wilcox personally inspected all the piles, concrete pile caps and steel towers in this study along with performing the structural calculations and evaluations to develop a proactive maintenance program. The effort included coordination of multiple sub consultants and design management of the consultant testing and inspections companies.

**Geysers Pipelines Evaluation | City of Santa Rosa | Santa Rosa, California | Lead Structural Engineer**

Mr. Wilcox provided value engineering for the City of Santa Rosa 30-inch diameter Geysers Recharge Project pipeline. This pipeline has multiple fault crossings where Mr. Wilcox proposed deformation actuators tied to shut-off valves. This project also included articulated pipeline connections at either end of the fault crossings and evaluation through soft soil/liquefiable zones. Recently, he provided structural engineering consulting for the EBMUD Walnut Creek to San Ramon Valley Master Plan pipeline and southern loop pipelines projects.

**Glendale Respondents Group 218-foot Single Span Pipe Bridge | City of Glendale | Glendale, California | 2000 | Principal Engineer**

Principal Engineer for the Glendale Respondents Group 218-foot single span pipe bridge. The three steel chord bridge structural design to span the Verdugo Wash adjacent to the Los Angeles River included slide-bearing base isolated supports at each end. The cast-in-drilled hole pier foundation spanned through the loose alluvial surficial soils to dense competent support soils. Construction was completed in 2000.

**Elevated Mokelumne 87-inch Diameter Aqueduct | East Bay Municipal Utility District (EBMUD) | San Joaquin County, California | Lead Structural Engineer**

Mr. Wilcox provided design evaluation review and construction structural observations of the pile-supported and buried pipeline through multiple river crossings and above-grade transmission lengths through the delta. Areas included specific butt strap weld retrofits to provide adequate strength in poor, liquefiable soils.

**Corona Del Mar Water Treatment Plant | Goleta Water District | Goleta, California | Project Structural Engineer**

Mr. Wilcox prepared structural plans, specifications, and calculations for the design of several new government facilities, including a multi-purpose, 9,100-sf, LEED Gold Rated, laboratory/administration-office/control building adjacent to the treatment plant. All design was performed using CADD and other appropriate software. Design was in accordance with the 2003 IBC. Engineering services during construction included evaluating contractor submittals, performing construction surveillance and preparing the technical portions of the design-build RFP (Request for Proposals) packages for the performance-based portions of this design-build project. Project was completed on time and below budget, with cost savings split with the owner.

**Antelope Valley 4 Water Treatment Plants | Antelope Valley East Kern County AVEK | Antelope Valley, Palmdale, California | 2006-2008 | Structural Engineer and QC Lead**

Craig provided structural design quality control and construction inspection quality control of these 4 recently designed and constructed reinforced concrete WTPs in very high seismic acceleration zone adjacent the San Andreas Fault. The below grade structures, on challenging sloping sites, had variable geotechnical conditions requiring great attention to foundation systems.

**Disinfection-By-Product (DBP) Control Program | Antelope Valley-East Kern Water Agency | Palmdale, CA | Structural Engineer/QC Lead,**

Craig provided structural design QC and construction inspection QC of these four recently designed and constructed reinforced concrete water treatment plants (WTPs) in a very high seismic acceleration zone adjacent to the San Andreas Fault. The below-grade structures, on challenging sloping sites, had variable geotechnical conditions requiring great attention to foundation systems. The

reinforced concrete filters were designed for the high seismic accelerations of the adjacent San Andreas fault to be fully functional after a major 2,500 year earthquake.

**Roseville WTP Expansion | Roseville, City of | Roseville, CA | Principal Structural QC Engineer**

Craig performed structural analysis, engineering, seismic engineering analysis, and consultation for the Roseville Water Treatment Plant expansion that included the filters, concrete testing, and evaluation.

**Bon Tempe and San Geronimo Water Treatment Plants Master Plan and Filter Rehabilitation | Marin Municipal Water District (MMWD) | Corte Madera, California | Structural Lead**

The first of two projects completed for MMWD was a master plan to ensure reliable, cost-effective operation of two drinking water treatment plants for the next 50+ years. The master plan found that major seismic rehabilitation of filters and other structures was required to achieve code compliance and meet the District's reliability goal of producing water within 24 hours of a major earthquake. The Filter Rehabilitation Project then followed. Craig was the structural lead and was accountable for performing seismic/structural analysis, evaluating upgrade options, preparing cost-effective designs, managing bid documents, and providing construction support for the necessary improvements at both plants.

**Harry Tracy WTP Short Term Improvements | San Francisco Public Utilities Commission (SFPUC) | San Francisco, California | Principal Structural QC Engineer**

Craig performed structural quality control and engineering, seismic engineering analysis, and consultation for the Harry Tracy Water treatment plant filter retrofit that included the reinforced concrete filters.

**Beverly Hills 5 Steel Replacement Reservoirs | City of Beverly Hills | Beverly Hills, California | Lead Structural Engineer**

Craig worked on developing the structural and seismic design of the five new AWWA D100 steel tank replacement reservoirs and pump stations. These five round reservoirs with new foundations are all located in the Santa Monica Hills within Coldwater Canyon. Each included a concrete block masonry units pump stations/control rooms that were seismically retrofitted, and designed for the 2,500-year MCE event per requirements of the 2007 edition of the CBC and AWWA D100-05.

**Ground Settlement Remediation | City of Brisbane | Brisbane, California | Construction Manager/Administrator, Project Engineer**

Construction Manager/Administrator, Project Engineer for ground settlement remediation at the perimeter foundation of a 12 story steel frame building constructed on a clay capped reclaimed bay refuse landfill site in Brisbane, California.

**Seismic Retrofit of the City of Simi Valley Library | City of Simi Valley Library | Simi Valley, CA | Project Engineer**

Project Engineer for immediate seismic retrofit of the



City of Simi Valley Library after the 1994 Northridge Earthquake. Included temporary shoring of reinforced concrete columns and beams to allow access to the building.

**Glendale Respondents Group | Glendale Respondents Group | CA | Principal Engineer**

Principal Engineer for the Glendale Respondents Group 218-foot single span pipe bridge. The three steel chord structural design to span the Verdugo Wash adjacent to the Los Angeles River included slide-bearing base isolated supports each end. The cast-in-drilled hole pier foundation spanned through the loose alluvial surficial soils to dense competent support soils. Construction was completed in 1998.

**Waste Water Treatment Plant Expansion | Santa Fe Irrigation District | San Diego, California | Principal Engineer**

Principal Engineer for the Santa Fe Irrigation District, San Diego California, Waste Water Treatment Plant expansion. This design build expansion includes a new reinforced concrete clarifier, reinforced concrete basins for an Actiflo system, centrifuge and solids handling building, pump and chemical facilities.

**Sunol Valley WTP Phase 1 Improvements, Expansion and Circular Storage Tank | San Francisco Public Utilities Commission | San Francisco, California | USD 150M | 2016 | Lead Structural Engineer & Quality Reviewer**

Craig served as lead structural engineer for a 17.5 MG Circular Storage Tank, 4-MG chlorine contact tank, stepped 80-foot-tall soil nail wall, chemical facility, and improvements. Craig also performed overall structural and seismic engineering analysis, design, and consultation during the design of this large treatment plant seismic upgrade and expansion.

**Design and Construction, Goelitz "Jelly Belly" Offices, Candy Factory, and Warehouses | Goelitz | Fairfield, California | Structural Engineer**

Structural Engineer for the design and construction of Goelitz "Jelly Belly" offices, candy factory, and warehouses (60,000 square feet), Fairfield California. Design and construction of the 2-story tilt-up concrete with concrete second floor on steel framing.

**Investigation and Evaluation, Hetch Hetchy Mocassin Hydro Electric Power Plant | Hetch Hetchy Mocassin Hydro Electric Power Plant | Moccassin, California | Principal Engineer**

Principal Engineer for the rapid investigation and evaluation of the original Hetch Hetchy Mocassin Hydro Electric Power Plant basement flooding. Led a six-member investigation team for the inspection of this historic structure to determine the causes of flooding and developed multiple alternative solutions to stop the flooding and prevent future flooding of the basement.

**San Francisco Catholic Archdiocese Saint Paul's Gothic Church | City of San Francisco | San Francisco, California | Client's Representative and Structural Engineer**

Client's Representative and Structural Engineer for the San Francisco Catholic Archdiocese Saint Paul's

Gothic Church. This large historic unreinforced masonry church structure, which incorporates granite block walls, is the largest Gothic Church Structure West of the Mississippi in the United States. Mr. Wilcox performed the initial evaluations of the church structure and the adjacent High School, Middle School, Elementary School and Two Convents. After the entire complex was evaluated then Mr. Wilcox was the church's advisor for the Seismic Retrofit Design implementation project.

**North Hollywood Central and Tujunga Groundwater Treatment Facilities | Los Angeles Department of Water and Power | Los Angeles, California, United States | Structural Engineer**

Craig is responsible for the structural engineering for the design of two 100' x 140' industrial process buildings that include storage and 5 other Buildings that include storage for a total of 7 Buildings as well as Electrical Power Feed and Control Centers to the 2 sites through new electrical building/structures. He worked with Simon Lin, Patrick Stahl, Ed Wong and Pat McKelvey on the design with Kiewit Construction involved with construction beginning on the completed designs in the Fall of 2020. Craig's work was as a distributed team from offices throughout California and the Western US as Delivery staff are distributed throughout 20 US West offices all using ProjectWise for all document management. Structural improvements including the large steel framed and reinforced concrete buildings, pipe racks, and structural storage elements.

**Disinfection-By-Product (DBP) Control Program | Antelope Valley-East Kern Water Agency | Palmdale, CA | USD 89M | Design Group Lead, Structural Engineer/QC Lead**

Craig provided structural design and construction inspection QC of these four reinforced concrete water treatment plants (WTPs) with high seismic accelerations adjacent to the San Andreas Fault. The below-grade structures, on challenging sloping sites, had variable geotechnical conditions requiring great attention to foundation details. The reinforced concrete filters flocculation/sedimentation basins, ozonation and chemical facilities of reinforced concrete and concrete block structures are supported on cast in drilled hole piers. (Staff Time 2004- 2010)

**North Hollywood Central and Tujunga Groundwater Treatment Facilities, Design Build with Kiewit | Los Angeles Department of Water and Power | Los Angeles, CA | USD 450M | Structural Engineer/Group Leader**

Craig is responsible for the structural engineering for the design of two 100' x 140' industrial process buildings that include UV Reactors and 5 other Buildings that include tanks for a total of 7 Buildings as well as Electrical Power Feed and Control Centers to the 2 sites through new electrical building/structures. He worked with the contractor Kiewit Construction on the design from inception concept to construction completing designs in the Fall of 2020. Craig's work was as a distributed team from offices throughout California and the Western US as Delivery staff are distributed throughout 20 US West offices all using ProjectWise for all document management. Structural improvements including the large steel framed and reinforced

concrete buildings, pipe racks, process and tank structural storage elements of this construction project. (Staff Time 2019-present)

**Sunol Valley Water Treatment Plant Improvements | San Francisco Public Utilities Commission | Sunol, CA | USD 400M | Engineer of Record**

The project included new flocculation and sedimentation basins with plate settlers, solids handling and a new 18.7 MG treated water reservoir and a 5-MG rectangular concrete reservoir. The treated water reservoir is a pre-stressed circular concrete tank measuring 340 feet in diameter. This design provides excellent seismic strength (a major fault that could generate a magnitude 7.2 earthquake is less than 1,000 feet from the reservoir) with a minimum amount of concrete. The perimeter walls are only 14 inches thick. CFD modeling was used to evaluate alternative inlet/outlet configurations. The initial concept was to have the outlet in the center, which would have required construction of 170 feet of 78-inch pipe encased under the reservoir. The CFD modeling showed that proper placement of the inlet and outlet on the perimeter could eliminate the need for the center outlet and save more than \$0.5 million. (Staff Time 2009-2014)

**Skinner Water Treatment Plant 400-MGD Ozonation | Metropolitan Water District of Southern California | Los Angeles, CA | USD 200M | Principal Structural Engineer**

Craig's work included ozone contactors, an ozone generation building, chemical buildings, and wash water reclamation facilities designed to Metropolitan's structural and seismic design criteria and 2003 IBC. The project included initial structural layout of design and drawings, structural and seismic calculations, and detailed contract document drawings and specifications production. Craig's additional responsibilities included supervising the structural engineers and CAD designers in the execution of this project. (Staff Time 2002-2005)

**San José-Santa Clara Regional Wastewater Facility Capital Improvement Program (CIP) | City of San José Environmental Services Department | San José, California | USD 2.2B | 2013-Present | Engineering Quality Manager and Structural Engineer**

Craig was instrumental in setting up the quality control program for the San José Santa Clara Regional Wastewater Facility and served as a structural subject matter expert for this \$1.4B program for over 10 years. In addition to conducting quality reviews of each of the projects in this program, Craig also wrote many of the basis of design criteria including architectural, structural and CAD/BIM. He has reviewed other consultants' design and disciplinary work at predetermined milestones during project designs as well as through interdisciplinary coordination. Craig reviewed plans and specifications for several projects on this program including digester improvements, new headworks, dewatering facility, aeration basins, clarifiers, yard piping, outfall, and overhead gas transportation. Additionally, life cycle costs were reduced by \$40M by retrofitting and converting rather than replacing existing structures while improving the systems and navigating complex

state, city, and project permitting and shutdown requirements.

**Oliver P. Roemer Water Filtration Facility Expansion (Phase 1) | West Valley Water District | Rialto, California | 2022-Ongoing | Structural Engineer**

The West Valley Water District is expanding the Oliver P. Roemer Water Filtration Facility from 14.4 MGD to 21.6 MGD to treat additional water from the State Water Project. This project will provide additional treated water capacity to meet regional water demands, address water supply reliability, and support regional groundwater sustainability management efforts. Working as part of a design-build team with PCL, Stantec is designing new influent and effluent pump stations, a new filter building with three Trident Package treatment systems, replacement UV reactors, UV recovery pumps, and granular activated carbon influent pumps. The project also involves the installation of 30-inch-diameter treated water pipeline. As Structural Engineer, Craig is providing structural engineering services from conceptual design through construction.

**Central Bayside System Improvement Project | San Francisco Public Utilities Commission | San Francisco, California, United States | 2015-2018 | Lead Structural Engineer**

Craig was the Lead Structural Engineer for the preliminary design of this project, which involved connections from existing combined sewers to a 24-foot-diameter and 9,000-foot-long storage tunnel. The connections include a 48-inch FRP dry weather pipeline and 12-foot by 8-foot wet weather culvert founded on piles. They also include a 120-inch EPBM tunnel and dual 48-inch HDPE force mains installed by micro-tunneling. Tunneling will require the removal of abandoned timber piles and the open cut excavation is in young bay mud. The connections also include 21-foot, 24-foot, and 45-foot-diameter shafts between 85-feet and 150 feet deep. Two of the shafts will include vortex drops.

**WASTEWATER TREATMENT**

**30 Percent Design Skinner Water Treatment Plant 400-MGD Ozonation Project | Metropolitan Water District of Southern California | Los Angeles, California, United States | Principal Structural Engineer**

Craig's work on this \$200M project included ozone contactors, an ozone generation building, chemical buildings, and wash water reclamation facilities designed to Metropolitan's structural and seismic design criteria and 2003 IBC. Craig's responsibilities included supervising the structural engineers and CAD designers in the execution of this project as well as QA/QC plan development, implementation, and monitoring. The project included initial structural layout of design and drawings, structural and seismic calculations, and detailed contract document drawings and specifications production.

**Los Osos WWTP and Collection System Structural and Seismic Design | State of California | Los Osos, California | Structural Group Leader and Engineer**

Mr. Wilcox designed masonry pump stations, reinforced concrete round wet well caissons (collection sumps), reinforced concrete treatment

buildings, a concrete and steel operations building and massive concrete and segmental retaining walls. • Cast-in-place concrete form liners allow aesthetic treatment of buildings and walls in town center location.

**Vineyard Surface WTP Final Engineering Design and Support Services | Sacramento County Water Agency | Sacramento, California | USD 255M | 2008-2011 | Structural Engineer**

Craig performed structural and seismic engineering analysis, design, and consultation during the design of this 100-MGD water treatment plant. The new facility included the design and construction of three separate two-story steel special concentric braced frame administration buildings, large concrete masonry, and steel-framed roof warehouses, along with maintenance facilities for trucks and equipment. The construction included chemical storage and injection facilities, a 20-MG rectangular reinforced concrete clearwell, pump station, filters, flocculation and sedimentation basins, and wash water facilities. (Staff Time 2006-2011)

**City of San Mateo Waste Water Treatment Plant Upgrade and Expansion | City of San Mateo | San Mateo, California | Lead Structural Engineer**

The improvements consist of alterations to the solids handling building, clarifiers, egg shape digester, solids equipment additions including silos, conveyors, centrifuges and multi story loading facilities.

**San Fernando Basin Groundwater Remediation Project | Los Angeles Department of Water and Power | Los Angeles, California | 2019-2023 | Structural Engineer**

Craig was responsible for the structural engineering technical design of two groundwater treatment facility sites. Significant structures included two 120-by-140-foot industrial process buildings with UV treatment and storage; five other buildings including chemical storage tanks; and two new electrical buildings supplying electrical power and control functions to the two sites. . This project is being executed as a progressive design-build with multiple design, procurement, and construction packages. Structures include steel braced framed and reinforced concrete shearwall buildings, pipe racks, and structural steel and reinforced concrete process and storage elements. The sites are located in significant earthquake hazard areas.

## **RECYCLED WATER**

**North Valley Regional Recycled Water Program (Design-Build) | City of Modesto | Modesto, California | -2017 | Structural**

Craig is a structural engineer on this project, in which Stantec provided engineering design, permitting, construction support and environmental services for Modesto's North Valley Regional Recycled Water Program under a Design-Build contract. The project included seven miles of 42-inch-diameter pipeline, a new recycled 32 MGD effluent pump station, a horizontal directionally drilled crossing under the San Joaquin River and an outfall at the Delta Mendota Canal. After construction was completed for these facilities, the Program now conveys 35,000 acre-feet per year of

highly-treated recycled water from Modesto's tertiary treatment plant to the Delta Mendota Canal.

## **PUMP STATION**

**Sunset and Heathfield Pump Stations and Force Main Upgrades and Expansion | King County/City of Bellevue | Bellevue, Washington, United States**

Stantec provided preliminary design (including pump station alternatives analysis and tunnel alternatives analysis), detailed design, and engineering services during construction for this project. The objective of the project was to increase the capacity of the pump stations from 18 MGD (peak) to 26 MGD (firm) and 30 MGD (peak) to account for flows associated with wet weather and population growth.

## **WATER GRAVITY STORM & SANITARY SEWERS**

**Basins 2 And 3 Collection System Improvements Project | City of San Mateo Public Works Department | San Mateo, California | Structural)**

Craig is the structural engineer on this project, which involves a series of technical, structural engineering designs and analyses leading to elimination of sanitary sewer overflows with new reinforced concrete basins and an upgrade of sewer capacity. The results of the analyses are a series of critical wastewater basins and upgrades for design and construction. Projects identified in Basins 2 and 3 includes 11 relief sewers, 3 pump station replacement/upgrade projects, and an in-system storage facility. Alternatives that eliminate SSOs in the design storm were developed to conceptual design level by Stantec.

**Central Bayside System Improvement Project | San Francisco Public Utilities Commission | San Francisco, California, United States | Lead Structural Engineer**

Craig was the structural engineer for the preliminary design of this project, which involved connections from existing combined sewers to a 24-foot-diameter (7.3-m-diameter), 9,000-foot-long (2.7-km-long) storage tunnel. The connections include a 48-inch (1,219 mm) FRP dry weather pipeline and 12-foot by 8-foot (3.7 by 2.4 m) wet weather culvert founded on piles. They also include a 120-inch (3,048 mm) EPBM tunnel and dual 48-inch (1,219 mm) HDPE force mains installed by micro-tunneling. Tunneling will require the removal of abandoned timber piles and the open cut excavation is in young bay mud. The connections also include 21-foot, 24-foot, and 45-foot-diameter (6.4 m, 7.3 m, and 13.8-m-diameter) shafts between 85-feet and 150 feet deep. Two of the shafts will include vortex drops.



## James A Cathcart PE, F.ASCE

Water Planning Engineer

47 years of experience · Irvine, California

Jim has more than 45 years of experience in water supply and development in California. Jim has been responsible for 14 well equipping and/or wellhead treatment design projects, as well as numerous pipeline and pump station designs. He has also conducted several groundwater treatment studies for wellhead water quality compliance. He specializes in the planning, design, and construction management of water, wastewater, and reclamation infrastructure; master planning; ground- and surface water treatment; pumping and storage; and pipeline design. Jim has provided expert witness services for water system design and groundwater contamination issues.

### EDUCATION

MS, Civil Engineering, California State University at Long Beach, Long Beach, California, 1983

BS, Civil Engineering, State University of New York at Buffalo, Buffalo, New York, 1977

### REGISTRATIONS

Professional Engineer #C31518, State of California, December 31, 2026

### PROJECT EXPERIENCE

#### MASTER PLANNING

2019 Sewer Master Plan Update | San Bernardino Municipal Water District | San Bernardino | Project Manager

Jim provided overall project review for this \$1.5 million effort to guide modernization of the department's sewer collection system. This project includes the closed-circuit television camera (CCTV) and cleaning of 40% of the Department's pipes that are 12 inches or greater in diameter; a flow monitoring effort at 20 sites for multiple months; an equipment review; and a condition assessment of SBMWD's siphons, manholes, lift stations, and catch basins. Information from the CCTV and cleaning effort will be incorporated into the final master plan and recommendations will be made for condition-based CIP.

2018 Sewer and Water Master Plan | East Valley Water District | Highlands, California | 2018-2019 | Project Manager

As part of the master plan updates, Stantec evaluated potential changes in EVWD's potable supply from mainly groundwater to mainly surface water over the future planning horizons. The two updated master plans address condition assessment of EVWD facilities, model update and calibration,

system evaluations, and development of a comprehensive CIP.

Hydraulic Network Analysis and Water Quality Network Analysis\* | City of Torrance | Torrance, California | Principal-in-Charge

Jim supervised hydraulic and water quality model studies for the City. These projects included analyzing effects of various operational changes on the water system as well as analyzing water distribution patterns and modeling water residence time throughout the system under various operating parameters.

Water System Study\* | City of Victorville | Victorville, California | Principal-in-Charge

Jim provided water system consulting services to the City to determine the feasibility of providing water service to a proposed Federal Bureau of Prison facility. Water system modeling was used to assess water supply options and impacts on the City's water system operations.

Recycled Water Feasibility Study\* | Laguna Beach County Water District | Laguna Beach, California | Principal-in-Charge/Project Manager

This study investigated recycled water opportunities within LBCWD's service area, and assessed the feasibility of implementing a recycled water program. Potential reuse sites throughout the service area were identified along with projected annual irrigation demand. Ten alternatives were evaluated based on demand served, number of irrigation sites, interagency interties, and pipeline/pumping station facilities required. Planning level costs were developed for each alternative, and they were ranked on a cost per acre foot basis and compared to other available water resources.

Water Supply Plan\* | Baldy Mesa Water District | Victorville, California | Technical Reviewer

Jim reviewed development of a comprehensive long-term water supply plan that addressed the district's rapidly increasing customer demands and new regulatory water quality requirements. The plan addressed immediate groundwater quality and supply issues, facility needs and costs, anticipated developments and near-term annexations, and recommendations for long-range solutions involving both surface and groundwater supply sources.

Water and Wastewater Master Plan and Data Conversion\* | Capistrano Beach Water District | Orange County, California | Principal-in-Charge

Jim lead the planning efforts for this combined water and wastewater master plan. The project included future land use and population planning and demand projections. Wastewater flow projections were based on flow monitoring results from select areas of the

*\* denotes projects completed with other firms*



District. Both systems were modeled to assess system adequacy and future improvements. Particular emphasis was placed on an aging sewer main along the coast. This sewer had experienced sagging and infiltration problems, and improvement analysis consisted of rehabilitation and replacement alternatives. In a parallel project, he coordinated conversion of the District's paper map system to a digital database.

**Water Master Planning\* | Various Cities, California | Project Engineer/Project Manager**

Jim prepared several water master planning studies for Torrance, Fullerton, Oxnard, Thousand Oaks, Capistrano Beach, and Santa Monica, California; and Sunnyside, Washington; as well as for residential and commercial developments. These studies included steady-state and time-dependent computer system modeling. System improvement recommendations total more than \$185 million. He also completed master plan updates for Torrance and Fullerton, California. Work for the City of Sunnyside was recognized by the state's Department of Social and Health Services for the quality of the hydraulic analysis and report and was suggested as a model for other small water system master plans.

**Recycled Water System Implementation\* | Moulton Niguel Water District | Laguna Niguel, California | Project Manager**

Jim oversaw the District's multi-year recycled water system expansion program from 1997 through 2006. This effort included system planning, state loan application assistance, and connecting 1,100 new recycled water users.

**Transmission System Analysis, Clean Water Program\* | City of San Diego | San Diego, California | Lead Engineer**

Jim was responsible for conducting a reclaimed water transmission system computer model analysis incorporating several local computer models into a regional computer model of the greater San Diego area. This regional model was used to efficiently balance area-wide reclaimed water supplies and demands with a goal of achieving greater overall energy efficiency and reclaimed use. The computer model was integrated with AutoCAD and Paradox database programs.

**Wildomar Recycled Water System Phase I Design\* | Elsinore Valley Municipal Water District | Lake Elsinore, California | Project Manager**

Jim oversaw a master plan update and design of the Phase 1 Wildomar recycled water system, which included approximately 32,500 linear feet of 6- to 24-inch-diameter pipelines serving 20 sites in Lake Elsinore. Design included the necessary on-site system conversions associated with each recycled water use site.

**Palos Verdes Recycled Water System Expansion\* | West Basin Municipal Water District | Palos Verdes, California | Principal-in-Charge/Project Manager**

Jim oversaw the development of an H2ONET hydraulic model to determine the feasibility of expanding the District's recycled water system into Palos Verdes. Potential customers included parks

and two golf courses. Work included overview of preliminary pipe alignment selection along with pump station and reservoir facility siting for this very hilly area. The recommended system expansion included two new pump stations, a reservoir and over 60,000 feet of pipe along highways and residential roads.

**Water System Master Plan\* | City of Torrance | Torrance, California | Principal-in-Charge/Project Manager**

Jim provided overall project direction for an update to the City's 1993 master plan. In addition to updating previous planning data, work included integrating a new hydraulic model with the City's GIS data and investigating various water resource availability options including groundwater treatment, desalination, and water rights acquisition. Special emphasis was placed on improving the City's downtown redevelopment area, addressing groundwater quality issues, and the impact of existing and proposed water quality regulations.

**Regional System As-needed Services\* | Walnut Valley Water District | Walnut, California | Principal-in-Charge/Project Manager**

Jim provided consulting assistance for the District's participation in combining its system with a proposed region-wide recycled water system. The regional system ultimately would include four local distribution systems, regional pumping and transmission facilities and a regional lake to store recycled water. Subsequent work involved reviewing the feasibility of constructing a membrane bioreactor (MBR) wastewater treatment plant to provide an alternate recycled water supply source for the District's system. The MBR plant cost estimate was \$12.5 million, for a unit projection cost of \$392/AF.

**Sub-Area Master Plan\* | Irvine Ranch Water District | Irvine, California | Principal-in-Charge**

Jim oversaw the preparation of a SAMP report involving planning for the Shady Canyon residential and golf course development, including new water, sewer and reclaimed water distribution, collection, pumping and storage facilities. The facility plan included a hydraulic model using H2ONET for analyzing recycled and domestic water systems. Work also involved a spreadsheet model to determine land use-based sewer flows and sewer pipeline sizes.

**Facilities Management and Master Planning\* | City of South Gate | South Gate, California | Project Manager**

As part of a facilities management and master planning effort Jim was responsible for inventorying and conversion to a computer database and graphical display for all water, wastewater, storm drain, street lighting, pavement, and urban forestry facilities. The project also included sewer flow monitoring and water system pressure and flow analysis; sewer, water and storm drain system computer modeling; and planning and analysis of existing and future sewer, water and stormwater systems. Results were incorporated into a comprehensive water, sewer and storm drain master plan and capital improvement program.

**Water Master Plan Update\* | City of Fullerton | Fullerton, California | Project Engineer/Project Manager**

Jim managed a second update to the City's Water Master Plan, as the project engineer for the City's 1983 master plan and project manager for the earlier update in 1991. He supervised the master plan data collection, analysis, production and computer modeling; wrote several report sections; and conducted all editing of the master plan.

**Water Master Plan\* | City of Newport Beach | Newport Beach, California | Project Manager/Technical Advisor**

Jim served initially as the project manager, then as a subconsultant technical advisor for an update to the City's master plan. His work included developing an updated hydraulic model using Innovyze's InfoWater software, developing current water demand/supply data, and developing a comprehensive capital improvement program. The project also included a condition assessment of major supply and distribution facilities throughout the water system.

**Lake Forest Recycled Water Area Plan\* | Irvine Ranch Water District | Lake Forest, California | Quality Control**

Jim provided draft and final report quality assurance review for a planning study that involved evaluation of recycled water service potential in the Lake Forest portion of the district's overall service area.

**Recycled Water Model Update\* | Walnut Valley Water District | Walnut, California | Principal-in-Charge/Project Manager**

Jim oversaw the modeling efforts to combine several local existing and proposed recycled water system models into a regional recycled system model to determine the economic and hydraulic feasibility of a regional system. The modeling effort identified \$55.5 million of improvements required for the regional system. A benefit/cost analysis determined that the regional system concept was cost-effective.

**Recycled Water System Master Plan\* | Walnut Valley Water District | Walnut, California | Principal-in-Charge/Project Manager**

Jim provided overall management for master planning system expansion by identifying potential users and updating potential user demands. The phased improvement program recommended developing several new pressure zones, and constructing \$17.7M in new pipelines, reservoirs, pump stations and wells.

**Encina Basin Phase II Recycled Water System Study\* | Carlsbad Municipal Water District | Carlsbad, California | Principal-in-Charge/Project Manager**

Jim oversaw an \$18 million system expansion study conducted jointly with another local consultant. He provided oversight for development of a new customer database, state loan application processing, and review of existing and planned computer model results of the expansion plan. A major effort involved evaluating two existing lakes for use in providing seasonal storage. The evaluations included developing necessary upgrades, evaluating water quality impacts, estimating costs for

incorporation into the recycled water system, and determining potential wetlands enhancement at one lake.

**Management System Standard Operating Procedures (MSSOP)\* | Moulton Niguel Water District | Laguna Niguel, California | Principal-in-Charge**

Jim oversaw MSSOP development for the District from 1999 through 2003. MSSOP is an intranet tool enabling District staff to access a variety of data related to its recycled water system operations. These data include water usage, facility drawings, schematics, operating procedures, O&M manuals, and links to external internet sources. Part of this work involved creating a system computer model integrated with a pilot GIS program.

**Sewer Master Plan\* | City of Sunnyside | Sunnyside, Washington | Project Engineer**

Jim performed a comprehensive wastewater infrastructure plan as part of a sewer master plan that involved population and land-use planning. He also utilized computerized modeling of existing and proposed sewer collection systems to project accurate requirements of the system.

**Comprehensive Water Resources Plan | Casitas Municipal Water District | Oak View, CA | Technical Advisor**

As the most recent drought continues to take a toll on surface water supplies, Casitas Municipal Water District (CMWD) brought in Stantec to prepare a Comprehensive Water Resources Plan (CWRP). Jim is responsible for providing review for the long list of alternative water supply projects developed through background research, decision criteria, and the development of a decision-support tool.

**Water Master Plan\* | Newport Beach, CA | 2019 | Project Manager/Technical Advisor**

Jim served initially as the project manager, then as a subconsultant technical advisor for an update to the City's master plan. His work included developing an updated hydraulic model using Innovyze's InfoWater software, developing current water demand/supply data, and developing a comprehensive capital improvement program. The project also included a condition assessment of major supply and distribution facilities throughout the water system.

## **WASTEWATER**

**Ralph W. Chapman Water Reclamation Facility Master Plan\* | Otay Water District | Spring Valley, California | Principal-in-Charge**

Jim directed a facility master plan for the Ralph W. Chapman Water Reclamation Facility. The plan developed a list of 34 improvements to various handling, treatment, and disinfection processes. Total improvement cost was \$10.3 million phased over a 5, 10, and 20-year planning horizon based on improvement priority.

**Wastewater Treatment Study\* | Santa Anita Race Track | Arcadia, California | Project Manager**

Jim managed a study to eliminate or reduce storm runoff from the racetrack into the Los Angeles County storm drain system. Alternatives evaluated included primary and secondary treatment of the

liquid and solid waste streams and the potential for reclaiming some water for nearby irrigation uses.

**North Open Space Sewer Study\* | City of San Juan Capistrano | San Juan Capistrano, California | Principal-in-Charge**

Jim provided project oversight and technical review of a sewer study that involved review of several alternate combinations of sewer alignments and lift stations to convey future wastewater flows from a variety of recreational facilities. Alignment alternatives included bridges, creek and railroad crossings; easements; and alternate combinations of gravity and pressure flow to service this low-lying area.

