AGENDA

18700 Ward St.
Fountain Valley, CA 92708
(714) 378-3200

WATER ISSUES COMMITTEE MEETING
WITH BOARD OF DIRECTORS *
ORANGE COUNTY WATER DISTRICT
Wednesday, February 11, 2026 12:00 p.m., Boardroom

*The OCWD Water Issues Committee meeting is noticed as a joint meeting with the Board of Directors for the purpose of strict compliance with the Brown Act and it provides an opportunity for all Directors to hear presentations and participate in discussions. Directors receive no additional compensation or stipend as a result of simultaneously convening this meeting. Items recommended for approval at this meeting will be placed on the **February 18** Board meeting Agenda for approval.

This meeting will be held in person. As a convenience for the public, the meeting may also be accessed by Zoom Webinar and will be available by either computer or telephone audio as indicated below. Because this is an in-person meeting and the Zoom component is not required, but rather is being offered as a convenience, if there are any technical issues during the meeting, this meeting will continue and will not be suspended.

Computer Audio: Join the Zoom Webinar by clicking on the following link:
https://ocwd.zoom.us/j/98592928069

Webinar ID: 985 9292 8069

Telephone Audio: (213) 338 8477

Teleconference Sites:
10382 Bonnie Drive, Garden Grove
1037 Sherwood Lane, Santa Ana
1454 Madison Street, Tustin
301 N. Ross Street, Santa Ana
303 W. Commonwealth Ave., Fullerton
2093 San Elijo Ave, Cardiff
6151 Baja Drive, Anaheim
1502 North Broadway, Santa Ana
* Members of the public may attend and participate at all locations.

PLEDGE OF ALLEGIANCE

ROLL CALL

ITEMS RECEIVED TOO LATE TO BE AGENDIZED

RECOMMENDATION: Adopt resolution determining need to take immediate action on item(s) and that the need for action came to the attention of the District subsequent to the posting of the Agenda (requires two-thirds vote of the Board members present, or, if less than two-thirds of the members are present, a unanimous vote of those members present.)

VISITOR PARTICIPATION

Time has been reserved at this point in the agenda for persons wishing to comment for up to three minutes to the Board of Directors on any item that is not listed on the agenda, but within the subject matter jurisdiction of the District. By law, the Board of Directors is prohibited from taking action on such public comments. As appropriate, matters raised in these public comments will be referred to District staff or placed on the agenda of an upcoming Board meeting.

At this time, members of the public may also offer public comment for up to three minutes on any item on the Consent Calendar. While members of the public may not remove an item from the Consent Calendar for separate discussion, a Director may do so at the request of a member of the public.

CONSENT CALENDAR (ITEMS NO. 1 – 17)

All matters on the Consent Calendar are to be approved by one motion, without separate discussion on these items, unless a Board member or District staff request that specific items be removed from the Consent Calendar for separate consideration.

1. MINUTES OF WATER ISSUES COMMITTEE MEETING HELD JANUARY 14, 2026

   RECOMMENDATION: Approve minutes as presented

2. FALL PROTECTION REPLACEMENTS FOR THE GWRS AND GREEN ACRES PROJECT FACILITIES

   RECOMMENDATION: Agendize for February 18 Board meeting: Approve an agreement with Diversified Fall Protection in the amount of $371,278 for services and hardware to upgrade fall protections systems for the GWRS and GAP facilities

3. FALL PROTECTION REPLACEMENTS FOR THE FIELD HEADQUARTERS FACILITIES

   RECOMMENDATION: Agendize for February 18 Board meeting: Approve an agreement with Diversified Fall Protection in the amount of $211,770 for services and hardware to upgrade fall protection systems for the Field Headquarters facilities

4. AUTHORIZE ISSUANCE OF SERVICES AGREEMENT TO YELLOW JACKET DRILLING SERVICES FOR DESTRUCTION OF WESTBAY MONITORING WELL SAR-3

   RECOMMENDATION: Agendize for February 18 Board meeting: Authorize issuance of a Services Agreement to Yellow Jacket Drilling Services LLC in an amount not to exceed $37,960 for destruction of Westbay monitoring well SAR-3

5. CONSTRUCTION OF AM-63 AND AM-21R MONITORING WELL CLUSTERS

   RECOMMENDATION: Agendize for February 18 Board meeting:

   1. Authorize staff to file a Notice of Exemption from requirements of the California Environmental Quality Act;

   2. Authorize General Manager to finalize and execute no-cost License Agreements with the AM-21R Site property owner, OCVIBE;

   3. Authorize construction of monitoring well cluster AM-63 and replacement monitoring well cluster AM-21R;

   4. Authorize issuance of a Notice Inviting Bids for monitoring well construction;

   5. Authorize issuance of an RFP for construction inspection services; and;

   6. Establish a project budget of $1,060,000

6. REQUEST FOR PROPOSALS FOR DESTRUCTION OF MONITORING WELLS OM-2 AND OM-2A

RECOMMENDATION: Agendize for February 18 Board meeting:

1. Authorize filing of a Categorical Exemption for the destruction of monitoring wells OM-2 and OM-2A in compliance with CEQA guidelines; and

2. Authorize issuance of Request for Proposals for services for the destruction of monitoring wells OM-2 and OM-2A

7. AGREEMENT TO BENDER/CCP FOR REVERSE OSMOSIS TRANSFER PUMP A01 VERTICAL TURBINE PUMP INSPECTION AND REHABILITATION

RECOMMENDATION: Agendize for February 18 Board meeting: Authorize issuance of an Agreement to Bender/CCP Inc. for an amount not to exceed $300,000 and establish the Product Water B01 Vertical Turbine Pump Inspection and Rehabilitation project in the amount of $300,000

8. AGREEMENT TO BENDER/CCP FOR GWRS PRODUCT WATER PUMP A02 VERTICAL TURBINE PUMP INSPECTION AND REHABILITATION

RECOMMENDATION: Agendize for February 18 Board meeting: Authorize issuance of an Agreement to Bender/CCP Inc. for an amount not to exceed $500,000 and establish the Product Water A01 Vertical Turbine Pump Inspection and Rehabilitation project in the amount of $500,000

9. AMENDMENT NO. 8 TO AGREEMENT NO. 1175 WITH INTERA, INC. FOR ADDITIONAL GROUNDWATER MODELING SERVICES REGARDING SUNSET GAP SEAWATER INTRUSION

RECOMMENDATION: Agendize for February 18 Board meeting: Authorize issuance of Amendment No. 8 to Agreement No. 1175 with Intera, Inc., in the amount of $71,957 for additional groundwater modeling of the Sunset Gap area

10. AMENDMENT TO AGREEMENT WITH AQUEOUS VETS FOR PRESSURE VESSEL SYSTEMS STORAGE AND TAX RATE MODIFICATION

RECOMMENDATION: Agendize for February 18 Board meeting: Authorize issuance of Amendment No. 9 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $25,000

11. AUTHORIZE ISSUANCE OF SERVICES AGREEMENT TO LIVING WATER WELL DRILLING FOR MONITORING WELL FVM-1 VAULT REPLACEMENT

RECOMMENDATION: Agendize for February 18 Board meeting: Authorize issuance of a Services Agreement to Living Water Well Drilling in an amount not to exceed $44,850 for monitoring well FVM-1 vault replacement

12. REQUEST FOR PROPOSALS FOR DESTRUCTION OF OCWD MONITORING WELL AMD-5

RECOMMENDATION: Agendize for February 18 Board meeting:

1. Authorize filing of a Categorical Exemption for the destruction of Westbay monitoring well AMD-5 in compliance with CEQA guidelines; and

2. Authorize issuance of Request for Quotes for services for the destruction of Westbay monitoring well AMD-5

13. EMERGENCY REPAIR WORK ORDER RATIFICATION

RECOMMENDATION: Agendize for February 18 Board meeting: Ratify Work Order Nos. 5/5A of Agreement No. 1450 and payment to Doty Bros. Construction Company for emergency repairs totaling $36,511

14. LA PALMA BASIN SHALLOW UNDERGROUND RECHARGE DEMONSTRATION PROJECT ENGINEER'S REPORT AND CATEGORICAL EXEMPTION

RECOMMENDATION: Agendize for February 18 Board meeting:

1. Approve the Engineer's Report for the La Palma Basin Shallow Underground Recharge Demonstration Project and determine the project feasible, necessary and beneficial to the lands of the District; and

2. Authorize filing of a Categorical Exemption for the La Palma Basin Shallow Underground Recharge Demonstration Project in compliance with the California Environmental Quality Act (CEQA) guidelines

15. RATIFICATION OF ACCESS AGREEMENTS FOR EXISTING MONITORING WELL SITES FOR SECOND HALF OF 2025

RECOMMENDATION: Agendize for February 18 Board meeting: Ratify execution of well access agreements issued to OCWD for the period of July 1 through December 31, 2025 for a total cost of $5,183

16. AUTHORIZE AGREEMENT WITH GLUMAC FOR FIELD HEADQUARTERS DIESEL FUEL TANK REPLACEMENT AND VEHICLE CHARGING INFRASTRUCTURE DESIGN

RECOMMENDATION: Agendize for February 18 Board meeting:

1. Ratify issuance of Addenda 1; and

2. Authorize Agreement with Glumac, a Tetra Tech Company, for a not-to-exceed amount of $297,780 for FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure engineering and design services

17. PURCHASE ORDER TO AB SCIEX LLC FOR SUPPORT EQUIPMENT FOR ONE PAL LIQUID INJECTION SYSTEM FOR AN EXISTING LIQUID CHROMATOGRAPHY / TANDEM MASS SPECTROMETER (LC/MS/MS)

RECOMMENDATION: Agendize for February 18 Board meeting: Authorize issuance of Purchase Order to AB Sciex LLC in the total amount of $2,229 for the purchase of supporting valve and cooling rack for a recently purchased PAL RSI 537 Liquid Injection System

END OF CONSENT CALENDAR

MATTER FOR CONSIDERATION

18. AGREEMENT WITH JACOBS TO UPDATE AND ADD OPERATIONAL CAPABILITIES TO OCWD'S RECHARGE FACILITIES MODEL

RECOMMENDATION: Agendize for February 18 Board meeting: Authorize issuance of an Agreement with Jacobs Engineering Group, Inc., for an amount not to exceed $99,620 to update and add operational capabilities to OCWD's Recharge Facilities Model

CHAIR DIRECTION AS TO ITEMS IF ANY TO BE AGENDIZED AS MATTERS FOR CONSIDERATION AT THE FEBRUARY 18 BOARD MEETING

DIRECTORS' ANNOUNCEMENTS/REPORTS

GENERAL MANAGER'S ANNOUNCEMENTS/REPORTS

ADJOURNMENT

WATER ISSUES COMMITTEE MEMBERS

Committee Members
Cathy Green – Chair
Erik Weigand – Vice Chair
Roger Yoh
Van Tran
Dina Nguyen

Alternates
Valerie Amezcua
Fred Jung
Natalie Meeks
Steve Sheldon
Denis Bilodeau

In accordance with the requirements of California Government Code Section 54954.2, this agenda has been posted at the guard shack entrance and in the main lobby of the Orange County Water District, 18700 Ward Street, Fountain Valley, CA and on the OCWD website not less than 72 hours prior to the meeting date and time above. All written materials relating to each agenda item are available for public inspection in the office of the District Secretary. Backup material for the Agenda is available at the District offices for public review and can be viewed online at the District's website: www.ocwd.com

Pursuant to the Americans with Disabilities Act, persons with a disability who require a disability-related modification or accommodation in order to participate in a meeting, including auxiliary aids or services, may request such modification or accommodation from the District Secretary at (714) 378-3234, by email at cfuller@ocwd.com by fax at (714) 378-3373. Notification 24 hours prior to the meeting will enable District staff to make reasonable arrangements to assure accessibility to the meeting.

As a general rule, agenda reports or other written documentation has been prepared or organized with respect to each item of business listed on the agenda and can be reviewed at www.ocwd.com. Copies of these materials and other disclosable public records distributed to all or a majority of the members of the Board of Directors in connection with an open session agenda item are also on file with and available for inspection at the Office of the District Secretary, 18700 Ward Street, Fountain Valley, California, during regular business hours, 8:00 am to 5:00 pm, Monday through Friday. If such writings are distributed to members of the Board of Directors on the day of a Board meeting, the writings will be available at the entrance to the Board of Directors meeting room at the Orange County Water District office.

MINUTES OF BOARD OF DIRECTORS MEETING
WATER ISSUES COMMITTEE
Orange County Water District
January 14, 2026 @ 12:00 p.m.

Director Green called the Water Issues Committee meeting to order at 12:00 p.m. in the District Boardroom. Public access was also provided via Zoom webinar. The Secretary called the roll and reported a quorum as follows:

Committee Members		OCWD
Cathy Green		Chris Olsen – Executive Director of Engineering & Water Resources
Erik Weigand		Mehul Patel – Executive Director of Operations
Roger Yoh		Jason Dadakis – Executive Director of Water Quality & Technical Resources
Van Tran		Lisa Haney – Executive Director of Planning & Natural Resources
Dina Nguyen	arrived at 12:15 p.m.	Randy Fick – Treasurer/CFO
		Adam Hutchinson – Recharge Planning Manager
Alternates		Megan Plumlee – Research Director
Valerie Amezcua		Crystal Nettles – Principal Communications Specialist
Fred Jung		Dave Mark – Principal Hydrogeologist
Natalie Meeks		Alicia Harasty – Legislative Affairs Liaison
Steve Sheldon	arrived at 12:02 p.m.	Julio Polanco – Scientist
Denis Bilodeau		Pat Versluis – Director of Water Quality
		Ben Smith – Director of Recharge and Wetland Operations
		Shawn Neville – Principal Planner
		Larry Esguerra – Senior Engineer
		Frank Hernandez – Director of Information Services
		Roy Herndon – Chief of Hydrogeology
		Bill Leever – Principal Hydrogeologist
		Ryan Bouley – Director of Engineering
		Kevin O'Toole – Senior Planner
		Jeremy Jungreis – General Counsel
		Leticia Villarreal – Assistant District Secretary

CONSENT CALENDAR

The Consent Calendar was approved upon motion by Director Amezcua, seconded by Director Weigand and carried [5-0], as follows:

Ayes: *Green, Weigand, Yoh, Tran, Amezcua*

1. Minutes of Water Issues Committee Meeting

The Minutes of the Water Issues Committee meeting held December 10, 2025, were approved as presented.

2. ACWA PFAS Cost of Compliance Study Contribution

Recommended for approval at January 21 Board meeting: Authorize a $5,000 contribution to ACWA for a PFAS Cost of Compliance Study.

3. Agreement with Jacobs for a South Basin Groundwater Protection Project Pre-Design Investigation Work Plan

Recommended for approval at January 21 Board meeting: Authorize issuance of an Agreement to Jacobs Engineering Group for preparation of a South Basin Groundwater Protection Project Pre-Design Investigation Work Plan.