**Hydraulic Analysis\* | City of San Diego | San Diego, California | Project Engineer**

Jim conducted an extensive hydraulic analysis of the 365-MGD Point Loma Wastewater Treatment Plant effluent channels. The predesign report presented an evaluation of various structural and hydraulic improvements to allow increased flow through the effluent channel and ocean outfall.

**Sanitary Sewer System Design\* | Santa Anita Race Track | Arcadia, California | Principal-in-Charge**

Jim coordinated a design-build effort to construct several stormwater collection pipes for routing stable area runoff to the sanitary sewers. The project also included design of a new branch sewer to accommodate increased flows and new collection points. The \$800,000 project was designed and constructed on a fast-track schedule of two months.

**South Platte Interceptor and Effluent Pump-Back Force Main Value Engineering\* | Metro Wastewater Reclamation District | Denver, Colorado | Value Engineering Team Member**

Jim participated in a four-day value engineering workshop for a major wastewater interceptor line, wastewater pump station and force main. Potential VE design recommendations were estimated to save up to \$17M on the \$75M original design estimate.

**Waimea Wastewater Treatment Plant Design-Build\* | Briant Construction, Inc. | Kauai, Hawaii**

Jim provided assistance in negotiating an engineering contract with the contractor, general project oversight, and assistance with change order negotiation. The design-build project involved expanding the Waimea Wastewater Treatment Plant from 0.30 to 0.70 MGD. The 35-year-old plant operated at greater than 80 percent capacity and much of the process equipment needed to be repaired, replaced or removed. Upgrade work included new preliminary screening and grit removal, flow equalization, MBBR, effluent filtration and disinfection, electrical system upgrades, and solids dewatering.

**Combined Collection System Design\* | Santa Anita Race Track | Arcadia, California**

Jim was responsible for design of approximately 3,200 feet of combined wastewater and stormwater piping for the horse stable area. First-flush storm flows are diverted from the Arcadia Wash flood control facility into a nearby sanitary sewer.

**Collection System Design\* | Crescenta Valley**

**County Water District | La Crescenta, California | Staff Engineer**

Jim was the staff engineer for the design of a major sewer collection system. The 40-mile collection system included pipelines constructed in easements and hilly areas and a sewer lift station and force main. The completed system serves the Crescenta Valley County Water District service area.

**Wastewater Program Management\* | City and County of Honolulu | Honolulu, Hawaii | Quality Assurance Manager**

Jim provided task order scope and fee review and ongoing QC review for a multi-year program management project under a USEPA consent decree. The work involved assisting the City and County in consent decree compliance through SSO spill reduction, collection system upgrade planning, treatment system upgrade planning, and various staff augmentation assignments.

**Phase 1 Services for Wastewater Reclamation Facility Expansion\* | City of Barstow | Barstow, California | QA/QC**

Jim provided QA/QC during design of influent pump station improvements for a 4.5-MGD WWTP.

**SARI Line Realignment and Protection\* | County of Orange | Orange County, California | Project Manager**

Jim provided project management and design oversight of the easterly section of pipeline realignment from Green River Golf Course to Gypsum Canyon Road. The eastern alignment included a 43 MGD metering station and building in a regional park; and 10,800 feet of 54-inch diameter interceptor sewer including 4,160 feet of tunnels. Tunneling included an 8-foot diameter, 1,200-foot long reach under the Santa Ana River; and what at the time was the first and largest intentional compound S-curve hydraulic tunnel in North America. The curved tunnel operation included a hydraulic jacking technology never before used in North America. The project also required coordination with Caltrans along the 91 Freeway, county and state park lands, and the Army Corps of Engineers who were concurrently constructing flood control improvements along the Santa Ana River. The project won Wastewater Project of the Year, ASCE Orange County in 2015.

**Emergency Sewer Realignment Along San Juan Creek\* | City of San Juan Capistrano | San Juan Capistrano, California | Project Manager**

During the heavy rainstorms in the winter of 1995, Jim assisted the City in preparing an emergency sewer line realignment design for a washed-out sewer line along San Juan Creek. During the fast-track, one-month project, a new alignment was selected and surveyed, permanent sewer easement descriptions were prepared, contract documents were prepared, and contractors were prequalified for construction of 1,100 feet of 18-inch trunk sewer line.

**3-62 Westminster Force Main Relocation | Orange**



## **County Sanitation District | California | Technical Advisor**

During preliminary design, Jim provided technical review and editing of an initial pump station rehabilitation PDR, and later worked with the management team to rescope the project to include final force main design. The 2.7 mile long dual force main required coordination with the US Navy along the Seal Beach Naval Weapons Station, and Cities of Seal Beach and Westminster. He provided technical review during design that included 9,800 feet of dual 36" HDPE force mains in a common trench, 4,600 feet of 36" HDPE in a single trench, and 4,600 feet of 36" HDPE sliplined in an existing 42" pipe. Design also included one flood control channel overcrossing and rehabilitating a dual barrel inverted siphon under another channel. Construction sequencing was critical to maintain one force main in service throughout construction. He also participated in all design submittal reviews, and provided technical oversight of engineering services during construction.

## **WATER TREATMENT**

### **Culver Drive Domestic Water Relocation | Irvine Ranch Water District | Irvine, California | Project Manager**

Due to a road widening project, Jim managed an accelerated design to relocate a portion of a 12-inch domestic waterline from the parkway to the street and bore and jack under a major storm channel. The plan was to prepare contract documents and a cost opinion for the relocation within a 2.5-month schedule coinciding with year-end holidays in order to have plans ready for bidding to accommodate the planned road repaving schedule. Original contract documents were completed on schedule. However, the project start was delayed due to paving contractor delays.

### **Air Stripper/Nitrate Blending for Wells 7 and 8B\* | City of Pomona | Pomona, California | Principal-in-Charge**

Jim assisted in the preliminary design report and conducted all design reviews for facilities, including a chloramination disinfection system housed in a chemical storage and feed pump building, wet well modifications, two existing low-lift booster pumps and space for a third pump, motor controls, instrumentation, SCADA system integration, and miscellaneous site piping. He also coordinated with the California DHS to bring the project on-line successfully.

### **Treatment Alternatives Analysis\* | Park Water Company | Downey, California | Project Engineer**

As project engineer, Jim supervised a treatment alternatives analysis and preliminary capital and operations and maintenance cost analysis for removing radon from Park Water Company groundwater wells as part of a response to USEPA's proposed Radon Rule.

### **Groundwater Treatment Plant\* | Nuevo Water Company | San Bernardino County, California | Principal-in-Charge**

Jim was responsible for designing a groundwater production well treatment system for H2S

contamination. The treatment system consisted of an air stripping tower and chemical feed systems for raising and lowering pH.

### **Perchlorate Treatment Plant Design-Build\* | City of Pomona | Pomona, California | Design QC Manager**

Jim was the design QC manager for a high-capacity single-pass ion exchange (IX) plant at the City's AEP facility, along with new bypass and pumping facilities upstream and downstream of AEP treatment. The project included permitting; providing a bypass of the existing AEP systems for approximately 3.7 MGD consisting of booster pumps, bag filters and associated piping, connections, instrumentation and controls; and combining effluents from the new bypass and AEP systems and directing a total of 16.6 MGD to the new perchlorate treatment plant, including booster pumps, associated piping, connections, instrumentation, monitoring and controls.

### **Water Treatment Plant Upgrade | Mammoth Community Water District | Mammoth Lakes, California | Project Manager**

Jim managed the study, design and construction management services for Surface Water Treatment Rule compliance for the District's Lake Mary plant. Jar testing and full scale filter performance testing were conducted to assess polymer effectiveness in cold, low-turbidity water. Design modifications included adding a rapid mix stage with chemical coagulant to provide an enhanced filtration process. Other modifications included chemical feed systems with six months of chemical storage during winter months.

### **Water Quality Study\* | Park Water Company | Downey, California | Project Manager**

Jim participated in a series of public forums presenting topics on water quality regulations for Park Water Company's water systems in California and Montana. He also participated in a water quality study for Park Water Company's five water systems. The study included conducting water system surveys and evaluations from the design, operation and regulatory compliance perspectives for both current and future drinking water regulations.

### **Discharge Elimination Study\* | Metropolitan Water District of Southern California | Los Angeles, California | Project Advisor**

Jim was the project advisor for a discharge elimination study. Work included reviewing all existing treatment and transmission facilities for compliance with NPDES permits and waste discharge permits, and recommending the elimination or acquisition of discharge permits.

### **Water Systems Study\* | Metropolitan Water District of Southern California | Los Angeles, California | Project Manager**

Jim managed a study of MWD's small water systems along the Colorado Aqueduct. Colorado River water quality and Surface Water Treatment Rule compliance requirements were reviewed for all five MWD domestic water treatment plants and the U. S. Bureau of Reclamation's domestic treatment plant at Parker Dam. Study recommendations for pilot testing membrane filter systems were conducted by

MWD and the filter systems subsequently were installed at the District's plants.

**Water Treatment Plant Start Up | Mammoth Community Water District | Mammoth Lakes, California | Principal-in-Charge**

Jim assisted the District with start-up, and O&M manual preparation for its 3-mgd water treatment plant, designed to meet current Surface Water Treatment Rule requirements.

**Value Engineering Studies\* | Metropolitan Water District of Southern California | Los Angeles, California | Principal-in-Charge/Client Manager**

Jim managed three VE studies including the Diemer Water Treatment Plant Orange County conveyance and distribution system maintenance facility, Orange County feeder lining repairs, and Weymouth sodium hypochlorite and sulfuric acid feed facilities.

**Well 22B Treatment System\* | City of South Gate | South Gate, California | Project Manager**

Jim assisted the City in reviewing vendor plans for start-up and operation of Well 22B treatment system using ozone and UV light to remove volatile organic compounds from the well. His assistance included reviewing disinfection options, reviewing start-up and testing plans, and assisting with DHS permitting of the new treatment facility.

**Groundwater Quality Study\* | City of Monrovia | Monrovia, California | Project Manager**

Jim managed a groundwater quality study and VOC treatment alternatives analysis for the City. The preliminary report reviewed air stripping, roto stripping, and GAC treatment processes.

**Fluoridation Facilities Project for the Weymouth, Diemer, Jensen, and Mills Filtration Plants\* | Metropolitan Water District of Southern California | Los Angeles, California | Principal-in-Charge**

Jim oversaw the overall design review and managing the preliminary design effort for addition of fluorosilicic acid chemical feed to four water filtration plants in the greater Los Angeles area. Filtration plant capacities range from 326 to 750 MGD. The project included providing mechanical, civil, structural, electrical and instrumentation design for chemical storage tank farms, chemical feed pumping and pipe routing, chemical injection, safety measures for handling the highly corrosive chemicals, and incorporation into the plant control system.

**Bartolo Water Treatment Plant\* | Suburban Water Systems | Whittier, California | Project Engineer/Project Manager**

Jim conducted a water supply investigation and plan for Suburban Water Systems that was followed by the design of a 14-MGD groundwater treatment system for the USEPA as part of the San Gabriel Basin Superfund Cleanup program. Process trains included air stripping, vapor-phase Granular Activated Carbon (GAC) treatment and steam regeneration of the GAC for several groundwater contaminants including TCE, PCE, and CTC. The design also included a 14-MGD pump station.

**On-Call Consulting Services for PFAS Treatment Systems Design | Orange County Water District |**

**Santa Ana, California | Project Manager**

Jim is leading a similar staff and subconsultant team for four wellhead treatment sites for the City of Santa Ana. Work includes preliminary design, final design, bid phase support, engineering services during construction, and part time inspection services. Sites include Well 40 currently in construction, Well 38 finishing final design, Well 31 in predesign, and Wells 27 and 28 in preliminary design.

**Groundwater Treatment Plant\* | Nuevo Water Company | Nuevo, California | Principal-in-Charge**

Jim was responsible for designing a groundwater production well treatment system for H<sub>2</sub>S contamination. The treatment system consisted of an air stripping tower and chemical feed systems for raising and lowering pH.

**San Fernando Basin Groundwater Remediation Project | Los Angeles Department of Water and Power | Los Angeles, California | Technical Reviewer**

Jim provided technical review for the civil design portion of the San Fernando Groundwater Remediation Project. This \$580 million effort addressed groundwater contamination in one of the largest aquifers in Southern California and restored a local source of drinking water for more than 800,000 people. Stantec was retained on a progressive design-build team with Kiewit to design and construct treatment facilities at two plant sites: the 25-MGD North Hollywood Central Facility and the 50-MGD Tujunga Well Field. The scope for the combined sites includes the installation of 6,500 feet of raw water pipeline, construction of UV treatment and storage buildings, and the addition of several pumps. Stantec provided process, civil, mechanical, structural, architectural, landscape, and I&C engineering design services.

**WATER PUMP & LIFT STATIONS**

**Seal Beach Pump Station Rehabilitation | Orange County Sanitation District | Seal Beach, CA | 2017-2018 | QA/QC Review and Technical Advisor**

Jim reviewed final deliverables for the Station's rehabilitation. Work consisted of analyzing the Station's upstream trunk system to determine the best area to begin construction of four new facilities for odor control systems throughout the region. The OCSD collection system model was updated to complete a capacity analysis of the pump station, develop a replacement forcemain, building rehabilitation plan, and design a facility with an aesthetically pleasing building with Green Building Code design approaches.

**1050-Zone Secondary Feed Pump Station | Moulton Niguel Water District | Laguna Niguel, CA | Project Manager**

2020-present | Preliminary and final design of a backup pumping station with three 255-GPM duty pumps and a 3,200-GPM fire pump, emergency generator, and distribution piping.

**Puerta de Luz Lift Station Decommissioning\* | Santa Margarita Water District | Santa Margarita, California | Principal-in-Charge**

Jim provided technical oversight and QC review for

*\* denotes projects completed with other firms*

decommissioning a small sewer lift station and providing both new and rehabilitated gravity flow sewer lines connected to an adjacent district's collection system. Pipe rehabilitation consisted of converting a 15-inch to 18-inch sewer using pipe bursting technology.

**Reservoir and Booster Station Design\* | City of Torrance | Torrance, California | Project Manager**

Jim managed the design of the 6.3-MGD Elm Avenue Production Facilities. The design included three 150-hp pumps, a 0.5 MG steel reservoir, water treatment including manganese and iron sequestering, a spray aeration system for hydrogen sulfide removal, and disinfection using ammonia and sodium hypochlorite addition.

**Victoria Pump Station Upgrade\* | South Coast Water District | Dana Point, California | Technical Reviewer**

Jim provided technical and quality control reviews for designing a 1.5-MGD sewer pump station and force main.

**Mead Valley Pump Station Upgrade\* | Eastern Municipal Water District | Lake Elsinore, California | Project Reviewer**

Jim assisted with design of replacement of a below-grade booster station with a new at-grade booster station. The project included a pre-engineered metal building and replacement of the motor control center (MCC).

**Santiago Pit Pumping Station and Turnout Pre-design\* | Orange County Water District | Orange County, California | Principal-in-Charge**

This study involved assessing the engineering and economic feasibility of constructing a conjunctive use project consisting of a 50 to 100 CFS turnout and pumping plant with a variable lift of up to 150 feet. The pumping station would be used for pumping recharge water from Santiago Pit to Santiago Creek as a means of increasing local groundwater recharge capacity. Several types of pumps, drivers, variable flow controls, and installations were evaluated, including a floating platform and a vertical pump shaft connected to the pit by a horizontal tunnel.

**Water System Improvements\* | US Navy | Long Beach, California | Project Manager**

Jim assisted with a water system improvement study, utility field investigations, water system flow testing, and computer modeling of the naval shipyard and naval base. He also provided civil and mechanical design of a 0.75-MG storage reservoir and 6.3-MGD pump station.

**Citywide Sewer Pump Station Upgrade\* | City of San Diego | San Diego, California | Technical Advisor**

Jim provided technical input during design and construction of \$10 million in improvements to renovate 22 sewage pump stations ranging from 0.2 MGD to 3.0 MGD in capacity. The work included performing and reviewing pump hydraulic analysis and evaluations, force main additions, pump and piping replacements, site improvements, standby generator unit additions, odor control unit installations, and emergency storage tank additions. Most of the stations were on very small sites,

requiring significant attention to construction phasing and constructability factors.

## **WATER DISTRIBUTION AND TRANSMISSION PIPELINES**

**Culver Drive 12-inch Domestic Water Relocation | Irvine Ranch Water District | Irvine, CA | 2020 | Project Manager**

Stantec prepared road widening and reconstruction drawings for the Culver and University Drive intersection improvements and during construction a portion of a 12-inch domestic waterline needed to be relocated from the parkway to the street and under a major storm channel. IRWD contacted Stantec to assist with an expedited design for the waterline relocation. The original plan called for contract documents to be completed within a 2-1/2-month schedule coinciding with Thanksgiving, Christmas and New Year's holidays in order to have plans ready for bidding to accommodate the road paving schedule. This required coordination with the paving contractor and City of Irvine. Relocation design required lowering the existing pipeline approximately 15 feet and boring and jacking under the existing box culvert. The launching and receiving pit locations were located to minimize traffic interference in Culver and University Drives and avoid further utility relocations. Coordination with the Department of Drinking Water was also required due to the channel boring. Original contract documents were completed on schedule. However, the project was delayed due to paving contractor delays, necessitating additional City coordination and design modifications.

**3-62 Westminster Force Main Relocation | Orange County Sanitation District | Orange County, California | 2018-Present | Technical Advisor**

During preliminary design, Jim provided technical review and editing of an initial pump station rehabilitation PDR, and later worked with the management team to rescope the project to include final force main design. The 2.7 mile long dual force main required coordination with the US Navy along the Seal Beach Naval Weapons Station, and Cities of Seal Beach and Westminster. He provided technical review during design that included 9,800 feet of dual 36" HDPE force mains in a common trench, 4,600 feet of 36" HDPE in a single trench, and 4,600 feet of 36" HDPE sliplined in an existing 42" pipe. Design also included one flood control channel overcrossing and rehabilitating a dual barrel inverted siphon under another channel. Construction sequencing was critical to maintain one force main in service throughout construction. He also participated in all design submittal reviews, and is providing technical oversight of engineering services during construction.

**SARI Line Realignment and Protection | Orange County Sanitation District | Orange County, California | Project Manager**

As a major subconsultant, Jim provided project management and design oversight of the easterly pipeline realignment from Green River Golf Course to Gypsum Canyon Road. The eastern alignment included a 43-mgd metering station and building in a regional park; and 10,800 feet of 54-inch diameter interceptor sewer with 4,160 feet of tunnels,



including under the Santa Ana River. Curved tunnel sections included a hydraulic jacking technology never before used in North America. The project required close coordination with OCSD and County Department of Public Works, Caltrans, county and state park lands, and Army Corps of Engineers. The project won Wastewater Project of the Year, ASCE Orange County in 2015.

**Southeast Water Reliability\* | Central Basin Municipal Water District | Carson, California | Principal-in-Charge**

Jim provided client liaison and design review for the preliminary and final design of approximately 11.4 miles of 42-inch-diameter recycled water transmission pipeline. The project also included new pumping facilities consisting of three 7,350-gpm, 900-hp pumps in a new pump station; and three 4,900-gpm, 600-hp pumps in the existing Rio Hondo Pump Station. The project also included adding a variable-speed 3,700-gpm pump and replacing the sodium hypochlorite disinfection system at the Rio Hondo Pump Station, a major supply source for the system.

**Santiago Creek Recharge Turnout Design\* | Orange County Water District | Orange County, California | Principal-in-Charge**

Jim provided overall project direction and QC review for design of a connection to the 66-inch-diameter Santiago Pipeline consisting of a 42-inch-diameter turnout with isolation/control valves, flow meter, and outlet structure for adding recharge water to Santiago Creek during non-rain periods.

**Miscellaneous Waterline Replacements\* | City of Oceanside | Oceanside, California | Principal-in-Charge/Project Manager**

Jim was responsible for leading the design and preparation of construction documents for over 5,600 feet of PVC and DI water lines. Line sizes varied between 6, 8 and 24-inch-diameter. The project involved construction in residential and commercial areas and included geotechnical and survey coordination, preliminary and final design, and office engineering during construction.

**Industrial Way Water Transmission Main Replacement\* | City of Newport Beach | Newport Beach, California | Quality Control**

Jim provided project oversight and quality control design reviews for replacement of a 14- and a 30-inch-diameter water main with a single 36-inch-diameter water main within the Industrial Way public street right-of-way.

**Oak View Pipeline Design\* | Moulton Niguel Water District | Laguna Niguel, California | Principal-in-Charge**

Jim provided project overview and quality control review for the design of approximately 8,400 feet of 8-inch potable and reclaimed water pipelines for a new development in Aliso Viejo, California.

**Bonita Canyon Offsite Pipeline\* | Irvine Ranch Water District | Irvine, California | Principal-in-Charge**

Jim provided overall project direction and quality control review for the design of 38,000 feet of ductile iron and steel domestic and recycled water pipelines

in Bonita Canyon Road to serve the Shady Canyon Development. The pipelines' designs included 16-inch, 24-inch, and 36-inch diameters with construction going through major roadways and a Caltrans crossing.

**Pipeline Alignment Study\* | City of Torrance | Torrance, California | Project Manager**

Jim prepared a preliminary alignment study for 4,600 feet of 8-, 12- and 16-inch-diameter pipeline. Three alternative alignments were investigated including one along the Pacific Coast Highway. Potential utility interference also was evaluated, including a flood control channel, high-pressure gas mains and power conduits.

**Pipeline Repair Analysis\* | City of Tucson | Tucson, Arizona | Project Manager**

Jim analyzed alternative methods for repairing or rerouting pipelines damaged due to river bed erosion and flooding. These pipeline routings involved a number of river crossings. Alternatives included deep bury, alternative pipe materials, and bridge crossings.

**Turtle Rock Pressure Improvements Project\* | Irvine Ranch Water District | Irvine, California | Principal-in-Charge**

Jim oversaw preliminary and final design of 4,000 feet of 12-inch water pipeline in an exclusive residential neighborhood and in undeveloped areas. Additionally, he conducted all preliminary and final design reviews.

**Paseo de Colinas Recycled Water Pipeline Design\* | Moulton Niguel Water District | Laguna Niguel, California | Principal-in-Charge**

Jim provided project overview and quality control review for the design of approximately 30,000 feet of pipeline ranging from 6- to 16-inch-diameter. The project included pressure reducing valves, utilities search, locating irrigation meters and service connections to meter vaults.

**Ortega Highway Pipeline\* | City of San Juan Capistrano | San Juan Capistrano, California | Project Reviewer**

Jim reviewed design of 5,500 feet of 12-inch-diameter steel pipeline and one pressure-reducing structure along Ortega Highway in conjunction with an ongoing road project.

**Reclaimed Water Distribution System\* | Walnut Valley Water District | Walnut, California | Project Manager**

Jim managed the District's reclaimed water distribution system project from the initial state funding (obtaining a \$6 million grant) through final design, construction management and start-up in the early 1980's. The \$8.3 million system included 24 miles of transmission and distribution pipeline up to 20 inches in diameter, a 5.4-MGD pump station, 1.44-MGD booster station and hydropneumatic tank, 2-MG steel reservoir, and hydropower generating station, as well as retrofitting of 27 on-site user irrigation systems. He was also responsible for the user and inter-agency water use negotiations and agreements, negotiations for MWD Local Projects Program funding, and use ordinance and user

manual preparation. In addition, Jim managed design of a second 2-MG steel reservoir added to the system in 1992.

**090G Groundwater Development (GWD) Project\* | Southern Nevada Water Authority | Barclay, California | QA/QC Manager**

Jim managed all QA/QC activities and conducted quality assurance reviews on all technical memoranda and a preliminary hydraulics report for this preliminary design. The project preliminary design consisted of approximately 202 miles of welded steel raw water pipeline, between 72 and 90 inches in diameter; one pumping station: six regulating tanks ranging between 7 and 10 MG in capacity; a 40-MG buried water storage reservoir; and two hydroturbine energy recovery facilities.

**Utilities Design at Cal Poly Campus\* | California State University, San Luis Obispo | San Luis Obispo, California | Project Manager**

Jim managed the design for a \$16 million campus infrastructure improvement program at the Cal Poly, San Luis Obispo campus. Improvements included 15,000 feet of water distribution piping, a 5 MGD pumping station with standby power, 2.5 MGD pumping station upgrade, 0.5-MG concrete reservoir, 8,000 feet of utilidors and utility tunnels, central plant conversion from high pressure steam to hot water boilers, new hot water distribution system piping and hot water heating system conversion to 58 buildings throughout the campus.

**P-1045 New Potable Water Conveyance\* | Naval Facilities Engineering Command | Oceanside, California | Project Manager/Design QC Manager**

Jim oversaw the final design of 28 miles of 12 and 20-inch HDPE water transmission mains, three pump stations (up to 5 MGD capacity) and a 3-MG prestressed concrete reservoir. The project was for NAVFAC at MCB Camp Pendleton as part of a \$54 million design/build contract with a Filanc/Orion JV. The project included horizontal directional drilling under four creeks plus one horizontal directional drill under the I-5 Freeway and NCTD railway.

**Recycled Water Near-Term Facilities Design\* | Rowland Water District | Rowland Heights, California | Principal-in-Charge**

Jim provided overview of design and construction support for portions of Rowland Water District's near-term recycled water pipelines. Project tasks included construction support and record drawing preparation for the Arenth Avenue pipeline (Phase 1), and design and construction support for more than 42,000 feet of pipelines ranging from 8 to 24-inch-diameter included in Phases 2 and 3.

## **CONDITION ASSESSMENT**

**Condition Assessment of Water Distribution System at Southern California Logistic Airport\* | City of Victorville | Victorville, California | QA/QC**

Jim provided QA/QC for a condition assessment report prepared for the Southern California Logistics Airport. An estimated 8 to 10 miles of pipe were surveyed, as well as mainline valves, hydrants, and associated lateral services. The project also involved design and oversight during construction of approximately two miles of replacement pipelines.

## **WATER SUPPLY**

**West Long Beach Advanced Treated Recycled Water Feasibility Study | Long Beach Water Department | Long Beach, CA | Project Manager**

This study assessed the viability of delivering advanced treated water to major industrial customers in and around the Port of Long Beach. Interviews were conducted with potential customers and recycled water supply agencies including LA County Sanitation District/Metropolitan Water District joint planned ATW project, LA San expansion at Hyperion Treatment Plant, and Water Replenishment District. Several combinations of supply sources and customer portfolios were evaluated along with conveyance pipe alignments to deliver this new supply. A shortlist of viable projects was developed and ranked based on quantity of water provided, capital cost of improvements, and projected implementation schedule along with a recommended plan to move forward.

**Water Resources Plan | Liberty Utilities Corporation | Downey, CA | Technical Reviewer**

Jim provided technical oversight and report editing on a long range water supply plan for Liberty's (formerly Park Water Company) three water systems in southern California. The plan addressed seven alternatives for meeting future water demands including additional imported water, expanding groundwater production and or increasing groundwater rights, participating in regional recycled water projects, desalination, water banking, and direct potable reuse. Alternatives were evaluated based on per acre foot cost, implementation schedule and availability of alternate water sources.

**Urban Water Management Plans (2015) | Various Agencies | 2015 | Principal-in-Charge/Project Manager**

Jim led the preparation of 29 UWMPs for the 2015 update. These included plans for most of Municipal Water District of Orange County's member agencies, Central Basin and West Basin Municipal Water Districts, Inland Empire Utilities Agency, and other local cities.

**Achieving Consensus on Banking Concept | Inland Empire Utilities Agency | Chino, CA | Team Member**

Jim is part of a consulting team providing program support to IEUA, Monte Vista and Cucamonga Valley Water Districts, and City of Ontario. The agencies have formed a joint powers authority to explore development of a groundwater bank in the Chino Basin. Work includes developing a conceptual framework for the bank, stakeholder outreach, and preparing a white paper on institutional interface, authority to form a bank, and financial and operational elements.

**Due Diligence Services for Water Utility Acquisition\* | Confidential | California | Lead Water System Engineer**

Jim assisted in the due diligence process in support of a water utility with facilities in two states. He was responsible for determining condition assessment of assets, assisting with regulatory review of capital and operational expenditure analysis (current and projected), projected system growth analysis, and



water quality analysis. He also assisted in preparing the final document in support of the findings.

**La Jolla Recharge Basin\* | Orange County Water District | Anaheim, California | Principal-in-Charge**

Jim provided overall project oversight and conducted design reviews of the final design of an inflatable dam across Carbon Creek, a diversion pipeline, inlet/outlet structures, and a nine-acre earthen storage basin.

**Sedgwick Groundwater Storage Plan and Programmatic EIR\* | Central Basin Municipal Water District | Commerce, California | Principal-in-Charge/Program Manager**

Jim was the principal-in-charge and program manager for a multi-phase program for Central Basin Municipal Water District. The Phase 1 effort involved assessing the feasibility of developing various water supply sources for short- and long-term storage in underlying aquifers to meet future local water demands. Phase 1 resulted in preparation of an environmental scoping study. Phase 2 expanded on this work to develop programmatic-level engineering concepts for using imported water, recycled water and stormwater as sources for groundwater storage augmentation. Extensive groundwater modeling was conducted to estimate the amount of usable groundwater storage capacity in the underlying groundwater basin under various supply source scenarios without adversely affecting overlying facilities, property and existing pumping rights. Other alternatives such as desalination and aggressive water conservation also were evaluated. The supply alternatives and modeling analyses provided the technical basis for developing a draft programmatic-level Environmental Impact Report for public review and comment.

**Rim Rock Reservoir and Pump Station\* | Laguna Beach County Water District | Laguna Beach, California | Principal-in-Charge**

Jim oversaw preliminary and final design for demolition and removal of two reservoirs and pump station, and design of a new 0.9 MG reservoir, pump station, and new transmission piping. Alternatives were developed for reservoir type (concrete vs steel), site placement and pipeline routing.

**Mission Trails Flow Regulatory Structure II\* | San Diego County Water Authority | San Diego, California | QA/QC Review**

Jim provided quality assurance/quality control (QA/QC) reviews during predesign and final design of two independent storage bays approximately six million gallons each, inlet valve structure, outlet vaults, connection to the new Pipelines 3 and 4, and an access and control building.

**Reservoir Study and Design\* | Capistrano Beach Water District | Orange County, California | Principal-in-Charge**

Jim provided overall project direction for an initial alternatives evaluation comparing various reservoir types for ease of construction and cost, given the existing site limitations. The study recommended an approximate 2-MG concrete reservoir. The follow-on preliminary design involved a review of alternate concrete designs and site configurations. The final

design included a circular 2-MG prestressed reservoir. He also provided technical and quality control review for the study and design.

**Water Conservation Program\* | Irvine Ranch Water District | Irvine, California | Project Manager**

Jim managed an area-wide residential water conservation audit and retrofit program sponsored in part by MWD.

**WELL DESIGN, CONSTRUCTION, AND PERMITTING**

**Hollywood Well Inter-tie\* | City of San Juan Capistrano | San Juan Capistrano, California | Principal-in-Charge**

Jim conducted project reviews for revising well discharge piping and appurtenances to convert a potable production well to non-domestic service. The project involved several piping interconnections.

**Well Equipping Designs\* | Cities of Manhattan Beach, Camarillo, and Fullerton | Manhattan Beach, Camarillo, and Fullerton, California | Project Engineer/Project Manager**

Jim designed potable water well pump systems for the Cities of Manhattan Beach, Camarillo, and Fullerton.

**Well and Treatment System Design\* | US Navy | Port Hueneme, California | Project Engineer**

Jim designed an 1,100-foot-deep water well, which included drilling specifications for a 1,500-GPM-capacity well. Equipment design included a 100-HP motor, discharge piping, and chlorination system and expansion of an existing iron/manganese water filter plant.

**Wellfield Rehabilitation Study and Design\* | City of Whittier | Whittier, California | Project Manager**

Jim led a study that involved a review of existing well casing, pump and motor condition for well depth, size of casing and screen, capacity, and type of driver. He evaluated pump tests and well inspection video surveys. The final report recommended a \$1.3 million well field rehabilitation program. As a follow-on project, Jim managed design and construction assistance of drilling and equipping a 6.5-MGD well, building, and transmission piping for the City.

**Water Facilities Design\* | City of Arcadia | Arcadia, California | Project Manager**

Jim managed the design and Negative Declaration preparation of the City's Live Oak Water Facilities. Work included drilling and equipping a well capable of pumping up to 4,000 GPM, moveable well house, chlorination facility, 0.3-MG reservoir, 9.5-MGD pump station, 24-inch transmission piping, and site improvements. He also provided assistance during construction services.