4. Purchase of Reverse Osmosis Replacement Membrane Elements for GWRS Reverse Osmosis System

Recommended for approval at January 21 Board meeting:

1) **Authorize issuance of a Purchase Order to Dupont water Solutions for an amount not to exceed $541,798 for 1,060 BW30XFRLE reverse osmosis membranes for one unit in the GWRS reverse osmosis system;**
2) **Authorize issuance of a Purchase Order to Toray Membrane, USA for an amount not to exceed $502,440 for 1,060 TLF-400DG reverse osmosis membranes for one unit in the GWRS reverse osmosis system;**
3) **Authorize issuance of a Purchase Order to Water Surplus for an amount not to exceed $806,049 for 1,060 NanoStack coated BW30XFRLE reverse osmosis membranes for one unit in the GWRS reverse osmosis system; and**
4) **Authorize additional funds in the amount of $100,287 for R&R account R25006.**

5. K-2025-1: Kraemer Basin Check Valve Replacements: Notice of Completion and Ratify Change Order

Recommended for approval at January 21 Board meeting:

1) **Ratify issuance of Change Order No. 1 to Innovative Construction Solutions for a total amount of $10,420; and**
2) **Accept completion of work and authorize filing a Notice of Completion for Contract No. K-2025: Kraemer Basin Check Valve Replacements.**

6. Agreement with DDB Engineering for the Preparation of 2025 GWRS Annual Report

Recommended for approval at January 21 Board meeting: Authorize issuance of Agreement to DDB Engineering Inc. for an amount not to exceed $60,000 to provide consulting services for the preparation of the calendar year 2025 GWRS Annual Report.

7. Alamitos Seawater Barrier 2026-27 Operations and Maintenance Budget

Recommended for approval at January 21 Board meeting: Approve the Alamitos Barrier 2026-27 total O&M budget in the amount of $3,320,000 and authorize the amount of the District's share not to exceed $1,331,000 payable to the Los Angeles County Department of Public Works after receipt and review of invoices.

8. WF-2025-1: Asphalt Pavement Rehabilitation 2026 – Publication of Notice Inviting Bids

Recommended for approval at January 21 Board meeting:

1) **Authorize publication of Notice Inviting Bids for Contract No. WF-2025-1: Asphalt Rehabilitation 2026 project; and**
2) **Authorize filing of a Categorical Exemption for the Asphalt Rehabilitation 2026 project in compliance with the California Environmental Quality Act (CEQA) guidelines.**

9. Authorize Work Order to PSOMAS for Archeological Monitoring at SA-2023-1

Recommended for approval at January 21 Board meeting:

1) **Ratify Work Order No. 1 to PSOMAS in the amount of $6,260 for Cultural Resources Monitoring Support Services; and**
2) **Authorize Issuance of a Work Order to PSOMAS, in an amount not-to-exceed $60,000, to continue archeological monitoring during new ground disturbance activities for the construction of City of Santa Ana PFAS Water Treatment Plant Well Nos. 27 & 28.**

10. Authorize Change Order to Murry Company for Reverse Osmosis Clean-In-Place Pipe Replacement

Recommended for approval at January 21 Board meeting:

1) **Authorize Change Order No. 1 to Murray Company for Reverse Osmosis Clean-in-Place Pipe Replacements in the amount of $288,827; and**
2) **Increase the Reverse Osmosis CIP Valve Relocation Project budget to $788,827.**

MATTERS FOR CONSIDERATION

11. Award Contract No. SA-2025-1 City of Santa Ana PFAS Treatment at John Garthe Reservoir to Kingmen Construction, Inc. and Budget Increase

Director of Engineering Ryan Bouley stated that a total of seven construction bids were received on December 11, 2025 for the City of Santa Ana PFAS treatment at John Garthe Reservoir project. Staff recommended awarding a contract to Kingmen Construction, Inc.as the lowest responsive bid. Staff also recommended increasing the budget by $1,474,850.

Upon motion by Director Amezcua, seconded by Director Weigand and carried [5-0], the Committee recommended for approval at the January 21 Board Meeting:

1) **Receive and file Affidavit of Publication of Notice Inviting Bids for Contract No. SA-2025-1 City of Santa Ana PFAS Treatment at John Garthe Reservoir Project;**
2) **Ratify issuance of Addenda 1 through 8;**
3) **Accept bid and authorize award of Contract SA-2025-1 to the lowest responsive bid and responsible bidder, Kingmen Construction, Inc., in the amount of $23,587,500; and**
4) **Increase project budget by $1,474,850 for a total project budget in the amount of $31,474,850.**

Ayes: ***Green, Weigand, Yoh, Tran, Amezcua***

12. Bond Basin Slope Repair Authorize Amendment No, 3 to ENGEO, Inc.

Mr. Bouley informed the Committee that ENGEO, Inc. has been providing additional services due to work expanding beyond the original project limits requiring additional compensation. Staff also requested a proposal for revised design drawings to accommodate construction during the rainy and dry season.

Upon motion by Director Weigand, seconded by Director Tran and carried [5-0], the Committee recommended for approval at the January 21 Board Meeting: Authorize Amendment No. 3 to Agreement 1555 with Engeo for a not-to-exceed amount of $59,827.

Ayes: Green, Weigand, Yoh, Tran, Nguyen

CHAIR DIRECTION AS TO ITEMS IF ANY TO BE AGENDIZED AS MATTERS FOR CONSIDERATION AT THE JANUARY 21 BOARD MEETING

All items Consent.

ADJOURNMENT

There being no further business, the meeting was adjourned at 12:28 p.m.

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Cathy Green, Chair

2

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: M. Patel/R. Phillips

Budgeted: Yes
Budgeted Amount: $ 600,000
Cost Estimate: $ 371,278
Funding Source: R&R
Program/ Line Item No.: R25009
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

SUBJECT: FALL PROTECTION REPLACEMENTS FOR THE GWRS AND GREEN ACRES PROJECT FACILITIES

SUMMARY

The District operates the Groundwater Replenishment System (GWRS) Advanced Water Purification Facility (AWPF) and Green Acres Project (GAP). Both facilities contain numerous ladder and stair systems for roof or process equipment access. Federal and California Occupational Safety and Health Administration (OSHA) regulation changes require GWRS and GAP facility ladder and stair systems to be refurbished to meet current fall protections standards.

Attachment: Diversified Fall Protection quotation dated January 21, 2026

RECOMMENDATION

Agendize for February 18 Board meeting: Approve an agreement with Diversified Fall Protection in the amount of $371,278 for services and hardware to upgrade fall protections systems for the GWRS and GAP facilities.

BACKGROUND & ANALYSIS

The GWRS and GAP facilities contain several buildings with roof access via fixed ladder systems. In addition, several other structures within the facilities contain ladder or stair access including chemical storage tanks and below grade process tanks. Many of the ladder systems were constructed as part of the original GWRS project in 2008 and the original GAP project in 1991. Many of the ladder systems and roof access hatches consist of fixed ladders with partial protective cages. The buildings with internal roof access ladders do not contain guards around roof hatches and some roofs do not have guard rails at their edges to protect against accidental falls.

The requirements for ladder systems to protect against accidental falls are mandated by OSHA. The requirements have changed over the years, and two prior assessments of the ladder systems have shown that many require modifications to meet current standards. In particular, fixed ladder systems over twenty feet in height must have a fall arrest system without relying solely on cage systems for compliance. Many of the current ladder systems were installed with cage systems as the main form of fall protection. This change in the

regulations was implemented after the original construction of both the GWRS and GAP facilities.

In response to the prior assessments of the ladder systems and to determine how best to meet current fall protection standards, staff solicited proposals from fall protection equipment providers. The solicitation included assessment of device refurbishments, alternative solutions where possible to meet current standards, and cost for those refurbishments to be designed by a licensed professional engineer with inclusion of stamped design drawings.

The scope of structures requiring additional fall protection upgrades is extensive and covers a large part of the Fountain Valley campus. It also includes the offsite Santa Ana Reservoir facility which is part of the GAP system. Table 2 includes a list of all the identified upgrades required to meet current standards. Companies that can provide the required fall protection equipment upgrades while also being able to provide stamped engineered drawings are limited. Solicitations were sought from multiple companies but only two were able to provide a quotation: CAI Safety Systems and Diversified Fall Protection. Table 1 below provides the pricing received from both companies.

Based on the quotations received, staff recommends issuance of an Agreement with Diversified Fall Systems in the amount of $371,278. The fall protection equipment upgrades project is budgeted in the fiscal year 2025-2026 budget in the Refurbishment and Replacement budget as R25009 in the amount of $600,000.

Table 1 – Price Quotations for Fall Protection Equipment Upgrades

Company	**Price**
Diversified Fall Protection	$371,278
CAI Systems	$517,801
Anchor Safety Systems	Incomplete Quote
Tritech Fall Protection	Non-Responsive
Anchor Safety Systems	Non-Responsive

Table 2 – List of Identified Required Fall Protection Upgrades (GWRS and GAP)

Item	Area	Description	Lacking Compliance	Recommendations	Type of
1	**Admin Bldg. Roof Access Ladder**	Ladder: 14 feet and Roof Hatch: 35" X 41"	Roof Hatch	Roof Hatch guardrail and safety gate	RHGG
2	**Air Gap Tank**	Ladder: 32 feet long, 35" opening	Ladder & Opening	Ladder Fall Arrest SRL & Self Closing Gate	LSRL, SCG
3	**Micro Filtration Tank: F01**	Ladder 18 feet	Existing Ladder fall arrest system is too short. Fiber glass ladders are not suitable for fall arrest systems	Remove ladder fall arrest system since not required per OSHA for ladders below 24	
4	**Micro Filtration Tank: D01, A01, B01 and**	Ladder 18 feet, Top of tank is unprotected	Top of tank is unprotected at leading edge	Use Portable Freestanding Anchor for top of tank	PFA
5	**MF West Electrical Room**	Ladder for Hatch: 24 feet and Roof Hatch: 45" X 45"	Ladder & Roof Hatch	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	ED, LFAC, RHGG
6	**MF East Electrical Room**	Ladder for Hatch: 24 feet and Roof Hatch: 45" X 45"	Ladder & Roof Hatch	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	ED, LFAC, RHGG
7	**Micro Filtration New Cells: Three identical Systems**	Work on top of headers that are 15 feet high	Working on headers	Install overhead rigid rail lifeline to cover 88 feet	HLL
8	**MF Chemical Old: Two identical**	Ladder 14 feet, Top of tank is unprotected	Top of tank is unprotected at leading edge	Use Portable Freestanding Anchor for top of tank	PFA
9	**Reverse Transfer Pump Station**	Two identical systems: Ladder: 23 feet and Roof Hatch: 45" X 45"	Ladder & Roof Hatch	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	ED, LFAC, RHGG
10	**GAP Alum Bulk Tank**	Ladder 21 feet, Top of tank is unprotected	Top of tank is unprotected at leading edge	Use Portable Freestanding Anchor for top of tank	PFA
11	**GAP Building**	Ladder: 9 feet long, 30" opening	Ladder Opening	Self-Closing Gate	SCG
12	**Sodium Hydrochloride Tank**	Six tanks: Ladder: 30 feet long, 24" opening	Ladder & Opening	Ladder Fall Arrest SRL & Self Closing Gate	LSRL, SCG
13	**Sulfuric Acid Tank Farm**	Six tanks: Ladder: lower & upper ladder each 14 feet long, 24" opening on both	Upper Ladder & two Openings	Ladder Fall Arrest SRL & Self Closing Gate	LSRL, SCG
14	**Threshold Inhibitors**	Two systems: Ladder: 11 feet long, 30"	Ladder Opening	Self-Closing Gate	SCG
15	**Citrus Acid Tanks**	Two systems: Ladder: 13 feet long, 24"	Ladder Opening	Self-Closing Gate	SCG
16	**Warehouse Roof Ladders**	Two systems: Ladder for Hatch: 26 feet and Roof Hatch: 45" X 45"	Ladder & Roof Hatch	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	ED, LFAC, RHGG
17	**Switch Gear Building**	One system: Ladder for Hatch: 24 feet and Roof Hatch: 45" X 45"	Ladder & Roof Hatch	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	ED, LFAC, RHGG
18	**Reverse Osmosis Bldg.**	One system: Ladder for Hatch: 8 feet and Roof Hatch: 42" X 42"	Ladder & Roof Hatch	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	ED, LFAC, RHGG
19	**Product Barrier Water Pump**	One system: Ladder for Hatch: 27 feet and Roof Hatch: 45" X 45"	Ladder & Roof Hatch	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	ED, LFAC, RHGG
20	**Surge Tanks**	Two systems: Ladder: 22 feet long, 24" opening	Ladder & Opening	Ladder Fall Arrest SRL & Self Closing Gate	LSRL, SCG
21	**B1 Pass Structure**	One systems: Ladder: 34 feet long, 30" opening	Ladder & Opening	Ladder Fall Arrest SRL & Self-Closing Gate	LSRL, SCG
22	**Lime Building: 4 Silos**	Four systems: Ladder: 18 feet long, 24" opening	Ladder Opening	Self-Closing Gate	SCG
23	**Lime Building: Slurry Tanks**	Two systems: Tank is 11' tall	Tank leading edge	Single Point Anchor with SRL	SPA
24	**Decarb**	Seven systems: Ladder: 19 feet long, 30" opening	Ladder Opening	Self-Closing Gate	SCG
25	**Hydrogen Peroxide Tanks**	Three systems: Tank is 15' tall	Tank leading edge	Single Point Anchor with SRL	SPA
26	**Hydrogen Peroxide Building**	One system: Ladder for Hatch: 27 feet and Roof Hatch: 42" X 42"	Ladder & Roof Hatch	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	ED, LFAC, RHGG
27	**UV MCC Electric**	One system: Ladder: 17 feet and Roof Hatch: 42" X 42"	Roof Hatch	Roof Hatch guardrail and safety gate	RHGG
28	**SE FE Tanks**	One system: Ladder: 32 feet long	Ladder	Ladder Fall Arrest SRL	LSRL
29	**Gap Influent Pump**	One system: Roof hatch, six skylights, roof perimeter	Roof hatch, skylights, roof edge	Roof Hatch guardrail and safety gate, skylight guard & Non-Penetrating Guardrail	RHGG, SG, NPGR
30	**Screening Facility**	One ladder 18 feet long	NA		
31	**Micro Filtration Cells - 6 Train Units, 8 Locations per unit, 48 total locations**	Service valves that are approximately 15 feet high	Leading Edge	Engineered Drawings, Single Point Anchor with SRL	ED, SAP
32	**SAR Tank**	One ladder 15' tall with opening and tank perimeter	Ladder opening & tank leading edge	Engineered Drawings, Guardrail & Self Closing Gate, Tank Vent Anchor	ED, GRSCG, TVA
33	**SAR Building: Basement**	One ladder 13'6" tall with opening	Ladder opening	Self-Closing Gate	SCG
34	**SAR Building: Roof**	One ladder 14'6" tall, roof hatch, skylights & roof perimeter	Ladder, Roof Hatch, Skylights & Perimeter	Engineered drawings, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate, skylight guard and Non-Penetrating guardrail	ED, LFAC, RHGG, SG, NPGR

PRIOR RELEVANT BOARD ACTION(S)

N/A

28258 Avenue Stanford, Valencia, CA 91355
Telephone: 855-837-3255 - Fax: 818-565-5535 - info@fallprotect.com - fallprotect.com

Project
75245 REV 1
Orange County Water District Fall Protection
18700 Ward Street
Fountain Valley, CA 92708

Client
Orange County Water District Client
18700 Ward Street
Fountain Valley, CA 92708
714-378-3243
blomeli@ocwd.com

Proposal Date
1/21/2026

Proposal Writer
Douglas Dunn
douglas.dunn@fallprotect.com

Scope of Work

Thank you for allowing Diversified Fall Protection to quote you on the fall protection system needed at your project located in **Fountain Valley**. Below you will find a summary of our proposed work. Please let me know if you have any questions.

All personal fall arrest systems are designed, engineered and installed to meet or exceed the standards set forth in Federal OSHA Standards for the Construction Industry 1926, Federal OSHA Standards for General Industry 1910, Cal/OSHA Construction Safety Orders, Title 8 (1670), Cal/OSHA General Safety Orders, Title 8 (3210), EM385 (for US Military projects) and ANSI Z359.

Workers accessing and working on the top of roofs are exposed to a fall of greater than 30". Fall protection is required for workers performing maintenance above the Cal/OHSA specified trigger height as set forth in GISO 3210.

§3210. Guardrails at Elevated Locations. Cal/OSHA General Safety Orders, Title 8

- Guardrails shall be provided on all open sides of unenclosed elevated work locations, such as: roof openings, open and glazed sides of landings, balconies or porches, platforms, runways, ramps, or working levels more than 30 inches above the floor, ground, or other working areas of a building as defined in Section 3207 of the General Industry Safety Orders.
- **§3210 (b) Other Elevated Locations.** The unprotected sides of elevated work locations that are not buildings or building structures where an employee is exposed to a fall of 4 feet or more shall be provided with guardrails.
- **§3210 (c)** Where the guardrail requirements of subsections (a) and (b) are impracticable due to machinery requirements or work processes, an alternate means of protecting employees from falling such as personal fall protection systems, shall be used.

§1670. Personal Fall Arrest Systems. Cal/OSHA Construction Safety Orders, Title 8

- **§1670 (14)** The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.

This proposal is for the design, fabrication and installation of a fall protection system in accordance with Cal/OSHA requirements and regulations. Design and engineering is required to determine the final locations, quantities of materials and attachments.

(1) 3M M100 Portable Jib System w/ Included concrete filled counterweight
(15) Roof Hatch Kits
(2) 88' Overhead Rigid Track Systems
(23) Fixed Ladder Self Retracting Lifeline Post
(5) Overhead Single Point Anchors w/ included hardware
(12) 20' Self Retracting Lifeline Systems w/ Included tag lines
(8) 25' Self Retracting Lifeline Systems w/ Included tag lines
(8) 35' Self Retracting Lifeline Systems w/ Included tag lines
(6) 30' Self Retracting Lifeline Systems w/ Included tag lines
(43) Swing Gates, provided in a safety yellow PC finish
(5) 74"x74" Skylight Screens
(3) 53.5"x24" Skylight Screens
(148 LF) Permanent Custom Guardrail
(1) Custom Tank Collar Tie Off System
(2) 23' Vertical Lifeline Systems w/ telescoping post
(3) 24' Vertical Lifeline Systems w/ telescoping extension post
(2) 26' Vertical Lifeline Systems w/ telescoping extension post
(2) 27' Vertical Lifeline Systems w/ telescoping extension post
(9) Detachable Vertical Lifeline Travelers-

Our California Licensed Professional Engineer will develop a full design package with drawings and calculations showing the layout and all attachment details of the fall protection systems. The engineering calculations will show each individual system has been designed to meet a safety factor of 2. Draft versions of drawings and calculations will be submitted to you for your approval prior to any work being started. Once you have approved the draft submittals final wet stamped copies will be given to you in our final submittal binder at the completion of the project.

Versatile Systems is a licensed “B” General Contractor in the State of California. All work being done at your site will be completed by Versatile Systems full time employees that have been extensively training in general safety and fall protection practices and procedures. California Contractors License #1090105

Our installers have been trained by the manufacturer on the installation of the proposed system. All work will be performed in exact accordance to the manufacturer’s specifications.

Certificates of insurance will be presented to you with our final contract.
All product manuals including safe use, maintenance & operating instructions will be included with the project turnover documentation. A thorough user procedure will be written for your personnel as a step by step process for using this fall protection equipment. You will receive all files electronically.

A thorough user awareness training course will be conducted for all users of the fall protection system. This training will cover the basics of general fall protection, the proper donning of a full body harness, proper procedures for the use of the lifeline system, inspection criteria, rescue procedures and maintenance procedures.

§1670. Personal Fall Arrest Systems. Cal/OSHA Construction Safety Orders, Title 8
Each personal fall arrest system shall be inspected not less than twice annually by a competent person in accordance with the manufacturer’s recommendations. The date of each inspection shall be documented.

Included in this proposal, at no additional charge, is the first bi-annual inspection for the system. The first inspection will be completed on the final completion date of this project; the second will need to be completed at 6 months after the first bi-annual inspection. Please note that at the 6 month date and beyond the client is responsible for contracting these inspections.

Items:	Price:
Engineering & Design- PE Stamped Submittal	$13,636.00
System Materials	$203,160.00
Installation Labor & Rental Equipment	$116,213.00
Freight of Materials	$20,492.00
Subtotal	$353,501.00
Sales Tax (Fountain Valley - 8.75%)	$17,777.00
Total Cost	**$371,278.00**

Exclusions / Related Work by Others

Payment & Performance Bonds
Premium work hours such as nights and weekends
Permits, licenses & applicable fees
Waterproofing, roofing repairs, roof flashing, etc.
Rental equipment such as boom lifts, scissor lifts, or high reach forklifts, etc.
Structural blocking or framing design or engineering thereof
Any electrical work of any kind.

Warranty

All labor and materials will be unconditionally warranted for one full year starting at the date of completion.

Payment Terms

Per contract agreement
Net 30, Due at Completion

Contractor: Diversified Fall Protection **Client: _____**

BY: _____ **BY: _____**

Travis Nelson: PE – CSP

Designated Contract Signer: Roland Gonzales – Project Operations Director – CA

Date: 1/21/2026 **Print Name: _____**

CA. Contractor's License# 1090105 **Company: _____**

Federal ID# 90-0423398 **Date: _____**

DIVERSIFIED
FALL PROTECTION

General Installation Terms & Conditions

1. Issuance of a purchase order, based on the information in this proposal acknowledges acceptance of these and the General Terms and Conditions.
2. Quote valid for 30 days.
3. If the client requires us to use labor other than existing Diversified Fall Protection employees, the quote is invalid.
4. Uninterrupted access to the job site must be provided for the agreed upon dates and times or additional charges will apply.
5. If we are required to stop work for reasons outside Diversified Fall Protection control a stand down fee will apply.
6. Custom-fabricated product is not eligible for return.
7. 25% of base contract due upon receipt of signed Order Confirmation or Authorized Purchase Order prior to any work being started. Remainder due upon completion of the project.
8. This quote does not include licenses, permits or other governmental fees incurred as a result of the job.
9. On this purchase all applicable sales taxes have been included.
10. Diversified Fall Protection reserves the right to correct any clerical errors in this quotation.
11. The work is assumed to be continued and uninterrupted from the kick off meeting until the project completion date.
12. All work will be completed based on mutually agreed to installation schedule, in one mobilization. Unless otherwise agreed upon.
13. Additional mobilization fees will apply if there are unscheduled work stoppages lasting more than 1 day.
14. Both parties shall forward notices, in writing, regarding changes in the scheduled work not less than five days in advance to avoid additional charges.
15. Any changes or modifications to the Scope of Work shall be mutually agreed upon and documented by *Purchaser* and Diversified Fall Protection, in the form of a change order.
16. Reasonable daily access to the project site for the sole intended purpose of completing the work described is expected.
17. Secure and adequate material lay down and tool storage space must be provided near the work site.
18. Diversified Fall Protection will put forth it's best effort in meeting it's promised obligations, but shall have no liability for delays in performance resulting from causes beyond it's reasonable control, including, without limitation, acts or omissions of any government, acts of God, customs delays, acts or omissions of another party, strikes, labor or transportation difficulties, or any other cause beyond the reasonable control of Diversified Fall Protection.
19. Work will be performed during normal business hours; between 7:00am and 4:30pm excluding weekends and holidays.
20. Additional terms may apply based on types of work involved, regulations, owner's restrictions, and other factors.
21. It is understood that personnel will be available on notice but will not be present during all working hours. This will not affect our access to the bowl for our required work hours.
22. The work area will be clear and free from unknown hazards at the time that our work is to begin.
23. Diversified Fall Protection and its employees will follow *purchaser's Site Safety Program* while on the job site unless the Diversified Fall Protection Safety Program is more comprehensive.
24. Daily safety meetings will be held and are open to the *Purchaser*.
25. Shipping and delivery dates are estimates based upon conditions prevailing at the time of quotation.
26. Diversified Fall Protection shall not be liable for delays in delivery due to: Purchaser changes, Acts of God, strikes, fire floods, epidemics, war, and all other causes beyond Diversified Fall Protection control. In the event of such delay, the delivery shall be extended by the amount of time delay incurred.
27. *Purchaser* shall pay any expenses incurred by Diversified Fall Protection due to Purchaser postponement of delivery, including storage, refusal of delivery, inability to accept shipment or price increases by the supplier.
28. All of the above quoted installation work is based on using non-union labor. If your company should deem it necessary to perform the work with union labor, please be advised that the quoted cost and scheduled duration is subject to change.
29. Should union labor be required this quote will be rescinded and a new proposal must be drafted.
30. If Union labor is required *Purchaser* will be responsible for providing competent* Union labor.
31. The Purchaser is responsible to supply the aforementioned documentation. If after one year we have not received requested data from you necessary for permit issuance, we will assume the lack of response to be an implied acknowledgment releasing us from permit responsibility. After that date we will invoice you for all expenses actually incurred and close out the project.
32. The work involved does not require building permits. It is repair work on a structure that was permitted and signed off as complete. Should the Purchaser elect to waive any required permit process, the Purchaser assumes all liability caused by not acquiring the permit. (If required)
33. Diversified Fall Protection shall not be required to furnish any safety device except those specified in this proposal. If federal, state and/or local governments require additional inspections, permits or licenses for the use of Seller's equipment, Purchaser shall obtain and cover all expense.
34. Diversified Fall Protection shall protect Purchaser against any lien asserted against Purchaser's property for equipment or services furnished by others at Diversified Fall Protection request, provided that Purchaser meets the required price and terms of this agreement.
35. The purchaser has supplied drawing show basic structure and intent for the repairs. As noted in the purchaser's scope of work, it is Diversified Fall Protection responsibility to confirm all as built conditions and build to fit. Copies of any and all drawings submitted by Diversified Fall Protection shall be retained by the purchaser in their records and for their use if required for any future repair to the structure. Specifications and dimensions used in this proposal are approximate and are subject to change or correction during installation.
36. If, within 5 days after receipt of notice that the work is completed the Buyer fails to so notify Diversified Fall Protection, the work shall be deemed to have been accepted by the Buyer and payment is due.
37. Diversified Fall Protection will remove all trash created by Diversified Fall Protection from the premises.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: M. Patel/B. Smith

Budgeted: Yes
Budgeted Amount: $500,000
Cost Estimate: $211,770
Funding Source: R&R
Program/ Line Item No.: R25026
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: FALL PROTECTION REPLACEMENTS FOR THE FIELD HEADQUARTERS FACILITIES

SUMMARY

The District operates the Field Headquarters (FHQ) facilities which contain numerous ladder systems for roof and process equipment access. Federal and California Occupational Safety and Health Administration (OSHA) regulation changes require facility ladder, roof tops, and stair systems to be refurbished to meet current fall protections standards.

Attachment: Diversified Fall Protection quotation dated January 21, 2026

RECOMMENDATION

Agendize for February 18 Board meeting: Approve an Agreement with Diversified Fall Protection in the amount of $211,770 for services and hardware to upgrade fall protection systems for the Field Headquarters facilities.

BACKGROUND & ANALYSIS

The Field Headquarters (FHQ) facilities contain several buildings with roof access via fixed ladder systems. In addition, several other structures within the facilities contain ladder access including airgaps, pump stations, and control buildings. Many of the ladder systems were constructed at the same time as the infrastructure it serves, mostly dating back to the early 1990s. Many of the ladder systems and roof access hatches consist of fixed ladders with partial or no protective cages and guardrails. The buildings with internal roof access ladders do not contain guards around roof hatches and some roofs do not have guard rails at their edges to protect against accidental falls.

The requirements for ladder systems to protect against accidental falls are mandated by OSHA. The requirements have changed over the years, and two prior assessments of the ladder systems have shown that many require modifications to meet current standards. In particular, fixed ladder systems over twenty feet in height must have a fall arrest system without relying solely on cage systems for compliance and roof openings require additional fall prevention measures.

In response to the prior assessments of the ladder systems and to determine how best to meet current fall protection standards, staff solicited proposals from fall protection equipment providers. The solicitation included assessment of device refurbishments, alternative solutions where possible to meet current standards, and cost for those refurbishments to be designed by a licensed professional engineer with inclusion of stamped design drawings.

The scope of structures requiring additional fall protection upgrades is extensive and covers a large part of FHQ facilities. Table 2 includes a list of the identified upgrades required to meet current standards. Companies that can provide the required fall protection equipment upgrades while also being able to provide stamped engineered drawings are limited. Solicitations were sought from multiple companies but only two were able to provide a quotation: CAI Safety Systems and Diversified Fall Protection. Table 1 below provides the pricing received from both companies.

Based on the quotations received, staff recommends issuance of an agreement with Diversified Fall Systems in the amount of $211,770. The FHQ fall protection equipment upgrades project is budgeted for the fiscal year 2025-26 in the Refurbishment and Replacement section as R25026 in the amount of $500,000.