# Thomas M. Regan PG, CEG, CHG

Senior Hydrogeologist/Groundwater Specialist

42 years of experience · Santa Maria, California

Tom has experience in groundwater resources management, development, and protection. His responsibilities have included groundwater resources development, feasibility of groundwater development, groundwater basin analysis, aquifer characterization, development of regional and basin-wide hydrologic inventories/water balances, and development of hydrogeologic conceptual models. He has provided analysis of groundwater contamination impacting water supply wells, evaluation of coastal seawater barriers and seawater intrusion, well siting feasibility, well and well field siting, well design and construction oversight, well evaluation, well rehabilitation design and oversight, hydrogeologic and geochemical investigations related to the siting of new and expansion of existing groundwater recharge facilities, analysis of recycled water travel times from groundwater recharge operations using storm water, imported water and recycled water, analysis of pumping test data and well interference effects. Tom's experience also includes the design and implementation of drilling, soil sampling, aquifer testing, and field-testing programs related to groundwater recharge and development.

## EDUCATION

BA, Geological Sciences, University of California Santa Barbara, Santa Barbara, California, United States, 1980

## REGISTRATIONS

Certified Engineering Geologist #1655, California Board for Professional Engineers, Land Surveyors, and Geologists, 1991 - Present

Professional Geologist #5203, California Board for Professional Engineers, Land Surveyors, and Geologists, 1991 - Present

Certified Hydrogeologist #327, California Board for Professional Engineers, Land Surveyors, and Geologists, 1995 - Present

## PROJECT EXPERIENCE

### GROUNDWATER

Big Valley Groundwater Sustainability Plan | Lake County Water Resources | Lake County, California | Hydrogeologist

Tom prepared the hydrogeologic conceptual model (HCM) for the recently submitted Big Valley Groundwater Sustainability Plan (GSP). He prepared the HCM text, including eight geologic cross-sections to explain the geologic and hydrogeologic conditions affecting groundwater recharge, discharge, and movement within the basin. The GSP was prepared in record time—nine months—and submitted on-time to the Department of Water Resources.

Basin Boundary Modification Request, Sustainable Groundwater Management Act | Camrosa Water District | Ventura County, California, United States | Hydrogeologist

For this project, Tom prepared geologic cross-sections and recommended basin boundary modifications of the Arroyo Santa Rosa groundwater basin in support of a basin boundary modification request (BBMR) which supported a forthcoming Groundwater Sustainability Plan. The BBMR was submitted to DWR and approved.

Sustainable Groundwater Management Act Technical Support | Southern San Joaquin Valley GSA and Chevron | Kern County, California, United States | Hydrogeologist

Tom reviewed draft chapters of numerous Groundwater Sustainability Plans for up to 17 groundwater sustainability agencies (GSA) in Kern, southern Monterey, and western Kings Counties. His reviews focused on chapters describing hydrogeologic conceptual models, undesirable results, minimum thresholds, and measurable objectives.

**Verdugo Basin Groundwater Evaluation and Monitoring | California Department of Water Resources | Los Angeles County, California | Hydrogeologist**

Tom managed and performed a groundwater evaluation and monitoring project under the Department of Water Resources-administered AB 303 Local Groundwater Assistance Funding Program for small water systems to identify potential new production well sites, provide information to stakeholders regarding the Verdugo groundwater basin to enhance balanced management of local groundwater and imported water supplies, provide additional geologic and hydrogeologic data to DWR to update DWR Bulletin 118, and provide new groundwater level and quality data to optimize groundwater resources development in the Verdugo basin. The study entailed the drilling and installation of three monitoring wells to crystalline bedrock, nine months of groundwater level and quality monitoring, a preliminary estimate of safe yield, data analysis, and final report preparation.

**Groundwater Recharge Feasibility Study | Department of Water Resources | Kern County, California, United States | Project Manager**

Tom managed a multi-disciplinary preliminary groundwater banking study under the Department of Water Resources-administered Proposition 13 Grant Funding Program to determine the technical feasibility of developing a full-scale conjunctive-use project in the White Wolf Basin in the southern San Joaquin Valley. The study involved seven tasks. Task 1 involved detailed review of available published and unpublished geologic and hydrogeologic data and of oil-field geologic and geophysical data from the nearby Tejon Oil Field. Task 2 involved a preliminary geotechnical investigation, including surficial soil mapping followed by shallow subsurface drilling and laboratory soil testing and percolation tests to identify potential groundwater recharge areas. A pilot recharge basin was then constructed in a representative area and equipped with various climate and vadose zone monitoring equipment, the latter, to track the wetting front as raw State Water Project water percolated in the pilot recharge basin. The pilot recharge basin was tested using various wet and dry cycles to determine optimum recharge rates. Task 3 involved the drilling of three deep exploratory borings to maximum depths of 1,700 feet to characterize subsurface geologic and hydrogeologic conditions. As part of this work, a number of fine-grained sedimentary layers (potential aquitards) that may impede recharge in certain areas were identified in the subsurface. In addition, methane gas from the nearby Tejon Oil Field was observed in certain portions of the underlying aquifer.

**Hydrogeologic Conceptual Site Model | Confidential Client | Western Kern County, California | Hydrogeologist**

Tom prepared a regulatory-agency-directed hydrogeologic conceptual site model of an operating oil field in western Kern County. He conducted research and compiled considerable data regarding historic site operations, geology, and groundwater water levels and quality conditions. He also prepared the HCM.

**Water Supply Assessments - Renewable Energy and Carbon Capture and Sequestration Projects \* | Various | California, United States | 2019-Present | Hydrogeologist**

Prepared Water Supply Assessments (WSAs) for a variety of renewable energy and carbon capture and sequestration (CCS) projects throughout California in accordance with SB610 and more recently AB205 legislation. Renewable energy project WSAs were prepared for two wind energy projects in northern California and five solar projects in the San Joaquin Valley and Mojave Desert. The CCS WSAs were prepared for confidential clients in the southern San Joaquin Valley. The WSAs entailed an analysis of construction and long-term (operation and maintenance) water supply sources and demands for the proposed projects using available surface water and/or groundwater supplies in the groundwater basin(s)/subbasin(s) impacted. The WSAs also included an analysis of water supply availability for single and multi-year drought cycles over a 20-year operational period

**GROUNDWATER SUPPLY / WELLS**

**Well Drilling and Construction Support Services | LADWP | San Fernando Valley, California | Project Hydrogeologist**

Tom provided field hydrogeologic services for the drilling, construction, and development of five high-capacity water supply wells in South Los Angeles as part of the Manhattan Well Improvement Project. Services included pilot hole reaming lithologic sampling and logging to depths of 1,580 feet, geophysical and caliper log review, well construction oversight, and airlift and swabbing development and airlift testing oversight. Tom also provided field hydrogeologic services for the Groundwater System Improvement Study in the eastern San Fernando Groundwater Basin. Services included pilot hole drilling and pilot hole reaming oversight, including lithologic sampling and logging; collecting discrete-depth Simulprobe groundwater and soil samples; recording penetration rates and drilling fluid properties; monitoring and reviewing geophysical logging of the pilot hole and reamed borehole; triple-completion monitoring well construction to depths of 880 feet; well development; monitoring of bio-fouling treatment and redevelopment of most wells; groundwater sampling; and ZIST pump installation, optimization, and compliance testing activities. Additional field work involved groundwater sampling from a variety of production and monitoring wells in Burbank, Pacoima, and San Fernando using submersible pumps and ZIST purging methods.

**Hydrogeologic Technical Support | Los Angeles  
Department of Water and Power | Inyo County,  
California, United States | Hydrogeologist**

Tom provided hydrogeologic services to support a variety of projects, including the Owens Lake Recharge Study, George Wellfield Hydrogeologic Evaluation, and Owens Valley Groundwater Management Plan chapter regarding evaluation of in-valley groundwater storage and maintenance plan for well assets". In the former study, Tom researched available hydrogeologic, geologic, geophysical, well construction and production data to assess the hydraulic characteristics of the underlying aquifers. The results of the investigation yielded information regarding changes in aquifer hydraulic conductivity that were used to recommend locations and preliminary designs for higher-capacity production wells. In the latter study, Tom reviewed available well construction, operation and historical production data for more than 100 production wells in the Owens Valley, and prepared the "Maintenance Plan for Well Assets" chapter in the Groundwater Management Plan. The chapter provided a detailed water level monitoring, well inspection, rehabilitation and replacement schedule, and flow chart to address deficiencies in the current data collection program and prioritize wells for rehabilitation and replacement. He has also been involved in several other studies related to groundwater recharge and recovery of surplus Los Angeles Aqueduct water in the Owens Valley groundwater basin and in other basins in Los Angeles and Kern counties adjacent to the Los Angeles Aqueduct.

**Water Well and Groundwater Supply Study | Kern  
County, California, United States | Project  
Hydrogeologist**

Tom provided hydrogeologic services to support the water supply planning for four proposed solar energy projects near California City and Boron, California. The projects included conducting a well canvass of all water wells in the project areas, preparing well inventory reports that provided details of the well canvass, and developing companion groundwater well inspection and testing work plans to assess the physical condition and operational characteristics of selected wells that could potentially meet the water supply demands of the projects. Detailed well inspection and testing flow charts were developed to provide the methodology for the assessments.

**Monitoring Well Construction and Destruction  
Oversight | City of Palm Springs | Palm Springs,  
California, United States | Hydrogeologist**

Tom managed the Colorado River Basin Regional Water Quality Control Board (CRBRWQCB)-requested modifications to the City of Palm Springs' Wastewater Treatment Plant groundwater monitoring network. He prepared a work plan, technical specifications, and bid documents to construct three monitoring wells, destroy one monitoring well, and equipping five monitoring wells with low-purge submersible pumps. Tom managed drilling, design, construction, and development of new monitoring wells; equipping new and existing monitoring wells; and destruction of the monitoring well. A final report documenting the work performed was submitted to the CRBRWQCB.

**Hydrogeologic Services | Los Angeles County  
Department of Public Works | Los Angeles,  
California, United States | Project Manager**

Tom managed and performed a variety of hydrogeologic studies and investigations at Los Angeles County Fire Department (LACFD) Camps 14 (Santa Clarita/Saugus) and 19 (Azusa) from 2013 through 2019. Initial work involved drilling and installing three, shallow, alluvial aquifer monitoring wells at LACFD Camp 14 to monitor up- and down-gradient water quality conditions adjacent to a new, on-site wastewater treatment and disposal system with multiple active and abandoned leach fields. Additionally, three older monitoring wells in the underlying sedimentary bedrock that contained high-salinity groundwater were decommissioned. Tom also evaluated the single, operating water supply wells at LACFD Camps 14 and 19. The evaluation reports indicated the LACFD Camp 14 well was improperly constructed, the well casing was severely damaged, and the well needed to be replaced. The California Department of Fish and Game and U.S. Army Corps of Engineers also advised LACFD that the wells at both facilities needed to be relocated because they were in a 100-year flood zone and environmentally sensitive habitats. In response, Tom conducted well siting studies and exploratory drilling at one location at LACFD Camp 19 and three locations at LACFD Camp 14. He worked with the client to select replacement well sites; prepared well construction technical specifications and bid documents; and provided hydrogeologic oversight for the drilling, design, construction, and testing of three potable wells at the two fire camps. He also recommended design pump settings and discharge rates for each well.

**Well Siting Evaluation | City of Pasadena |  
Pasadena, California, United States | 2019 | Project  
Hydrogeologist**

Tom managed and conducted a municipal well siting evaluation related to volatile organic compound (VOC), perchlorate, and nitrate contamination. The evaluation included a review and analysis of historic municipal well operations, monitoring well and municipal well VOC, perchlorate and nitrate data, monitoring well and municipal well lithologic data, geologic and hydrogeologic data, municipal well dynamic spinner log data, and groundwater model and capture zone analysis. The results of the evaluation were presented in a technical memorandum with recommendations for a preferred well site.



**Well Drilling and Construction Support Services, KB Homes Wells 4-76 and 4-77 and KHovnanian Homes Well 4-90 | KHovnanian Homes | Lancaster, California, United States | Project Hydrogeologist**

Tom managed and provided hydrogeologic services to support the planning, drilling, design, construction, development, and testing of three municipal water supply wells with aquifer storage and recovery (ASR) capabilities at two residential development projects. Technical services included conductor and pilot hole drilling, lithologic logging, discrete-depth aquifer testing and analysis, well design, well construction observation, and development and aquifer testing of the three wells to assess and provide design production rates for each well. He prepared and submitted well completion reports to KHovnanian Homes and LACWWD 40, the agency taking over the wells' operation. Tom is currently coordinating with LACCWD 40 to rehabilitate and test KHovnanian Homes Well 4-90.

**Well Drilling and Construction Support Services for John Latorraca Correctional Center Well 5 | Merced County | Merced County, California | Hydrogeologist**

Tom provided hydrogeologic support services for the drilling, design, construction, development, and testing of a replacement water supply well to provide a reliable source of water for the John Latorraca Correctional Center. Services included pilot hole lithologic and geophysical log review; soil sample selection and review of sieve analysis; well design; well construction observation; review of development logs; planning, review, and analysis of step-drawdown and constant rate pumping tests; and preparation of a well completion report with recommendations for a design discharge rate and pump setting.

**Vacaville Hydrogeologic Services | BLC Vacaville | Vacaville, California | Hydrogeologist**

As part of land development mitigation measures for a residential development company, Tom conducted a water well siting feasibility study on the mitigation lands; developed a preliminary well design; prepared well construction specifications and bid documents for a new irrigation well; conducted a pre-bid job walk with prospective drilling contractors; provided bid review; helped the client select the drilling contractor; and oversaw the drilling, discrete-depth zone sampling, design, and construction of a 2400-foot-deep, high-capacity irrigation well in an area where the deepest wells were less than 500 feet and produced marginal quality groundwater. He provided recommendations for a design discharge rate, 1800 gpm, and pump setting. The water quality was considered excellent to irrigate historically grown crops and was approved by UC Davis' Division of Agriculture and Natural Resources.

**Well Drilling and Construction Support Services for Lahontan National Fish Hatcheries Complex Well 4R | US Fish and Wildlife Service | Gardnerville, Nevada | Hydrogeologist**

Tom provided hydrogeologic services on behalf of a government contractor for the drilling, design, construction, development, and testing of a replacement water supply well to provide a reliable source of supply for the fish hatchery. Services included pilot hole lithologic and geophysical log review; soil sample selection and sieve analysis review; well design; well construction observation; development logs review; and planning, review, and analysis of step-drawdown and constant rate pumping tests. He also provided recommendations for design discharge rates of 900 and 1200 GPM.

**Groundwater Management Plan-Owens Valley | LADWP | California, United States | Hydrogeologist**

Prepared comprehensive evaluation of LADWP water supply wells in Owens Valley with recommendations for future maintenance, rehabilitation and replacement.

**Bellefield Phase 2 Solar Energy Project Exploratory Well Drilling Plan | Primoris Renewable Energy | Mojave, California, United States | 2024-Present | Project Hydrogeologist**

Prepared a groundwater resources exploratory drilling plan on behalf of a construction contractor of the Bellefield Phase 2 Solar Energy Project in California City. The next phase of work will include the drilling of four exploratory borings to a minimum depth of 500 feet to assess groundwater supplies available for construction and long-term operation of the project.



## Tyler Hadacek PE

Process Engineer

11 years of experience · Austin, Texas

Tyler is a senior process engineer with experience in water, wastewater, and water reuse treatment, covering projects from master planning through conceptual design, final design, permitting, and support during construction. His experience includes managing and designing conventional and advanced treatment plants for water and wastewater, treatment plant rehabilitation and expansion, unit process retrofits, wellhead treatment systems as well as conducting planning studies, water quality studies, and treatment plant operations support. He has been extensively involved in many integrated water resources and water reuse projects including alternative delivery design-build, with an emphasis in groundwater treatment, advanced treatment, disinfection, and membrane processes. He has worked on treatment facilities ranging from distributed/well-head application to full scale plants of up to 500 mgd.

### EDUCATION

Master of Science, Environmental Engineering, University of California at Los Angeles, Los Angeles, California, 2013

Bachelor of Science, Civil and Environmental Engineering, University of California at Los Angeles, Los Angeles, California, 2012

### REGISTRATIONS

Registered Civil Engineer #84298, State of California, Expires: 2025

### PROJECT EXPERIENCE

#### WATER TREATMENT

Wilson Reservoir and Wellhead Water Treatment Design | City of South Pasadena | Pasadena, California, United States | Process Engineer

Tyler was a process engineer for the design of a 3,000 GPM wellhead treatment to remove 1, 2, 3-Trichloropropane (TCP) from the groundwater to be used as a drinking water source. The design utilized granular activated carbon (GAC) for treatment and the project is located in a constrained residential area with particular challenges to the site, including height restrictions and limited footprint.

San Fernando Basin Groundwater Remediation Project | Los Angeles Department of Water and Power | Los Angeles, California | Project Engineer

Tyler served as process engineer and design coordinator for the progressive design-build project of two new groundwater treatment facilities of 38 MGD and 25 MGD. He assisted with coordinating the process design for pretreatment solids removal, UV-AOP treatment with hydrogen peroxide, granular activated carbon (GAC) adsorption, and modifications to the chloramination and fluoride chemical feed systems. Tyler also oversaw the value engineering design proposals and evaluations on the project.

Round Mountain Water Treatment Plant | Camrosa Water District | Camarillo, California | Process Engineer

Tyler provided engineering support services during construction for the brackish groundwater RO membrane treatment plant at Round Mountain. He has been involved during the start-up phase at the water treatment plant and has helped with troubleshooting and finding solutions to issues surrounding the membrane treatment system.

Tracer Study, Chlorine Disinfection, and Bioassay Testing | Camrosa Water District | Camarillo, California | Process Engineer

Tyler was involved in performing a chlorine disinfection study involving bioassay testing to rerate the existing chlorine contactor for producing Title XXII recycled water at higher flow rates. This rerating was based on the experimental proof of viral and bacterial disinfection as opposed to meeting the 450 mg-min/L CT requirement – one of the first projects of its kind. This plant scale study involved a tracer study, a chlorine demand study, and a chlorine disinfection study involving seeding of MS2 bacteriophage and monitoring virus and coliform levels to show effectiveness of free chlorine disinfection. Tyler was heavily involved in all phases of the project including planning the study, performing of the experiments, analyzing and evaluating the data, and writing the final report for this study. The project was accepted as a paper and presentation at the WateReuse 2015 Conference.

**Carbon Dioxide Injection System for pH Adjustment |  
Antelope Valley-East Kern Water Agency |  
Palmdale, California | Project Engineer**

Tyler was the project engineer for the design and construction of the carbon dioxide injection system and for pH control at the 90-MGD Quartz Hill water treatment plant. Tyler evaluated all the process and equipment alternatives, developed the preliminary design, and managed the interdisciplinary design team. He developed the procurement documents and coordinated the assigned procurement contract to the construction contractor. His role involved project management support, managing the budget and schedule, and engineering support services during construction.

**Disinfection CT Calculation Updates for SCADA |  
Antelope Valley-East Kern Water Agency (AVEK) |  
Palmdale, California | Project Engineer**

Tyler assisted in updating the CT equations for all four drinking water treatment plants based on new chlorine contact basins and contact pipelines and corresponding tracer studies. He developed CT equations, high level programming logic, and HMI layouts for use by a system integrator to update the SCADA systems at each plant.

**Arsenic Wellhead Treatment Alternatives Analysis  
and Preliminary Design | Coachella Valley Water  
District | Palm Desert, California | Project Engineer**

Tyler led a two-step process of an alternatives analysis and subsequent preliminary design of a wellhead treatment system for a 1000-GPM well. This involved evaluating an existing ion exchange arsenic removal system and potential options to abandon, rehabilitate, or replace the treatment system. Tyler performed a thorough evaluation of water supply alternatives and process alternatives, including ion exchange and adsorption treatment.

**Pre-procurement of MF/UF System for the North City  
Pure Water Facility | City of San Diego | San Diego,  
California | Project Engineer**

Tyler is the lead project engineer for development of the pre-procurement documents for the MF/UF system for the NCPWF. The procurement package involved lifecycle cost evaluation, and included P&IDs and specifications for the membrane equipment and ancillary systems.

**Arsenic Ion Exchange and Manganese Treatment  
System Evaluation Study | US Navy | Bridgeport,  
California | Project Engineer**

Tyler evaluated an arsenic and a manganese drinking water treatment system in decentralized, remote locations treating contaminated groundwater. The project consisted of site investigations, data collection and analysis, treatment process evaluation, economic analysis, and recommendation of treatment system alternatives. As project engineer for the arsenic treatment evaluation, he developed preliminary design criteria for ion exchange and adsorption treatment systems. Tyler exercised sensitivity to existing conditions and client values, and applied a comprehensive technical knowledge of removal processes, as well as interdisciplinary design requirements to propose optimal solutions for the client.

**Graves Reservoir and Wellhead Water Treatment  
Design | City of South Pasadena | South Pasadena,  
California | Process Engineer**

Tyler was the process engineer for an 800-GPM wellhead treatment design to remove nitrate, perchlorate, carbon tetrachloride, and tetrachloroethylene from the groundwater to be used as a drinking water source. The design utilized GAC, nitrate-selective ion exchange, and on-site chlorine generation for treatment. The ion exchange treatment uses a bypass and blend arrangement to minimize the flow through the ion exchange reactors and reduce costs. It also incorporates on-site resin regeneration and brine minimization technologies to reduce costs of resin and brine disposal. Process screening and life-cycle cost evaluation were performed as part of preliminary design for the nitrate treatment process selection, resulting in brine-minimizing, ion exchange technologies.

**Remediation Alternatives Study and Work Plan |  
Confidential Client | California | Process Engineer**

A large Superfund site in Southern California has multiple contaminated areas with several parties involved. Tyler analyzed the site water quality database and built queries and data analysis templates to estimate contaminant concentrations at different locations. He also worked on conceptual-level treatment system design calculations and cost estimates for extracted groundwater containing various toxic organics and heavy metals. The treatment system consisted of air stripping, ion exchange, UV/advanced oxidation process, and liquid and vapor phase carbon adsorption. This work helped define and evaluate alternatives for the client to address the groundwater contamination.

**Weymouth Water Treatment Plant Filter  
Rehabilitation Design and Construction |  
Metropolitan Water District of Southern California |  
Los Angeles, California | USD 35M | 2013-Ongoing |  
Process Engineer**

Tyler performed site assessment and was a process engineer for the rehabilitation of 48 filters for a 500-mgd drinking water plant for Metropolitan Water District. He was the primary engineer managing the development of specifications for the contract documents. This project has required a great attention to detail and awareness of client engineer and operator preferences in the rehabilitation of an existing plant that is more than 70 years old and is crucial to delivering water to end users in Southern California.

**City of Santa Ana Well 38 PFAS Treatment Design |  
OCWD | Santa Ana, California, United States |  
Project Engineer**

Tyler is the project engineer for the design of a 2,500 gpm ion exchange drinking water treatment system for treating PFOA and PFOS. He will lead the basis of design development, final design coordination and provide support services during construction

**Advisory Services – Development and Assessment of Water Supply | Millennium Challenge Corporation | Mongolia | Process-Mechanical Quality Reviewer**

Tyler is providing treatment process review and advisory services to Millennium Challenge Corporation (MCC) in support of the development of new water supply to alleviate water shortages and support future water demands. The water supply program involves the development of new water source and both conventional and advanced treatment processes.

**Disinfection By-Product Evaluation and Mitigation Study | Las Virgenes Municipal Water District | Malibu, California, United States | Process Engineer**

Tyler is assisting the District in evaluating the formation of DBPs at their 18 mgd drinking water treatment plant (WTP) and facilitating the adoption of a new strategy and permit to mitigate DPB formation. Tyler is performing bench scale tests and working with the District and the California State Water Board Division of Drinking Water for a revised disinfection strategy for the WTP

**Tapia Summer Discharge Compliance Design – Chlorination/Dechlorination System | Las Virgenes-Triunfo Joint Powers Authority | Calabasas, California, United States | Process Engineer**

The Las Virgenes-Triunfo Joint Powers Authority (JPA) own and operate the Tapia Water Reclamation Facility (Tapia) that discharges its treated effluent for part of the year to Malibu Creek. Stantec helped the JPA conduct an alternatives evaluation and subsequent preliminary design considering multiple options for meeting the nutrient requirements in the discharge to the creek of 1.0 mg/L total nitrogen (TN) and 0.1 mg/L total phosphorous (TP). The option of using potable water and performing ammonia removal was selected and Stantec is performing the detailed design for this system, including new 1,200 LF water pipeline and chlorination and dechlorination contactor and chemical systems. Tyler conducted process evaluation, developed the design criteria, and is coordinating the design and permitting of this pipeline and chlorination and dechlorination facility.

**TCP Impact and Solutions Study | West Valley Water District (District) | Rialto, California | USD 7M | Project Engineer**

Tyler is responsible for this study which includes alternatives analysis, preliminary process design, hydraulics, water quality review, and construction cost estimation. The study evaluated two District wells with 1,2,3 TCP contamination, impacts to the District's water supply, and alternative solutions to bring the wells back online, including blending and treatment.

**1,2,3-TCP Planning Study | Chino Desalter Authority | Ontario, California | Process QA/QC Reviewer**

Tyler was a quality control technical reviewer for this study that evaluated options for treating for 1,2,3-TCP from various contaminated wells. The team developed process models for adsorption and air stripping, along with system-level flow and mass balance calculations and cost estimates. Tyler reviewed the process calculations and complete report.

**High Desert Water Bank (HDWB) - Arsenic Treatment Alternatives Analysis | Antelope Valley East Kern Water Agency | Antelope Valley, California | Process Engineer**

Tyler served as process engineer for the alternatives analysis for arsenic treatment for the High Desert Water Bank project with AVEK. He reviewed water quality from the native groundwater and SWP, SWP pump in policy requirements, and performed a treatment system alternatives analysis including filtration and coagulation-flocculation-sedimentation. He prepared conceptual design for the preferred coagulation-flocculation-sedimentation alternative including sludge handling, along with cost estimates, site layouts, chemical systems design, and project schedule. Tyler will continue as the process engineer for preliminary and detailed design

**Lake Oswego-Tigard Water Treatment Plant (LO-T WTP) Expansion | Lake Oswego-Tigard Water Partnership | Lake Oswego, Oregon | USD 68M | Process Engineer**

Tyler was the lead process engineer for the ozone system during construction, startup, and commissioning. He led the review of all ozone system related submittals, interacting intimately with the ozone system supplier, contractor, and construction management team. He was the lead process engineer for the design and procurement of the liquid oxygen supply system. Tyler performed training sessions for operators during startup and assisted in plant optimization for the entire treatment plant including ballasted flocculation upstream of ozone, and biological filtration downstream. Ozone is used primarily for treatment of taste and odor compounds. The Water Treatment Plant has a capacity of 32 mgd.

**Sunol Valley WTP Ozonation Alternatives Evaluation | San Francisco Public Utilities Commission | Sunol, CA | USD 138M | Project Engineer**

San Francisco Public Utilities Commission's (SFPUC) 160 mgd Sunol Valley Water Treatment (SVWTP) has experienced more frequent taste and odor events due to geosmin and MIB by-products from algae blooms in the source water reservoirs. Tyler was the project engineer for this comprehensive evaluation of up to 9 alternatives, including ozonation of raw, settled, or filtered water. Tyler developed the process design, layouts, and lifecycle cost analyses. He worked closely with SFPUC in a series of workshops to collaboratively assist in the selection of a preferred alternative.



**Ozonation Sidestream Injection Feasibility Study | Milwaukee Water Works | Milwaukee, Wisconsin | Process Engineer**

Tyler was responsible for data aggregation, analysis, and presentation for a feasibility report evaluating the upgrade of the ozone injection from fine bubble diffusion to sidestream injection. The study involved a detailed evaluation of both the existing and proposed new processes, including the physical and chemical process comparisons and a thorough economic analysis on both operation and maintenance and capital costs.

**Hap Cremean Water Plant Treatment Improvements (Ozone/BAF) | City of Columbus | Columbus, OH | Process Engineer**

Tyler assisted as a process engineer for the ozone system during construction and startup. He was involved in review of ozone system submittals, and was onsite for startup assistance. The project implemented a new ozone system with sidestream injection, upstream of biologically active filtration, primarily for treatment of DBP precursors. The Hap Cremean Water Plant has a maximum flow capacity of 125 mgd

**Surface Aeration TTHM Removal | Elsinore Valley Municipal Water District | Lake Elsinore, CA | Project Engineer**

Tyler was the project engineer from predesign through construction. The project involves the use of surface aerators in an enclosed clearwell to air-strip trihalomethanes from the water before the plant effluent is sent to the distribution system. His work included process evaluation, pre-design, management of the interdisciplinary team through detailed design and support during construction, and project management of the budget and schedule

**WATER REUSE & RECLAMATION**

**Chlorine Contactor Tracer Study | City of Simi Valley | Simi Valley, California | Project Engineer**

Tyler was one of two lead engineers that conducted a plant-scale tracer study at a 15 MGD wastewater treatment plant in order to investigate actual contact times and re-rate the chlorine contactor for higher flow rates. He performed dosing calculations, developed the field procedures for the experiments, and helped execute all of the tests at the treatment plant which utilized hydrofluorosilicic acid and fluoride ISE probes. Tyler performed data analysis and co-authored the final report that summarized the study and its findings.

**WWRP Water Master Plan | Valley Sanitation District | Indio, CA | Process Engineer**

Tyler evaluated the current capacity and future sizing of various treatment processes, including the activated sludge process, for the master plan of a 20 MGD wastewater treatment plant. He performed calculations to evaluate the current process, and developed design criteria for the future expansion of the activated sludge process, evaluating alternatives with and without nutrient removal.

**Recycled Water Seasonal Storage Facility Plan of Action and Basis of Design Report – Advanced Water Treatment Plant | Las Virgenes Municipal Water District | Calabasas, California | Process Engineer**

Tyler oversaw basis of design development for an Advanced Water Treatment Plant (AWT) for water reuse for the Las Virgenes Municipal Water District. This is an indirect potable reuse project via surface water augmentation of the Las Virgenes Reservoir. He worked with the team on all treatment processes to develop design criteria, facility layouts, and cost estimates. He was the lead process engineer for the RO system and the development of the O&M cost estimate for the entire facility.

**Pure Water Southern California - Advanced Water Treatment Demonstration Facility | Metropolitan Water District of Southern California | Los Angeles, California | Ongoing | Process Engineer**

Tyler was a process engineer and operator for Metropolitan's Advanced Water Treatment Demonstration Facility, now known as the Advanced Purification Center (APC). He was involved extensively in the treatment process design and equipment procurement, including developing the prequalification documents for the MBR, MF, and UV/AOP equipment. He was also the lead process engineer for the UV disinfection and UV/AOP systems. Tyler has been involved through construction, commissioning, and operations. He was an operator for the facility through the first year and half of testing and monitoring to assist in gaining regulatory approval for the full-scale facility, performing operations, testing, maintenance, and troubleshooting activities. The APC is part of Metropolitan's Pure Water Southern California Program (PWSC)--a regional water supply program that plans to augment groundwater supplies via indirect potable reuse. The full-scale facility will treat secondary effluent from the LACSD Joint Water Pollution Control Plant through MBR, MF, RO, and UV/AOP.

**Hyperion MBR Pilot Facility | City of Los Angeles, Bureau of Sanitation | Los Angeles, California, United States | 2016-2019 | Process Engineer**

Tyler assisted with the detailed design, commissioning and operations plan for a 1.0-mgd AWT demonstration facility including MBR-RO-AOP process train. The facility will be used to collect operational data for future modification of the high-purity oxygen Hyperion WWTP into a 70-mgd MBR facility.

**Pure Water Southern California – Full-scale Boron IX Feasibility Study | Metropolitan Water District of Southern California | Southern California | Lead Process Engineer**

Tyler was involved in supplemental studies for boron removal using ion exchange. He developed the treatment system design and cost estimate to remove boron from the advanced treated water.

**Pure Water Southern California – Full-scale Conceptual Design | Metropolitan Water District of Southern California | Los Angeles County, California | Process Engineer**

Tyler has been involved in the process design for the full-scale, 150-MGD advanced water treatment plant (AWTP) from early conceptual design and recent updates to both the AWTP and additional DPR treatment facilities. The full-scale facility is part of Metropolitan's Pure Water Southern California Program (PWSC)--a regional water supply program that plans to augment groundwater supplies via indirect potable reuse. The full-scale facility will treat secondary effluent from the LACSD Joint Water Pollution Control Plant through MBR, MF, RO, and UV/AOP.

**Septage Receiving Station | South County Regional Wastewater Authority | Gilroy, California, United States | Process Engineer**

The South County Regional Wastewater Authority (SCRWA) is implementing a new receiving facility to receive septage hauler loads and collection system maintenance crew loads from vacuum trucks. Tyler was the project engineer, performing a comprehensive evaluation of alternatives for the facility, and developing the preliminary design. The facility will be designed to provide pre-treatment of screening, grit-removal, and oil and grease removal prior to sending the waste loads into the plant influent for co-treatment with wastewater.

**Program Management Services - Pure Water Antelope Valley | Palmdale Water District | Palmdale, California | Process Engineer**

Tyler is managing Stantec's interdisciplinary design team to deliver the demonstration facility design package for construction. He is overseeing the process design, including UF, RO, UV-AOP and pre-procurement of the process equipment for the demonstration facility. Tyler will also develop the full-scale design criteria for a 5-MGD AWT.