Table 1 – Price Quotations for FHQ Fall Protection Equipment Upgrades

Description	Cost
Diversified Fall Protection	$ 211,769.11
CAI Safety Systems	$ 261,535.00
Anchor Safety Systems	Incomplete Quote
Tritech Fall Protection	Non-Responsive
Anchor Safety Systems	Non-Responsive

Table 2 – List of Identified Required Fall Protection Upgrades (FHQ)

Item	Area	Description	Lacking Compliance	Recommendations	Type of System
1	**Admin Bldg. Roof Access Ladder**	Ladder: 12 feet and Roof Hatch: 37" X 43"	Roof Hatch	Roof Hatch guardrail and safety gate	RHGG
2	**Maintenance Warehouse**	Ladder: 15 feet long, 30" opening	Ladder Opening	Self Closing Gate	SCG
3	**Heavy Equipment Mechanic Shop**	Lower Roof: Unprotected leading edge, no access. Upper Roof: Unprotected leading edge, skylights are unprotected, Ladder 20 feet long with 30" opening.	Ladder, ladder fall arrest, unprotected leading edges and ladder openings	Ladder, Ladder fall arrest, self closing gate, Skylight Guards and Fixed Guardrail	LAD, LFA, SCG, SG, FGR
4	**Warehouse Maintenance Bldg. Roof Ladder**	One system: Ladder 11 feet, Roof hatch 30" X 30", roof perimeter 180 feet	Roof hatch, roof edge	Roof Hatch guardrail and safety gate, Fixed Guardrail	RHGG, SG, FGR
5	**Warehouse Maintenance Bldg.**	Ladder 10 feet, unprotected roof opening, roof perimeter and skylight	unprotected leading edges, skylights and ladder openings	self closing gate, Skylight Guards and Fixed Guardrail	SCG, SG, FGR
6	**Mira Loma Basin Ladder**	Ladder: 12 feet long, 20" opening	Ladder Opening	Self Closing Gate	SCG
7	**Kraemer Basin Ladder**	Ladder: 8 feet long, 20" opening	Ladder Opening	Self Closing Gate	SCG
8	**Miller Basin Ladder**	Ladder: 8 feet long, 20" opening	Ladder Opening	Self Closing Gate	SCG
9	**La Palma Basin Ladder**	Ladder: 15 feet long, 30" opening	Ladder Opening	Self Closing Gate	SCG
10	**Five Coves Dam Bldg.**	Ladder 10 feet, Roof hatch, roof perimeter	Roof hatch, roof edge	Roof Hatch guardrail and safety gate, & Non-Penetrating Guardrail	RHGG, NPGR
11	**Burris Basin Bldg. - Lower Access**	Ladder: 21 feet and Roof Hatch: 47" X 47"	Roof Hatch	Roof Hatch guardrail and safety gate	RHGG
12	**Burris Basin Bldg. - Main Pump Room Ladders**	Lower Ladder: 22', bottom support is bent, opening of 24" is unprotected. Upper ladder: 18' long, roof hatch 30" square	Lower ladder support, ladder opening, upper ladder needs fall arrest system, roof hatch	Self Closing Gate, Ladder Fall Arrest Cable, Roof Hatch guardrail and safety gate	SCG, LFAC, RHGG

PRIOR RELEVANT BOARD ACTION(S)

N/A

DIVERSIFIED FALL PROTECTION | WEST

28258 Avenue Stanford, Valencia, CA 91355
Telephone: 855-837-3255 - Fax: 818-565-5535 - info@fallprotect.com - fallprotect.com

Project
72618
Fall Protection Improvements Installation
4060 East La Palma
Anaheim, CA 92807

Client
Orange County Water District
Ben Lomeli
4060 East La Palma
Anaheim, CA 92807
714-378-3243
blomeli@ocwd.com

Proposal Date
1/21/2026

Proposal Writer
Brett Auerbach
Brett.auerbach@fallprotect.com

Scope of Work

Thank you for allowing Diversified Fall Protection to quote you on the fall protection system needed at your project located in **Anaheim**. Below you will find a summary of our proposed work. Please let me know if you have any questions.

All personal fall arrest systems are designed, engineered and installed to meet or exceed the standards set forth in Federal OSHA Standards for the Construction Industry 1926, Federal OSHA Standards for General Industry 1910, Cal/OSHA Construction Safety Orders, Title 8 (1670), Cal/OSHA General Safety Orders, Title 8 (3210), EM385 (for US Military projects) and ANSI Z359.

Workers accessing and working on the top of roofs are exposed to a fall of greater than 30". Fall protection is required for workers performing maintenance above the Cal/OHSA specified trigger height as set forth in GISO 3210.

§3210. Guardrails at Elevated Locations. Cal/OSHA General Safety Orders, Title 8

- Guardrails shall be provided on all open sides of unenclosed elevated work locations, such as: roof openings, open and glazed sides of landings, balconies or porches, platforms, runways, ramps, or working levels more than 30 inches above the floor, ground, or other working areas of a building as defined in Section 3207 of the General Industry Safety Orders.
- **§3210 (b) Other Elevated Locations.** The unprotected sides of elevated work locations that are not buildings or building structures where an employee is exposed to a fall of 4 feet or more shall be provided with guardrails.
- **§3210 (c)** Where the guardrail requirements of subsections (a) and (b) are impracticable due to machinery requirements or work processes, an alternate means of protecting employees from falling such as personal fall protection systems, shall be used.

§1670. Personal Fall Arrest Systems. Cal/OSHA Construction Safety Orders, Title 8

- **§1670 (14)** The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.

This proposal is to provide and install fall protection improvements are various sites and locations. Further engineering and design may be required.

Burris:
(1) Demolition of existing ladder
(1) Approx. 22' custom ladder, provided in a powder coat white finish (ladder 18.5" wide)
(1) Ladder anchor w/ 25' SRL & tagline
(1) 45"x45" Roof hatch kit

Burris Storage:
(1) Approx. 20' vertical lifeline system w/ telescoping post
(1) Detachable traveller
(1) 45"x45" roof hatch kit

Five Coves:
(1) 32 5/8" x 38" Roof hatch kit
Approx. (218LF) weighted base guardrail

Five Coves 2:
(1) 32 5/8" x 38" Roof hatch kit
Approx. (218LF) weighted base guardrail

Warehouse Maintenance:
(1) Swing gate, provide in a PC yellow finish
Approx. (24LF) weighted base guardrails
(18) 3'x10' Skylight Screens

Auto Shop:
(1) Swing gate, provided in a PC yellow finish
(1) Ladder anchor w/ 20' SRL & tagline
Approx. (24LF) weighted base guardrails
(27) 3'x10' Skylight screens

Admin Building:
(1) 34 5/8"x40 ¾" Roof hatch kit

La Palma Basin:
(1) Demolition of existing ladder
(1) 14' Ladder, provided in a galvanized finish
(1) Swing gate, provided in a powder coat yellow finish

Mira Loma Basin:
(1) Demolition of existing ladder
(1) 13' Ladder, provided in a galvanized finish
(1) Swing gate, provided in a powder coat yellow finish

Miller:
(1) Demolition of existing ladder
(1) 8' Ladder, provided in a galvanized finish
(1) Swing gate, provided in a powder coat yellow finish

Kraemer:
(1) Demolition of existing ladder
(1) 8' Ladder, provided in a galvanized finish
(1) Swing gate, provided in a powder coat yellow finish

Our California Licensed Professional Engineer will develop a full design package with drawings and calculations showing the layout and all attachment details of the fall protection systems. Draft versions of drawings and calculations will be submitted to you for your approval prior to any work being started. Once you have approved the draft submittals final wet stamped copies will be given to you in our final submittal binder at the completion of the project.

Versatile Systems is a licensed "B" General Contractor in the State of California. All work being done at your site will be completed by Versatile Systems full time employees that have been extensively training in general safety and fall protection practices and procedures. California Contractors License #1090105

Our installers have been trained by the manufacturer on the installation of the proposed system. All work will be performed in exact accordance to the manufacturer's specifications.

Certificates of insurance will be presented to you with our final contract.
All product manuals including safe use, maintenance & operating instructions will be included with the project turnover documentation. A thorough user procedure will be written for your personnel

as a step by step process for using this fall protection equipment. You will receive all files electronically.

A thorough user awareness training course will be conducted for all users of the fall protection system. This training will cover the basics of general fall protection, the proper donning of a full body harness, proper procedures for the use of the lifeline system, inspection criteria, rescue procedures and maintenance procedures.

§1670. Personal Fall Arrest Systems. Cal/OSHA Construction Safety Orders, Title 8
Each personal fall arrest system shall be inspected not less than twice annually by a competent person in accordance with the manufacturer's recommendations. The date of each inspection shall be documented.

Included in this proposal, at no additional charge, is the first bi-annual inspection for the system. The first inspection will be completed on the final completion date of this project; the second will need to be completed at 6 months after the first bi-annual inspection. Please note that at the 6 month date and beyond the client is responsible for contracting these inspections.

Items:	Price:
Engineering & Design-PE Stamped Submittal	$2,890.00
Fall Protection System Materials	$10,178.00
Installation Labor & Rental Equipment	$13,137.00
Freight of Materials	$200.00
Subtotal	$26,405.00
Sales Tax (Anaheim - 7.75%)	$788.80
Total Cost - Burris	**$27,193.80**

Items:	Price:
PE Stamped Submittal Shop Drawings	$1,454.00
Fall Protection System Materials	$2,842.00
Installation Labor	$4,929.00
Freight of Materials	$150.00
Subtotal	$9,375.00
Sales Tax (Anaheim - 7.75%)	$220.26
Total Cost - Burris Storage	**$9,595.26**

Items:	Price:
Engineering & Design-PE Stamped Submittal	$1,454.00
Fall Protection System Materials	$9,799.00
Installation Labor & Rental Equipment	$13,892.00
Freight of Materials	$250.00
Subtotal	$25,395.00
Sales Tax (Anaheim - 7.75%)	$759.42
Total Cost - Five Coves	**$26,154.42**

Items:	Price:
Engineering & Design-PE Stamped Submittal	$1,454.00
Fall Protection System Materials	$9,799.00
Installation Labor & Rental Equipment	$13,892.00
Freight of Materials	$250.00
Subtotal	$25,395.00
Sales Tax (Anaheim - 7.75%)	$759.42
Total Cost - Five Coves 2	**$26,154.42**

Items:	Price:
PE Stamped Submittal Shop Drawings	$1,575.00
Fall Protection System Materials	$7,241.00
Installation Labor & Rental Equipment	$13,684.00
Freight of Materials	$750.00
Subtotal	$23,250.00
Sales Tax (Anaheim - 7.75%)	$561.18
Total Cost - Warehouse Maintenance	**$23,811.18**

Items:	Price:
PE Stamped Submittal Shop Drawings	$2,353.00
Fall Protection System Materials	$12,050.00
Installation Labor & Rental Equipment	$21,550.00
Freight of Materials	$1,500.00
Subtotal	$37,453.00
Sales Tax (Anaheim - 7.75%)	$933.88
Total Cost - Auto Shop	**$38,386.88**

Items:	Price:
PE Stamped Submittal Shop Drawings	$1,454.00
Fall Protection System Materials	$1,153.00
Installation Labor & Rental Equipment	$3,476.00
Freight of Materials	$150.00
Subtotal	$6,233.00
Sales Tax (Anaheim - 7.75%)	$89.36
Total Cost - Admin Building	**$6,322.36**

Items:	Price:
Engineering & Design-PE Stamped Submittal	$2,459.00
Fall Protection System Materials	$2,890.00
Installation Labor & Rental Equipment	$8,735.00
Freight of Materials	$200.00
Subtotal	$14,284.00
Sales Tax (Anaheim - 7.75%)	$223.98
Total Cost - La Palma Basin	**$14,507.98**

Items:	Price:
Engineering & Design-PE Stamped Submittal	$2,459.00
Fall Protection System Materials	$2,740.00
Installation Labor & Rental Equipment	$8,727.00
Freight of Materials	$200.00
Subtotal	$14,126.00
Sales Tax (Anaheim - 7.75%)	$212.35
Total Cost - Mira Loma Basin	**$14,338.35**

Items:	Price:
Engineering & Design-PE Stamped Submittal	$2,459.00
Fall Protection System Materials	$1,990.00
Installation Labor	$7,849.00
Freight of Materials	$200.00
Subtotal	$12,498.00
Sales Tax (Anaheim - 7.75%)	$154.23
Total Cost - Miller	**$12,652.23**

Items:	Price:
Engineering & Design-PE Stamped Submittal	$2,459.00
Fall Protection System Materials	$1,990.00
Installation Labor	$7,849.00
Freight of Materials	$200.00
Subtotal	$12,498.00
Sales Tax (Anaheim - 7.75%)	$154.23
Total Cost - Kraemer	**$12,652.23**

Exclusions / Related Work by Others

Payment & Performance Bonds
Premium work hours such as nights and weekends
Permits, licenses & applicable fees
Waterproofing, roofing repairs, roof flashing, etc.
Structural blocking or framing design or engineering thereof
Any electrical work of any kind.
Any waterproofing.
Any concrete repairs.

Warranty

All labor and materials will be unconditionally warranted for one full year starting at the date of completion.

Payment Terms

Per contract agreement
Net 30, Due at Completion

Contractor: Diversified Fall Protection

BY: _____

John McHugh – President **Date:** 1/21/2026

CA. Contractor's License# 1090105

Federal ID# 90-0423398

Client: _____

BY: _____

Print Name: _____

Company: _____

Date: _____

General Installation Terms & Conditions

1. Issuance of a purchase order, based on the information in this proposal acknowledges acceptance of these and the General Terms and Conditions.
2. Quote valid for 30 days.
3. If the client requires us to use labor other than existing Diversified Fall Protection employees, the quote is invalid.
4. Uninterrupted access to the job site must be provided for the agreed upon dates and times or additional charges will apply.
5. If we are required to stop work for reasons outside Diversified Fall Protection control a stand down fee will apply.
6. Custom-fabricated product is not eligible for return.
7. 25% of base contract due upon receipt of signed Order Confirmation or Authorized Purchase Order prior to any work being started. Remainder due upon completion of the project.
8. This quote does not include licenses, permits or other governmental fees incurred as a result of the job.
9. On this purchase all applicable sales taxes have been included.
10. Diversified Fall Protection reserves the right to correct any clerical errors in this quotation.
11. The work is assumed to be continued and uninterrupted from the kick off meeting until the project completion date.
12. All work will be completed based on mutually agreed to installation schedule, in one mobilization. Unless otherwise agreed upon.
13. Additional mobilization fees will apply if there are unscheduled work stoppages lasting more than 1 day.
14. Both parties shall forward notices, in writing, regarding changes in the scheduled work not less than five days in advance to avoid additional charges.
15. Any changes or modifications to the Scope of Work shall be mutually agreed upon and documented by *Purchaser* and Diversified Fall Protection, in the form of a change order.
16. Reasonable daily access to the project site for the sole intended purpose of completing the work described is expected.
17. Secure and adequate material lay down and tool storage space must be provided near the work site.
18. Diversified Fall Protection will put forth it's best effort in meeting it's promised obligations, but shall have no liability for delays in performance resulting from causes beyond it's reasonable control, including, without limitation, acts or omissions of any government, acts of God, customs delays, acts or omissions of another party, strikes, labor or transportation difficulties, or any other cause beyond the reasonable control of Diversified Fall Protection.
19. Work will be performed during normal business hours; between 7:00am and 4:30pm excluding weekends and holidays.
20. Additional terms may apply based on types of work involved, regulations, owner's restrictions, and other factors.
21. It is understood that personnel will be available on notice but will not be present during all working hours. This will not affect our access to the bowl for our required work hours.
22. The work area will be clear and free from unknown hazards at the time that our work is to begin.
23. Diversified Fall Protection and its employees will follow *purchaser's Site Safety Program* while on the job site unless the Diversified Fall Protection Safety Program is more comprehensive.
24. Daily safety meetings will be held and are open to the *Purchaser*.
25. Shipping and delivery dates are estimates based upon conditions prevailing at the time of quotation.
26. Diversified Fall Protection shall not be liable for delays in delivery due to: Purchaser changes, Acts of God, strikes, fire floods, epidemics, war, and all other causes beyond Diversified Fall Protection control. In the event of such delay, the delivery shall be extended by the amount of time delay incurred.
27. *Purchaser* shall pay any expenses incurred by Diversified Fall Protection due to Purchaser postponement of delivery, including storage, refusal of delivery, inability to accept shipment or price increases by the supplier.
28. All of the above quoted installation work is based on using non-union labor. If your company should deem it necessary to perform the work with union labor, please be advised that the quoted cost and scheduled duration is subject to change.
29. Should union labor be required this quote will be rescinded and a new proposal must be drafted.
30. If Union labor is required *Purchaser* will be responsible for providing competent* Union labor.
31. The Purchaser is responsible to supply the aforementioned documentation. If after one year we have not received requested data from you necessary for permit issuance, we will assume the lack of response to be an implied acknowledgment releasing us from permit responsibility. After that date we will invoice you for all expenses actually incurred and close out the project.
32. The work involved does not require building permits. It is repair work on a structure that was permitted and signed off as complete. Should the Purchaser elect to waive any required permit process, the Purchaser assumes all liability caused by not acquiring the permit. (If required)
33. Diversified Fall Protection shall not be required to furnish any safety device except those specified in this proposal. If federal, state and/or local governments require additional inspections, permits or licenses for the use of Seller's equipment, Purchaser shall obtain and cover all expense.
34. Diversified Fall Protection shall protect Purchaser against any lien asserted against Purchaser's property for equipment or services furnished by others at Diversified Fall Protection request, provided that Purchaser meets the required price and terms of this agreement.
35. The purchaser has supplied drawing show basic structure and intent for the repairs. As noted in the purchaser's scope of work, it is Diversified Fall Protection responsibility to confirm all as built conditions and build to fit. Copies of any and all drawings submitted by Diversified Fall Protection shall be retained by the purchaser in their records and for their use if required for any future repair to the structure. Specifications and dimensions used in this proposal are approximate and are subject to change or correction during installation.
36. If, within 5 days after receipt of notice that the work is completed the Buyer fails to so notify Diversified Fall Protection, the work shall be deemed to have been accepted by the Buyer and payment is due.
37. Diversified Fall Protection will remove all trash created by Diversified Fall Protection from the premises.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026	**Budgeted:** No
	Budgeted Amount: $0
To: Water Issues Committee	**Cost Estimate:** $37,960
Board of Directors	**Funding Source:** R&R
	Program/ Line Item No.: TBD
From: John Kennedy	**General Counsel Approval:** N/A
	Engineers/Feasibility Report: N/A
Staff Contact: R. Herndon, D. Field	**CEQA Compliance:** Categorical Exemption to be filed upon project approval

Subject: AUTHORIZE ISSUANCE OF SERVICES AGREEMENT TO YELLOW JACKET DRILLING SERVICES FOR DESTRUCTION OF WESTBAY MONITORING WELL SAR-3

SUMMARY

Quotes for destruction of Westbay monitoring well SAR-3 were received on January 22, 2026. Based on the received proposals, staff recommends issuing a Services Agreement to Yellow Jacket Drilling Services LLC to complete the destruction work, which is necessary because of the City of Anaheim's redevelopment of the well site.

RECOMMENDATION

Agendize for February 18 Board Meeting: Authorize issuance of a Services Agreement to Yellow Jacket Drilling Services LLC in an amount not to exceed $37,960 for destruction of Westbay monitoring well SAR-3.

BACKGROUND/ANALYSIS

Westbay multi-level monitoring well SAR-3 was constructed in 1988 and is 1,420 feet deep with 11 screen intervals at various depths. The well is located in the City of Anaheim adjacent to the Santa Ana River and Angel Stadium (Figure 1). The well is among the 56 Westbay-type wells installed by OCWD between 1988 and 2002.

OCWD constructed well SAR-3 on property previously owned by the County of Orange under an encroachment permit. The property has been acquired by the City of Anaheim (City). The City is in the final design stages to construct "River Park" including a playground and play structures surrounding the well site. Although the City has offered to protect the well, the new site layout will prevent access to large trucks and equipment that are necessary to conduct well rehabilitation and eventual sealing/destruction of the well. Additionally, having the well in a playground would restrict safe access to the well for routine monitoring and maintenance, making its use infeasible. Construction of River Park is tentatively scheduled to start in April 2026. Figures 2 and 3 show renderings of proposed River Park and the location of SAR-3.

The Board approved destruction of SAR-3 in November 2025. Staff advertised the Scope of Work in December 2025. On January 22, 2026, three quotes were received as listed below.

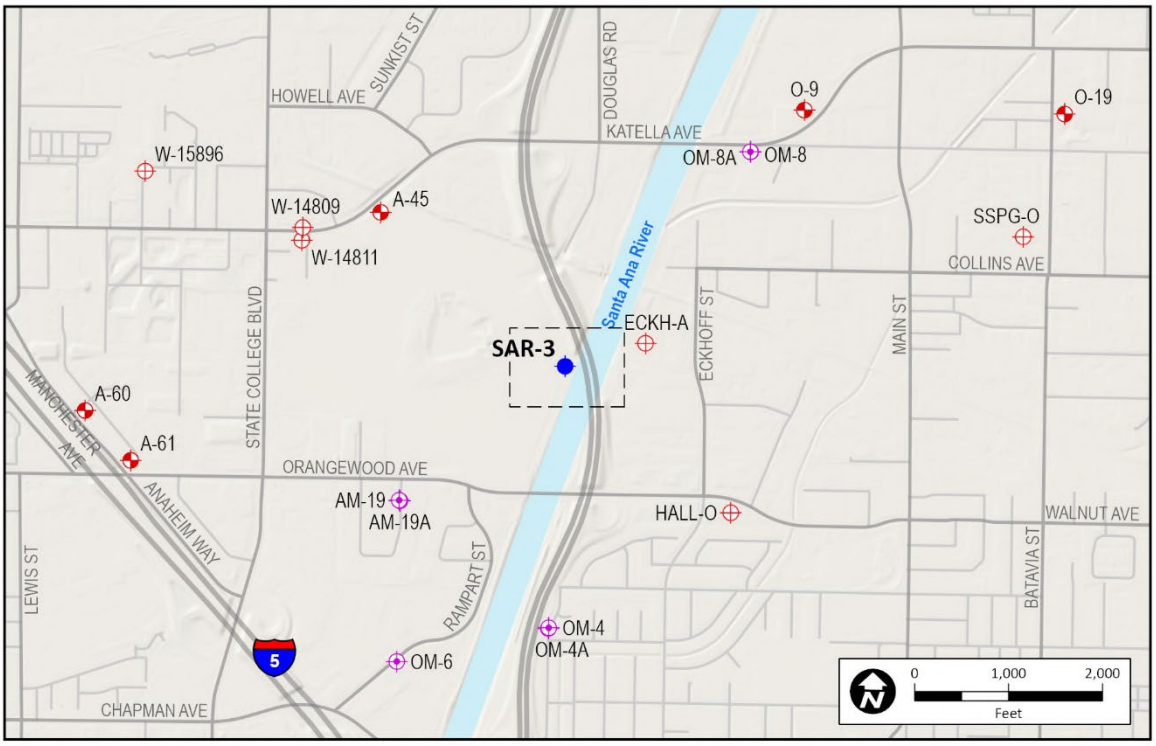
Yellow Jacket Drilling Services LLC	$37,960
Arsenal Well Drilling, Inc.	$95,460
Living Water Well Drilling	$97,800

The lowest cost quotation from Yellow Jacket in the amount of $37,960 is lower than the Geologist's Estimate of $50,000 by $12,040. Staff contacted Yellow Jacket and confirmed that they are comfortable completing the work within their quoted amount. Therefore, staff recommends issuing a Services Agreement to Yellow Jacket Drilling Services LLC to destroy Westbay monitoring well SAR-3.

PRIOR RELEVANT BOARD ACTION(S)

11/19/25 R25-11-200 – Authorize issuance of Request for Proposals for destruction of monitoring well SAR-3.

Figure 1: SAR-3 Location



g:\staff\DavidF\SAR-3 Well Map.aprx (10/30/2025)

SOURCE: OCWD (09/2025); Nearmap (5/2025)

Figure 2: Rendering of Proposed River Park (1 of 2)

Figure 3: Rendering of Proposed River Park (2 of 2)

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee

Board of Directors

From: John Kennedy

Staff Contact: R. Herndon, D. Field

Budgeted: Yes
Budgeted Amount: $610,000 CIP/$450,000 R&R
Cost Estimate: $610,000 CIP,$450,000 R&R

Funding Source: CIP & R&R
Program/ Line Item No.: C25006 & R25048
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: Categorical Exemption to be filed upon project approval

Subject: CONSTRUCTION OF AM-63 AND AM-21R MONITORING WELL CLUSTERS

SUMMARY

Due to construction of the OCVIBE in Anaheim, monitoring wells AM-21 and AM-21A were destroyed in May 2025. Also, a data gap exists in the Shallow and Principal aquifers in the City of Placentia where the installation of a cluster of two monitoring wells will: (1) improve the accuracy of annual groundwater elevation contour maps used for the basin storage calculation, and (2) provide water quality data in an area where two new production wells have been prevented from going on-line due to arsenic and uranium exceedances. Staff requests authorization to construct monitoring wells AM-63A and AM-63B in Placentia and AM-21R and AM-21RA in Anaheim.

RECOMMENDATION

Agendize for February 18 Board meeting:

1. Authorize staff to file a Notice of Exemption from requirements of the California Environmental Quality Act;

2. Authorize General Manager to finalize and execute no-cost License Agreements with the AM-21R Site property owner, OCVIBE;

3. Authorize construction of monitoring well cluster AM-63 and replacement monitoring well cluster AM-21R;

4. Authorize issuance of a Notice Inviting Bids for monitoring well construction;

5. Authorize issuance of an RFP for construction inspection services; and

6. Establish a project budget of $1,060,000.

BACKGROUND/ANALYSIS

AM-63 Monitoring Well Cluster (AM-63A & AM-63B)

At the end of each water year (end of June), staff collects groundwater level data throughout the basin and then constructs annual groundwater elevation contour maps for the Shallow, Principal, and Deep aquifers. These contour maps are then used to determine the annual groundwater level change from the prior June and the annual change in groundwater storage and accumulated overdraft. The Forebay area of the basin contributes the largest storage change per foot of water level change. A large data gap exists in both the Shallow and Principal aquifers in the City of Placentia north/northeast of the District's Anaheim Forebay spreading grounds.

As shown in Figure 1, the proposed monitoring well location is just over a half mile northeast of Anaheim Lake. There are a few production wells in the general vicinity screened in the Principal aquifer, but static groundwater levels from these wells were found to often be anomalous or unobtainable and thus of little to no benefit for the annual Principal aquifer groundwater elevation contour map. Additionally, two new large system municipal wells in the area remain inactive (Figure 1) due to exceedances of uranium in one well and arsenic in the other.

For the Shallow aquifer, there is a lack of existing wells north of the Anaheim Forebay spreading grounds for constructing the groundwater contours. Installation of a cluster of two monitoring wells will improve the accuracy of the annual groundwater elevation contour maps for both the Shallow and Principal aquifers influential for the basin storage calculation and will also provide useful water quality data in the upper portion of the Principal aquifer to investigate the potential source and extent of the aforementioned uranium and arsenic occurrences. Table 1 below summarizes the estimated casing depths and target aquifers for these wells.

Staff has been in contact with City of Placentia and located a suitable well site in the Placentia Champions Sports Complex parking lot (Figure 1). Placentia staff has asked that the wells be constructed starting on June 1, 2026, to minimize impacts to the Sports Complex activities.

AM-21R Monitoring Well Cluster (AM-21R & AM-21RA)

With Board approval, monitoring wells AM-21 and AM-21A (wells) were destroyed in 2025. The area around the wells is being redeveloped as part of the OCVIBE project, necessitating well destruction. These wells were part of the proposed monitoring well network for future recharge of GWRS water at Burris Basin. Therefore, construction of replacement wells is necessary for GWRS compliance monitoring. Table 1 below summarizes the estimated casing depths and target aquifers for these wells.

Staff has been in contact with City staff and the OCVIBE team and located a suitable replacement well location. The replacement location is approximately 900 feet southwest of the original location.

Table 1 Estimated Casing Depths and Target Aquifers for AM-21R and AM-63 monitoring well clusters.

Well No.	Aquifer Name	Casing Depth (feet bgs)
AM-21RA	Shallow	175
AM-21R	Principal	275
AM-63A	Shallow	240
AM63B	Principal	555

Based on the information above, staff recommends constructing monitoring well cluster AM-63 (AM-63A & AM-63B) and replacement monitoring well cluster AM-21R (AM-21R & AM-21RA).

California Environmental Quality Act

Staff has reviewed the project and determined that a Categorical Exemption from the California Environmental Quality Act (CEQA) is applicable. The project is consistent with the Categorical Exemption for New Construction or Conversion of Small Structures (Class 3) because it consists of the construction and operation of a limited numbers of new, small facilities or structures.

Table 2 below summarizes the estimated project budget based on the Geologist's estimated cost for construction of the AM-63 and AM-21R monitoring well clusters.