**Pure Water San Diego Program - North City Pure Water Facility | Public Utilities Department | San Diego, California, United States | Process Engineer**

Tyler is a process engineer for the 10% and 30% designs for the North City Pure Water Facility and was a technical reviewer for the 60% and 100% designs. The project will supply water for potable reuse to an existing surface water reservoir and provide advanced treatment of ozone-BAC filters-MF/UF-RO-UV/AOP. Tyler worked on the facility layouts and piping and developed the conceptual design of all treatment processes. He was the process lead for design; controls; and integration of the MF/UF, BAC, and ozone systems for the pre-design of this 40-MGD facility. He performed the process and design calculations and coordinated work of other disciplines. He also led the development of the pre-selection documents for the MF/UF system.

**Water Recycling and Reuse Planning Study | Las Virgenes Municipal Water District | Calabasas, California | Project Engineer**

Tyler supported the evaluation of various water recycling and reuse alternatives for the Las Virgenes Municipal Water District. At a conceptual level, options for direct and indirect potable reuse treatment, conveyance, and storage were evaluated. Political, economic, environmental, permitting, and technical aspects of the alternatives were investigated, and a few alternatives were selected for further consideration in a Basis of Design report.

**Anaheim Water Recycling Demonstration Plant | City of Anaheim | Anaheim, California, United States | Process Engineer**

Tyler provided operations support for the facility. He performed process sizing and operational data analyses for ozone and disinfection optimization. He worked directly with the City and operations staff and supported the procurement of ozone equipment.

**Metropolitan Water District's Pure Water Southern California Program | Metropolitan Water District of Southern California (Metropolitan) | Carson, California | USD 4B | Process Engineer**

Tyler was a process engineer for various technical studies for the Pure Water Southern California program in support of the conceptual planning. He was responsible for an updated opinion of probable cost study for both indirect and direct potable reuse, treatment facilities alternatives study, disinfection booster station study for the 40+ mile conveyance pipeline. He also supported the conceptual design of the 150 mgd advanced treatment facility including ozone, BAC, UF, RO, UVAOP, and stabilization, and 25 and 60 mgd facilities for direct potable reuse.

**Nutrient Removal Alternatives Analysis and Preliminary Design for Reclaimed Water Permit Compliance | Calabasas, CA**

The Las Virgenes-Triunfo Joint Powers Authority (JPA) own and operate the Tapia Water Reclamation Facility (Tapia) that discharges its treated effluent for part of the year to Malibu Creek. Stantec is helping the JPA conduct an alternatives evaluation and subsequent preliminary design considering multiple options for meeting the nutrient requirements in the discharge to the creek of 1.0 mg/L total nitrogen (TN) and 0.1 mg/L total phosphorous (TP). Tyler conducted the biological modelling of secondary and tertiary MBR processes for nitrification-denitrification, and developed the process design criteria and treatment option alternatives evaluation

Tapia WRF Summer Discharge Compliance Design and ESDC - Chlorination/Dechlorination System | Las Virgenes-Triunfo Joint Powers Authority | Calabasas, CA | USD 3M | Project Engineer

The Las Virgenes-Triunfo Joint Powers Authority (JPA) own and operate the Tapia Water Reclamation Facility (Tapia) that discharges its treated effluent for part of the year to Malibu Creek. Stantec helped the JPA conduct an alternatives evaluation and subsequent preliminary design considering multiple options for meeting the nutrient requirements in the discharge to the creek of 1.0 mg/L total nitrogen (TN) and 0.1 mg/L total phosphorous (TP). The option of using potable water and performing ammonia removal was selected and Stantec is performing the detailed design for this system, including new 1,200 LF water pipeline and chlorination and dechlorination contactor and chemical systems. Tyler conducted process evaluation, preliminary design, and oversaw the design, permitting, support services during construction, and commissioning.

### **PFAS INVESTIGATION AND MITIGATION**

On-Call Consulting Services for PFAS Treatment Systems Design | Orange County Water District | Santa Ana, California | Process Mechanical Engineer

Tyler is responsible for the process, hydraulics, and process-mechanical coordination for all wellhead treatment designs for PFAS with ion exchange. He has been involved in preliminary design, final design, bid phase support, and engineering services during construction. This ongoing assignment includes four distinct sites each with separate design and construction packages ranging from 2,000 to 5,700 gpm. The scope also includes hydraulic analysis of the wells and the City's reservoir and distribution system, design of booster pumps, and upgrades of their onsite hypochlorite generation and feed systems where applicable.

### **WATER RESOURCES**

Drinking Water Reservoir Assessment | City of Santa Monica | Santa Monica, California | Project Engineer

Tyler was the project engineer who organized and led the assessment of 4 drinking water reservoirs. Tyler led a team that evaluated and recommended improvements to the reservoirs' structural, mechanical, instrumentation and control features. The deliverable to the City was a comprehensive report with prioritization and cost for all improvements to inform the City's capital improvement projects.

Santa Monica Sustainable Water Infrastructure Project (SWIP) | City of Santa Monica | Santa Monica, California | 2010-2015 | Process Engineer

The City's SWIP is an integrated water resources initiative to improve water sustainability and drought resilience. It involved the addition of reverse osmosis to the existing Santa Monica Urban Runoff Recycling Facility to treat urban runoff and brackish/saline groundwater including PFAS contamination, construction of a new below-grade advanced water treatment facility for treating wastewater and stormwater through MBR-RO-UV/AOP, and a new below-grade stormwater harvesting tank. Tyler was the lead engineer for conceptual design of all facilities. He also collaborated closely with state and regional regulatory agencies for future facilities permitting. Tyler and the Stantec team are supporting the City of Santa Monica through the progressive design-build delivery process, providing technical design review and advice as the City's Owner's Engineer.

### **GROUNDWATER MONITORING AND REPORTING**

Coordinated Integrated Monitoring Plan (CIMP) | East San Gabriel Valley Watershed Management Group | San Gabriel Valley, California | Field Engineer

The East San Gabriel River Watershed Management Group is comprised of the cities of Claremont, La Verne, Pomona, and San Dimas. Victor was responsible for leading a team to develop the WMP and CIMP for the area encompassed by the group. The WMP is a requirement of the National Pollutant Discharge Elimination System (NPDES) Municipal Separate Storm Sewer System (MS4) Permit Order No. R4-2012-0175 (Permit), which was adopted by the Los Angeles Regional Water Quality Control Board (Regional Board) and became effective on December 28, 2012. The CIMP involved an outfall and receiving water monitoring program and MS4 infrastructure database, as well as a non-stormwater monitoring program and effectiveness tracking program. Tyler was involved in conducting water monitoring and stormwater outfall monitoring. Sampling is performed at three receiving water sites for both wet and dry weather events and at three stormwater outfall sites for only wet weather events.

Machado Lake Storm Water Monitoring and Reporting | Los Angeles County Department of Public Works | Los Angeles, California | Field Engineer

Tyler was on a team of engineers that provided water quality monitoring and reporting services for storm water runoff for the county of Los Angeles. He mobilized during storm events to collect storm water runoff for laboratory analysis, analyze water quality onsite, and measure various field parameters. Tyler also performed data analysis and wrote post-event reports on this project that supported the client in their compliance with storm water permits regulating discharge of nutrients and toxic contaminants into receiving waters.



## **Zakir Hirani** PE, BCEE

Advanced Water Treatment - North America Reuse Practice Leader

21 years of experience · Pasadena, California

Zakir is an expert in physiochemical and biological treatment of water and wastewater with emphasis on advanced water treatment. He has worked on over 30 treatment projects providing engineering services including pilot studies, conceptual process design, modeling, detailed design, engineering services during construction, startup/commissioning and process troubleshooting. He also brings process design experience with microfiltration/ultrafiltration (MF/UF), membrane bioreactors (MBR), reverse osmosis (RO), ozone, ultraviolet (UV) disinfection, advanced oxidation processes (AOP) including UV/H<sub>2</sub>O<sub>2</sub> and Ozone/H<sub>2</sub>O<sub>2</sub>. Zakir has been involved with three of the largest potable reuse programs in Southern California, including Metropolitan's Regional Recycled Water Program, the City of Los Angeles' Hyperion 2035 Program, and the City of San Diego's Pure Water Program. He has authored over 70 papers and publications for national and international conferences and peer-reviewed journals. He has operational and design experience with different types of low- and high-pressure membranes. He is a recognized expert in MBR and has coauthored two chapters of The MBR Book by Elsevier.

### **EDUCATION**

MS, Environmental Engineering, University of Southern California, Los Angeles, California, USA, 2004

B.Eng., Civil Engineering, The Maharaja Sayajirao University of Baroda, Vadodara, Gujarat, India, 2001

### **REGISTRATIONS**

Registered Civil Engineer #77284, State of California, Issued 01/07/2011, Expires 06/30/27

Board Certified Environmental Engineer #12-10004, American Academy of Environmental Engineers & Scientists

### **PROJECT EXPERIENCE**

#### **WASTEWATER RECLAMATION AND REUSE**

Chlorine Disinfection Study for the Water Reclamation Facility | California | Technical Lead

Zakir led the development of a test protocol for a chlorine disinfection study to demonstrate that a lower CT value could be utilized to achieve the level of disinfection required by California's Title 22 standards for disinfected tertiary effluent with respect to MS-2 bacteriophage and total coliform bacteria.

Biscayne Bay Coastal Wetlands Rehydration Pilot Project | Miami-Dade County Water and Sewer Department | Miami-Dade County, Florida | Project Engineer

Zakir evaluated the limit of technologies to achieve very low effluent nitrogen and phosphorus concentration while treating secondary effluent with two different process trains: 1) MBR, RO, and UV+H<sub>2</sub>O<sub>2</sub> and 2) MBR, RO and Ozone+H<sub>2</sub>O<sub>2</sub>. The treated water was analyzed for a wide range of water quality parameters to evaluate its suitability for recharging coastal wetlands. Trained and supervised three junior engineers to operate and monitor the pilot systems, analyze data and troubleshoot different treatment processes.

#### **RECYCLED WATER**

Gibson Island Recycled Water Treatment Plant | Seqwater | Queensland, Australia | Project Engineer

Zakir evaluated the advanced water treatment of secondary effluent from the Gibson Island Wastewater Treatment Plant. The project objectives included characterizing the secondary effluent, evaluating the performance of the MF/UF and RO, assessing chemical phosphorus removal, evaluating RO to achieve low nitrogen limits, and assessing formation potential of NDMA and sister compounds.

Anaheim Water Recycling Demonstration Plant | City of Anaheim | Anaheim, California, United States | 2006-2008 | Project Technical Lead

Zakir led the process design of a 100,000-gpd decentralized water recycling facility using MBR and ozone to produce recycled water that meets CDPH's Title 22 requirements. He completed the process design of the treatment facility from the preliminary design phase to the final design, performed the engineering services during construction, and led the plant commissioning and permitting process.



Regional Recycled Water Advanced Purification Center Demonstration Project | Metropolitan Water District of Southern California | Los Angeles, CA | 2016-Ongoing | Project Manager and Process Technical Lead

Zakir worked in multiple roles on the Regional Recycled Water Program since 2016. He led the process design of the Advanced Purification Center (APC) - a 0.5-MGD advanced water treatment (AWT) demonstration facility with MBR+RO+UV/AOP process train. Zakir assisted the site staff with commissioning, operations, and process/equipment troubleshooting for the APC. He also led several planning studies for the full-scale AWT facility, including the conceptual design using BIM and cost estimates, phasing strategy, nitrogen, and boron removal strategies as well as direct potable reuse (DPR) planning.

## **WASTEWATER TREATMENT**

Wastewater Treatment Plant Expansion | South County Regional Wastewater Authority (SCRWA) | Gilroy, CA | 2017-2018 | Technical Reviewer

Zakir reviewed the design for this 2.5-MGD MBR facility being built to expand the treatment capacity of the existing oxidation ditch to 11 MGD. The expansion consists of headworks (pump stations and fine screens), nitrification-denitrification bioreactor basins, membrane basins, internal recycling pumping, and return sludge pumping. The MBR effluent will be disinfected using UV disinfection.

Wastewater Treatment Plant (WWTP) #1 | City of Rio Rancho | Rio Rancho, New Mexico | Process Lead

Zakir provided 30% design of a 1.5 mgd MBR facility at the City of Rio Rancho's Wastewater Treatment Plant #1. The project includes designing and building a new MBR facility that meets stringent total nitrogen goal of <10 mg/L-N with part of the MBR effluent fed to an AWT facility for groundwater recharge.

Gold Bar Wastewater Treatment Plant Conversion to MBR | EPCOR | Edmonton, Alberta | Process Lead

Zakir led the conceptual design of converting Train #11 to MBR at the Gold Bar WWTP. The WWTP is designed for an average daily flow capacity of 31 MLD per train with a total of 11 trains. Due to anticipated stringent nutrient regulations and additional capacity needs, EPCOR is considering converting one of the WWTP trains to MBR. The conceptual design completed by Stantec converts one of the 11 trains to MBR and increases its capacity to 60 MLD while meeting anticipated stringent effluent water quality goals.

Wastewater Treatment Plant Capital Rehabilitation and Repair Plan | City of Palm Springs | Palm Springs, California | Project Manager

Zakir served as the Project Manager for the 2019 capital improvement plan for the City. City is anticipating stringent TDS and nitrogen limits for its WWTP effluent. Along with solids handling improvements, the plan also investigated potential alternatives to meet future effluent limits for total nitrogen and total dissolved solids for its 10.9-MGD wastewater treatment plant.

Enlozada Wastewater Treatment Plant | Arequipa, Peru | Project Engineer

Zakir was responsible for the process and mechanical design of an odor control facility for this 40-mgd wastewater treatment plant. The odor control facility, which was designed to treat air flow of 13,000 scfm, includes exhaust fans, biotrickling filters and polishing carbon absorbers. Completed the detailed design of the odor control facility including all process calculations pertaining to duct work and equipment sizing, reviewing design drawings, and writing detailed specifications for all equipment pertaining to the odor control facility. Worked with mechanical, I&C, electrical, HVAC, civil, architectural and structural discipline engineers to complete the detailed design.

Western Corridor Water Project (WCWP) | Southeast Queensland, Australia | Project Engineer

Zakir evaluated the advanced water treatment of secondary effluent from the Gibson Island Wastewater Treatment Plant. The project objectives included characterizing the secondary effluent, evaluating the performance of the MF/UF and RO, assessing chemical phosphorus removal, evaluating RO to achieve low nitrogen limits and assessing formation potential of NDMA and sister compounds.

## **WATER REUSE & RECLAMATION**

Hyperion 2035 Program | City of Los Angeles | Los Angeles, California, United States | 2019- | Process Engineer/Deputy Project Manager

Zakir is overseeing planning and technical studies to develop the Conceptual Facilities Plan to convert Hyperion Water Reclamation Plant (WRP) to an AWT facility (including IPR and DPR processes). He also led the detailed design of a 1.0-MGD demonstration facility (the Hyperion MBR Pilot Facility), which will be used to collect data for regulatory approval and design of the full-scale AWT facility; and the conceptual design of a 1.5-MGD production facility (the Hyperion Advanced Water Purification Facility) for the program.

San Diego Pure Water Program | Public Utilities Department | San Diego, California, United States | Technical Reviewer

Zakir has been involved with the Pure Water San Diego Program from its onset. From 2005 to 2007, he operated the advanced water treatment (AWT) pilot facilities at the North City Water Reclamation Plant (NCWRP) as part of City's Water Reuse Study. Data from that study was used to design the 1-MGD demonstration facility at the NCWRP. He led two concurrent 30% design efforts for a 34-MGD potable reuse facility that will treat tertiary, filtered effluent from the North City Water Reclamation Plant. Treatment processes for the AWT facility include O3/BAC+MF+UF+RO+UV/AOP with H2O2, chemical stabilization with lime, and chlorine disinfection. The treated effluent will be used to augment the Miramar reservoir. Zakir also reviewed the treatment alternatives for Phase 2 of the program that may include a 54-MGD MBR-based indirect or direct potable reuse train. The \$3B program is scheduled to reach full implementation by 2035.

**Evaluation of New MBR Systems for Water Reclamation | Bureau of Reclamation | Project Engineer**

Zakir evaluated operational and water quality performance of five new MBR systems (Koch/Puron, Huber, Kruger, Norit, Asahi/Pall) with capacities ranging from 5,000-51,000 gpd. Also evaluated the performance of new generation RO membranes while operating on MBR effluent. Developed the cost estimates for 1-mgd and 5-mgd MBR installations.

**Water Reuse Study | City of San Diego | San Diego, California | Project Engineer**

The study consisted of three separate projects that evaluated performance of UF-RO-UV+H<sub>2</sub>O<sub>2</sub> process train. The project was conducted in conjunction with the City's Water Reuse 2005 program which identified a 16 mgd AWT indirect potable reuse (IPR) application as the most feasible option to supplement City's potable water supply.

**Pure Water Southern California Program | Metropolitan Water District of Southern California | Los Angeles, California, United States | Deputy Project Manager**

Zakir is serving as deputy project manager for the Environmental Planning Phase of the \$3.4B PWSC, providing treatment-related engineering services for preparation of a Programmatic Environmental Engineering Report (PEIR). Managing a team of more than 30 individuals and 12 firms, he is overseeing numerous planning studies to support environmental documentation and develop the Conceptual Facilities Plan for the full-scale AWT facility. Prior to that, Zakir led the design and operation of the Advanced Purification Center and conducted planning studies for the full-scale facility, including conceptual design, BIM modeling, cost estimates, phasing as well as nitrate and boron management strategies. He also led the Stantec Team in interactions with the Division of Drinking Water (DDW) and Independent Scientific Advisory Panel (ISAP) for regulatory approval.

**Pure Water Antelope Valley Program | Palmdale Water District | Palmdale, California, United States | Deputy Program Manager**

Zakir is the deputy program manager for this 5-MGD AWT program that will treat tertiary effluent from Los Angeles County Sanitation District's Palmdale Water Reclamation Plant to produce potable water for groundwater recharge via subsurface injection. He is leading the efforts to develop the Program Priorities and Implementation Plan that will delineate Program drivers, challenges, costs, program packaging, delivery methods, funding strategies, public outreach strategies, and regulatory/permitting strategies. Zakir will also oversee the detailed design of an AWT demonstration facility and conceptual design of the full-scale AWT facility for the program.

**WATER TREATMENT**

**Advanced Water Treatment (AWT) Facility | Metropolitan Water District of Southern California | Carson, California | Lead Process Engineer**

Zakir led the process design for the Advanced Water Treatment (AWT) Demonstration facility, consisting of MBR, RO and AOP (UV/H<sub>2</sub>O<sub>2</sub>) process train that will be utilized to collect sufficient operational and water quality data for design of a 150-MGD AWT facility at the Joint Water Pollution Control Plant. While using MBR as a pretreatment to RO, the facility will be the first of its kind to seek approval of the MBR-RO-AOP process train for indirect potable reuse. Zakir also led the conceptual design of a 150-MGD AWT facility consisting of an MBR-RO-AOP process train.

**Tapia WRF Summer Compliance Project | Las Virgenes Municipal Water District | California | Project Manager**

Zakir managed the summer compliance project for the Tapia WRF required by the District to comply with summer discharge requirements into the Malibu Creek. The scope of work included alternatives analysis to produce advanced treated water that meets total nitrogen and phosphorus limits of 1.0 and 0.1 mg/L, respectively. The District decided to break point chloramine the potable water to comply with the TN and TP limits; this option was further developed during detailed design.

**Hyperion Advanced Water Purification Facility | City of Los Angeles Bureau of Sanitation (LASAN) | El Segundo, California | USD 70 | Process Technical Lead**

Zakir led the conceptual design of this 1.5-MGD advanced water treatment production facility with an MBR-RO-AOP process train with a construction value of \$70M. The effluent from the facility will be used at the nearby Los Angeles International Airport and for on-site use at the Hyperion Water Reclamation Facility. Zakir also assisted in value engineering and review of Design-Build Entity's (Walsh/B&C) submittals.

**Conceptual Design of an Advanced Water Treatment (AWT) Facility | Carson, CA | 2019 | Process Lead**

Zakir led the process design for the \$1.1B Advanced Water Treatment (AWT) Demonstration facility, consisting of MBR, RO and AOP (UV/H<sub>2</sub>O<sub>2</sub>) process train that will be utilized to collect sufficient operational and water quality data for design of a 150-MGD AWT facility at the Joint Water Pollution Control Plant. While using MBR as a pretreatment to RO, the facility will be the first of its kind to seek approval of the MBR-RO-AOP process train for indirect potable reuse. Zakir also led the conceptual design of a 150-MGD AWT facility consisting of an MBR-RO-AOP process train.

**Hyperion MBR Pilot Facility | City of Los Angeles,  
Bureau of Sanitation | Los Angeles, California |  
Process Lead**

Zakir managed the detailed design of this 1.0-MGD advanced water treatment demonstration facility including an MBR-RO process train. The facility will be used to collect operational data for future modification of the 260-MGD Hyperion Water Reclamation Plant into an MBR-based AWT facility. Zakir has also worked on several planning studies for the full-scale AWT facility, including studies for converting Hyperion's High-Purity Oxygen Activated Sludge (HPOAS) process to MBR.

**Santa Monica Sustainable Water Infrastructure Project (SWIP) | City of Santa Monica | Santa Monica, California | USD 82M | Technical Reviewer**

Zakir led the conceptual design of a 1.5-MGD AWT production facility including an MBR-RO-AOP process train. The AWT facility is expected to treat a blend of wastewater, stormwater, and groundwater to produce effluent for groundwater recharge. Zakir assisted with value engineering and review of design-build entity (Kiewit/PACE) submittals.

**Conceptual Study for Advanced Water Treatment (AWT) Facility, LVMWD | Las Virgenes Municipal Water District | California | Lead Process Engineer**

Zakir led the conceptual design of a 1.5-MGD AWT Facility intended to achieve effluent total nitrogen and total phosphorus limits of 1.0 and 0.1 mg/L, respectively for augmenting flow to Malibu Creek. Two treatment trains were evaluated during the study – MBR-RO and MF-RO-IX, for treatment of secondary effluent from Tapia Water Reclamation Facility.

**Integrated Membrane System (MBR-RO) Study | City of Rio Rancho | Rio Rancho, New Mexico | Project Engineer**

Zakir evaluated the performance of MBR process (GE's MBR) followed by four different RO membranes (Osmonics, Saehan, Hydranautics and Toray). Assessed the long-term performance of MBR and RO membranes under various operating conditions and determine their efficiency in removal of emerging contaminants such as EDCs and PPCPs.

**Evaluation of Different MBR Systems | Chino, California | Project Manager**

Zakir evaluated the performance of five new MBR systems (Toray, Sumitomo, Hitachi, Microdyn, Econity) to seek Title 22 approval for these systems. Worked with vendors for design, installation, start-up and commissioning

**Disinfection Guidelines for Satellite Water Recycling Facilities | WaterReuse Research Foundation | Project Engineer**

Zakir surveyed and sampled 40 different MBR installations across the U.S to assess the impact of different design and operational variables on effluent water quality and subsequent disinfection requirements. The project findings defined the disinfection guidelines for MBRs including worst case scenarios such as membrane cleaning and breach.

**Engineering Internship | Los Angeles County Sanitation Districts | Whittier, California | Intern**

Zakir evaluated biological treatment and membrane filtration performance of two different MBR systems (GE's Zenon and Kubota) utilizing dual recycle and simultaneous nitrification-denitrification (NdN) configurations. Also evaluated the efficiencies of conventional activated sludge (CAS) and MBR processes in removal of emerging contaminants.

**Investigation of MBR Effluent Water Quality and Technology | WaterReuse Research Foundation | Project Engineer**

Zakir investigated the impact of operational parameters on effluent water quality produced by MBR process. He developed an MBR model to predict the performance of the process in removal of nutrients and emerging contaminants. The model incorporated membrane separation, was calibrated, and validated using real world data obtained from pilot and full-scale installations worldwide. The model was used to predict impact of key process parameters such as SRT, HRT and MLSS on aeration requirements and effluent water quality.

## **SOIL AND GROUNDWATER REMEDIATION SYSTEMS**

**San Fernando Basin Groundwater Remediation Project | Los Angeles Department of Water and Power | Los Angeles, California | Process Technical Lead**

Zakir led the chemical dosing systems design of two groundwater treatment facilities and well collector piping on this \$460M, 89-mgd progressive design-build project. The facilities will treat up to 140 cfs from 17 wells to remove and prevent migration of groundwater contaminants and restore beneficial use of the Basin. Treatment is designed to meet 97-005 goals using UV/AOP with hydrogen peroxide and GAC to reduce groundwater contaminants (1,4 dioxane, PCE, and TCE) to below detection limits.



# BOARD MEMORANDUM

**DATE:** July 28, 2025  
**TO:** BOARD OF DIRECTORS  
**FROM:** Mr. Scott Rogers, Assistant General Manager  
**VIA:** Mr. Dennis D. LaMoreaux, General Manager  
**RE:** ***CONSIDERATION AND POSSIBLE ACTION ON RESOLUTION NO. 25-5 APPROVING THE FUNDING APPLICATION FOR THE LAND AND WATER CONSERVATION FUND FOR LITTLEROCK RESERVOIR RECREATION AREA UPGRADES. (NO BUDGET IMPACT – ASSISTANT GENERAL MANAGER ROGERS)***

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## **Recommendation:**

Staff recommends that the Board authorize staff to apply for funding for the Littlerock Reservoir Recreation Area with the State of California Land and Water Conservation funds.

## **Alternative Options:**

The alternative is to not approve this Resolution.

## **Impact of Taking No Action:**

Missed opportunity to secure funds to bring the recreational facilities to better condition and reopen the recreational area.

## **Background:**

On February 14, 1963, the President Kennedy's administration proposed legislation to establish a "Land and Water Conservation Fund" (LWCF) to assist states in planning, acquiring, and developing recreation lands. With bipartisan support, President Johnson signed it into law on September 3, 1964, as Public Law 88- 578, 16 U.S.C.460l-4.

National Park Service administers the LWCF program at the federal level. Previously, the Bureau of Outdoor Recreation administered the LWCF program from 1964 to 1978 and the Heritage Conservation & Recreation Service administered it from 1978 to 1981. Funds allocated to California are administered by the California Department of Parks and Recreation under the provisions of the California Outdoor Recreation Resources Plan Act of 1967 (Public Resources Code §5099 et seq.). Outer Continental Shelf mineral receipts, sales of federal surplus real property, federal recreation fees, and federal motorboat fuel taxes all serve as funding sources for the LWCF. On August 4, 2020, the Great American Outdoors Act (GAOA) was signed into law, authorizing \$900 million nationwide annually in permanent funding for LWCF.

The funding provided in the GAOA to California was a little over \$35 million, with Littlerock Reservoir Recreation area eligible for up to \$6 million with a required 50-percent match.



July 28, 2025

Littlerock Reservoir Recreation Area is an eligible project.

**Strategic Plan Initiative/Mission Statement:**

The item is under Strategic Initiative No. 5 Regional Leadership and No. 1 Water Resource Reliability.

**Budget:**

Approval of this Resolution has no Budget impact.

**Supporting Documents:**

- Resolution No. 25-5

## **RESOLUTION NO. 25-5**

### **A RESOLUTION OF THE BOARD OF DIRECTORS OF THE PALMDALE WATER DISTRICT APPROVING THE APPLICATION FOR THE LAND AND WATER CONSERVATION FUND FOR THE LITTLEROCK RESERVOIR RECREATIONAL AREA UPGRADES**

**WHEREAS**, the Congress under Public Law 88-578 has authorized the establishment of a federal Land and Water Conservation Fund Grant-In-Aid program, providing matching funds to the State of California and its political subdivisions for acquiring lands and developing facilities for public outdoor recreation purposes; and

**WHEREAS**, the California Department of Parks and Recreation is responsible for administration of the program in the State, setting up necessary rules and procedures governing applications by local agencies under the program; and

**WHEREAS**, the applicant certifies by resolution the approval of the application and the availability of eligible matching funds prior to submission of the application to the State; and

**NOW, THEREFORE, BE IT RESOLVED** that the Board of Directors of the Palmdale Water District hereby:

1. Approves the filing of an application for Land and Water Conservation Fund assistance for the proposed Littlerock Reservoir Recreation Area Upgrades
2. Certifies that the applicant has reviewed, understands, and agrees to the General Provisions contained in the contract shown in the Grant Administration Guide; and
3. Agrees to abide by 54 U.S.C. §200305(f)(3) which requires, "No property acquired or developed with assistance under this section shall, without the approval of the Secretary, be converted to other than public outdoor recreation use. The Secretary shall approve a conversion only if the Secretary finds it to be in accordance with the then-existing comprehensive statewide outdoor recreation plan and only on such conditions as the Secretary considers necessary to ensure the substitution of other recreation properties of at least equal fair market value and of reasonably equivalent usefulness and location."
4. Certifies that said agency has matching funds from eligible source(s) and can finance 100 percent of the project, which up to half may be reimbursed; and
5. Agrees to comply with all applicable federal, state and local laws, ordinances, rules, regulations, and guidelines.
6. Appoints the General Manager, or his designee, as agent of the applicant to conduct all negotiations and execute and submit all documents, including, but not limited to, applications, contracts, amendments, payment requests, and compliance with all applicable current state and federal laws which may be necessary for the completion of the aforementioned project.

## **CERTIFICATION**

**PASSED, APPROVED AND ADOPTED** by the Board of Directors of the Palmdale Water District on this 28<sup>th</sup> day of July 2025, by the following vote:

AYES:

NOES:

ABSENT:

ABSTAIN:

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Kathy Mac Laren-Gomez, President  
Board of Directors  
Palmdale Water District

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Cynthia Sanchez, Assistant Secretary  
Board of Directors  
Palmdale Water District

APPROVED AS TO FORM:

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Aleshire & Wynder, LLP  
District Legal Counsel



# BOARD MEMORANDUM

**DATE:** July 28, 2025  
**TO:** **BOARD OF DIRECTORS**  
**FROM:** Mr. Bob Egan, Financial Advisor  
**VIA:** Mr. Dennis D. LaMoreaux, General Manager  
**RE:** ***STATUS REPORT ON CASH FLOW STATEMENT AND CURRENT CASH BALANCES AS OF JUNE 2025. (FINANCIAL ADVISOR EGAN/FINANCE COMMITTEE)***

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Attached are the Cash Notes, the Investment Funds Report, and the Cash Flow Report as of June 2025. The reports were reviewed in detail at the Finance Committee meeting.

			<b><u>2025</u></b>			
			<b><u>May to June 2025 Activity</u></b>			
			<b><u>acct 11469</u></b>			
		<b>Balance</b>	<b>6/30/2025</b>	<b>3,534,338.55</b>		
		<b>Balance</b>	<b>5/31/2025</b>	<b>4,445,318.38</b>		
		<b>Decrease</b>		<b>(910,979.83)</b>		
		<b><u>One month activity</u></b>			<b>Taxes</b>	
		<b>Interest/Mkt value received</b>		<b>13,652.13</b>	<b>YTD expected</b>	<b>5,875,355</b>
		<b>Taxes received</b>		<b>29,335.25</b>	<b>YTD received</b>	<b>4,632,674</b>
		<b>RDA Passthrough</b>		<b>609,237.93</b>		
		<b>Transfer to Hazen &amp; Sawyer</b>		<b>(69,117.74)</b>	<b>Decrease</b>	<b>(1,242,681)</b>
		<b>Transfer to Butte County</b>		<b>(994,087.50)</b>		
		<b>Transfer to 11432</b>		<b>(500,000.00)</b>		
		<b>Decrease</b>		<b>(910,979.93)</b>		
		<b><u>Acct 11475</u></b>				
		<b>Balance</b>	<b>6/30/2025</b>	<b>2,674,903.83</b>		
		<b>Balance</b>	<b>5/31/2025</b>	<b>2,665,090.35</b>		
		<b>Increase</b>		<b>9,813.48</b>		
		<b><u>One month activity</u></b>				
		<b>Interest/Mkt value received</b>		<b>9,813.48</b>		
		<b>Increase</b>		<b>9,813.48</b>		
					<b><u>all accounts</u></b>	
					<b>FACE</b>	<b>17,409,000</b>
		<b><u>Acct 11432</u></b>			<b>Value</b>	<b>17,190,348</b>
		<b>Balance</b>	<b>6/30/2025</b>	<b>13,732,065.37</b>	<b>Future earnings</b>	<b>218,652</b>
		<b>Balance</b>	<b>5/31/2025</b>	<b>12,181,730.05</b>		
		<b>Increase</b>		<b>1,550,335.32</b>		
				<b><u>Int/Mkt</u></b>	<b><u>Month</u></b>	<b><u>YTD</u></b>
		<b><u>One month activity</u></b>		<b>Jan</b>	<b>57,375.13</b>	
		<b>Transfer from 11469</b>		<b>Feb</b>	<b>60,018.67</b>	
		<b>Fed Funds from CBB</b>		<b>Mar</b>	<b>66,657.96</b>	
		<b>Interest/Mkt value received</b>		<b>Apr</b>	<b>57,188.36</b>	
		<b>Increase</b>		<b>May</b>	<b>53,634.74</b>	
				<b>Jun</b>	<b>81,154.30</b>	<b>376,029.16</b>
		<b><u>Acct 24016.</u></b>		<b>Jul</b>		<b>Excludes bond</b>
		<b>Balance</b>	<b>6/30/2025</b>	<b>1,847,588.65</b>	<b>Aug</b>	<b>interest</b>
		<b>Balance</b>	<b>5/31/2025</b>	<b>1,840,205.28</b>	<b>Sep</b>	
		<b>Increase</b>		<b>7,383.37</b>	<b>Oct</b>	
				<b>Nov</b>		
		<b><u>One month activity</u></b>		<b>Dec</b>		
		<b>Interest/Mkt value received</b>				
		<b>Increase</b>			<b>2024 interest</b>	
					<b>801,272</b>	

			<b>2025</b>	
			<b>Second Quarter 2025 Major account Activity</b>	
			<b>acct 11469</b>	
			<b>Balance</b>	<b>6/30/2025</b>
				<b>3,534,338.55</b>
			<b>Balance</b>	<b>3/31/2025</b>
				<b>4,247,857.54</b>
			<b>Decrease</b>	<b>(713,518.99)</b>
			<b>Three months activity</b>	
			<b>Taxes received</b>	<b>3,444,498.54</b>
			<b>Interest/Mkt value received</b>	<b>44,200.74</b>
			<b>RDA Passthrough</b>	<b>609,237.93</b>
			<b>Transfer to 11432</b>	<b>(2,400,000.00)</b>
			<b>Transfer to 11432</b>	<b>(916,847.81)</b>
			<b>Transfer to 11432</b>	<b>(500,000.00)</b>
			<b>Transfer from 11475</b>	<b>394,678.54</b>
			<b>Transfer to Hazen and Sawyer</b>	<b>(62,380.86)</b>
			<b>Transfer to Hazen and Sawyer</b>	<b>(69,117.74)</b>
			<b>Transfer To Butte County</b>	<b>(994,087.50)</b>
			<b>Capital Lease Payment to CBB</b>	<b>(263,700.83)</b>
			<b>Decrease</b>	<b>(713,518.99)</b>
			<b>Acct 11475</b>	
			<b>Balance</b>	<b>6/30/2025</b>
				<b>2,674,903.83</b>
			<b>Balance</b>	<b>3/31/2025</b>
				<b>1,241,896.88</b>
			<b>Increase</b>	<b>1,433,006.95</b>
			<b>Three months activity</b>	
			<b>Interest/Mkt value received</b>	<b>23,451.24</b>
			<b>Capital Improvement fee received</b>	<b>920,664.00</b>
			<b>Capital Improvement fee received</b>	<b>248,387.23</b>
			<b>Capital Improvement fee received</b>	<b>394,678.54</b>
			<b>Capital Improvement fee received</b>	<b>38,539.20</b>
			<b>Cap Total</b>	
			<b>Non Local check received</b>	<b>201,965.28</b>
			<b>1,827,685</b>	
			<b>Transfer to 11469</b>	<b>(394,678.54)</b>
			<b>Increase</b>	<b>1,433,006.95</b>
			<b>Acct 11432</b>	
			<b>Balance</b>	<b>6/30/2025</b>
				<b>13,732,065.37</b>
			<b>Balance</b>	<b>3/31/2025</b>
				<b>8,809,466.82</b>
			<b>Increase</b>	<b>4,922,598.55</b>
			<b>Three months activity</b>	
			<b>transfer from 11469</b>	<b>2,400,000.00</b>
			<b>Transfer from 11469</b>	<b>916,847.81</b>
			<b>Transfer from 11469</b>	<b>500,000.00</b>
			<b>Fed funds from CBB</b>	<b>1,000,000.00</b>
			<b>Interest/Mkt value received</b>	<b>105,750.74</b>
			<b>Increase</b>	<b>4,922,598.55</b>
			<b>Acct 24016.</b>	
			<b>Balance</b>	<b>6/30/2025</b>
				<b>1,847,588.65</b>
			<b>Balance</b>	<b>3/31/2025</b>
				<b>1,829,135.11</b>
			<b>Increase</b>	<b>18,453.54</b>
			<b>Three months activity</b>	
			<b>Interest/Mkt value received</b>	<b>18,453.54</b>
			<b>Increase</b>	<b>18,453.54</b>

**PALMDALE WATER DISTRICT  
INVESTMENT FUNDS REPORT**

**June 30, 2025**

	<u><b>June 2025</b></u>		<u><b>May 2025</b></u>		<u><b>March 2025</b></u>	
<b>Federal Agency Obligations</b>	14,190,429.96	57.63%	14,141,084.48	57.24%	10,159,203.81	53.09%
<b>Negotiable Certificates of Deposit</b>	2,999,917.50	12.18%	3,168,717.40	12.83%	3,173,017.50	16.58%
<b>Local Agency Investment Fund (LAIF)</b>	14,049.46	0.06%	14,049.46	0.06%	13,896.32	0.07%
	<u>17,204,396.92</u>		<u>17,323,851.34</u>		<u>13,346,117.63</u>	
<b>Cash and Cash Equivalents</b>	7,319,637.74	29.73%	7,274,636.57	29.44%	5,717,500.33	29.88%
<b>Accrued Interest</b>	100,026.96	0.41%	108,257.33	0.44%	71,122.15	0.37%
	<u><u>24,624,061.62</u></u>		<u><u>24,706,745.24</u></u>		<u><u>19,134,740.11</u></u>	

**PALMDALE WATER DISTRICT  
INVESTMENT FUNDS REPORT  
June 30, 2025**

					<u>June 2025</u>	<u>May 2025</u>	<u>March 2025</u>
<b>CASH</b>							
1-00-0103-100	Citizens - Checking				2,481,736.88	3,291,366.92	2,639,403.80
1-00-0103-200	Citizens - Refund				864.42	-	-
1-00-0103-300	Citizens - Merchant				332,814.46	263,284.80	347,383.64
	<b>Bank Total</b>				<b>2,815,415.76</b>	<b>3,554,651.72</b>	<b>2,986,787.44</b>
1-00-0110-000	PETTY CASH				300.00	300.00	300.00
1-00-0115-000	CASH ON HAND				5,400.00	5,400.00	5,400.00
	<b>TOTAL CASH</b>				<b>2,821,115.76</b>	<b>3,560,351.72</b>	<b>2,992,487.44</b>
<b>INVESTMENTS</b>							
1-00-0135-000	Local Agency Investment Fund			Acct. Total	14,049.46	14,049.46	13,896.32
<b>1-00-0120-000 UBS Money Market Account General (SS 11469)</b>							
Cash					-	40,885.06	1,130.91
UBS Select Government Preferred Fund					2,768,820.48	1,990,202.43	1,847,432.44
Accrued interest					3,505.12	11,188.79	7,916.49
					<b>2,772,325.60</b>	<b>2,042,276.28</b>	<b>1,856,479.84</b>
<b>US Government Securities</b>							
<b>CUSIP #</b>	<b>Issuer</b>	<b>Maturity Date</b>	<b>Rate</b>	<b>PAR</b>	<b>Market Value</b>	<b>Market Value</b>	<b>Market Value</b>
912979NV5	US Treasury Bill	6/20/2025			-	1,471,873.00	1,461,238.25
91282CAM3	US Treasury Note	9/30/2025	0.250	265,000	262,357.95	261,496.70	259,866.95
				<b>265,000</b>	<b>262,357.95</b>	<b>1,733,369.70</b>	<b>1,721,105.20</b>
<b>Certificates of Deposit</b>							
	<b>Issuer</b>	<b>Maturity Date</b>	<b>Rate</b>	<b>Face Value</b>			
1	Bank of Hope	06/11/2025	5.250		-	170,037.40	170,255.00
2	National Bk of Mid VT	10/27/2025	4.300	250,000	249,830.00	249,832.50	250,005.00
3	Cape Cod Cooperative	12/11/2025	4.200	250,000	249,825.00	249,802.50	250,012.50
				<b>500,000</b>	<b>499,655.00</b>	<b>669,672.40</b>	<b>670,272.50</b>
	<b>Acct. Total</b>				<b>3,534,338.55</b>	<b>4,445,318.38</b>	<b>4,247,857.54</b>
<b>1-00-1110-000 UBS Money Market Account Capital (SS 11475)</b>							
Cash					-	-	3.48
UBS Select Government Preferred Fund					928,741.46	925,532.09	132,604.18
Accrued interest					13,267.97	9,769.96	2,729.92
					<b>942,009.43</b>	<b>935,302.05</b>	<b>135,337.58</b>
<b>US Government Securities</b>							
<b>CUSIP #</b>	<b>Issuer</b>	<b>Maturity Date</b>	<b>Rate</b>	<b>PAR</b>	<b>Market Value</b>	<b>Market Value</b>	<b>Market Value</b>
91282484Z0	US Treasury Note	08/31/2025	2.750	610,000	608,212.70	607,700.30	606,266.80
91282CBQ3	US Treasury Note	02/28/2026	0.500	640,000	624,659.20	622,528.00	-
				<b>1,250,000</b>	<b>1,232,871.90</b>	<b>1,230,228.30</b>	<b>606,266.80</b>
<b>Certificates of Deposit</b>							
	<b>Issuer</b>	<b>Maturity Date</b>	<b>Rate</b>	<b>Face Value</b>			
1	Bank Of America	3/6/2026	4.250	250,000	250,087.50	249,740.00	250,300.00
2	JP Morgan Chase	3/11/2026	4.300	250,000	249,935.00	249,820.00	249,992.50
				<b>500,000</b>	<b>500,022.50</b>	<b>499,560.00</b>	<b>500,292.50</b>
	<b>Acct. Total</b>				<b>2,674,903.83</b>	<b>2,665,090.35</b>	<b>1,241,896.88</b>



1-00-0125-000		UBS Access Account General (SS 11432)					
Cash					-	-	-
UBS Select Government Preferred Fund					523,689.49	493,178.38	493,404.66
Accrued interest					71,459.67	69,026.09	40,370.95
					<u>595,149.16</u>	<u>562,204.47</u>	<u>533,775.61</u>
US Government Securities							
CUSIP #	Issuer	Maturity Date	Rate	PAR	Market Value	Market Value	Market Value
912797NU7	US Treasury Bill	12/26/2025		470,000	460,440.20	458,908.00	456,276.00
9128284Z0	US Treasury Note	08/31/2025	2.750	650,000	648,095.50	647,549.50	646,022.00
91282CAJ0	US Treasury Note	08/31/2025	0.250	975,000	968,175.00	965,415.75	959,146.50
91282CFK2	US Treasury Note	09/15/2025	3.500	1,500,000	1,497,885.00	1,496,205.00	1,495,335.00
91282CFK2	US Treasury Note	09/15/2025	3.500	775,000	773,907.25	773,039.25	772,589.75
91282CFK2	US Treasury Note	09/15/2025	3.500	1,214,000	1,212,288.26	1,210,928.58	1,210,224.46
91282CGA3	US Treasury Note	12/15/2025	4.000	1,000,000	999,250.00	999,150.00	999,210.00
9128286F2	US Treasury Note	02/25/2026	2.500	1,000,000	988,980.00	987,160.00	985,660.00
91282CBQ3	US Treasury Note	02/28/2026	0.500	1,000,000	976,030.00	972,700.00	-
91282CCF6	US Treasury Note	05/31/2026	0.750	1,000,000	970,580.00	966,910.00	-
91282CCW9	US Treasury Note	08/31/2026	0.750	1,450,000	1,397,495.50	1,391,724.50	-
91282CCW9	US Treasury Note	08/31/2026	0.750	1,550,000	1,493,874.50	-	-
				<u>12,584,000</u>	<u>12,387,001.21</u>	<u>10,869,690.58</u>	<u>7,524,463.71</u>
Certificates of Deposit							
	Issuer	Maturity Date	Rate	Face Value			
	Bank of India	04/16/2025	4.950		-	-	250,055.00
	Valley National Bank NJ	04/23/2025	4.950	Called	-	-	250,080.00
1	Flagstar BK NA	09/11/2025	5.180	250,000	250,422.50	250,592.50	251,092.50
2	Goldman Sachs Bank NY	11/06/2025	4.100	250,000	249,757.50	249,747.50	-
3	US BK NA OH	04/22/2026	4.150	250,000	249,735.00	249,495.00	-
				<u>750,000</u>	<u>749,915.00</u>	<u>749,835.00</u>	<u>751,227.50</u>
				Acct. Total	<u>13,732,065.37</u>	<u>12,181,730.05</u>	<u>8,809,466.82</u>
Total Managed Accounts					<u>19,955,357.21</u>	<u>19,306,188.24</u>	<u>14,313,117.56</u>
1-00-1121-000		UBS Rate Stabilization Fund (SS 24016) - District Restricted					
Cash					-	893.84	834.60
UBS Select Government Preferred Fund					277,270.55	263,593.05	249,602.62
Accrued interest					11,794.20	18,272.49	20,104.79
					<u>289,064.75</u>	<u>282,759.38</u>	<u>270,542.01</u>
US Government Securities							
CUSIP #	Issuer	Maturity Date	Rate	PAR	Market Value	Market Value	Market Value
9128285N6	US Treasury Note	11/30/2025	2.875	310,000	308,198.90	307,795.90	307,368.10
				<u>310,000</u>	<u>308,198.90</u>	<u>307,795.90</u>	<u>307,368.10</u>
Certificates of Deposit							
	Issuer	Maturity Date	Rate	Face Value			
1	Bank of America NA NC	10/02/2025	3.850	250,000	249,567.50	249,472.50	249,460.00
2	Trustone Finl FCU	10/23/2025	4.350	250,000	249,882.50	249,902.50	250,105.00
3	Bank Hapoalim B M	12/18/2025	5.200	250,000	250,945.00	251,120.00	251,697.50
4	CFG BK MD	04/30/2026	4.250	250,000	249,887.50	249,647.50	249,812.50
5	Wings Finl Credit MN	05/07/2026	4.150	250,000	250,042.50	249,507.50	250,150.00
				<u>1,250,000</u>	<u>1,250,325.00</u>	<u>1,249,650.00</u>	<u>1,251,225.00</u>
				Acct. Total	<u>1,847,588.65</u>	<u>1,840,205.28</u>	<u>1,829,135.11</u>
TOTAL CASH AND INVESTMENTS					<u>24,624,061.62</u>	<u>24,706,745.24</u>	<u>19,134,740.11</u>
Increase (Decrease) in Funds					<u>(82,683.62)</u>		
1-00-1139-000		2023A Bonds - Project Funds (BNY Mellon)					
Construction Funds					5,020,651.25	6,076,090.04	6,942,653.24
Issuance Funds					-	-	-
					<u>5,020,651.25</u>	<u>6,076,090.04</u>	<u>6,942,653.24</u>
1-00-1145-000		2024A Bonds - Project Funds (BNY Mellon)					
Construction Funds					14,455,281.99	14,909,012.50	16,475,595.50
Issuance Funds					-	-	-
					<u>14,455,281.99</u>	<u>14,909,012.50</u>	<u>16,475,595.50</u>

PALMDALE WATER DISTRICT														Budget 2025 Carryover Information
2025 Cash Flow Report (Based on Nov. 12, 2024 Adopted Budget)														
	January	February	March	April	May	June	July	August	September	October	November	December	YTD	
Total Cash Beginning Balance (BUDGET)	19,090,141	19,400,690	20,967,687	19,079,295	20,648,696	21,268,923	23,445,420	22,872,712	22,824,784	20,946,483	19,058,550	19,150,211		
Total Cash Beginning Balance	19,090,141	18,704,089	21,985,657	20,063,223	23,175,254	24,706,745	24,624,062	26,435,996	27,956,890	21,908,207	23,940,916	22,437,220		
Budgeted Water Receipts	2,457,226	2,374,033	2,558,806	2,913,627	2,763,077	3,264,903	3,229,210	3,451,066	3,341,734	3,167,847	2,884,299	2,636,474	35,042,302	
Water Receipts	2,924,032	2,989,629	2,985,652	2,874,146	3,066,520	3,396,593	3,229,210	3,451,066	3,341,734	3,167,847	2,884,299	2,636,474	36,947,201	
DWR Refund (Operational Related)					18,150	5,093							23,243	
RWA Agreement (AV Watermaster/AVSWCA)													-	
Other (Gain on Sale of Equipment)	15,200												15,200	
Total Operating Revenue (BUDGET)													-	
Total Operating Revenue (ACTUAL)	2,939,232	2,989,629	2,985,652	2,874,146	3,084,670	3,401,686	3,229,210	3,451,066	3,341,734	3,167,847	2,884,299	2,636,474	36,985,644	
Total Operating Expenses excl GAC (BUDGET)	(2,402,455)	(2,232,981)	(2,560,118)	(2,522,615)	(2,338,942)	(2,627,009)	(2,647,295)	(3,242,087)	(2,704,614)	(2,801,173)	(2,758,731)	(2,500,367)	(31,338,387)	
GAC (BUDGET)					(195,000)	(165,000)			(195,000)	(195,000)			(750,000)	
Operating Expenses excl GAC (ACTUAL)	(3,140,189)	(2,285,178)	(2,321,369)	(2,789,000)	(2,171,050)	(2,421,322)	(2,647,295)	(3,242,087)	(2,704,614)	(2,801,173)	(2,758,731)	(2,500,367)	(31,782,374)	
LCID Water Purchase					(400,000)								(400,000)	
Mojave Water Authority Water Agreement									(1,600,000)					
Littlerock Dam - Sediment Removal				(1,311)		(2,869)		(70,820)	(75,000)		(1,600,000)	(50,000)	(1,800,000)	
GAC							(195,000)	(165,000)	(195,000)	(195,000)			(750,000)	
Prepaid Insurance (paid)/refunded													-	
Total Operating Expense (ACTUAL)	(3,140,189)	(2,285,178)	(2,321,369)	(2,790,311)	(2,571,050)	(2,424,191)	(2,842,295)	(3,477,908)	(4,574,614)	(2,996,173)	(4,358,731)	(2,550,367)	(34,732,373)	
Non-Operating Revenue:		(125,579)												
Assessments, net (BUDGET)	1,003,000	445,355	30,000	3,249,000	1,128,000	20,000	85,000	220,000	-	-	178,000	3,235,000	9,593,355	
Actual/Projected Assessments, net	815,681	349,085	22,409	2,498,315	916,848	29,335	85,000	220,000	-	-	178,000	3,235,000	8,349,674	
Asset Sale/Unencumbered Money (Taxes)													-	
RDA Pass-through (Successor Agency)	409,168					609,238							1,018,405	
Interest	48,521	41,708	45,340	42,360	45,453	72,418	23,750	23,750	23,750	23,750	23,750	23,750	438,301	
Market Adjustment	8,719	18,336	21,543	14,878	8,308	8,842							80,625	
Grant Re-imbursement		116,920		710,053	68,445		2,500,000			2,500,000		173,027	6,068,444	
Solar Array Agreement		339,108											339,108	
Capital Improvement Fees - Infrastructure		177,100	314,988	84,391	1,149								577,629	
Capital Improvement Fees - Water Supply		403,910	605,676	202,535	200,816								1,412,937	
Water Transfer Aqreement Sales		1,662,500						1,800,000					3,462,500	
DWR Refund (Capital Related)				103,986	171,800				115,000				390,786	
Other	9,102	61,002	12,854	14,660	11,312	18,206	8,600	8,600	8,600	8,600	8,600	8,600	178,736	
Total Non-Operating Revenues (BUDGET)													-	
Total Non-Operating Revenues (ACTUAL)	1,291,191	3,169,669	1,022,810	3,671,179	1,424,131	738,039	2,617,350	2,052,350	147,350	2,532,350	210,350	3,440,377	18,515,538	
Non-Operating Expenses:														
Budgeted Capital Expenditures	(267,000)	(265,000)	(265,000)	(265,000)	(265,000)	(265,000)	(265,000)	(265,000)					(2,122,000)	
Budgeted Capital Expenditures (Committed During Year)													-	
Actual/Projected Capital Expenditures	(146,931)	(318,898)	(343,252)	(153,936)	(130,343)	(568,920)	(265,000)	(265,000)	-	-	-	-	(2,192,279)	
Ditch Enclosure Project			(1,235,218)											
Meter Exchange Project (Meters Purchased)	(402,010)	(34,000)											(436,010)	
SWP Capitalized	(907,703)	(219,985)	(241,186)	(219,984)	(219,984)	(219,984)	(907,698)	(219,982)	(249,158)	(219,982)	(219,982)	(219,982)	(4,065,610)	
Investment in PRWA (Suspended Contribution since 2022)													-	
Butte County Water Transfer						(994,088)						(994,088)	(1,988,175)	
EPA WIFIA Administrative Fee										(168,000)				
Bond Payments - Interest			(1,784,539)						(1,793,994)				(3,578,534)	
Principal									(2,900,369)				(2,900,369)	
Capital leases - Citizens Business Bank (2024 Lease)				(263,701)						(263,701)			(527,402)	
Capital leases - Enterprise FM Trust (Vehicles)	(14,310)	(14,336)			(50,768)	(15,227)	(14,300)	(14,300)	(14,300)	(14,300)	(14,300)	(14,300)	(180,442)	
Capital leases - Wells Fargo (Printers)	(5,332)	(5,332)	(5,332)	(5,363)	(5,164)	-	(5,332)	(5,332)	(5,332)	(5,332)	(5,332)	(5,332)	(58,519)	
Total Non-Operating Expenses (ACTUAL)	(1,476,287)	(592,552)	(3,609,527)	(642,983)	(406,259)	(1,798,218)	(1,192,330)	(504,614)	(4,963,154)	(671,315)	(239,614)	(1,233,702)	(15,927,338)	
Total Cash Ending Balance (BUDGET)	19,400,690	20,967,687	19,079,295	20,648,696	21,268,923	23,445,420	22,872,712	22,824,784	20,946,483	19,058,550	19,150,211	21,675,684		
Total Cash Ending Balance (ACTUAL)	18,704,089	21,985,657	20,063,223	23,175,254	24,706,745	24,624,062	26,435,996	27,956,890	21,908,207	23,940,916	22,437,220	24,730,002		
											Budget	20,768,964	Carryover	-
											Difference	3,961,038	Adj. Difference	3,961,038
2023 Cash Ending Balance (ACTUAL)	14,479,181	14,926,970	12,842,032	14,946,300	15,679,096	14,775,947	14,009,807	13,516,980	10,953,725	13,153,304	12,822,185	15,636,283		

Indicates actual expenditures/revenues:   
Indicates anticipated expenditures/revenues:



# BOARD MEMORANDUM

**DATE:** July 28, 2025  
**TO:** BOARD OF DIRECTORS  
**FROM:** Mr. Dennis J. Hoffmeyer, Finance Manager/CFO  
**VIA:** Mr. Dennis D. LaMoreaux, General Manager  
**RE:** ***STATUS REPORT ON FINANCIAL STATEMENTS, REVENUE, AND EXPENSE AND DEPARTMENTAL BUDGET REPORTS FOR JUNE 2025. (FINANCE MANAGER HOFFMEYER/FINANCE COMMITTEE)***

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## Discussion:

Presented here are the Balance Sheet and Income Statement for the period ending June 30, 2025. This is the first review of the reports from the new reporting system.

This is the sixth month of the District's Budget Year 2025. Historical trends for the District have our revenues at 45.5% and expenses are at 47.4%. This would typically be 50% for traditional budgetary percentages. Operating revenues are above, and expenses are below for the actuals. Please refer to Diagram A for a graphical representation of this information.

## **Balance Sheet:**

Page 1 is the balance sheet for the 6-month period.

- The net change for the month-to-month (May to June) was a decrease of \$1,012,479.
- The month saw a decrease in Cash of \$739,524 and Investments increased by \$656,552. Restricted – cash and cash equivalents decreased to \$19,475,933.
- The decrease in Cash was attributed to the transfer of \$1,000,000 over to UBS Financial Services to be invested long term. (highlighted in orange)
- The increase in investments for the month is primarily due to the transfer of funds from Citizens Business Bank (highlighted in yellow). Although the transfer amount does not exactly match the overall increase, it was the key factor contributing to the positive investment growth. This occurred despite significant payments made to Butte County and expenditures related to the Ditch Enclosure Project.
- Lastly, the Accounts Payable and Accrued Expenses balance decreased by \$2,278,510 from the previous month (highlighted in green). This reduction is primarily due to the timing of bill payments. Although the decrease is notable, it is significantly smaller than the reduction observed in the District's overall cash position.

Page 2 presents a new monthly report format comparing financial data year-over-year and month-over-month. This comparative view will be included in all future financial reports.

- For the year-over-year comparison, there was an overall increase of \$10,412,134.
- One of the primary drivers of this increase was a \$4,074,338 rise in investments (highlighted in orange). This growth is mainly attributed to early receipt of capital improvement fees in 2025 and proceeds from the sale of a portion of the District's Table A water allocation to Westside.
- The District's receivables increased by \$1,873,590 compared to June of last year (highlighted in yellow). This increase is primarily driven by higher water usage among

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customers, along with the implementation of new rates established through the 2024 Water Rate Study.

- In the Non-Current Assets section, three components contributed to a significant shift. Restricted Cash decreased by \$14,037,483; however, those funds were invested into capital projects, resulting in an increase of \$19,789,673 in Capital Assets Not Depreciated and Capital Assets Depreciated (highlighted in green). The net effect of these changes reflects an additional \$5,752,190 investment in the District's capital infrastructure.
- Lastly, as part of the implementation of GASB 101 in the 2024 audit, both components of Compensated Absences increased by a total of \$742,199 (highlighted in blue). This adjustment reflects the updated reporting requirements under the new accounting standard.

### Income Statement:

Page 3 presents the income statement trending for the first six months of the fiscal year.

- **Operating Revenues:** The District's operating revenues are performing above the historical average, currently at 53.4%. June reflected continued increases in water usage as we move into the summer months (highlighted in orange).
- **Operating Expenses:** Overall, operating expenses are below the historical average at 42%, reflecting strong fiscal management to date.
- **Departmental Expenses:** Two departments reported budget utilization percentages above historical norms this month. While part of this variance is due to front-loaded Health Savings Account (HSA) contributions for employees enrolled in consumer-driven health plans, staff have also begun identifying specific expenses contributing to the increases. Some of these costs are related to annual contracts that require full payment upfront, which inflates early-year budget utilization. Staff will continue to monitor these trends and provide updates to the committee as necessary (highlighted in yellow).
- **Non-Operating Revenues:**
  - **Interest Earnings:** There has been a continued increase in interest income, primarily driven by restricted cash balances, which are yielding more than general investments (highlighted in green).
  - **Capital Improvement Fees (CIF):** In June, we recorded a reversal of CIF previously collected in May (highlighted in blue). This reversal was processed through the District's general operating accounts, and the corresponding funds remain invested with UBS.

Page 4 presents the Income Statement Variance Report, offering a year-to-year comparison with a primary focus on the quarterly data.

- **Operating Revenues:** Water Sales and Meter Fees showed a combined year-over-year increase of \$1,554,666 for the quarter (highlighted in orange).
- **Operating Expenses:** Source of Supply expenses rose by \$423,794 (highlighted in yellow). This increase is attributed to the District drawing more water from the State Water Project in 2025 compared to the same period in 2024.

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- **Interest Earnings:** Interest income increased by \$157,637 for the quarter (highlighted in green). Most of this gain came from interest earned on bond construction funds, with a smaller portion contributed by general investment earnings.
- **Capital Improvement Fees (CIF):** CIF revenue was higher due to several developers expediting projects to take advantage of the lower fee schedule implemented in April (highlighted in blue). It is uncertain whether this trend will continue, as it depends on the pace of ongoing development.

Page 5 is the graphical representation of the Departmental – Budget vs. Actual.

Page 6 is the graphical representation of Personnel versus Operational Expenses.

#### Department Indicators

The following variances were noted during the review of departmental budgets on Pages 15 and 16:

- **Information Technology (Page 15):**

Cloud Services are driving a significant portion of the department's budget overage.

Specifically:

- *Cloud Services – MS Office 360* is over budget by 236.5%
- *Cloud Services – Seamless Docs* is over budget by 108.5%

These variances are currently under further review to assess accuracy and expected trends for the remainder of the fiscal year.

- **Customer Care (Page 16):**

Under the Contracted Services section, the department has reached 117.2% of its annual budget. The primary driver is:

- *Contracted Services – AMR Services (Itron)*, which is at 810.7% of budget

This account was transitioned to a new contract with Sensus. A preliminary review indicates that the new contract amount was not incorporated into the current budget. Staff will update the budget to reflect the new contract and address the oversight.

#### **Departments:**

Pages 7 through 16 contain the individual departmental budgets, presented in the new reporting format. These are provided for your review and reflect updated formatting intended to improve clarity and comparison across departments compared to the income statement.

#### Non-Cash Definitions:

**Depreciation:** This is the spreading of the total expense of a capital asset over the expected life of that asset.

**OPEB Accrual Expense:** Other Post-Employment Benefits (OPEB) is the recognized annual required contribution to the benefit. The amount is actuarially determined in accordance with

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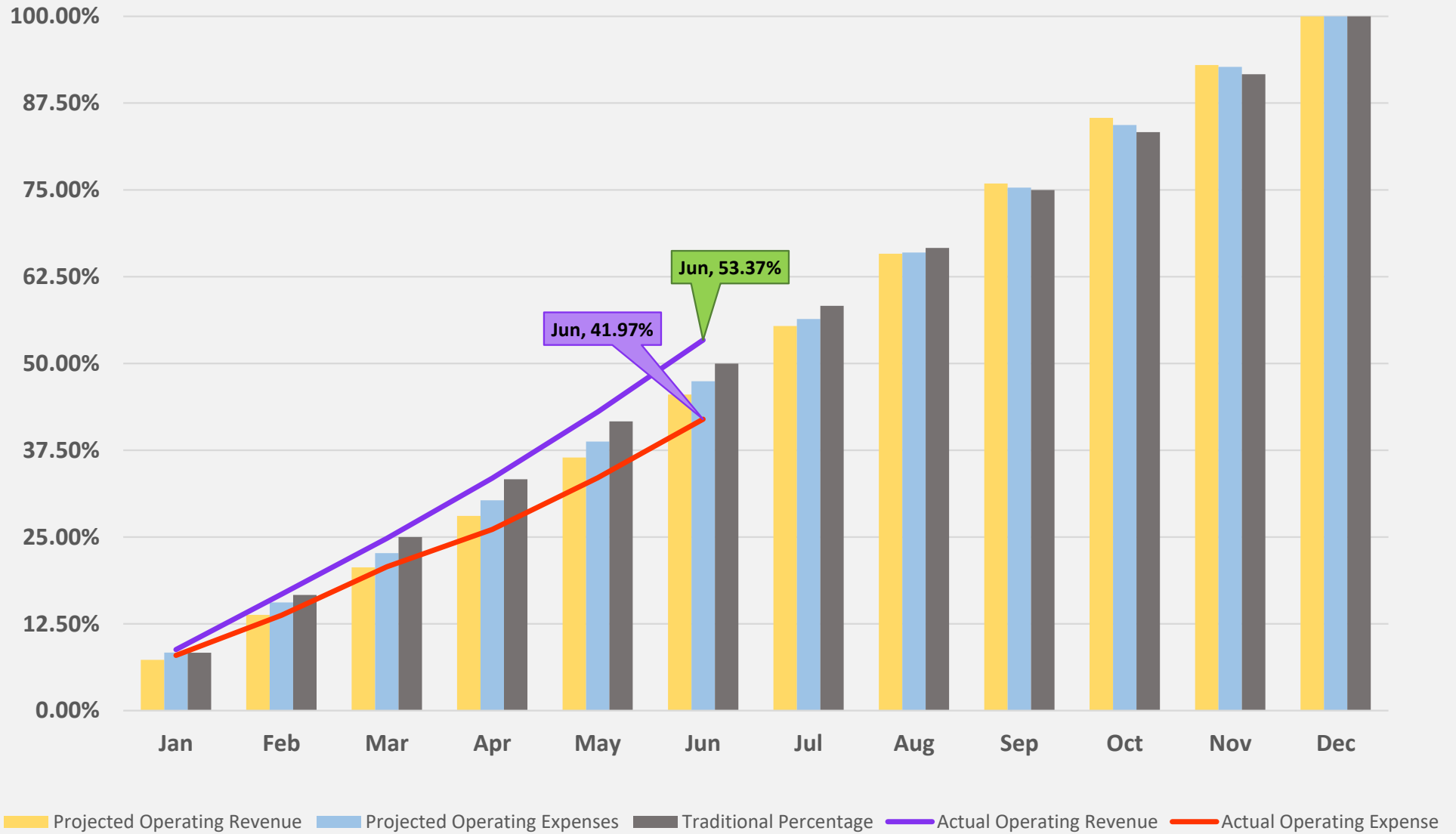
the parameters of GASB 45. The amount represents a level of funding that, if paid on an ongoing basis, is projected to cover normal costs each year.

**Bad Debt:** The uncollectible accounts receivable that has been written off.

**Service Cost Construction:** The value of material, parts & supplies from inventory used to construct, repair, and maintain our asset infrastructure.