Table 2 Proposed Budget for Construction of AM-21R and AM-63 Monitoring Well Clusters

Task	Cost Estimate
Capital Improvement Project (CIP #C25006)	
Pre-Construction Activities	
License Agreement (pending)	$ 500
Legal Description Survey for License Agreement	2,000
Construction Activities (Wells AM-63A and AM-63B)	
Well Construction	490,000
Well Construction Inspection Services	80,000
Dedicated Sample Pumps	6,500
Survey Wellhead Locations and Elevations	2,000
SUBTOTAL:	581,000
CONTINGENCY:	29,000
CIP TOTAL:	**$ 610,000**
Replacement & Refurbishment (R&R # R25048)	
Pre-Construction Activities	
License Agreement (no cost)	$ 0
Legal Description Survey for License Agreement	2,000
Monitoring Well Construction (Wells AM-21AR and AM-21R)	
Well Construction	350,000
Well Construction Inspection Services	68,000
Dedicated Sample Pumps	6,500
Survey Wellhead Locations and Elevations	2,000
SUBTOTAL:	428,500
CONTINGENCY:	21,500
R&R TOTAL:	**$ 450,000**
PROJECT TOTAL (CIP & R&R):	**$ 1,060,000**

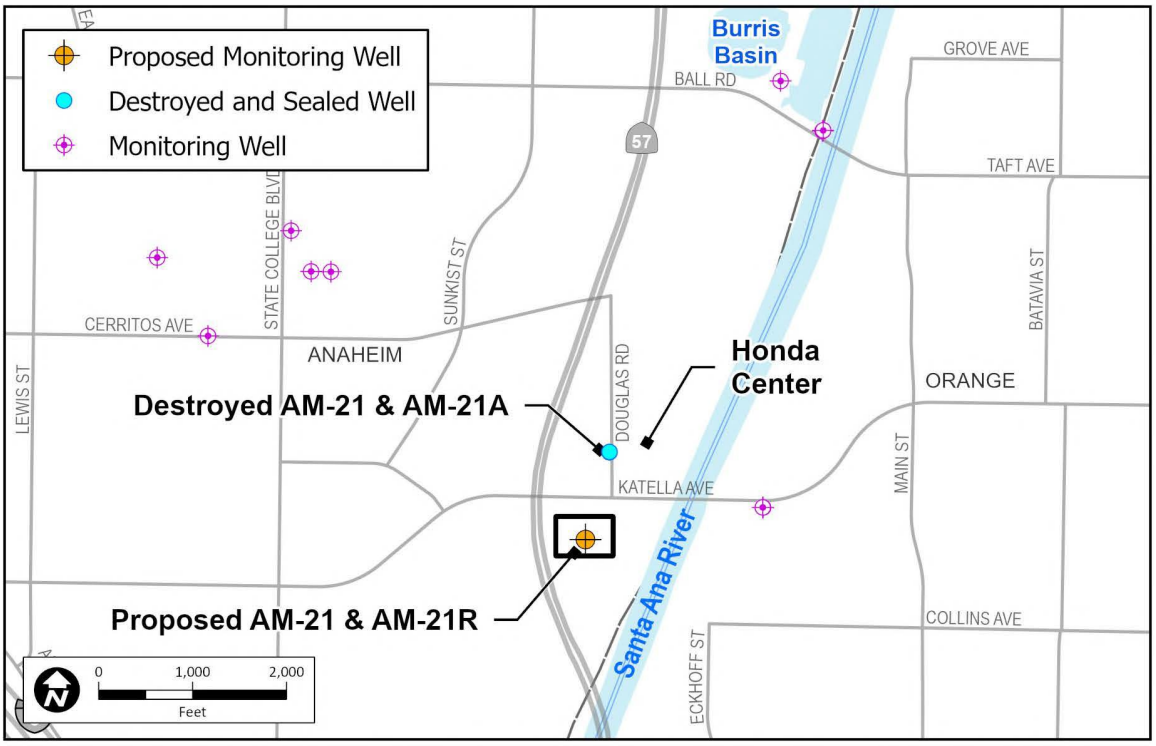
PRIOR RELEVANT BOARD ACTION(S)

5/15/24, R24-5-49, Authorize issuance of agreement to BC2 Environmental, LLC for destruction of monitoring wells AM-21 and AM-21A.

Figure 1: Proposed Monitoring Well Cluster AM-63 Location

SOURCE: OCWD (01/2026); Nearmap (10/2025)

Figure 2: Proposed Replacement Monitoring Well Cluster AM-21R Location



\\ocwd.com\gis\GDrive\Staff\DavidF\AM-21R\AM-21R_Maps.aprx (1/20/2026)

SOURCE: OCWD (01/2026); Nearmap (10/2025)

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026	**Budgeted:** Yes
	Budgeted Amount: $52,000
To: Water Issues Committee	**Cost Estimate:** $52,000
Board of Directors	**Funding Source:** R&R
	Program/ Line Item No.: R25049
From: John Kennedy	**General Counsel Approval:** N/A
	Engineers/Feasibility Report: N/A
Staff Contact: R. Herndon/D. Field	**CEQA Compliance:** Categorical Exemption to be filed upon project approval

Subject: REQUEST FOR PROPOSALS FOR DESTRUCTION OF MONITORING WELLS OM-2 AND OM-2A

SUMMARY

The area adjacent to monitoring wells OM-2 and OM-2A (wells) will be redeveloped by the property owner, the County of Orange (County). Per the terms of our License Agreement with the County, they have requested that we destroy these wells. Staff does not currently have plans to recommend replacing these wells but will return to the Board should such a need arise.

RECOMMENDATION

Agendize for February 18 Board Meeting:

1. Authorize filing of a Categorical Exemption for the destruction of monitoring wells OM-2 and OM-2A in compliance with CEQA guidelines; and

2. Authorize issuance of Request for Proposals for services for the destruction of monitoring wells OM-2 and OM-2A.

BACKGROUND/ANALYSIS

Monitoring wells OM-2 and OM-2A (wells) were installed in 1990 on County property to depths of 251 and 129 feet, respectively. The wells were installed as part of a VOC investigation in the City of Orange. At time of installation, the two wells were located approximately ten feet apart, and on the outside of the Theo Lacy Jail. Several years ago, the fenceline for the jail was modified, placing the two wells within the jail complex. The locations of the wells are shown in Figure 1. Starting in 2007, groundwater sampling was discontinued due to onerous access restrictions. However, groundwater levels are currently gauged on a quarterly basis.

The property is currently being redeveloped by the County. Per the terms of our License Agreement, the County has the right to request OCWD to destroy the wells. The County has requested the wells be destroyed prior to site development. Because there are other OCWD monitoring wells in the area that adequately monitor the Shallow and upper Principal aquifers, installation of replacement wells is not deemed necessary.

Based on the County's construction schedule, these wells will need to be destroyed no later than August 2026.

For the reasons discussed above, staff recommends destroying monitoring wells OM-2 and OM-2A.

California Environmental Quality Act

Staff has evaluated the project and determined that it qualifies for an exemption from the California Environmental Quality Act (CEQA) under Class 3, Section 15303, as the project involves limited activities on narrow-diameter wells at a site devoid of sensitive habitat and occurring within previously developed roadways.

Table 1 below summarizes the proposed budget based on the Geologist's estimated costs for monitoring well OM-2 and OM-2A destruction.

Table 1 Cost Estimate and Proposed Budget for Monitoring Well OM-2 & OM-2A Destruction

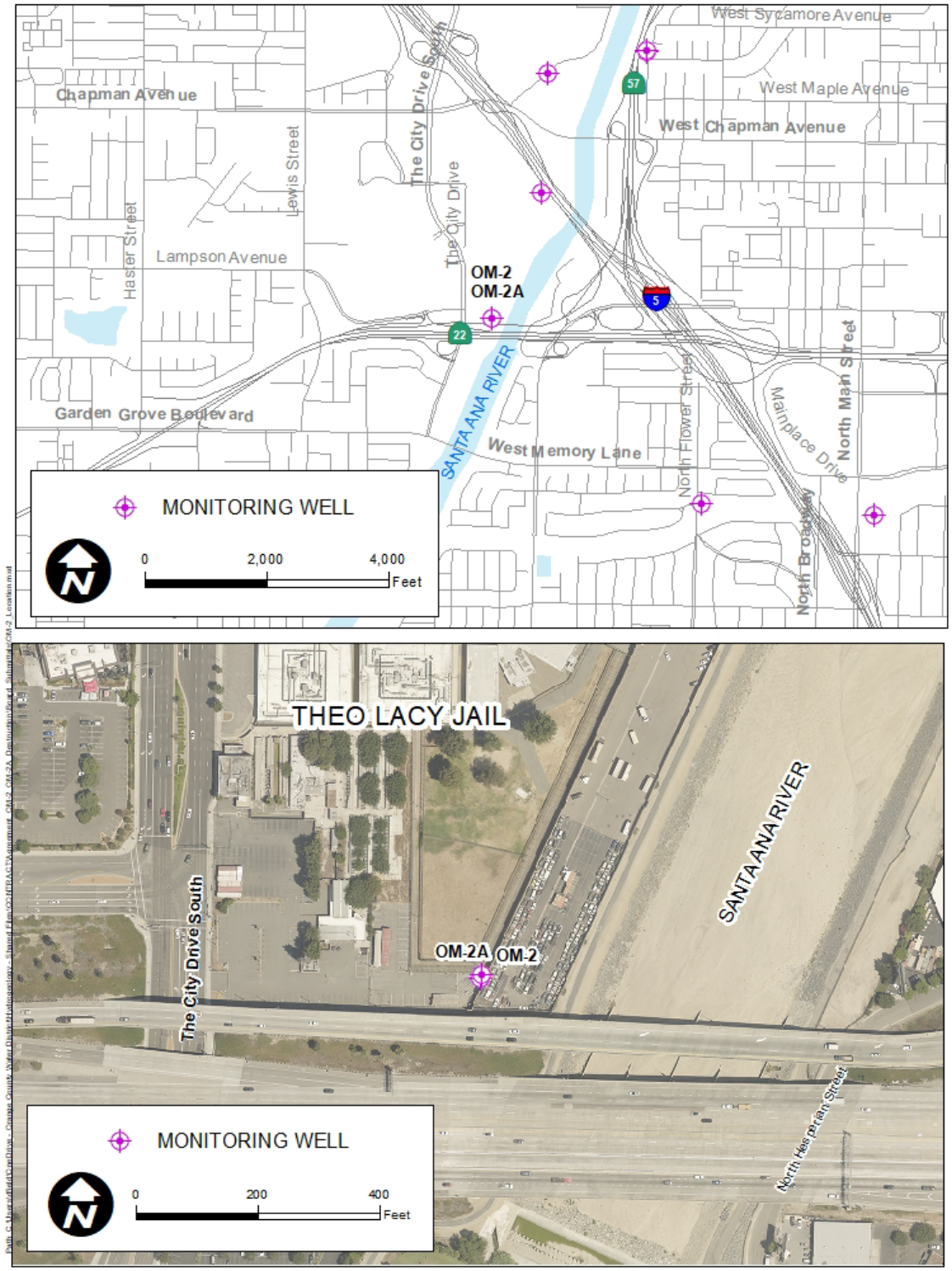
Task	Cost Estimate
OM-2 & OM-2A Destruction (contractor)	$ 50,000
Destruction Inspection Services[1]	0
County Encroachment Permit	2,000
TOTAL:	**$ 52,000**

[1]Inspection services to be completed in-house by OCWD geologist.

PRIOR RELEVANT BOARD ACTIONS

None

Figure 1: OM-2 Location



AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee/ Board of Directors

From: John Kennedy

Staff Contact: M. Patel/R. Phillips

Budgeted: Yes
Budgeted Amount: $150,000
Cost Estimate: $300,000
Funding Source: R&R
Program/Line Item No.: R25017
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: Cat. Ex.

Subject: AGREEMENT TO BENDER/CCP FOR REVERSE OSMOSIS TRANSFER PUMP A01 VERTICAL TURBINE PUMP INSPECTION AND REHABILITATION

SUMMARY

The Groundwater Replenishment System (GWRS) Advanced Water Purification Facility (AWPF) consists of six, 1,250 horsepower vertical turbine pumps. Five of the six pumps have been in service over seventeen years and are due for inspection and rehabilitation. These pumps are used to transfer water GWRS microfiltration product water from a holding tank to the reverse osmosis process. One of the five original pumps (B01) was recently removed for rehabilitation and now a second pump, A01, is ready for rehabilitation.

RECOMMENDATION

Agendize for February 18 Board meeting: Authorize issuance of an Agreement to Bender/CCP Inc. for an amount not to exceed $300,000 and establish the Product Water A01 Vertical Turbine Pump Inspection and Rehabilitation project in the amount of $300,000.

BACKGROUND/ANALYSIS

The GWRS AWPF consists of six 1,250 horsepower vertical turbine pumps called the RO Transfer Pumps. These pumps are used to transport GWRS product water from the microfiltration process, as it accumulates in a holding tank, to the reverse osmosis process building. These pumps provide enough pressure for the individual RO unit high pressure feed pumps suction requirements.

Five of the six vertical turbine pumps were put online in 2008 as part of the original GWRS project. One of the six was put into service in 2015 as part of the GWRS Initial Expansion (GWRSIE). These pumps are maintained as part of the GWRS asset management program receiving regular preventative maintenance in keeping with manufacturer recommendations. The pumps include an online vibration and temperature monitoring system. In addition, each pump is tested for vibration and temperature analysis on a quarterly basis by an outside testing service. This has allowed five of the pumps to run successfully for over seventeen years, which is the normal recommended industry standard for performing a vertical turbine pump rehabilitation. Given the age of RO transfer pump B01, staff budgeted to have the pump

removed and sent to a qualified pump repair shop for inspection and rehabilitation via Refurbishment & Replacement (R&R) budget number R21010 in the amount of $150,000. The board approved an agreement with Bender/CCP, Inc. in August 2025 to perform the rehabilitation of RO transfer pump B01 based upon being the lowest responsive bidder to a request for proposals (RFP).

The scope of the RFP for pump B01 was to pull the motor and pump, inspect, and perform rehabilitation as needed as part of a preventative maintenance effort. Since the level of rehabilitation required for the pump will not be known until a detailed inspection is performed, the quote was formatted for a base bid to remove and reinstall the pump using an external crane service, inspect the pump, and replacement of key components such as the stuffing box bearing, and main mechanical seal. Upon formal inspection of the pump, the main shaft was found to be in poor condition with pitting of the steel material and other signs of deterioration. The entire shaft required replacement with a newly fabricated main shaft assembly. In addition, the labor to fabricate a new main shaft was higher than that for normal pump rehabilitation work. Also, the motor was found to need more extensive rehabilitation than planned due to build of debris on key motor components. Due to the unforeseen damage discovered the total cost to rehabilitate RO transfer pump B01 pump and motor will exceed the $150,000 budget and come in closer to $300,000.

In anticipation that RO transfer pump A01 will be in a similar condition as B01 based upon its age and similar main shaft material as B01, staff would like to move forward with rehabilitation of product water pump A01. This would allow Bender/CCP, Inc. to proactively begin ordering material for the new main shaft to limit the delay in getting RO transfer pump A01 rehabilitated in order to limit any additional impacts to GWRS plant production.

Staff recommends issuance of an agreement with Bender/CCP, Inc. for an amount not to exceed $300,000 to rehabilitate RO transfer pump A01. Staff also request authorization to increase the budget to R&R project R25017 for RO transfer pump A01 from $150,000 to $300,000.

PRIOR RELEVANT BOARD ACTION(S)

8/20/25 - Authorize issuance of an Agreement to Bender/CCP Inc. for an amount not to exceed $150,000 and establish the Product Water B01 Vertical Turbine Pump Inspection and Rehabilitation project in the amount of $150,000.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: M. Patel/R. Phillips

Budgeted: Yes
Budgeted Amount: $150,000
Cost Estimate: $500,000
Funding Source: R&R
Program/Line Item No.: R25015
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: Cat. Ex.