**Capitalized Construction:** The value of our labor force used to construct our asset infrastructure.

## Palmdale Water District Monthly Budgetary Percentages



# Balance Sheet

PWD (Palmdale Water District), All Funds

Last Closed Period: Jun FY\_2025

	Jan '25	Feb '25	Mar '25	Apr '25	May '25	Jun '25
<i>in Whole Dollars</i>	Actual	Actual	Actual	Actual	Actual	Actual
<b>Current Assets</b>						
[-] Cash & Equivalents	18,696,481	21,985,501	20,055,508	23,175,579	24,707,033	24,624,062
[+] Cash	416,103	2,912,558	2,992,591	3,201,635	3,560,639	2,821,116
[+] Investments	18,280,378	19,072,943	17,062,917	19,973,944	21,146,394	21,802,946
[+] Receivables	11,412,865	8,863,806	8,671,275	6,374,150	5,723,221	5,939,912
[+] Inventory	1,859,632	1,862,839	1,980,514	1,854,660	1,865,776	1,767,024
[+] Prepaid Expenses	578,716	544,656	498,097	458,711	419,325	379,939
<b>Total Current Assets</b>	<b>32,547,693</b>	<b>33,256,802</b>	<b>31,205,394</b>	<b>31,863,100</b>	<b>32,715,355</b>	<b>32,710,936</b>
<b>Non Current Assets</b>						
[+] Restricted Cash	26,544,044	26,059,387	23,418,249	22,025,773	20,985,103	19,475,933
[+] Lease Receivables	140,441	140,441	140,441	140,441	140,441	140,441
[+] Investment	2,255,347	2,255,347	2,255,347	2,255,347	2,255,347	2,255,347
[+] Right-To-Use Assets	405,701	405,701	405,701	405,701	405,701	405,701
[+] Capital Assets not Depreciated	35,807,708	37,962,435	41,291,398	42,866,463	44,874,070	46,056,660
[+] Capital Assets Depreciated	164,548,070	164,142,048	163,536,543	163,970,454	163,292,269	162,614,088
<b>Total Non Current Assets</b>	<b>229,701,312</b>	<b>230,965,359</b>	<b>231,047,679</b>	<b>231,664,179</b>	<b>231,952,931</b>	<b>230,948,170</b>
<b>Deferred Outflows of Resources</b>						
[+] Deferred Outflows of Resources	8,252,912	8,249,612	8,246,312	8,243,012	8,239,712	8,236,412
<b>Total Deferred Outflows of Resources</b>	<b>8,252,912</b>	<b>8,249,612</b>	<b>8,246,312</b>	<b>8,243,012</b>	<b>8,239,712</b>	<b>8,236,412</b>
<b>Total Assets</b>	<b>270,501,917</b>	<b>272,471,773</b>	<b>270,499,385</b>	<b>271,770,291</b>	<b>272,907,998</b>	<b>271,895,518</b>
<b>Current Liabilities</b>						
[+] Accounts Payable & Accrued Exp	1,624,866	3,067,771	2,031,692	2,128,077	3,355,107	1,076,597
[+] Customer Deposits	3,051,304	3,030,946	3,017,521	3,018,740	3,013,560	3,005,773
[+] Construction Deposits	1,728,011	1,751,783	1,757,783	1,757,783	1,757,783	1,766,283
Current Compensated Absences	411,133	398,416	405,037	405,037	405,037	405,037
[+] Accrued Interest Payable	1,212,572	1,515,715	26,069	292,996	585,991	878,987
[+] Long-term liabilities - due in one year	4,422,079	4,422,079	4,422,079	4,184,447	4,184,447	4,184,447
<b>Total Current Liabilities</b>	<b>12,449,966</b>	<b>14,186,710</b>	<b>11,660,181</b>	<b>11,787,081</b>	<b>13,301,926</b>	<b>11,317,124</b>
<b>Non-Current Liabilities</b>						
Non Current Compensated Absences	1,233,399	1,195,247	1,215,112	1,215,112	1,215,112	1,215,112
[+] Lease Payable	256,512	256,512	256,512	256,512	256,512	256,512
[+] Current Portion of Capital Lease Payable	1,010,223	1,010,223	1,010,223	1,010,223	1,010,223	1,010,223
[+] Bond Premiums and Discount	2,693,507	2,684,986	2,676,464	2,667,943	2,659,422	2,650,901
[+] Long term Portion of Bond Payable	94,144,139	94,144,139	94,144,139	94,144,139	94,144,139	94,144,139
[+] Other Non Current Liabilities	28,538,131	28,629,951	28,729,324	28,819,871	28,911,034	29,002,197
<b>Total Non-Current Liabilities</b>	<b>127,875,911</b>	<b>127,921,057</b>	<b>128,031,774</b>	<b>128,113,800</b>	<b>128,196,442</b>	<b>128,279,083</b>
<b>Deferred Inflows of Resources</b>						
[+] Deferred Inflows of Resources	9,299,335	8,499,335	7,699,335	6,899,335	6,099,335	5,299,335
<b>Total Deferred Inflows of Resources</b>	<b>9,299,335</b>	<b>8,499,335</b>	<b>7,699,335</b>	<b>6,899,335</b>	<b>6,099,335</b>	<b>5,299,335</b>
<b>Total Liabilities</b>	<b>149,625,213</b>	<b>150,607,102</b>	<b>147,391,290</b>	<b>146,800,216</b>	<b>147,597,703</b>	<b>144,895,542</b>
<b>Equity</b>						
[+] Retained Earnings	120,876,705	121,864,671	123,108,095	124,970,075	125,310,295	126,999,976
<b>Total Equity</b>	<b>120,876,705</b>	<b>121,864,671</b>	<b>123,108,095</b>	<b>124,970,075</b>	<b>125,310,295</b>	<b>126,999,976</b>
<b>Total Liabilities Equity</b>	<b>270,501,917</b>	<b>272,471,773</b>	<b>270,499,385</b>	<b>271,770,291</b>	<b>272,907,998</b>	<b>271,895,519</b>



# Balance Sheet Variance

PWD (Palmdale Water District), All Funds

Last Closed Period: Jun FY\_2025

in currency

in Whole Dollars

	Ending Balances		Variance vs. PY		Ending Balances		Variance vs. PM	
	Jun '25	Jun '24	Fav/(Unfav)		Jun '25	May '25	Fav/(Unfav)	
	Actual	PY Actual	\$ Var	% Var	Actual	PM Actual	\$ Var	% Var
<b>Current Assets</b>								
[-] Cash & Equivalents	24,624,062	20,672,554	3,951,508	19.1%	24,624,062	24,707,033	(82,971)	-0.3%
[+] Cash	2,821,116	2,943,946	(122,830)	-4.2%	2,821,116	3,560,639	(739,524)	-20.8%
[+] Investments	21,802,946	17,728,608	4,074,338	23.0%	21,802,946	21,146,394	656,552	3.1%
[+] Receivables	5,939,912	4,066,321	1,873,590	46.1%	5,939,912	5,723,221	216,690	3.8%
[+] Inventory	1,767,024	2,265,037	(498,013)	-22.0%	1,767,024	1,865,776	(98,752)	-5.3%
[+] Prepaid Expenses	379,939	364,118	15,821	4.3%	379,939	419,325	(39,386)	-9.4%
<b>Total Current Assets</b>	<b>32,710,936</b>	<b>27,368,029</b>	<b>5,342,907</b>	<b>19.5%</b>	<b>32,710,936</b>	<b>32,715,355</b>	<b>(4,419)</b>	<b>0.0%</b>
<b>Non Current Assets</b>								
[+] Restricted Cash	19,475,933	33,513,416	(14,037,483)	-41.9%	19,475,933	20,985,103	(1,509,169)	-7.2%
[+] Lease Receivables	140,441	266,728	(126,287)	-47.3%	140,441	140,441	-	0.0%
[+] Investment	2,255,347	2,234,414	20,933	0.9%	2,255,347	2,255,347	-	0.0%
[+] Right-To-Use Assets	405,701	235,404	170,297	72.3%	405,701	405,701	-	0.0%
[+] Capital Assets not Depreciated	46,056,660	27,345,097	18,711,563	68.4%	46,056,660	44,874,070	1,182,590	2.6%
[+] Capital Assets Depreciated	162,614,088	161,535,977	1,078,110	0.7%	162,614,088	163,292,269	(678,182)	-0.4%
<b>Total Non Current Assets</b>	<b>230,948,170</b>	<b>225,131,037</b>	<b>5,817,133</b>	<b>2.6%</b>	<b>230,948,170</b>	<b>231,952,931</b>	<b>(1,004,761)</b>	<b>-0.4%</b>
<b>Deferred Outflows of Resources</b>								
1400-000 (DOR - Contributions Pension)	1,033,933	964,493	69,440	7.2%	1,033,933	1,033,933	-	0.0%
1400-001 (DOR - Pension Related)	2,798,294	4,383,541	(1,585,247)	-36.2%	2,798,294	2,798,294	-	0.0%
1400-010 (DOR - OPEB Contributions)	556,021	464,791	91,230	19.6%	556,021	556,021	-	0.0%
1400-011 (DOR - OPEB Related)	2,729,464	2,013,193	716,271	35.6%	2,729,464	2,729,464	-	0.0%
2501-400 (2023A Bonds - Loss of Defeasance)	1,118,700	1,158,300	(39,600)	-3.4%	1,118,700	1,122,000	(3,300)	-0.3%
<b>Total Deferred Outflows of Resources</b>	<b>8,236,412</b>	<b>8,984,318</b>	<b>(747,906)</b>	<b>-8.3%</b>	<b>8,236,412</b>	<b>8,239,712</b>	<b>(3,300)</b>	<b>0.0%</b>
<b>Total Assets</b>	<b>271,895,518</b>	<b>261,483,384</b>	<b>10,412,134</b>	<b>4.0%</b>	<b>271,895,518</b>	<b>272,907,998</b>	<b>(1,012,479)</b>	<b>-0.4%</b>
<b>Current Liabilities</b>								
[+] Accounts Payable & Accrued Exp	1,076,597	2,719,278	(1,642,681)	-60.4%	1,076,597	3,355,107	(2,278,510)	-67.9%
[+] Customer Deposits	3,005,773	2,896,842	108,930	3.8%	3,005,773	3,013,560	(7,788)	-0.3%
[+] Construction Deposits	1,766,283	1,708,156	58,127	3.4%	1,766,283	1,757,783	8,500	0.5%
Current Compensated Absences	405,037	219,488	185,550	84.5%	405,037	405,037	-	0.0%
[+] Accrued Interest Payable	878,987	878,987	0	0.0%	878,987	585,991	292,996	50.0%
[+] Long-term liabilities - due in one year	4,184,447	1,908,676	2,275,771	119.2%	4,184,447	4,184,447	-	0.0%
[+] Payables	-	-	-	0.0%	-	-	-	0.0%
<b>Total Current Liabilities</b>	<b>11,317,124</b>	<b>10,331,428</b>	<b>985,696</b>	<b>9.5%</b>	<b>11,317,124</b>	<b>13,301,926</b>	<b>(1,984,802)</b>	<b>-14.9%</b>
<b>Non-Current Liabilities</b>								
Non Current Compensated Absences	1,215,112	658,463	556,649	84.5%	1,215,112	1,215,112	-	0.0%
[+] Lease Payable	256,512	119,618	136,894	114.4%	256,512	256,512	-	0.0%
[+] Current Portion of Capital Lease Payable	1,010,223	1,489,646	(479,423)	-32.2%	1,010,223	1,010,223	-	0.0%
[+] Bond Premiums and Discount	2,650,901	2,753,156	(102,255)	-3.7%	2,650,901	2,659,422	(8,521)	-0.3%
[+] Long term Portion of Bond Payable	94,144,139	97,044,508	(2,900,369)	-3.0%	94,144,139	94,144,139	-	0.0%
[+] Other Non Current Liabilities	29,002,197	27,789,452	1,212,745	4.4%	29,002,197	28,911,034	91,163	0.3%
<b>Total Non-Current Liabilities</b>	<b>128,279,083</b>	<b>129,854,843</b>	<b>(1,575,760)</b>	<b>-1.2%</b>	<b>128,279,083</b>	<b>128,196,442</b>	<b>82,642</b>	<b>0.1%</b>
<b>Deferred Inflows of Resources</b>								
2300-000 (Deferred Assessments)	-	1,116,667	(1,116,667)	-100.0%	-	800,000	(800,000)	-100.0%
2065-001 (DIR - Pension Related)	273,549	552,482	(278,933)	-50.5%	273,549	273,549	-	0.0%
2065-010 (DIR - OPEB Related)	4,795,498	5,252,471	(456,973)	-8.7%	4,795,498	4,795,498	-	0.0%
2065-011 (DIR - Leases)	230,288	345,431	(115,143)	-33.3%	230,288	230,288	-	0.0%
<b>Total Deferred Inflows of Resources</b>	<b>5,299,335</b>	<b>7,267,051</b>	<b>(1,967,716)</b>	<b>-27.1%</b>	<b>5,299,335</b>	<b>6,099,335</b>	<b>(800,000)</b>	<b>-13.1%</b>
<b>Total Liabilities</b>	<b>144,895,542</b>	<b>147,453,322</b>	<b>(2,557,779)</b>	<b>-1.7%</b>	<b>144,895,542</b>	<b>147,597,703</b>	<b>(2,702,161)</b>	<b>-1.8%</b>
<b>Equity</b>								
[+] Retained Earnings	126,999,976	114,030,063	12,969,913	11.4%	126,999,976	125,310,295	1,689,681	1.3%
<b>Total Equity</b>	<b>126,999,976</b>	<b>114,030,063</b>	<b>12,969,913</b>	<b>11.4%</b>	<b>126,999,976</b>	<b>125,310,295</b>	<b>1,689,681</b>	<b>1.3%</b>
<b>Total Liabilities Equity</b>	<b>271,895,519</b>	<b>261,483,384</b>	<b>10,412,134</b>	<b>4.0%</b>	<b>271,895,519</b>	<b>272,907,998</b>	<b>(1,012,479)</b>	<b>-0.4%</b>

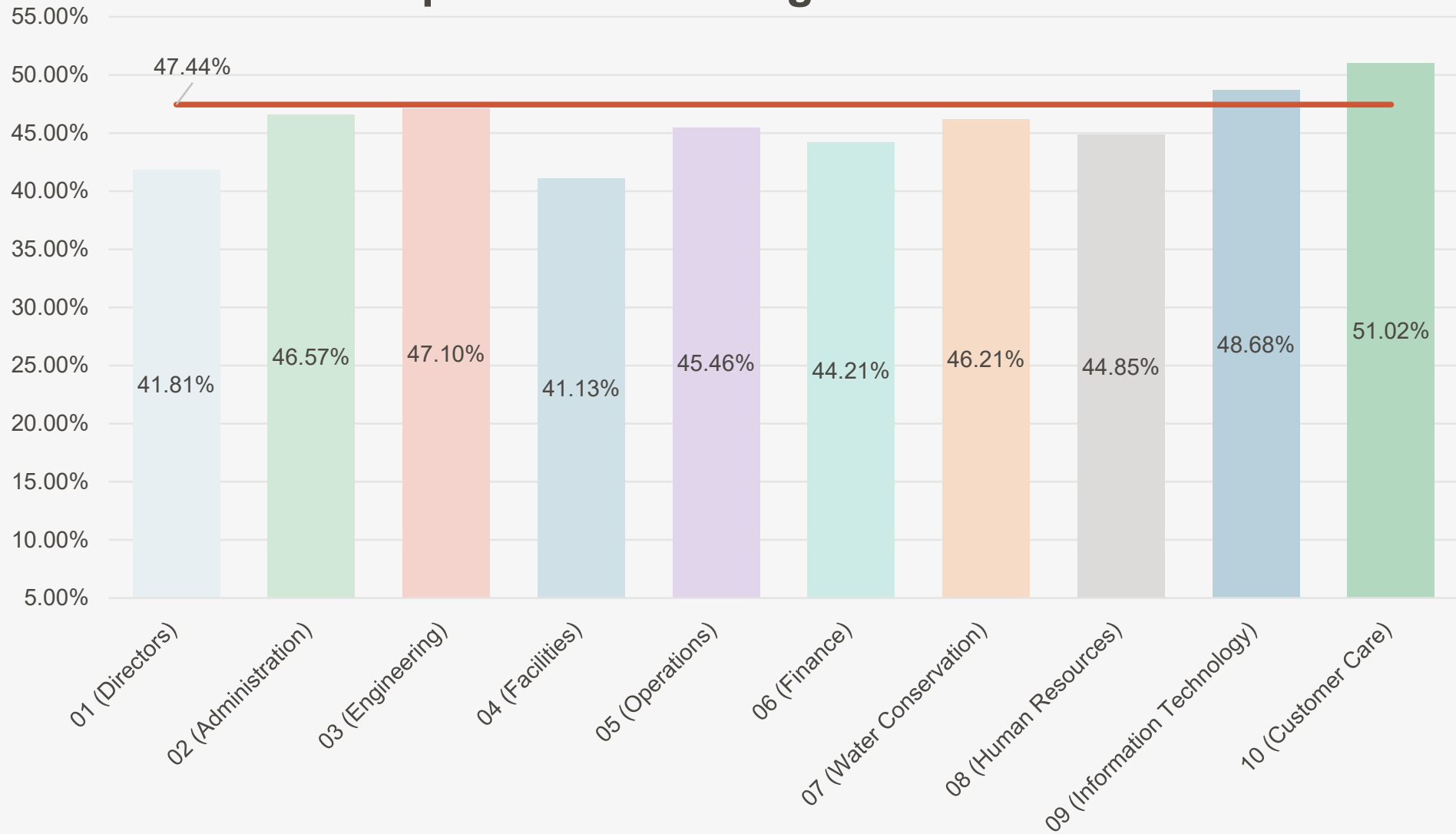
Income Statement										
Last Closed Period: Jun FY_2025										
in Whole Dollars			Jan '25	Feb '25	Mar '25	Apr '25	May '25	Jun '25	2025	% of exec.
			Actual	Actual	Actual	Actual	Actual	Actual	Actual	
									Budget	Budget
Program Revenue										
[+] Wholesale water	All Departments		31,014	-	21,026	17,261	15,848	43,211	128,360	30.2%
[+] Water Sales	All Departments		1,005,697	740,963	777,913	985,418	1,243,145	1,523,535	6,276,671	50.8%
[+] Meter Fees	All Departments		1,887,047	1,891,428	1,887,821	1,890,302	1,886,759	1,893,163	11,336,521	56.4%
[+] Water Quality Fees	All Departments		23,644	18,075	18,996	23,765	28,486	33,775	146,741	24.5%
[+] Elevation Fees	All Departments		19,794	14,258	14,782	19,458	26,497	32,142	126,930	34.8%
[+] Other Service Charges	All Departments		112,303	143,156	89,597	119,489	120,283	102,808	687,635	57.0%
[+] Drought Surcharge	All Departments		-	-	-	-	-	-	-	0.0%
Total Program Revenue			3,079,499	2,807,880	2,810,135	3,055,692	3,321,017	3,628,634	18,702,857	53.37%
Total Revenue			3,079,499	2,807,880	2,810,135	3,055,692	3,321,017	3,628,634	18,702,857	53.37%
Operating Expenses										
[+] Operating Expenses	01 (Directors)		10,835	13,482	11,289	11,026	21,158	13,943	81,734	41.8%
[+] Operating Expenses	02 (Administration)		540,139	346,728	493,813	467,785	414,218	459,563	2,722,245	46.6%
[+] Operating Expenses	03 (Engineering)		192,705	178,143	164,339	164,007	157,772	159,046	1,016,011	47.1%
[+] Operating Expenses	04 (Facilities)		592,664	553,443	601,028	588,047	580,447	581,886	3,497,516	41.1%
[+] Operating Expenses	05 (Operations)		373,607	444,713	305,958	295,826	330,091	389,125	2,139,321	45.5%
[+] Operating Expenses	06 (Finance)		173,262	164,121	149,469	158,509	157,161	128,709	931,229	44.2%
[+] Operating Expenses	07 (Water Conservation)		29,928	32,805	23,880	28,375	25,272	24,343	164,604	46.2%
[+] Operating Expenses	08 (Human Resources)		72,645	56,711	51,372	58,227	69,863	49,229	358,047	44.9%
[+] Operating Expenses	09 (Information Technology)		275,048	186,520	142,498	151,236	160,548	145,690	1,061,542	48.7%
[+] Operating Expenses	10 (Customer Care)		209,453	155,913	140,630	140,549	144,287	138,617	929,449	51.0%
[+] Source of Supply	All Departments		14,455	147,027	148,309	15,249	1,078,774	(3,964)	1,399,850	50.4%
[+] Plant Expenditures	All Departments		37,013	27,648	-	7,128	44,161	-	115,949	29.0%
[+] Sediment Removal Project	All Departments		824	1,311	2,174	695	-	16,451	21,454	1.2%
[+] GAC Filter Media Replacement	All Departments		-	-	-	-	-	-	750,000	0.0%
Total Operating Expenses			2,522,578	2,308,565	2,234,759	2,086,659	3,183,752	2,102,638	14,438,951	41.97%
Net Cash Operating Profit/(Loss)			556,920	499,315	575,377	969,034	137,265	1,525,996	4,263,907	665.3%
Cash Operating Margin %			18.1%	17.8%	20.5%	31.7%	4.1%	42.1%	22.8%	1246.5%
Non-Cash Operating Expense										
[+] Depreciation	All Departments		481,090	481,090	482,368	482,725	482,725	482,725	2,892,723	49.9%
[+] OPEB P&L	All Departments		127,710	127,710	127,710	127,710	127,710	127,710	766,260	47.9%
[+] Bad Debts	All Departments		5,881	23,837	(295)	(919)	(304)	4,788	32,987	131.9%
[+] Service Cost Construction	All Departments		25,500	15,763	26,565	39,352	18,555	25,346	151,080	27.5%
[+] Capitalized Construction	All Departments		(184,922)	(180,973)	(169,131)	(222,634)	(176,726)	(156,159)	(1,090,545)	-90.9%
Total Non-Cash Operating Expense			455,260	467,427	467,216	426,233	451,959	484,410	2,752,506	40.6%
Operating (Loss) Income			101,661	31,888	108,160	542,800	(314,695)	1,041,586	1,511,401	24.6%
Operating Margin %			3.3%	1.1%	3.8%	17.8%	-9.5%	28.7%	8.1%	46.2%
Non Operating Revenues										
[+] Assessments - Debt Service	All Departments		536,640	536,640	536,640	536,640	536,640	536,640	3,219,840	46.0%
[+] Assessments - 1% Ad Valorem	All Departments		672,528	263,360	263,360	263,360	263,360	872,598	2,598,566	74.7%
[+] DWR Fixed Charge Recovery	All Departments		-	-	-	103,986	171,800	-	275,786	91.9%
[+] Interest Expense	All Departments		127,319	126,132	123,766	116,788	107,809	135,245	737,058	258.6%
[+] CIF	All Departments		-	581,010	920,664	286,926	201,965	(201,965)	1,788,601	325.2%
[+] State Water Project - Table A Water Sale	All Departments		-	-	-	-	-	-	-	0.0%
[+] State & Federal Grants	All Departments		-	116,920	-	710,053	68,445	-	895,417	14.9%
[+] Other Non-Operating Revenue	All Departments		13,059	65,676	12,854	14,660	11,311	18,206	135,766	543.1%
Total Non Operating Revenues			1,349,545	1,689,738	1,857,284	2,032,413	1,361,330	1,360,723	9,651,034	54.72%
[+] Interest Long Term Debt	All Departments		298,561	298,561	299,622	288,413	288,413	288,413	1,761,984	64.2%
[+] Deferred Charges - Cost Issuance	All Departments		-	-	-	-	-	-	-	0.0%
[+] Amortization of SWP	All Departments		415,440	415,440	415,442	415,443	415,444	415,441	2,492,649	51.5%
[+] Water Conservation Programs	All Departments		5,231	1,744	6,795	9,160	2,559	8,612	34,101	34.1%
PRWA	00 (General)		-	17,916	161	217	-	161	18,456	0.0%
			719,231	733,660	722,020	713,233	706,416	712,628	4,307,189	56.1%
Net Income			731,974	987,966	1,243,424	1,861,980	340,219	1,689,681	6,030,799	157.8%
NIBT %			23.8%	35.2%	44.2%	60.9%	10.2%	46.6%	32.2%	295.6%

# Income Statement Variance

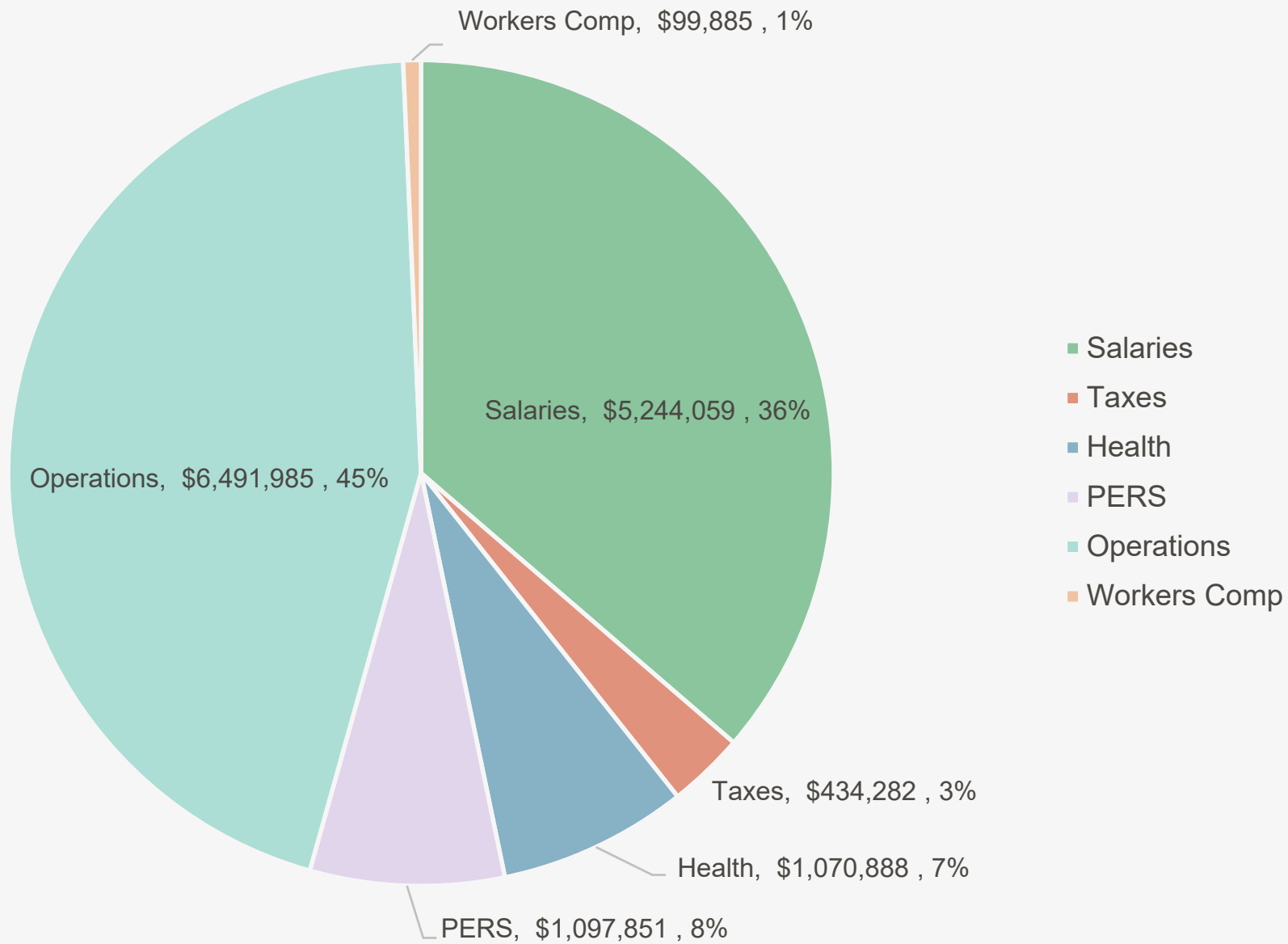
Last Closed Period: Jun FY\_2025

		Q2 - Quarter to Date			Variance vs. PY		Variance vs. Budget		Year to Date			Variance vs. PY		Full Year		% of
		Jun '25	Jun '24	Jun '25	(Fav)/Unfav		(Fav)/Unfav		Jun '25	Jun '24	Jun '25	(Fav)/Unfav		Budget	Executed	Budget
		Actual	PY Actual	Budget	\$ Var	% Var	\$ Var	% Var	Actual	PY Actual	Budget	\$ Var	% Var	Budget	Budget	Budget
in Whole Dollars																
Program Revenue																
[+] Wholesale water	All Departments	76,320	18,057	106,250	58,263	322.7%	(29,930)	-28.2%	128,360	43,337	212,500	85,023	196.2%	425,000	30.2%	
[+] Water Sales	All Departments	3,752,097	2,783,009	3,086,582	969,087	34.8%	665,515	21.6%	6,276,671	4,577,514	6,173,164	1,699,156	37.1%	12,346,328	50.8%	
[+] Meter Fees	All Departments	5,670,224	5,084,646	5,024,744	585,579	11.5%	645,481	12.8%	11,336,521	10,141,574	10,049,487	1,194,947	11.8%	20,098,974	56.4%	
[+] Water Quality Fees	All Departments	86,026	98,011	150,000	(11,985)	-12.2%	(63,974)	-42.6%	146,741	162,856	300,000	(16,116)	-9.9%	600,000	24.5%	
[+] Elevation Fees	All Departments	78,097	88,958	91,250	(10,861)	-12.2%	(13,153)	-14.4%	126,930	139,943	182,500	(13,013)	-9.3%	365,000	34.8%	
[+] Other Service Charges	All Departments	342,580	310,748	301,750	31,832	10.2%	40,830	13.5%	687,635	606,585	603,500	81,050	13.4%	1,207,000	57.0%	
Total Program Revenue		10,005,343	8,383,429	8,760,576	1,621,915	19.3%	1,244,768	14.2%	18,702,857	15,671,810	17,521,151	3,031,048	19.3%	35,042,302	53.4%	
Operating Expenses																
[+] Operating Expenses	01 (Directors)	46,127	43,223	48,875	2,904	6.7%	(2,748)	-5.6%	81,734	77,398	97,750	4,336	5.6%	195,500	41.8%	
[+] Operating Expenses	02 (Administration)	1,341,565	1,426,956	1,461,235	(85,390)	-6.0%	(119,670)	-8.2%	2,722,245	2,700,910	2,922,470	21,336	0.8%	5,844,940	46.6%	
[+] Operating Expenses	03 (Engineering)	480,824	437,072	539,260	43,752	10.0%	(58,436)	-10.8%	1,016,011	924,492	1,078,521	91,519	9.9%	2,157,042	47.1%	
[+] Operating Expenses	04 (Facilities)	1,750,380	1,683,609	2,126,105	66,771	4.0%	(375,724)	-17.7%	3,497,516	3,391,928	4,252,209	105,588	3.1%	8,504,418	41.1%	
[+] Operating Expenses	05 (Operations)	1,015,043	969,164	1,176,567	45,879	4.7%	(161,524)	-13.7%	2,139,321	2,067,984	2,353,133	71,336	3.4%	4,706,266	45.5%	
[+] Operating Expenses	06 (Finance)	444,378	452,649	526,602	(8,271)	-1.8%	(82,224)	-15.6%	931,229	930,965	1,053,205	265	0.0%	2,106,408	44.2%	
[+] Operating Expenses	07 (Water Conservation)	77,990	70,697	89,060	7,293	10.3%	(11,070)	-12.4%	164,604	143,706	178,120	20,898	14.5%	356,240	46.2%	
[+] Operating Expenses	08 (Human Resources)	177,319	157,173	199,558	20,146	12.8%	(22,239)	-11.1%	358,047	326,228	399,116	31,819	9.8%	798,232	44.9%	
[+] Operating Expenses	09 (Information Technology)	457,475	373,317	545,124	84,158	22.5%	(87,649)	-16.1%	1,061,542	987,485	1,090,248	74,057	7.5%	2,180,496	48.7%	
[+] Operating Expenses	10 (Customer Care)	423,453	410,530	455,461	12,923	3.1%	(32,007)	-7.0%	929,449	854,780	910,921	74,669	8.7%	1,821,843	51.0%	
[+] Source of Supply	All Departments	1,090,059	666,265	695,000	423,794	63.6%	395,059	56.8%	1,399,850	703,252	1,390,000	696,598	99.1%	2,780,000	50.4%	
[+] Plant Expenditures	All Departments	51,288	27,016	100,000	24,273	89.8%	(48,712)	-48.7%	115,949	43,526	200,000	72,423	166.4%	400,000	29.0%	
[+] Sediment Removal Project	All Departments	17,146	10,792	450,000	6,355	58.9%	(432,854)	-96.2%	21,454	10,792	900,000	10,662	98.8%	1,800,000	1.2%	
[+] GAC Filter Media Replacement	All Departments	-	167,000	187,500	(167,000)	-100.0%	(187,500)	-100.0%	-	334,000	375,000	(334,000)	-100.0%	750,000	0.0%	
Total Operating Expenses		7,373,049	6,895,462	8,600,347	477,587	6.9%	(1,227,298)	-14.3%	14,438,951	13,497,444	17,200,694	941,507	7.0%	34,401,385	42.0%	
Net Cash Operating Profit/(Loss)		2,632,295	1,487,967	160,229	1,144,328	76.9%	2,472,066	1542.8%	4,263,907	2,174,366	320,457	2,089,541	96.1%	640,917	665.3%	
Operating Margin %		26.3%	17.7%	1.8%	8.6%	48.2%	24.5%	1338.5%	22.8%	13.9%	1.8%	8.9%	64.3%	21.0%	108.7%	
Non-Cash Operating Expense																
[+] Depreciation	All Departments	1,448,174	1,400,995	1,450,000	47,180	3.4%	(1,826)	-0.1%	2,892,723	2,812,971	2,900,000	79,752	2.8%	5,800,000	49.9%	
[+] OPEB P&L	All Departments	383,130	383,130	400,000	-	0.0%	(16,870)	-4.2%	766,260	766,260	800,000	-	0.0%	1,600,000	47.9%	
[+] Bad Debts	All Departments	3,564	5,554	6,250	(1,990)	-35.8%	(2,686)	-43.0%	32,987	10,982	12,500	22,006	200.4%	25,000	131.9%	
[+] Service Cost Construction	All Departments	83,253	109,353	137,500	(26,100)	-23.9%	(54,247)	-39.5%	151,080	222,857	275,000	(71,777)	-32.2%	550,000	27.5%	
[+] Capitalized Construction	All Departments	(555,519)	(330,425)	(300,000)	(225,094)	-68.1%	(255,519)	-85.2%	(1,090,545)	(625,039)	(600,000)	(465,506)	-74.5%	(1,200,000)	-90.9%	
Total Non-Cash Operating Expense		1,362,603	1,568,608	1,693,750	(206,005)	-13.1%	(331,147)	-19.6%	2,752,506	3,188,031	3,387,500	(435,526)	-13.7%	6,775,000	40.6%	
Operating (Loss) Income		1,269,692	(80,641)	(1,533,521)	1,350,333	1674.5%	2,803,213	182.8%	1,511,401	(1,013,665)	(3,067,043)	2,525,066	249.1%	(6,134,083)	24.6%	
Operating Margin %		12.7%	-1.0%	-17.5%	13.7%	-1419.3%	30.2%	-172.5%	8.1%	-6.5%	-17.5%	14.5%	-224.9%	25.6%	31.6%	
Non Operating Revenues																
[+] Assessments - Debt Service	All Departments	1,609,920	1,849,860	1,750,000	(239,940)	-13.0%	(140,080)	-8.0%	3,219,840	3,292,080	3,500,000	(72,240)	-2.2%	7,000,000	46.0%	
[+] Assessments - 1% Ad Valorem	All Departments	1,399,318	1,454,094	869,421	(54,776)	-3.8%	529,897	60.9%	2,598,566	2,567,889	1,738,841	30,676	1.2%	3,477,682	74.7%	
[+] DWR Fixed Charge Recovery	All Departments	275,786	270,793	75,000	4,993	1.8%	200,786	267.7%	275,786	270,793	150,000	4,993	1.8%	300,000	91.9%	
[+] Interest Expense	All Departments	359,842	202,205	71,250	157,637	78.0%	288,592	405.0%	737,058	370,543	142,500	366,515	98.9%	285,000	258.6%	
[+] CIF	All Departments	286,926	72,293	137,500	214,634	296.9%	149,426	108.7%	1,788,601	126,242	275,000	1,662,358	1316.8%	550,000	325.2%	
[+] State & Federal Grants	All Departments	778,497	1,191,779	1,500,000	(413,281)	-34.7%	(721,503)	-48.1%	895,417	1,191,779	3,000,000	(296,361)	-24.9%	6,000,000	14.9%	
[+] Other Non-Operating Revenue	All Departments	44,178	37,098	6,250	7,080	19.1%	37,928	606.8%	135,766	686,147	12,500	(550,381)	-80.2%	25,000	543.1%	
Total Non Operating Revenues		4,754,467	5,078,121	4,409,421	(323,654)	-6.4%	345,046	7.8%	9,651,034	8,505,473	8,818,841	1,145,561	13.5%	17,637,682	54.7%	
Non Operating Expenses Excl. PRWA																
[+] Interest Long Term Debt	All Departments	865,240	865,240	685,808	-	0.0%	179,432	26.2%	1,761,984	1,546,524	1,371,615	215,460	13.9%	2,743,231	64.2%	
[+] Deferred Charges - Cost Issuance	All Departments	-	292,810	-	(292,810)	-100.0%	-	0.0%	-	292,810	-	(292,810)	-100.0%	-	0.0%	
[+] Amortization of SWP	All Departments	1,246,328	1,246,332	1,209,555	(4)	0.0%	36,773	3.0%	2,492,649	2,492,654	2,419,110	(5)	0.0%	4,838,220	51.5%	
[+] Water Conservation Programs	All Departments	20,331	14,275	25,000	6,056	42.4%	(4,669)	-18.7%	34,101	18,249	50,000	15,852	86.9%	100,000	34.1%	
PRWA	00 (General)	378	7,706	-					18,456	9,075	-			-		
Total Non Operating Expenses Excl. PRWA		2,132,277	2,426,363	1,920,363	(294,086)	-12.1%	211,915	11.0%	4,307,189	4,359,313	3,840,725	(52,123)	-1.2%	7,681,451	56.1%	
Net Income		3,891,881	2,571,117	955,536	1,320,764	51.4%	2,936,344	307.3%	6,855,246	3,132,496	1,911,073	3,722,750	118.8%	3,822,148	179.4%	
NIBT %		38.9%	30.7%	10.9%	8.2%	26.8%	28.0%	256.6%	36.7%	20.0%	10.9%	16.7%	83.4%	25.7%	142.4%	

## Departmental - Budget vs. Actual



# Personnel vs Operational Expenses



# Departmental Reporting

## 01 (Directors)

*in Whole Dollars*

	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll Benefits	3,972	20,250	40,500	9.8%
<b>Total Personnel</b>	<b>3,972</b>	<b>20,250</b>	<b>40,500</b>	<b>9.8%</b>
<b>Directors</b>				
[+] xxxx-008 Director Mac Laren-Gomez	19,101	15,500	31,000	61.6%
[+] xxxx-010 Director Dino	20,939	15,500	31,000	67.5%
[+] xxxx-012 Director Wilson	13,246	15,500	31,000	42.7%
[+] xxxx-014 Director Kellerman	12,489	15,500	31,000	40.3%
[+] xxxx-015 Director Sanchez	11,987	15,500	31,000	38.7%
<b>Total Directors</b>	<b>77,762</b>	<b>77,500</b>	<b>155,000</b>	<b>50.2%</b>
<b>Total Department Expenses</b>	<b>81,734</b>	<b>97,750</b>	<b>195,500</b>	<b>41.8%</b>

# Departmental Reporting

## 02 (Administration)

*in Whole Dollars*

	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	753,537	822,625	1,645,250	45.8%
[-] Payroll Benefits	226,940	262,500	525,000	43.2%
[+] Taxes	61,151	70,000	140,000	43.7%
[+] Health	94,814	95,000	190,000	49.9%
[+] PERS	70,976	97,500	195,000	36.4%
<b>Total Personnel</b>	<b>980,477</b>	<b>1,085,125</b>	<b>2,170,250</b>	<b>45.2%</b>
<b>Operational Expenses</b>				
[+] Groundwater Adjudication	80,180	38,250	76,500	104.8%
[+] Others	168,983	168,187	336,374	50.2%
[+] Permits	1,200	5,000	10,000	12.0%
[+] Public Affairs	-	6,492	12,984	0.0%
[+] Public Relations	42,809	37,653	75,306	56.8%
<b>Total Operational Expenses</b>	<b>293,172</b>	<b>255,582</b>	<b>511,164</b>	<b>57.4%</b>
<b>Total Department Expenses</b>	<b>1,273,649</b>	<b>1,340,707</b>	<b>2,681,414</b>	<b>47.5%</b>
<b>District Administration</b>				
<b>District-Wide Salaries &amp; Benefits</b>				
5070-001 (Salaries-On-Call/Stand By Time)	39,732	47,500	95,000	41.8%
5070-002 (PERS-Unfunded Liability)	576,852	632,233	1,264,466	45.6%
5070-003 (Worker's Compensation)	116,617	120,405	240,810	48.4%
5070-004 (Vacation Benefit Expense)	(19,670)	47,500	95,000	-20.7%
5070-005 (Life Insurance/EAP)	2,938	3,625	7,250	40.5%
<b>Total District-Wide Salaries &amp; Benefits</b>	<b>716,469</b>	<b>851,263</b>	<b>1,702,526</b>	<b>42.1%</b>
<b>District-Wide Operating Expenses</b>				
5070-006 (Other Operating)	121,392	28,500	57,000	213.0%
5070-007 (Consultants)	222,826	250,000	500,000	44.6%
5070-008 (Insurance)	254,002	250,000	500,000	50.8%
5070-010 (Legal Services)	62,260	90,500	181,000	34.4%
5070-011 (Memberships)	62,423	82,500	165,000	37.8%
5070-012 (Elections)	-	29,000	58,000	0.0%
5070-099 (District - 100th Anniversary Expense)	9,224	-	-	0.0%
<b>Total District-Wide Operating Expenses</b>	<b>732,127</b>	<b>730,500</b>	<b>1,461,000</b>	<b>50.1%</b>
<b>Total Department Expenses</b>	<b>1,448,596</b>	<b>1,581,763</b>	<b>3,163,526</b>	<b>45.8%</b>

# Departmental Reporting

## 03 (Engineering)

<i>in Whole Dollars</i>	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	719,331	788,000	1,576,000	45.6%
[-] Payroll Benefits	279,800	273,500	547,000	51.2%
[+] Taxes	58,691	57,500	115,000	51.0%
[+] Health	142,212	139,000	278,000	51.2%
[+] PERS	78,897	77,000	154,000	51.2%
<b>Total Personnel</b>	<b>999,131</b>	<b>1,061,500</b>	<b>2,123,000</b>	<b>47.1%</b>
<b>Operational Expenses</b>				
[+] Contracted Services	-	1,500	3,000	0.0%
[+] Others	14,861	11,271	22,542	65.9%
[+] Supplies	2,020	4,250	8,500	23.8%
<b>Total Operational Expenses</b>	<b>16,880</b>	<b>17,021</b>	<b>34,042</b>	<b>49.6%</b>
<b>Total Department Expenses</b>	<b>1,016,011</b>	<b>1,078,521</b>	<b>2,157,042</b>	<b>47.1%</b>



# Departmental Reporting

## 04 (Facilities)

*in Whole Dollars*

	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	1,233,784	1,425,000	2,850,000	43.3%
[-] Payroll Benefits	503,141	507,500	1,015,000	49.6%
[+] Taxes	105,155	102,500	205,000	51.3%
[+] Health	288,553	290,000	580,000	49.8%
[+] PERS	109,432	115,000	230,000	47.6%
<b>Total Personnel</b>	<b>1,736,925</b>	<b>1,932,500</b>	<b>3,865,000</b>	<b>44.9%</b>
<b>Operational Expenses</b>				
[+] Contracted Services	90,747	141,583	283,166	32.0%
[+] Electricity	869,140	1,211,048	2,422,097	35.9%
[+] Lease Expense	105,016	89,097	178,194	58.9%
[+] Mtce & Rep Operations	444,226	397,596	795,191	55.9%
[+] Natural Gas	28,960	200,471	400,942	7.2%
[+] Others	103,628	158,336	316,673	32.7%
[+] Permits	44,150	36,355	72,710	60.7%
[+] Supplies	49,352	45,785	91,569	53.9%
[+] Testing	95	19,703	39,406	0.2%
[+] Tools	25,277	19,736	39,471	64.0%
<b>Total Operational Expenses</b>	<b>1,760,591</b>	<b>2,319,709</b>	<b>4,639,418</b>	<b>37.9%</b>
<b>Total Department Expenses</b>	<b>3,497,516</b>	<b>4,252,209</b>	<b>8,504,418</b>	<b>41.1%</b>

# Departmental Reporting

## 05 (Operations)

*in Whole Dollars*

	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	721,188	803,000	1,606,000	44.9%
[-] Payroll Benefits	269,868	279,500	559,000	48.3%
[+] Taxes	60,508	64,000	128,000	47.3%
[+] Health	139,497	138,000	276,000	50.5%
[+] PERS	69,863	77,500	155,000	45.1%
<b>Total Personnel</b>	<b>991,056</b>	<b>1,082,500</b>	<b>2,165,000</b>	<b>45.8%</b>
<b>Operational Expenses</b>				
[+] Contracted Services	17,759	42,597	85,194	20.8%
[+] Electricity	287,963	229,242	458,485	62.8%
[+] Mtce & Rep Operations	57,909	71,343	142,687	40.6%
[+] Natural Gas	556	1,617	3,235	17.2%
[+] Others	731,814	807,679	1,615,357	45.3%
[+] Permits	13,562	54,533	109,065	12.4%
[+] Supplies	37,195	60,299	120,598	30.8%
[+] Tools	1,507	3,323	6,646	22.7%
<b>Total Operational Expenses</b>	<b>1,148,265</b>	<b>1,270,633</b>	<b>2,541,266</b>	<b>45.2%</b>
<b>Total Department Expenses</b>	<b>2,139,321</b>	<b>2,353,133</b>	<b>4,706,266</b>	<b>45.5%</b>

# Departmental Reporting

## 06 (Finance)

*in Whole Dollars*

	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	481,660	599,000	1,198,000	40.2%
[-] Payroll Benefits	205,374	224,000	448,000	45.8%
[+] Taxes	39,651	43,750	87,500	45.3%
[+] Health	111,673	119,000	238,000	46.9%
[+] PERS	54,049	61,250	122,500	44.1%
<b>Total Personnel</b>	<b>687,034</b>	<b>823,000</b>	<b>1,646,000</b>	<b>41.7%</b>
<b>Operational Expenses</b>				
[+] Contracted Services	188,353	179,827	359,654	52.4%
[+] Lease Expense	1,447	1,500	3,000	48.2%
[+] Mtce & Rep Operations	50	-	-	0.0%
[+] Others	968	3,886	7,771	12.5%
[+] Supplies	-	779	1,558	0.0%
[+] Telecommunication	53,378	44,213	88,426	60.4%
<b>Total Operational Expenses</b>	<b>244,195</b>	<b>230,205</b>	<b>460,408</b>	<b>53.0%</b>
<b>Total Department Expenses</b>	<b>931,229</b>	<b>1,053,205</b>	<b>2,106,408</b>	<b>44.2%</b>

# Departmental Reporting

## 07 (Water Conservation)

<i>in Whole Dollars</i>	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	105,940	115,500	231,000	45.9%
[-] Payroll Benefits	48,298	50,000	100,000	48.3%
[+] Taxes	8,968	9,000	18,000	49.8%
[+] Health	26,220	27,500	55,000	47.7%
[+] PERS	13,111	13,500	27,000	48.6%
<b>Total Personnel</b>	<b>154,239</b>	<b>165,500</b>	<b>331,000</b>	<b>46.6%</b>
<b>Operational Expenses</b>				
[+] Others	-	1,817	3,635	0.0%
[+] Public Relations	8,509	6,128	12,257	69.4%
[+] Supplies	1,856	4,674	9,348	19.9%
<b>Total Operational Expenses</b>	<b>10,365</b>	<b>12,620</b>	<b>25,240</b>	<b>41.1%</b>
<b>Total Department Expenses</b>	<b>164,604</b>	<b>178,120</b>	<b>356,240</b>	<b>46.2%</b>

# Departmental Reporting

## 08 (Human Resources)

*in Whole Dollars*

	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	198,388	247,000	494,000	40.2%
[-] Payroll Benefits	69,853	67,000	134,000	52.1%
[+] Taxes	16,592	17,500	35,000	47.4%
[+] Health	34,478	29,750	59,500	57.9%
[+] PERS	18,783	19,750	39,500	47.6%
<b>Total Personnel</b>	<b>268,242</b>	<b>314,000</b>	<b>628,000</b>	<b>42.7%</b>
<b>Operational Expenses</b>				
[+] Employee Expense	54,230	48,632	97,263	55.8%
[+] HR/Safety	292	1,039	2,078	14.0%
[+] Others	3,530	4,025	8,050	43.8%
[+] Supplies	18,832	17,918	35,835	52.6%
[+] Training	12,923	13,503	27,006	47.9%
<b>Total Operational Expenses</b>	<b>89,805</b>	<b>85,116</b>	<b>170,232</b>	<b>52.8%</b>
<b>Total Department Expenses</b>	<b>358,047</b>	<b>399,116</b>	<b>798,232</b>	<b>44.9%</b>

# Departmental Reporting

## 09 (Information Technology)

<i>in Whole Dollars</i>	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	363,587	408,000	816,000	44.6%
[-] Payroll Benefits	135,915	142,250	284,500	47.8%
[+] Taxes	30,016	31,000	62,000	48.4%
[+] Health	64,937	67,500	135,000	48.1%
[+] PERS	40,962	43,750	87,500	46.8%
<b>Total Personnel</b>	<b>499,502</b>	<b>550,250</b>	<b>1,100,500</b>	<b>45.4%</b>
<b>Operational Expenses</b>				
[-] Cloud Services	131,549	73,227	146,454	89.8%
4155-801 (Cloud Services-MS-Office 360)	98,255	20,774	41,548	236.5%
4155-804 (Cloud Services-Adobe-Creative Suite)	295	7,141	14,282	2.1%
4155-805 (Cloud Services-SeamlessDocs)	8,450	3,895	7,790	108.5%
4155-806 (Cloud Services-IPSwitch-Moveit)	-	5,453	10,906	0.0%
4155-807 (Cloud Services-GFI Fax)	751	1,169	2,337	32.1%
4155-808 (Cloud Services-KnowBe4-Security Awareness)	298	2,467	4,934	6.0%
4155-809 (Cloud Services-Network Solutions DNS, Web Reg)	762	1,818	3,635	21.0%
4155-810 (Cloud Services-IBM-MaaS 360)	4,161	3,246	6,492	64.1%
4155-811 (Cloud Services-MSP Portal-Bit Defender)	-	2,776	5,552	0.0%
4155-813 (Cloud Services-FleetMate)	-	273	545	0.0%
4155-814 (Cloud Services-Security Metrics-PCI Compliance)	-	2,398	4,796	0.0%
4155-815 (Cloud Services - Citrix)	-	1,044	2,089	0.0%
4155-816 (Cloud Services - -Azure Servic)	18,576	20,774	41,548	44.7%
[+] Computer Equipment	47,203	72,969	145,938	32.3%
[+] Computer Software	29,438	20,774	41,548	70.9%
[+] Contracted Services	78,948	85,169	170,339	46.3%
[+] Lease Expense	23,816	29,343	58,687	40.6%
[+] Mtce & Rep Operations	-	1,818	3,635	0.0%
[+] Others	4,580	6,752	13,503	33.9%
[+] Software M&S	175,006	169,446	338,892	51.6%
[+] Supplies	3,476	2,597	5,194	66.9%
[+] Telecommunication	68,023	77,903	155,806	43.7%
<b>Total Operational Expenses</b>	<b>562,039</b>	<b>539,998</b>	<b>1,079,996</b>	<b>52.0%</b>
<b>Total Department Expenses</b>	<b>1,061,542</b>	<b>1,090,248</b>	<b>2,180,496</b>	<b>48.7%</b>

# Departmental Reporting

## 10 (Customer Care)

*in Whole Dollars*

	Jun '25 Actual	Jun '25 Budget	Full year Budget	% Used
<b>Personnel</b>				
[+] Payroll	626,912	649,000	1,298,000	48.3%
[-] Payroll Benefits	274,521	245,250	490,500	56.0%
[+] Taxes	49,578	48,750	97,500	50.8%
[+] Health	160,018	131,500	263,000	60.8%
[+] PERS	64,925	65,000	130,000	49.9%
<b>Total Personnel</b>	<b>901,433</b>	<b>894,250</b>	<b>1,788,500</b>	<b>50.4%</b>
<b>Operational Expenses</b>				
[-] Contracted Services	25,676	10,958	21,917	117.2%
4155-005 (Contracted Services - Assessor Data (Realquest))	4,125	5,453	10,906	37.8%
4155-010 (Contracted Services - Credit Reporting Services)	1,341	2,597	5,194	25.8%
4155-015 (Contracted Services - AMR Services (Itron))	20,210	1,247	2,493	810.7%
4155-020 (Contracted Services - NEMO-Q System)	-	1,662	3,324	0.0%
[+] Others	-	3,116	6,232	0.0%
[+] Supplies	2,340	2,597	5,194	45.1%
<b>Total Operational Expenses</b>	<b>28,016</b>	<b>16,671</b>	<b>33,343</b>	<b>84.0%</b>
<b>Total Department Expenses</b>	<b>929,449</b>	<b>910,921</b>	<b>1,821,843</b>	<b>51.0%</b>

## **New and Replacement Capital Projects**

Budget Year	Project	Project Title	Project Type	Contractor	Approved Contract Amount	Board / Manager Approval	Payments Approved to Date	Contract Balance	Through Dec. 2024	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2025 Total	2026 Carryover
2017	12-400	PRGRRP - Construction of Monitoring Wells / Test Basin	Water Supply	Environmental Const.	427,490	04/26/2017	330,359	97,131	330,359													-	
2017	12-400	PRGRRP - Construction of Monitoring Wells / Test Basin - Auxiliary Items	Water Supply	Various Vendors			35,742	-	35,742													-	
2018	18-606	45th ST Tank Site - Altitude Valve Replacement	Replacement Cap.				28,401	-	10,951		17,450											17,450	
2018	18-606	45th ST Tank Site - Altitude Valve Replacement	Replacement Cap.	Cedro Construction, Inc.			406,562	-	406,562													-	
2018	18-614	LRD - Interior Access Ladder	Replacement Cap.				27,028	-	27,028													-	
2020	20-606	2800 Zone Velocity Deficiency	General Project				16,923	-	16,923													-	
2020	20-610	2950 Zone Booster Station @ 3M Clearwell Site	Replacement Cap.				201,977	-	177,872		1,720	18,083	1,880	221	2,200							24,104	
2020	20-610	2950 Zone Booster Station @ 3M Clearwell Site (Bond Fund - Design)	Replacement Cap.	P2S Inc	119,817		12,419	107,398	12,419													-	
2020	20-610	2950 Zone Booster Station @ 3M Clearwell Site (Bond Fund - Construction)	Replacement Cap.	Metro Builders	6,487,402		3,305,073	3,182,328	2,392,719		380,088	201,207	7,672	116,406	206,981							912,355	
2020	20-610	2950 Zone Booster Station @ 3M Clearwell Site (Bond Fund - Booster Stn Review)	Replacement Cap.	Hazen and Sawyer	41,890		43,518	(1,628)	43,518													-	
2020	20-610	2950 Zone Booster Station @ 3M Clearwell Site (Bond Fund - Booster Stn Review)	Replacement Cap.	Ardurra Group, Inc	345,818		23,437	322,381	22,637				800									800	
2020	20-622	Well 36 Design & Const.	General Project				251,665	-	168,884	11,168	5,953	38,934	5,506	6,947	14,273							82,781	
	20-622	Well 36 Design & Const. (Bond Fund - Design)	General Project	Hazen and Sawyer	646,836		634,712	12,124	574,326	27,277		19,815	1,640	11,655								60,387	
	20-622	Well 36 Design & Const. (Bond Fund - Construction)	General Project	Zim Industries, Inc	2,098,913		1,966,046	132,867	1,966,046													-	
	20-622	Well 36 Design & Const. (Bond Fund - Pipeline Construction)	General Project	Cedro Construction, Inc.	303,839		297,378	6,461	297,378													-	
	20-622	Well 36 Design & Const. (Bond Fund - Well Equipping)	General Project	Caliaqua, Inc	4,258,230		-	-	1,087,407			511,946	445,081	283,310	658,250							1,898,587	
2020	20-703	Water Conservation Garden Construct @ MOB	General Project				86,749	-	86,749													-	
2021	21-607	Design 16" WM Ave P Well #8A					10,139	-	10,139													-	
2021	21-609	Design WM from 16"to24" Ave S					2,000	-	2,000													-	
2021	21-613	Palmdale Ditch Conversion	General Project				4,865,706	-	2,936,788	201,674	202,550	1,235,218	62,381		227,096							1,928,918	
2022	22-601	Des&Const WM @Pearlblossom 53rd	General Project				2,820	-	2,820													-	
2022	22-602	Design WM Repl @ 10th to R4	General Project				11,215	-	11,215													-	
2022	22-603	Des&Const WM Repl Sierra Hwy	General Project				5,335	-	5,335													-	
2022	22-604	Des&Const WM Repl 26-27 Ave R	General Project				428,780	-	8,777			77,477	87,645		254,881							420,003	
2022	22-605	Design Recycled Water Pipeline - Avenue Q	General Project				39,226	-	8,335		3,401	22,424	605	3,582	880							30,891	
2022	22-605	Design Recycled Water Pipeline - Avenue Q	General Project	American Pipeline Services	2,096,245		1,974,597	121,648	965,115	345,652		473,622			190,208							1,009,482	
2022	22-629	WTP - Design & Const. Chemical Feed Lines	General Project				35,556	-	35,556													-	
2023	23-601	12" DI Watermain - 20th ST E	General Project				3,090	-	3,090													-	
2023	23-603	8" Watermain - Camares Dr	General Project				2,475	-	2,475													-	
2023	23-640	Main Repl 27th St E	General Project				3,271	-	-			660	466		2,145							-	
2023	23-612	Des&Const Rehab 6M Clearwell	Replacement Cap.				174,692	-	163,843					10,849								10,849	
2024	24-602	Repl PWD Hydrants	Replacement Cap.				33,150	-	33,150													-	
2024	24-604	Submersible Chopper Pump	Replacement Cap.				44,685	-	44,685													-	
2024	24-605	Repl Broken Gate Valves	Replacement Cap.				32,271	-	32,271													-	
2024	24-607	Design & Construct Littlerock Dam Road	General Project				94,293	-	94,293													-	
2024	24-608	2024 Service Line Replacement Project	General Project				5,808	-	5,808													-	
2024	24-609	Hilltop Booster Replacement	General Project				192	-	192													-	
2024	24-610	Well 8 Motor Rebuild	General Project				83,364	-	-			83,364										-	
2024	24-611	Well 11 Engine Overhaul	General Project				60,080	-	46,333		13,748											13,748	
2024	24-612	Palmdale Lake Outlet Structure PDR	General Project				30,438	-	-	30,438												30,438	
2024	24-613	Well 5 Booster #4 Replacement	General Project				25,837	-	-		25,213		624									25,837	
2024	24-615	2024 Meter Exchange Program	Replacement Cap.				761,703	-	657,859	49,127	132	130		36,022	18,433							103,844	
2024	24-616	Design & Const SCADA Radio Network	General Project				93,736	-	-		38,940	21,973	32,823									93,736	
2024	24-617	Well 15 Repl Sodium Hypo Gen	General Project				91,398	-	91,398													-	
2024	24-700	2024 Large Mtr/Vault Repl Prog	General Project				101,101	-	61,073	32,986			1,761	5,282								40,029	
2025	25-600	Repl Broken Gate Valves CY 2025	Replacement Cap.				10,271	-	-		350	673	5,699	195	3,354							10,271	
2025	25-601	Well 15 Pump Removal	General Project				28,029	-	-		28,029											28,029	
2025	25-602	Instll Auto Flusher 40th St E	General Project				11,018	-	-			10,732	287									11,018	
2025	25-603	2025 Well 11 Engine Overhaul	Replacement Cap.				62,244	-	-					62,244								62,244	
2025	25-604	Main Office - 3" Backflow Repl	Replacement Cap.				4,538	-	-				3,872	615	51							4,538	
2025	25-606	Design & Construct Littlerock Dam Pump System	General Project				6,445	-	-				5,270	686	489							6,445	
2025	25-609	Instll Auto Flusher Cheeseboro	General Project				7,508	-	-						7,508							7,508	
			Sub-Totals:		16,826,479		16,815,001	3,980,711	12,880,070	698,321	717,573	2,716,258	664,010	538,013	1,586,749	-	-	-	-	-	-	6,834,290	



Palmdale Water District

2024 Capital Projects - Contractual Commitments and Needs

Consulting and Engineering Support

Budget Year	Project	Project Title	Project Type	Contractor	Approved Contract Amount	Board / Manager Approval	Payments Approved to Date	Contract Balance	Through Dec. 2024	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2025 Total	2026 Carryover
2017	12-400	PRGRRP - CEQA, Permitting, Pre-Design, and Pilot	Water Supply	Kennedy/Jenks	1,627,000	05/12/2016	14,937	1,612,063	14,937														
		Paid by General Fund		Kennedy/Jenks			-	-	-														
2020	20-405	Well Rehab Consulting Services		Kyle Groundwater	-		75,457	-	75,457														
2020	20-412	Aquisition of Wtr Svc to Alpine Springs Mobilehome Park			-		43,700	-	43,700														
2021	21-500	Alpine Springs Grant Funding			-		19,763	-	19,763														
2021	21-417	LRDR - Sediment Removal Phase 2	Expense	California Dept Fish & Game			49,585	-	49,585														
	21-417	LRDR - Sediment Removal Phase 2	Expense	Aspen Environment Group			171,696	-	171,696														
	21-417	LRDR - Sediment Removal Phase 2	Expense	U.S. Geological Survey			48,500	-	48,500														
	21-417	LRDR - Sediment Removal Phase 2	Expense	All Others			1,763,919	-	1,763,919														
	21-412	Intranet Website Design	Expense	Tripepi Smith	-		19,403	-	19,403														
2022	22-403	Strategic Water Resources Plan	Expense	Woodard & Curran, Inc			552,831	-	552,831														
2022	22-412	2022 Virtual Desktop	Expense	VM Sources Group, Inc			10,000	-	10,000														
2022	22-65x	Pure Water AV - General Expense					766,623	-	517,191	15,348	178,853	41,154	7,498	3,700	2,878								
	22-65x	Pure Water AV - (Bonds)		Stantec	6,316,102		5,175,674	1,140,428	4,364,381	83,037	170,657		203,791	249,808	104,000								
	22-656	Pure Water AV - Demonstration Facility (Bonds)		W.M. Lyles	24,865,261		5,286,142	19,579,119	1,694,783	760,463		1,480,519	513,121	433,539	403,716								
	22-656	Pure Water AV - Demonstration Facility (Bonds)		Royal Industal Solutions	309,493		279,921	29,572	-				279,921										
	22-650	Pure Water AV - Project Review (Bonds)		NWRI	112,950		64,248	48,702	64,248														
2023	23-412	Data Warehouse	Expense	Oxcyon, Inc	-		66,360	-	66,360														
2023	23-415	SCADA Analysis	Expense	SoCal SCADA Solutions	-		72,410	-	72,410														
2024	24-414	Migration to SharePoint & Teams Portal	Expense	Citrin Cooperman Advisors	-		31,096	-	31,096														
2024	24-415	Implementation - DUO Multi-Factor Authentication	Expense		-		11,417	-	11,417														
2025	25-411	Risk Resilience Assesment Proj	Expense				29,970	-	-			27,648			2,323								
Sub-Totals:					33,230,806		14,481,169	22,409,883	9,549,165	858,847	349,511	1,521,674	1,004,331	687,047	510,594	-	-	-	-	-	-	-	-

New and Replacement Equipment

Budget Year	Project	Project Title	Project Type	Contractor	Approved Contract Amount	Board / Manager Approval	Payments Approved to Date	Contract Balance	Through Dec. 2024	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2025 Total	2026 Carryover
2022	22-630	Boardroom Audio/Visual Rehab	Equipment				134,026	-	134,026													-	
2023	23-417	Repairs Littlerock Dam Access	Expense				104,093	-	104,093													-	
2025	25-607	Wach Valve Turning Sytem SKID	General Project				101,527	-	-						101,527							101,527	
2025	25-608	New Boardroom Projectors					-	-	-													-	
Sub-Totals:							339,645	-	238,119	-	-	-	-	-	101,527	-	-	-	-	-	-	101,527	-

Water Quality Fee Funded Projects

Budget Year	Work Order	Project Title	Project Type	Vendor/Supplier	Approved Contract Amount	Board / Manager Approval	Payments Approved to Date	Contract Balance	Through Dec. 2024	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2025 Total	2026 Carryover
2025	25-401	GAC Replacements @ WTP	Water Quality		-		-	-	-													-	
2025	25-401	GAC Replacement @ Underground Booster Station	Water Quality		-		-	-	-													-	
Sub-Totals:					-		-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-

- = Projects that originated from 2013 WRB Funds
- = Project had additional funding paid out by the general fund to complete.
- = Project is now deemed complete with no further expense.
- = Projects paid by 2018 WRB Funds
- = Projects paid by 2021 WRB Funds