Subject: AGREEMENT TO BENDER/CCP FOR GWRS PRODUCT WATER PUMP A02 VERTICAL TURBINE PUMP INSPECTION AND REHABILITATION

SUMMARY

The Groundwater Replenishment System (GWRS) Advanced Water Purification Facility (AWPF) consists of five 2,250 horsepower vertical turbine pumps. Four of the five pumps have been in service over ten years and are due for inspection and rehabilitation. These pumps are used to transfer water GWRS product water from the AWPF site in Fountain Valley to the recharge basins in Anaheim.

RECOMMENDATION

Agendize for February 18 Board meeting: Authorize issuance of an Agreement to Bender/CCP Inc. for an amount not to exceed $500,000 and establish the Product Water A02 Vertical Turbine Pump Inspection and Rehabilitation project in the amount of $500,000.

BACKGROUND/ANALYSIS

The GWRS AWPF consists of five 2,250 horsepower vertical turbine pumps. These pumps are used to transport GWRS product water from the AWPF site in Fountain Valley to four recharge basins in Anaheim (Kraemer, Miller, Miraloma, and La Palma) as well as to the mid basin injection well field site in Santa Ana consisting of five well sites. Three of the five vertical turbine pumps were put online in 2008 as part of the original GWRS project. One of the five was put into service in 2015 as part of the GWRS Initial Expansion (GWRSIE) and the last of the five pumps was put into service in 2023 as part of the GWRS Final Expansion (GWRSFE).

These pumps are maintained as part of the GWRS asset management program, receiving regular preventative maintenance in keeping with manufacturer recommendations. The pumps include an online vibration and temperature monitoring system. In addition, each pump is tested for vibration and temperature analysis on a quarterly basis by an outside testing service. This has allowed four of the five pumps to run successfully for over ten years, which is the normal recommended industry standard for performing a vertical turbine pump rehabilitation. Given the age of product water pump A01, staff budgeted to have the pump removed and sent to a qualified pump repair shop for inspection and rehabilitation via Refurbishment & Replacement (R&R)

budget number R24012 in the amount of $150,000. The board approved an agreement with Bender/CCP, Inc. in August 2025 to perform the rehabilitation of pump A01 based upon being the lowest responsive bidder to a request for proposals (RFP).

The scope of the RFP for pump A01 was to pull the motor and pump, inspect, and perform rehabilitation as needed as part of a preventative maintenance effort. Since the level of rehabilitation required for the pump was not known until a detailed inspection was performed, the quote was formatted for a base bid to remove and reinstall the pump using an external crane service, inspect the pump, and replacement of key components such as the stuffing box bearing, and main mechanical seal. Upon formal inspection of the pump, extensive damage was discovered with the pump's three impeller sections. Two impellers were found to be made of bronze material and one from high grade duplex stainless steel. The bronze impellers were found to have sections of the bronze metal material missing due to failure from corrosion which likely affected the pump's hydraulic performance. Also, the motor was found to need extensive rehabilitation of its components due to debris build up. Due to the damage discovered two new impeller sections were ordered in high grade duplex steel material. It is anticipated that the total cost to rehabilitate product water pump A01 will exceed the $150,000 budget and come in at closer to $500,000. In addition, the lead time for the original pump manufacturer two fabricate new impellers is twelve to twenty weeks. The removal of pump A01 for refurbishment limits the GWRS to a production of 100 mgd.

In anticipation that product water pump A02 will be in a similar condition as A01 based upon its age and its impellers being made of the same materials as A01, staff would like to move forward with rehabilitation of product water pump A02. This would allow Bender/CCP, Inc. to proactively begin ordering new impellor sections to limit the delay in getting product water pump A02 rehabilitated in order to limit the duration of lost production from the GWRS.

Staff recommend issuing an agreement with Bender/CCP, Inc. for an amount not to exceed $500,000 to rehabilitate product water pump A02. Staff also request authorization to increase the budget to R&R project R25015 for product water pump A02 from $150,000 to $500,000.

PRIOR RELEVANT BOARD ACTION(S)

8/20/25 - Authorize issuance of an Agreement to Bender/CCP Inc. for an amount not to exceed $150,000 and establish the Product Water A01 Vertical Turbine Pump Inspection and Rehabilitation project in the amount of $150,000.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Herndon/B. Leever

Budgeted: Partial
Budgeted Amount: $50,000
Cost Estimate: $71,957
Funding Source: General Fund
Program/Line-Item No.: 1075.53010.9900
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: AMENDMENT NO. 8 TO AGREEMENT NO. 1175 WITH INTERA, INC. FOR ADDITIONAL GROUNDWATER MODELING SERVICES REGARDING SUNSET GAP SEAWATER INTRUSION

SUMMARY

Modeling consultant Intera, Inc. updated and refined calibration of the Alamitos-Sunset Gap groundwater model, evaluated seawater barrier options, and optimized barrier flow rates, all in support of the barrier feasibility study. Much of their effort was out of scope work requested by the District to reach project goals. Intera provided a cost proposal for $71,957 to account for the out of scope work and new work requested by the District. Staff recommends approval via Amendment No. 8 to the agreement with Intera.

Attachment: January 30, 2026 letter cost proposal for additional modeling work from Intera, Inc.

RECOMMENDATION

Agendize for February 18 Board meeting: Authorize issuance of Amendment No. 8 to Agreement No. 1175 with Intera, Inc., in the amount of $71,957 for additional groundwater modeling of the Sunset Gap area.

BACKGROUND/ANALYSIS

Based on the District's investigations confirming seawater intrusion in the Sunset Gap beneath the Naval Weapons Station Seal Beach (NWSSB), OCWD retained Intera, Inc. to expand the original Alamitos groundwater model to cover areas of concern in the Sunset Gap (Figure 1). Subsequent modeling activities of a potential Sunset Gap barrier performed by Intera were requested by staff and approved by the Board under Amendments 1-7.

Model simulations have been used to evaluate conceptual barrier configurations comprising injection and extraction wells, Deep Aquifer injection supply wells, and seasonal variability in injection and extraction flows needed to prevent seawater intrusion. Additionally, modeling has been used to evaluate basin impacts if seawater intrusion were left unabated. If left unabated, the model shows that continued inland migration of seawater would occur in the absence of a barrier, including impacting an increasing number of production wells over time.

In September 2023, the District initiated a feasibility study to evaluate an injection and extraction well barrier using conservative injection and extraction rates. Subsequent modeling

has shown that reduced injection flow rates coupled with increased extraction flow rates would be effective at controlling seawater intrusion. As part of the feasibility study modeling, the District requested Intera to perform additional modeling activities, beyond what was scoped in Amendment 7, to optimize injection and extraction rates under low basin conditions to determine the barrier's effectiveness. Additionally, the District requested Intera to model the impacts from operating a "West Orange County Wellfield" as an option for injection barrier supply, which was also out of scope. The District requested a proposal from Intera (attached) to cover the cost of the out of scope items and to complete the original scope of work. Details of the out of scope work items, the remaining scope, and the cost to complete the work are included in the attached proposal from Intera dated January 28, 2026.

Based on Intera's cost proposal, staff requests authorization to issue Amendment No. 8 in the amount of $71,957 to Intera's services agreement, bringing the total amount authorized to $675,121.

PRIOR RELEVANT BOARD ACTIONS

2/19/25, R25-2-22 - Authorize issuance of Amendment No. 7 to Agreement No. 1175 with Intera, Inc., in the amount of $57,550 for additional groundwater monitoring services regarding Sunset Gap seawater intrusion.

12/20/23, R23-12-164– Authorize issuance of Amendment No. 6 to Agreement No. 1175 with Intera, Inc., in the amount of $162,920 for staff-requested additional scope of work on the Alamitos-Sunset Gap model optimization and water supply scenarios.

9/20/23, R23-8-110– Authorize issuance of an Agreement to Hazen for an amount not to exceed $412,457 for a Sunset Gap Seawater Intrusion Barrier Feasibility Study.

6/21/23, R23-6-80– Authorize issuance of Amendment No. 5 to Agreement No. 1175 with Intera, Inc., in the amount of $38,600 for staff-requested additional scope of work on the Alamitos-Sunset Gap model "no barrier" scenarios.

6/15/22, R22-6-76– Authorize issuance of Amendment No. 4 to Agreement No. 1175 with Intera, Inc., in the amount of $35,420 to incorporate additional data into the Alamitos-Sunset Gap model "no barrier" scenarios.

6/18/21, R20-6-95 – Authorize issuance of Amendment No. 3 to Agreement No. 1175 with Intera, Inc., in the amount of $124,500 to extend the Alamitos-Sunset Gap model and run "no barrier" scenarios.

3/18/20, R20-3-29 – Authorize issuance of Amendment No. 2 to Agreement No. 1175 with Intera, Inc., in the amount of $48,320 for additional work on the Alamitos-Sunset Gap model, including additional calibration and predictive simulations.

5/23/18, R18-5-53 – Authorize issuance of Amendment No. 1 to Agreement No. 1175 with Intera, Inc., in the amount of $28,710 for additional work necessary to expand the Alamitos Gap groundwater model into the Sunset Gap area.

7/20/16, R16-7-102 – Authorize issuance of Professional Services Agreement to Intera, Inc. for an amount not to exceed $135,032 for expanding the Alamitos Gap groundwater model into the Sunset Gap area.

9/16/09, R09-9-147 - Authorize issuance of Professional Services Agreement to Intera, Inc. for an amount not to exceed $269,804 for the development of a groundwater computer model of the Alamitos Barrier.

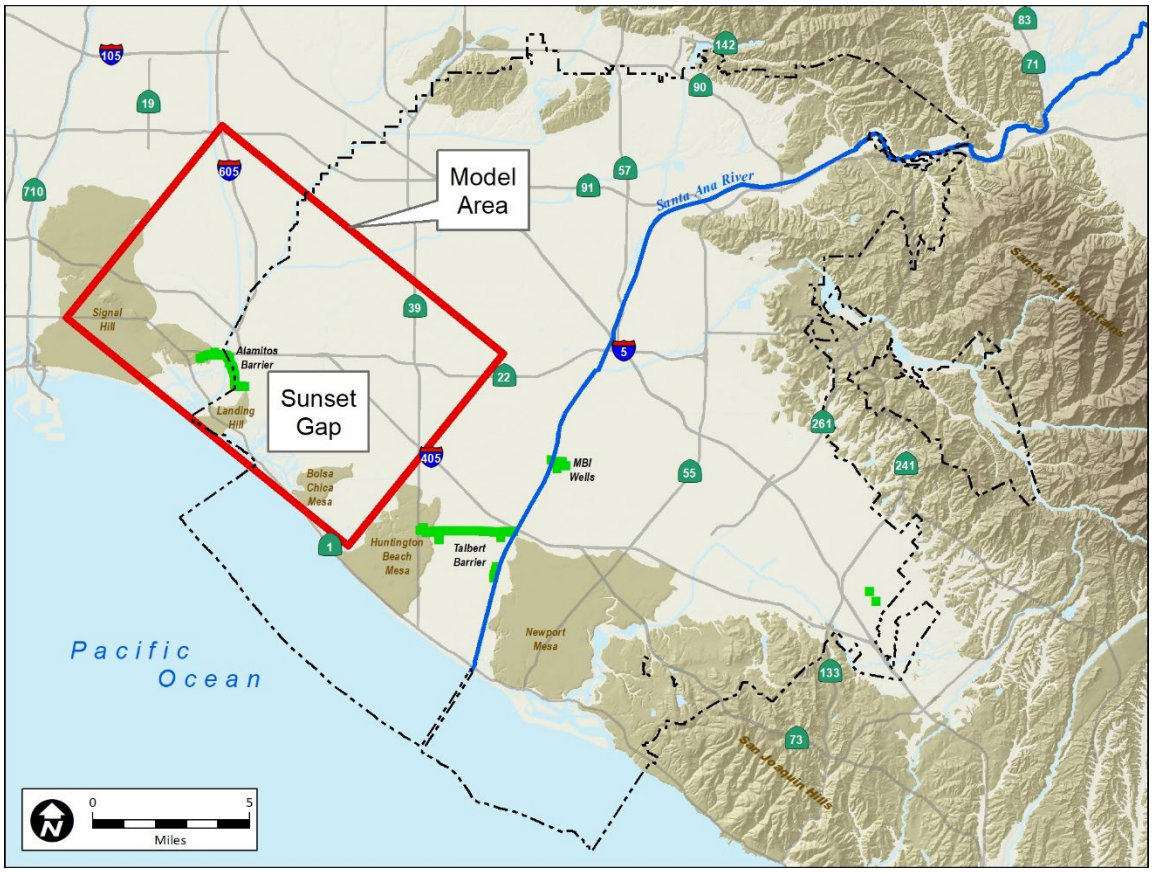


Figure 1 shows the location of the Alamitos-Sunset Gap Model area outlined in red along with the existing seawater intrusion barriers in Orange County.

INTERA Incorporated
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+1 (424) 275 4055
INTERA.com

January 30, 2026

Mr. William Leever, CHG
Principal Hydrogeologist
Orange County Water District
18700 Ward Street
Fountain Valley, CA 92708

Cc: Mr. Roy Herndon, CHG, Chief of Hydrogeology, OCWD
Mr. Tim Sovich, PE, Principal Engineer, OCWD

RE: Request for Additional Funds for Sunset Gap Feasibility Study Modeling

Dear Mr. Leever,

Based on the work completed to date and the remaining approved scope for the Sunset Gap Feasibility Study modeling, INTERA respectfully submits this request for additional funds to address cost overruns associated with District-approved technical work and to complete the remaining modeling tasks.

The sections below summarize the additional technical effort completed to date and the scope elements that remain. A corresponding budget adjustment request is also provided for consideration under Amendment 8.

Task 1: Evaluation of Injection-Extraction Barrier

As part of the originally approved scope, Task 1 included evaluation of alternative injection–extraction barrier configurations and operating rates, development of recommended average and maximum injection and extraction rates, and refinement of the spatial distribution of wells along the barrier alignment. Planned activities included a series of constant-rate simulations, automated optimization to identify feasible well configurations and rates, and model refinement to meet hydraulic performance criteria.

Under this scope, INTERA completed eight constant-rate simulations to evaluate barrier configurations and update baseline conditions. Two automated optimization rounds were performed to identify optimal injection and extraction rate distributions, including adjustments to the number and placement of extraction wells to maintain acceptable drawdown and hydraulic gradients. These efforts established the initial barrier configuration used for subsequent model refinement and long-term predictive evaluation. As part of the originally approved scope, Task 1 included evaluation and refinement of injection–extraction barrier configurations and operating rates.

Additional barrier refinement was required to ensure that simulated barrier operations were representative of expected operational behavior and remained hydraulically sound under recalibrated conditions. This additional effort, approved by the District, included three simulations to smooth temporal

variability in injection rates, improve seasonal consistency, and eliminate wells with near-zero or impractical operating rates. Following recalibration, further adjustments were necessary to align barrier performance with the updated model response, resulting in seven additional simulations to redistribute injection and extraction volumes, refine average and maximum operating rates, incorporate recalibrated boundary conditions, and reduce unrealistic well-to-well variability.