Project Summary (W/O GAC Included)									Totals	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	2024 Total
Total Approved Contracts to Date									50,057,285													
Total Payments on Approved Contracts to Date									31,635,816													
Total Contract Balance to Date									26,390,594													
Non-Operating Capital Expenditures (Paid)										1,557,169	1,067,084	4,237,932	1,668,342	1,225,061	2,198,870	-	-	-	-	-	-	11,954,457
Non-Operating Capital Expenditures (Projected)									-	-	-	-	-	-	-	-	-	-	-	-	-	-
Funding Available Through Water Supply Fees									-	-	-	-	-	-	-	-	-	-	-	-	-	-
2019 Funding Through Budgeted Non-Operating Capital Ex.									11,954,457	1,557,169	1,067,084	4,237,932	1,668,342	1,225,061	2,198,870	-	-	-	-	-	-	11,954,457

# Water Revenue Bond - Series 2023A

Updated: July 16, 2025

Project	Project #	Description	Bond Allocation	Contractual Commitment	Payout to Date	Over/(Under)	Uncommitted Bond \$
		2023A WRB Issue - Construction Funds	\$ 13,520,000		\$ -	\$ -	\$ 13,520,000
3M-Power	20-610	3M Booster Station -Power Plan Design (P2S)	-	119,817	13,589	106,228	(13,589)
3M-Const	20-610	3M Booster Station Replacement Project (Metro Builders)	-	6,612,816	3,305,073	3,307,742	(3,305,073)
		Original Contract Amt: \$5,794,042, A2: \$657,606.48, A3: \$35,753.33, A4: \$4,393.50, A5: \$13,829.98, A6: \$39,509.67, A7: \$5,713.76, A8: \$2,684.93, A9: \$9,485.26, A10: \$24,253.66, A11: \$662.81, A12: \$24,880.28					
3M-Review	20-610	3M Booster Station Replacement Project (Hazen & Sawyer)	-	41,890	43,518	(1,628)	(43,518)
3M-Mgmt	20-610	3M Booster Station - Project Inspection (Ardurra Group)	-	345,818	25,661	320,157	(25,661)
W36-Design	20-622	Well 36 - Design & Construction (Hazen and Sawyer)	-	264,208	150,917	113,290	(150,917)
		Original Contract Amt: \$612,656, A1: \$34,180, A2: \$45,140, A3: \$27,265, A5: \$95,892					
W36-Equip	20-622	Well 36 - Equipping (Caliagua, Inc)	-	4,321,512	2,985,994	1,335,518	(2,985,994)
		Original Contract Amt: \$4,258,230, A1: \$42,980, A2: \$4,984, A3: \$12,029, A4: \$1,541, A5: \$1,748					
Q-Recycled	22-605	Avenue Q Recycled Water Pipeline (American Pipeline Svcs)	-	2,211,682	1,974,597	237,085	(1,974,597)
		Original Contract Amt: \$2,094,670, A1: \$1,575, A2: \$1,410, A3: \$10,037.67, A4: \$9,753.53, A5: \$9,753.53, A7: \$2,192.45, A8: \$5,250, A9: \$1,880.94, A10: \$974.25, A12: \$0,747.27, A13: \$(6,562.70)					
WRB		Bond Issuance Costs	327,759	327,759	327,759	-	
ISS		Issuance Funds	(13,329)	(13,329)	(13,329)		
Totals:			\$ 13,834,430	\$ 14,232,172	\$ 8,813,779	\$ 5,312,165	\$ 5,020,651
2023A Water Revenue Bonds - Unallocated Funds:				\$ (397,742)			
2023A Water Revenue Bonds - Remaining Funds to payout:					\$ 5,020,651		

Requisition No.	Payee	Date Approved	Invoice No.	Project	Payment Amount
33	Metro Builders & Engineers Group	Jun 25, 2025	PP#21	3M-Const	206,981.25
33	American Pipeline Services	Jun 25, 2025	PWD10	Q-Recycled	190,207.54
33	Caliagua, Inc	Jun 25, 2025	PB08	W36-Equip	625,337.50
33	Pacific Premier Bank	Jun 25, 2025	PB08-RET	W36-Equip	32,912.50
33	Metro Builders & Engineers Group	May 28, 2025	PP#20	3M-Const	116,406.14
33	Hazen and Sawyer - Design Engineers	May 28, 2025	20182-000-47	W36-Design	11,655.00
33	Caliagua, Inc	May 28, 2025	PB07	W36-Equip	269,144.50
33	Pacific Premier Bank	May 28, 2025	PB07-RET	W36-Equip	14,165.50
32	Hazen and Sawyer - Design Engineers	Apr 24, 2025	20182-000-46	W36-Design	1,640.00
32	Ardurra Group, Inc.	Apr 24, 2025	163291	3M-Mgmt	800.00
31	Caliagua, Inc	Apr 10, 2025	PB06	W36-Equip	422,826.48
31	Pacific Premier Bank	Apr 10, 2025	PB06-RET	W36-Equip	22,254.02
31	Metro Builders & Engineers Group	Apr 10, 2025	PP#19	3M-Const	7,671.56
30	Metro Builders & Engineers Group	Mar 20, 2025	PP#18	3M-Const	69,456.37
30	Hazen and Sawyer - Design Engineers	Mar 20, 2025	20182-000-45	W36-Design	5,025.00
30	Hazen and Sawyer - Design Engineers	Mar 20, 2025	20182-000-44	W36-Design	14,790.00
30	Ardurra Group, Inc.	Mar 20, 2025	162230	3M-Mgmt	800.00
30	Ardurra Group, Inc.	Mar 20, 2025	161202	3M-Mgmt	800.00
30	American Pipeline Services	Mar 20, 2025	PWD09	Q-Recycled	3,389.12
30	Caliagua, Inc	Mar 20, 2025	PB05	W36-Equip	337,483.70
30	Pacific Premier Bank	Mar 20, 2025	PB05-RET	W36-Equip	17,762.30
29	Metro Builders & Engineers Group	Mar 6, 2025	PP#17	3M-Const	131,750.79
29	American Pipeline Services	Mar 6, 2025	PWD08	Q-Recycled	470,233.16
28	Caliagua, Inc	Mar 1, 2025	PB04	W36-Equip	148,865.00
28	Pacific Premier Bank	Mar 1, 2025	PB04-RET	W36-Equip	7,835.00
27	Metro Builders & Engineers Group	Feb 5, 2025	PP#16	3M-Const	380,088.44
26	American Pipeline Services	Jan 23, 2025	PWD07	Q-Recycled	345,651.79
25	Metro Builders & Engineers Group	Dec 18, 2024	PP#15	3M-Const	204,367.20
25	American Pipeline Services	Dec 18, 2024	PWD06	Q-Recycled	432,778.91

(Cont.)

24	Hazen and Sawyer - Design Engineers	Dec 11, 2024	20182-000-43	W36-Design	5,172.54
24	Hazen and Sawyer - Design Engineers	Dec 11, 2024	20182-000-42	W36-Design	22,104.00
24	Caliaqua, Inc	Dec 11, 2024	PB03	W36-Equip	373,547.12
24	Pacific Premier Bank	Dec 11, 2024	PB03-RET	W36-Equip	19,660.37
24	Caliaqua, Inc	Dec 11, 2024	PB02	W36-Equip	163,875.00
24	Pacific Premier Bank	Dec 11, 2024	PB02-RET	W36-Equip	8,625.00
23	Metro Builders & Engineers Group	Nov 27, 2024	PP#14	3M-Const	370,190.20
23	Hazen and Sawyer - Design Engineers	Nov 27, 2024	20182-000-41	W36-Design	24,305.00
23	Hazen and Sawyer - Design Engineers	Nov 27, 2024	20182-000-40	W36-Design	17,747.50
23	Ardurra Group, Inc.	Nov 27, 2024	156285	3M-Mgmt	624.00
23	American Pipeline Services	Nov 27, 2024	PWD05	Q-Recycled	319,906.71
22	Metro Builders & Engineers Group	Oct 24, 2024	PP#13	3M-Const	190,601.65
22	Metro Builders & Engineers Group	Oct 24, 2024	PP#12	3M-Const	142,920.57
22	American Pipeline Services	Oct 24, 2024	PWD04	Q-Recycled	97,019.77
21	Hazen and Sawyer - Design Engineers	Sep 17, 2024	20182-000-39	W36-Design	11,307.50
21	American Pipeline Services	Sep 17, 2024	PWD03	Q-Recycled	34,935.30
21	Caliaqua, Inc	Sep 17, 2024	PB01	W36-Equip	495,615.00
21	Pacific Premier Bank	Sep 17, 2024	PB01-RET	W36-Equip	26,085.00
20	Ardurra Group, Inc.	Aug 22, 2024	152509	3M-Mgmt	3,371.25
20	American Pipeline Services	Aug 22, 2024	PWD02	Q-Recycled	31,724.50
19	Hazen and Sawyer - Design Engineers	Aug 8, 2024	20182-000-38	W36-Design	495.00
19	Metro Builders & Engineers Group	Aug 8, 2024	PP#11	3M-Const	550,302.42
18	P2S, Inc.	Jul 25, 2024	SIN043484	3M-Power	1,170.00
18	P2S, Inc.	Jul 25, 2024	SIN045244	3M-Power	699.75
18	Ardurra Group, Inc.	Jul 25, 2024	150829	3M-Mgmt	3,985.00
18	American Pipeline Services	Jul 25, 2024	PWD01	Q-Recycled	48,750.00
17	Hazen and Sawyer - Design Engineers	Jul 17, 2024	20182-006-5	3M-Review	4,722.50
16	Metro Builders & Engineers Group	Jul 11, 2024	PP#10	3M-Const	83,426.83
16	Hazen and Sawyer - Design Engineers	Jul 11, 2024	20182-000-37	W36-Design	1,180.00
16	Ardurra Group, Inc.	Jul 11, 2024	150060	3M-Mgmt	15,280.75
15	Hazen and Sawyer - Design Engineers	Jun 11, 2024	20182-000-36	W36-Design	695.00
15	Metro Builders & Engineers Group	Jun 11, 2024	PP#9	3M-Const	392,311.72
15	P2S, Inc.	Jun 11, 2024	SIN044000	3M-Power	260.50
14	Metro Builders & Engineers Group	May 23, 2024	PP#8	3M-Const	39,608.07
13	Hazen and Sawyer - Design Engineers	May 16, 2024	20182-007-1	3M-Review	5,812.50
13	Hazen and Sawyer - Design Engineers	May 16, 2024	20182-000-35	W36-Design	2,310.00
13	Hazen and Sawyer - Design Engineers	May 16, 2024	20182-006-4	3M-Review	7,845.00
12	Metro Builders & Engineers Group	May 1, 2024	PP#7	3M-Const	100,781.11
11	P2S, Inc.	Apr 25, 2024	SIN042663	3M-Power	608.00
11	Hazen and Sawyer - Design Engineers	Apr 25, 2024	20182-000-33	W36-Design	27,061.00
11	Hazen and Sawyer - Design Engineers	Apr 25, 2024	20182-000-34	W36-Design	5,429.50
10	P2S, Inc.	Apr 2, 2024	SIN042054	3M-Power	585.00
10	Metro Builders & Engineers Group	Apr 2, 2024	PP#6	3M-Const	17,243.49
10	Hazen and Sawyer - Design Engineers	Apr 2, 2024	20182-006-3	3M-Review	6,200.00
9	Hazen and Sawyer - Design Engineers	Feb 22, 2024	20182-006-2	3M-Review	15,390.00
9	Hazen and Sawyer - Design Engineers	Feb 22, 2024	20182-006-1	3M-Review	3,547.50
9	Metro Builders & Engineers Group	Feb 22, 2024	PP#5	3M-Const	13,680.99
8	P2S, Inc.	Feb 5, 2024	SIN040720	3M-Power	1,725.50
6	Metro Builders & Engineers Group	Jan 22, 2024	PP#4	3M-Const	50,781.25
5	Metro Builders & Engineers Group	Jan 9, 2024	PP#3	3M-Const	33,299.48
4	P2S, Inc.	Dec 7, 2023	SIN039934	3M-Power	1,305.25
4	Metro Builders & Engineers Group	Dec 7, 2023	PP#2	3M-Const	25,461.98
3	P2S, Inc.	Nov 13, 2023	SIN039156	3M-Power	2,568.75
2	Metro Builders & Engineers Group	Oct 30, 2023	PP#1	3M-Const	177,741.91
1	P2S, Inc.	Oct 19, 2023	SIN038546	3M-Power	4,666.25

# Water Revenue Bond - Series 2024A

Updated: July 16, 2025

Project	Project #	Description	Bond Allocation	Contractual Commitment	Payout to Date	Over/(Under)	Uncommitted Bond \$
		2024A WRB Issue - Construction Funds	\$ 22,000,000		\$ -	\$ -	\$ 22,000,000
PRWAP-MGMT	20-65x	Palmdale Regional Water Augmentation Program (Stantec)	-	5,553,642	1,848,044	3,705,598	(1,848,044)
		Original Contract Amt: The original contract was paid through the Series 2021A WRB Funds, A1: \$2,038,690, A2: \$3,541,952					
PRWAP-Prop		Property Purchase - APN 3022-011-002 (Production Facility)	-	456,466	456,466	-	(456,466)
PWAV-Demo	20-656	Pure Water AV - Demonstration Facility (W.M. Lyles)	-	12,787,620	5,286,142	7,501,479	(5,286,142)
		Original Contract Amt: \$24,750,983, A1: \$9,324, A2: \$11,886.79, A3: \$13,998, A5: \$23,726, A6: \$1,476, A7: \$(7,145), A9: \$11,323, A10: \$49,689, A11: \$9,085, A14: \$10,927, A15: \$151,534, A16: \$12,028, A17: \$16,439, A20: \$(1,701), A21: \$10,193					
PWAV-MCC	20-656	Pure Water AV - Motor Control Center (Royal Industrial)	-	309,493	279,921	29,572	(279,921)
			-		-	-	
			-		-	-	
			-		-	-	
PWD		Design, Engineering and Other Preconstruction Costs	-	220,763	220,763	-	(220,763)
WRB		Bond Issuance Costs	260,951	260,951	260,951	-	
ISS		Issuance Funds	(15,261)	(15,261)	(15,261)		
INT		Interest Earnings	-		546,617		546,617
Totals:			\$ 22,000,000	\$ 19,327,984	\$ 7,544,718	\$ 11,236,649	\$ 14,455,282
2024A Water Revenue Bonds - Unallocated Funds:				\$ 2,672,016			
2024A Water Revenue Bonds - Remaining Funds to payout:					\$ 14,455,282		

Requisition No.	Payee	Date Approved	Invoice No.	Project	Payment Amount
	Interest Earnings	Jun 30, 2025		INT	53,985.51
19	W.M. Lyles	Jun 25, 2025	PP-008	PWAV-Demo	403,715.97
19	Stantec Consulting Services, Inc.	Jun 25, 2025	2403905	PRWAP-MGMT	104,000.05
	Interest Earnings	May 30, 2025		INT	54,047.69
18	W.M. Lyles	May 28, 2025	PP-007	PWAV-Demo	433,539.10
18	Stantec Consulting Services, Inc.	May 28, 2025	2390656	PRWAP-MGMT	249,808.06
	Interest Earnings	Apr 30, 2025		INT	59,549.49
17	Stantec Consulting Services, Inc.	Apr 24, 2025	2371740	PRWAP-MGMT	129,868.51
17	Stantec Consulting Services, Inc.	Apr 24, 2025	2375949	PRWAP-MGMT	73,922.19
16	Royal Industrial Solutions	Apr 10, 2025	8870-1031858	PWAV-MCC	43,903.80
16	Royal Industrial Solutions	Apr 10, 2025	8870-1032042	PWAV-MCC	236,017.58
15	W.M. Lyles	Apr 10, 2025	PP-006	PWAV-Demo	513,120.94
	Interest Earnings	Mar 31, 2025		INT	56,883.27
14	W.M. Lyles	Mar 20, 2025	PP-005	PWAV-Demo	789,410.96
13	W.M. Lyles	Mar 1, 2025	PP-004	PWAV-Demo	691,108.38
	Interest Earnings	Feb 28, 2025		INT	66,088.17
12	Stantec Consulting Services, Inc.	Feb 5, 2025	2345138	PRWAP-MGMT	170,657.39
	Interest Earnings	Jan 31, 2025		INT	70,078.34
11	W.M. Lyles	Jan 23, 2025	PP-003	PWAV-Demo	760,462.73
11	Stantec Consulting Services, Inc.	Jan 23, 2025	2333623	PRWAP-MGMT	83,036.59
	Interest Earnings	Dec 31, 2024		INT	75,110.22
10	W.M. Lyles	Dec 11, 2024	PP-002	PWAV-Demo	655,823.90
10	Stantec Consulting Services, Inc.	Dec 11, 2024	2318905	PRWAP-MGMT	115,026.28
	Interest Earnings	Nov 30, 2024		INT	81,727.27
9	W.M. Lyles	Nov 27, 2024	PP-001	PWAV-Demo	1,038,959.59
8	Stantec Consulting Services, Inc.	Nov 7, 2024	2303718	PRWAP-MGMT	102,177.66
8	Stantec Consulting Services, Inc.	Nov 7, 2024	2300447	PRWAP-MGMT	79,961.12
	Interest Earnings	Oct 31, 2024		INT	29,147.24
7	Stantec Consulting Services, Inc.	Sep 17, 2024	2271777	PRWAP-MGMT	64,683.52
6	Stantec Consulting Services, Inc.	Aug 8, 2024	2263693	PRWAP-MGMT	103,599.15
5	Stantec Consulting Services, Inc.	Jul 17, 2024	2255640	PRWAP-MGMT	55,655.74

(Cont.)

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# BOARD MEMORANDUM

**DATE:** July 28, 2025  
**TO:** BOARD OF DIRECTORS  
**FROM:** Mr. Dennis J. Hoffmeyer, Finance Manager/CFO  
**VIA:** Mr. Dennis D. LaMoreaux, General Manager  
**RE:** ***OTHER FINANCIAL REPORTS. (FINANCE MANAGER HOFFMEYER/FINANCE COMMITTEE)***

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## DISCUSSION:

Presented here are financial-related items for your review.

1. Accounts receivable overview:

a. Outstanding Balances for Accounts 60-Days Delinquent (attachment)

Staff continues to make progress in addressing delinquent account shutoffs. This month, outstanding balances for Single-Family Residential (SFR) accounts have continued to decline. However, the other three account categories show mixed results, largely due to the timing of delinquencies and incoming payments.

Staff continues to work closely with customers by offering payment arrangements to help them address outstanding balances. As of June 30, there are 8 active payment plans totaling \$3,179.40. Of this amount, \$834.11 has been collected, leaving \$2,345.29 still outstanding.

The main contributing factors to these arrangements include accounts with leak adjustments, financial hardship cases, and the reinstatement of previously canceled payment plans.

2. 2025 Revenue Projections (attachment):

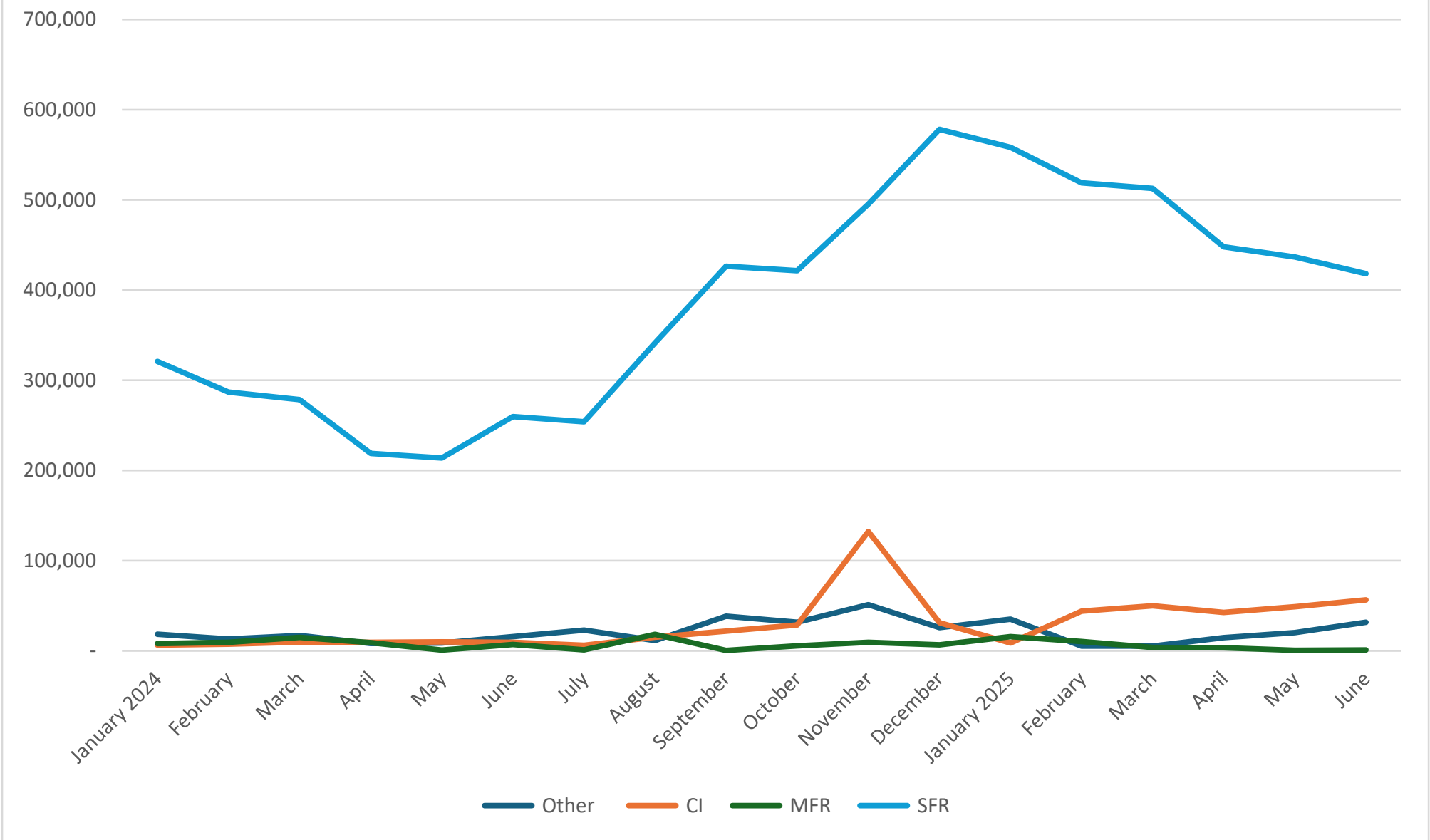
a. Based on selling 15,000 AF shown as of June 30, revenue is ahead of projections by approximately \$2,185,095.

3. Payment transactions by type (attachment)

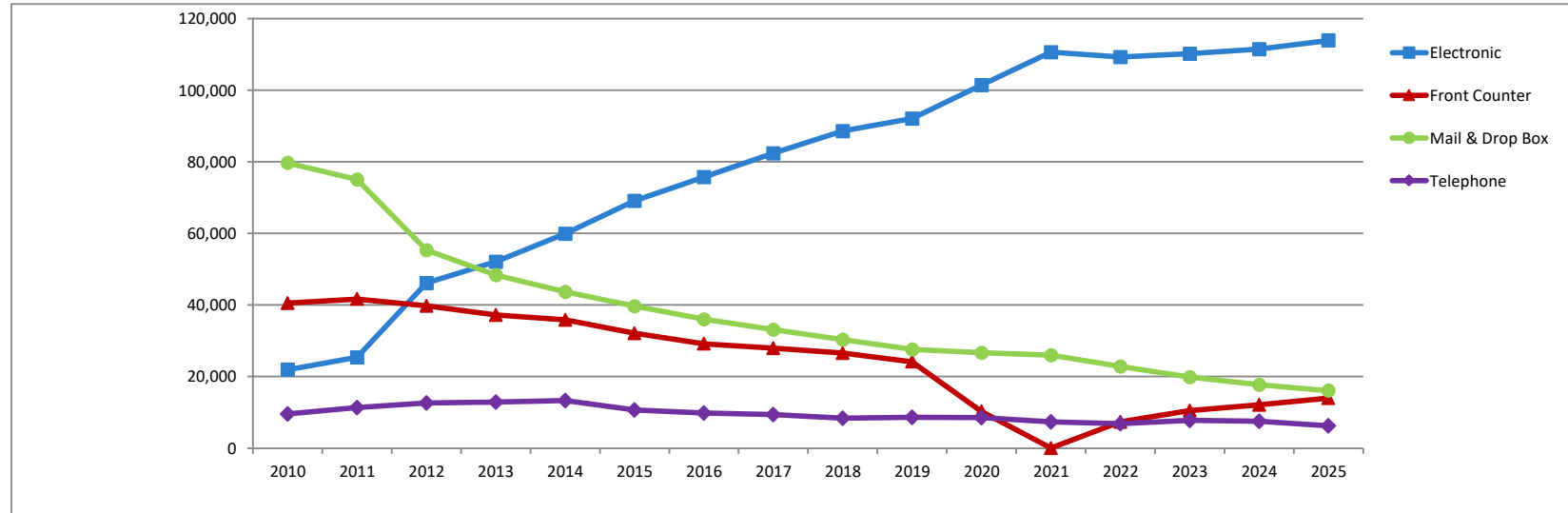
4. Billing and collection statistics (attachment)

# Palmdale Water District

## Outstanding Balances for Accounts 60-Days Delinquent



## Payment Transaction By Types January - June



Payment Type	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
Electronic	21,945	25,387	46,116	52,106	59,928	69,074	75,724	82,325	88,583	92,037	101,437	110,585	109,257	110,219	111,449	113,897
Front Counter	40,535	41,675	39,764	37,217	35,841	32,128	29,161	27,916	26,560	24,136	10,274	62	7,311	10,464	12,116	14,008
Mail & Drop Box	79,698	75,028	55,317	48,366	43,690	39,680	36,024	33,116	30,331	27,609	26,668	25,961	22,798	19,835	17,737	16,090
Telephone	9,519	11,311	12,633	12,881	13,324	10,642	9,842	9,361	8,324	8,634	8,495	7,327	6,860	7,753	7,548	6,267
<b>Total</b>	<b>151,695</b>	<b>153,401</b>	<b>153,830</b>	<b>150,570</b>	<b>152,783</b>	<b>151,524</b>	<b>150,751</b>	<b>152,718</b>	<b>153,798</b>	<b>152,416</b>	<b>146,874</b>	<b>143,935</b>	<b>146,226</b>	<b>148,271</b>	<b>148,850</b>	<b>150,262</b>

Electronic Payments Breakout	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	2024	2025
META - ACH Pymt	3,644	4,304	3,754	3,811	1,633	1,617	801	849	842	865	851	864	819	799	788	714
WES - ACH Pymt	0	466	439	495	493	488	497	521	508	462	462	386	380	366	356	330
INF - Website Pymts	18,301	20,617	31,206	34,534	36,779	38,452	41,039	44,351	47,806	51,135	57,073	62,825	64,761	68,253	71,400	74,763
IVR - Automated Pay ##	0	0	0	0	4,091	10,984	13,816	15,996	17,444	18,411	19,932	20,680	19,528	19,142	18,645	18,924
KIOSK - Automated Pay \$\$	0	0	0	0	0	0	547	457	1,284	696	359	0	77	108	162	0
PNM - Automated Pay %%	0	0	0	0	0	0	21	1,260	1,989	2,309	3,514	5,420	4,513	3,623	3,136	2,893
VAN - ACH Pymt &&	0	0	10,717	13,266	16,932	17,533	19,003	18,891	18,710	18,159	19,246	20,410	19,179	17,928	16,962	16,273
<b>Total</b>	<b>21,945</b>	<b>25,387</b>	<b>46,116</b>	<b>52,106</b>	<b>59,928</b>	<b>69,074</b>	<b>75,724</b>	<b>82,325</b>	<b>88,583</b>	<b>92,037</b>	<b>101,437</b>	<b>110,585</b>	<b>109,257</b>	<b>110,219</b>	<b>111,449</b>	<b>113,897</b>

##- IVR service started March 13, 2015

\$\$ - Kiosk service started July 1, 2016

%% - PNM - Pay Near Me Payment service started June 9, 2017

&& - Vanco ACH service started Sept 2012



**MINUTES OF MEETING OF THE FINANCE COMMITTEE OF THE PALMDALE WATER DISTRICT, JUNE 17, 2025:**

*A meeting of the Finance Committee of the Palmdale Water District was held Tuesday, June 17, 2025, at 2029 East Avenue Q, Palmdale, CA 93550. Chair Wilson called the meeting to order at 12:30 p.m.*

**1) Roll Call.**

**Attendance:**

Committee:  
Don Wilson, Chair  
Scott Kellerman,  
Committee Member

**Others Present:**

Scott Rogers, Assistant General Manager  
Dennis Hoffmeyer, Finance Manager  
Bob Egan, Financial Advisor  
Danielle Henry, Executive Assistant  
0 members of the public

**2) Adoption of Agenda.**

It was moved by Committee Member Kellerman, seconded by Chair Wilson, and unanimously carried by all members of the Committee present at the meeting to adopt the agenda, as written.

**3) Public Comments for Non-Agenda Items.**

There were no public comments for non-agenda items.

**4) Action Items: (The Public Shall Have an Opportunity to Comment on Any Action Item as Each Item is Considered by the Committee Prior to Action Being Taken.)**

**4.1) Consideration and Possible Action on Approval of Minutes of Meeting Held May 20, 2025.**

It was moved by Committee Member Kellerman, seconded by Chair Wilson, and unanimously carried by all members of the Committee present at the meeting to approve the minutes of the Finance Committee meeting held May 20, 2025, as written.

**4.2) Discussion and Overview of Cash Flow Statement and Current Cash Balances as of May 2025. (Financial Advisor Egan)**

Financial Advisor Egan provided an overview of the monthly Major Account Activity Report, the Investment Funds Report, and the Cash Flow Statement through May 2025, including account transfers, interest and market values, capital improvement funds, and the projected year-end balance followed by a brief discussion of the Redevelopment Agencies (RDA) passthrough funds received from the County of Los Angeles, of water transfer agreements, and of scheduled debt payments.

**4.3) Discussion and Overview of Financial Statements, Revenue, and Expense and Departmental Budget Reports for May 2025. (Finance Manager Hoffmeyer)**

Finance Manager Hoffmeyer reviewed in detail the new Balance Sheet Reports, the Income Statement Reports, and the Departmental Report handouts for the period ending May 2025, including assessments received, funding of capital projects, and increased water sales and meter fees as a result of the approved 2024 Water Rate Study and the Meter Exchange Project and then stated that operating revenues are above the historical trend average at 43%; that expenses are below the historical trend average at 33.5%; and that four departments are above the traditional budgetary percentage of 41.7% due to the front-loading of employee Health Savings Accounts (HSA) and payment of annual contracts followed by a brief discussion of recycled water projects and the future of the Palmdale Recycled Water Authority.

**4.4) Discussion and Overview of Committed Contracts Issued. (Finance Manager Hoffmeyer)**

Finance Manager Hoffmeyer provided an overview of the Project Expense Transactions Report paid out through the General Fund and the 2023A and 2024A Series Water Revenue Bonds in May 2025 followed by a brief discussion of grant funding reimbursements and the anticipated tax obligation for the Water Revenue Bond restricted interest.

**4.5) Consideration on a Recommendation to Receive and File the 2024 Annual Financial Report. (Finance Manager Hoffmeyer)**

Finance Manager Hoffmeyer provided a detailed overview of the Draft 2024 Annual Financial Report highlighting the net position growth, revenue increases, expense changes, and the adoption of GASB No. 101 and No. 102 Standards related to employee leave benefits and disclosure of vulnerabilities after which it was moved by Committee Member Kellerman, seconded by Chair Wilson, and unanimously carried by

all members of the Committee present at the meeting to approve the recommendation to receive and file the 2024 Annual Financial Report as presented and that this item be presented to the full Board for consideration at the June 23, 2025 Regular Board Meeting.

**5) Reports.**

**5.1) Finance Manager Hoffmeyer:**

**a) Accounts Receivable Overview.**

Finance Manager Hoffmeyer provided a brief update on outstanding balances for accounts 60 days delinquent and stated that as of May 31, there are eight payment arrangements totaling \$2,746.66 with \$1,393.80 collected to date with leak adjustments, hardships, and reinstatement of prior arrangements as the contributing factors.

**b) Revenue Projections.**

He then stated that based on selling 15,000 AF of water, 2025 revenue is ahead of projections by approximately \$1,763,902 as of May 31 followed by a brief discussion of increased water sales due to accurate meter readings from the newly installed meters and future meter exchanges for stuck and failing meters.

**5.2) Financial Advisor Egan:**

**a) Debt Service Coverage Status.**

Financial Advisor Egan reported that the Debt Service Coverage for June 2024 to May 2025 is 3.94 and remains very strong after which Finance Manager Hoffmeyer stated that the audited numbers will be reflected in the next report.

**5.3) Other.**

There were no other items to report.

**6) Board Members' Requests for Future Agenda Items.**

There were no requests for future agenda items.

7) **Date of Next Committee Meeting.**

It was determined that the next Finance Committee Meeting will be held July 22, 2025 at 12:30 p.m.

8) **Adjournment.**

There being no further business to come before the Finance Committee, the meeting was adjourned at 2:01 p.m.

  
Chair