Under the recommendation of OCWD, the budget originally allocated to Task 3 ($37,780) was reallocated to Task 1 to support this additional effort. Despite this reallocation, the cumulative modeling effort required to finalize a stable, defensible, and operationally realistic barrier configuration exceeded the combined Task 1 budget of $98,470 by $13,771.

Task 1 is now complete, and no further work is anticipated.

Budget Impact

The budget overage on Task 1 is $13,771. Consequently, the total requested budget amendment for Task 1 is $13,771.

Task 2: Evaluation of Deep Aquifer Water Source

The previously scoped work for Task 2 included evaluating the feasibility of supplying the proposed injection barrier with water pumped from the Deep aquifer through four model simulations assessing extraction rates and well configurations. The scope also included evaluating an alternative supply option involving production from the western portion of the Orange County Basin (West Orange County Wellfield) in the Principal aquifer through two additional simulations.

While the two West Orange County Wellfield simulations have not been completed to date, no additional explicit scope is anticipated for this task and no additional budget is needed.

Budget Impact

The previous total budget for Task 2 was $14,170, and $7,805 has been spent to date. The remaining budget ($6,365) will be used to complete the two already-scoped West Orange County Wellfield scenarios.

No additional budget for Task 2 is requested.

Task 3: Evaluation of Extraction-Only Barrier Alternatives

Work on this task was not initiated nor were any costs incurred, as OCWD deemed this alternative to not be feasible. The budget from Task 3 ($37,780) was reallocated to Task 1.

Budget Impact

No additional funds are requested for this task.

Task 4: Predictive Uncertainty Analysis

The original scope for Task 4 included completion of a predictive uncertainty analysis using a hybrid workflow consisting of an automated, calibration-constrained uncertainty analysis combined with five manual sensitivity simulations. The scope also included two predictive scenario evaluations addressing reduced Alamitos Barrier injection and increased inland pumping.

Under the originally approved scope, INTERA completed the five planned manual sensitivity simulations and established the preliminary framework for the calibration-constrained uncertainty analysis. The low-water-level conditions predictive scenario was completed, and corresponding adjustments to barrier rates were incorporated as part of Task 1 refinement. Based on OCWD guidance, the reduced Alamitos Barrier injection scenario was removed from further evaluation, as the low-water-level scenario provides a more conservative and relevant basis for assessing long-term system response.

As predictive simulations progressed, additional District-approved effort was required to ensure the technical validity of long-term results. Beyond the five originally scoped sensitivity runs, INTERA completed five additional sensitivity simulations to evaluate a broader range of parameter variability. In addition, diagnostic simulations were required to investigate and correct unexpected long-term chloride leakage behavior associated with numerical dispersion and fault representation in the chloride transport model, particularly along the Bolsa–Fairview Fault. These diagnostics led to revisions in model conceptualization and fault representation, resulting in a recalibrated model that more accurately reflects expected long-term behavior of the barrier system and seawater intrusion dynamics in the Sunset Gap area.

INTERA completed most of this diagnostic and corrective work on its own time in order to conserve project budget. This unbilled effort is estimated at approximately $20,000. The billed effort associated with these diagnostics and corrections, totaling $8,170, is included in the current spent amount.

The remaining component of Task 4 is completion of the automated calibration-constrained predictive uncertainty analysis, which remains part of the originally approved scope and is required to finalize uncertainty characterization for the feasibility study.

Budget Impact

The previous budget for Task 4 was $76,590, and $84,676 has been spent to date. The cost overage is $8,086. The remaining effort needed to complete the calibration-constrained predictive uncertainty analysis is estimated at $30,100.

The total Task 4 budget amendment request is $38,186., which is the overage plus the remaining effort.

Un-Scoped Contingency Allowance

In addition to the task-specific items outlined above, OCWD has requested that an additional allowance be included to accommodate un-scoped work that may arise as the Sunset Gap Feasibility Study progresses. To provide flexibility for addressing technical items that cannot be fully anticipated at this stage, a line item of $20,000 is included as part of this amendment request. This un-scoped allowance will not be utilized unless existing budget is exhausted and express permission is granted by OCWD.

Summary

The total amendment request for the modified scope described above is $71,957. Table 1 outlines the budget amendments below.

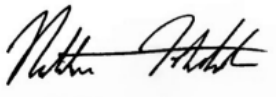
Table 1

Task	Budget Amendment Request
1. Evaluate Injection-Extraction Barrier	$13,771
2. Evaluate Deep Aquifer Water Source	$0
3. Evaluate Extraction-Only Barrier Alternatives	$0
4. Predictive Uncertainty Analysis	$38,186
5. Technical Memorandum	$0
Additional Line Item	$20,000
Total	**$ 71,957**

INTERA appreciates OCWD's efforts to develop a reliable solution to control seawater intrusion in the Sunset Gap. The development of this groundwater model has and will continue to support a better understanding of regional hydrogeology and possible solutions to ongoing intrusion. We hope that OCWD will support our proposed path forward for updating and finalizing the Sunset Gap Feasibility Study modeling.

Sincerely,

INTERA Incorporated



Abhishek Singh, PhD, PE
Principal Engineer, Project Manager
President – Water Supply & Water Resources LOB
INTERA Incorporated

Nathan Hatch
Senior Hydrologist, Lead Modeler
INTERA Incorporated

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Bouley

Budgeted: No
Budgeted Amount: $0
Cost Estimate: $25,000
Funding Source: WIFIA, Paygo
Program/ Line Item No. C19018, C19020

General Counsel Approval: N/A
Engineers/Feasibility Report: N/A **CEQA Compliance:** N/A

Subject: AMENDMENT TO AGREEMENT WITH AQUEOUS VETS FOR PRESSURE VESSEL SYSTEMS STORAGE AND TAX RATE MODIFICATION

SUMMARY

OCWD has agreements with Aqueous Vets and Evoqua to manufacture PFAS Treatment Vessel Systems to remove perfluoroalkyl substances (PFAS) from water produced by Producers' affected wells. Amendment No. 9 to the agreement with Aqueous Vets is necessary for additional storage costs for Orange Well 29 and increased tax rates for vessels delivered to Santa Ana.

RECOMMENDATION

Agendize for February 18 Board Meeting: Authorize issuance of Amendment No. 9 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $25,000.

BACKGROUND/ANALYSIS

In May of 2020, OCWD issued Agreements to Aqueous Vets (AV) and Evoqua to purchase PFAS Treatment Vessel Systems. AV has been both building and delivering these systems for OCWD to meet the various Producer's specific project schedules and design requirements. The original agreement with AV assumed a single tax rate since the number of vessels and project locations for individual producers was unknown at that time. Several of the systems from AV were delivered to Santa Ana, and the tax rate is higher than the average tax rate that was used in the agreement.

In addition, AV is supplying the vessels for Orange Well 29. Construction of the well is currently in progress, but installation of PFAS treatment vessels has been delayed while the city drills a new well. The Well 29 site is too small to accommodate storing the vessels, so they need to be stored at AV's facility for approximately 18 months. The storage fees will add approximately $18,000 to the cost of the systems for Well 29. Staff recommends authorizing the issuance of Amendment No. 9 to Agreement No. 1422 with Aqueous Vets for an amount not to exceed $25,000 for additional tax rate and storage costs.

PRIOR RELEVANT BOARD ACTIONS

8/21/24, R24-8-97: Authorize issuance of Amendment No. 8 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $11,496.

8/16/23, R23-8-106: Authorize issuance of Amendment No. 7 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $3,264.

5/18/22, R22-5-59: Authorize issuance of Amendment No. 6 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $34,142.

3/16/22, R22-3-25: Authorize issuance of Amendment No. 5 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $2,942,490.

9/15/21, R21-9-140: Authorize issuance of Amendment No. 4 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $859,827.

05/19/21, R21-5-79: Authorize issuance of Amendment No. 3 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $208,313 and authorize issuance of Amendment No. 4 to Agreement No. 1423 with Evoqua, for an amount not to exceed $131,854.

04/21/21, R21-4-64: Authorize issuance of Amendment No. 3 to Agreement No. 1423 with Evoqua to increase the size of five PFAS Treatment Vessel Systems from 1220 to 1240 Systems, for an amount not to exceed $282,571.

12/16/20, R20-12-166: Authorize issuance of Amendment No. 2 to Agreement No. 1422 with Aqueous Vets to modify PFAS Treatment Vessel Systems to increase flowrate, for an amount not to exceed $49,905.

10/21/20, R20-10-135: Authorize issuance of Amendment No. 1 to Agreement No. 1422 with Aqueous Vets, for an amount not to exceed $306,338 to substitute Cla-Val Pressure Reducing Valves for the originally proposed rupture disks and authorize issuance of Amendment No. 2 to Agreement No. 1423 with Evoqua, for an amount not to exceed $533,593 to substitute Cla-Val Pressure Reducing Valves for the originally proposed rupture disks and NSF-61 certified expansion joints for the originally proposed expansion joints.

09/16/20, R20-9-121: Authorize issuance of Amendment No. 1 to Agreement No. 1423 with Evoqua to increase the PFAS Treatment Vessel System pressure rating of four vessel systems to 150 psi, for an amount not to exceed $71,840.

05/06/20, R20-5-56: Authorize Agreement to Aqueous Vets for the purchase of 25 systems for a price not to exceed $8,159,052 and Agreement to Evoqua and for the purchase of 30 systems for a price not to exceed $11,020,220.

1/22/20, R20-1-13: Authorizing Request for Quotes to pre-purchase 150 PFAS treatment vessels; Authorizing RFP for on-call consultants to prepare PFAS Treatment System Designs; Authorizing Agreements for PFAS Treatment System; and establishing design budget

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Herndon/D. Field

Budgeted: No
Budgeted Amount: $0
Cost Estimate: $44,850
Funding Source: General Fund
Program/ Line Item No.: 1075.57016.9900
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: NA

Subject: AUTHORIZE ISSUANCE OF SERVICES AGREEMENT TO LIVING WATER WELL DRILLING FOR MONITORING WELL FVM-1 VAULT REPLACEMENT

SUMMARY

Quotes for the replacement of the FVM-1 monitoring well vault were received on January 22, 2026. Staff recommends issuance of a Services Agreement to Living Water Well Drilling to complete the vault replacement needed because of the County's redevelopment of a portion of Mile Square Park.

RECOMMENDATION

Agendize for February 18 Board meeting: Authorize issuance of a Services Agreement to Living Water Well Drilling in an amount not to exceed $44,850 for monitoring well FVM-1 vault replacement.

BACKGROUND/ANALYSIS

Monitoring well FVM-1 was constructed in 1989 and is 1,884 feet deep with 18 screen intervals. The well is located in Mile Square Park on County of Orange property in the City of Fountain Valley (Figure 1). The well is among the 56 Westbay-type wells installed by OCWD between 1988 and 2002. These multi-level wells are the backbone of the District's basin-wide monitoring well network, comprising more than 550 depth-specific monitoring points. They have provided the data integral to the development and operation of the OCWD basin model and continued water level and water quality monitoring including the annual basin accumulated overdraft calculation.

A portion of Mile Square Park is currently being redeveloped by the County as part of the Mile Square Regional Park Expansion Project. During this redevelopment, the grade adjacent to FVM-1 has been raised by approximately two feet. Consequently, demolition of the old vault and installation of a new vault is required. Figure 2 shows the top of the well vault and the new grade.

The Board approved replacement of the FVM-1 vault in October 2025. On January 22, 2026, two quotes were received as listed below.

Living Water Well Drilling	$44,850
Levon Construction Group	$58,000

Staff recommends issuing a Services Agreement to Living Water Well Drilling to replace the FVM-1 vault.

PRIOR RELEVANT BOARD ACTION(S)

10/15/25 M25-89 – Authorize request for quotes for monitoring well FVM-1 vault replacement.

Figure 1: Location of Westbay monitoring Well FVM-1.

Figure 2: Top of Westbay monitoring well FVM-1 vault after grade change.

12

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026	**Budgeted:** No **Budgeted Amount:** $0
To: Water Issues Committee Board of Directors	**Cost Estimate:** $40,000 **Funding Source:** R&R **Program/ Line Item No.:** TBD
From: John Kennedy	**General Counsel Approval:** N/A **Engineers/Feasibility Report:** N/A
Staff Contact: R. Herndon/D. Field	**CEQA Compliance:** Categorical Exemption to be filed upon project approval

Subject: REQUEST FOR PROPOSALS FOR DESTRUCTION OF OCWD MONITORING WELL AMD-5

SUMMARY

The area encompassing OCWD multi-level monitoring well AMD-5 is being redeveloped by the property owner, the City of Anaheim (City). After initial notification from City staff, OCWD staff informed them of the importance and cost of replacing this well and requested that they reassess their redevelopment plans to allow continued well access. City staff reassessed its plans and determined that they could not accommodate the well, which is within the interior of the property and beneath a future building footprint. Staff recommends destroying this well, and plans to come back to the Board requesting approval to construct a replacement well after a suitable location has been identified.

RECOMMENDATION

Agendize for February 18 Board Meeting:

1. Authorize filing of a Categorical Exemption for the destruction of Westbay monitoring well AMD-5 in compliance with CEQA guidelines; and

2. Authorize issuance of Request for Quotes for services for the destruction of Westbay monitoring well AMD-5.

BACKGROUND/ANALYSIS

Monitoring well AMD-5 uses the Westbay multi-level packer system and was constructed in 1991 at the City of Anaheim's city yard, known as the Edwards Utility Complex (property). AMD-5 is 1,470 feet deep with 12 screen intervals at various depths. The well is among the 56 Westbay-type wells installed by OCWD between 1988 and 2002. These multi-level wells are the backbone of the District's basin-wide monitoring well network, comprising more than 550 depth-specific monitoring points. They provide data integral to the operation of the OCWD basin model and annual basin accumulated overdraft calculation as well as water chemistry, e.g., PFAS. Figure 1 shows the location of AMD-5 and all OCWD Westbay multi-level monitoring wells.

Current usage of the property is a laydown area for City maintenance supplies. Figure 2 shows the current well site conditions. The City has plans to redevelop the property, converting it to an office building and training facility for City staff (Figure 3). The District's access agreement with City has a revocation clause that requires the District to properly destroy and seal the wells at the City's request. Therefore, the City has requested that OCWD destroy the well to make way for construction. Construction of the new building is tentatively planned to start in July 2026. Therefore, time is of the essence to have the well destroyed before construction begins.

City staff has offered to try to locate a suitable replacement well site. Once a suitable location has been identified, staff will request Board approval to construct the replacement. Based on the City's notice, staff requests authorization to issue a Request for Quotes to properly destroy monitoring well AMD-5.

California Environmental Quality Act

Staff has evaluated the project and determined that it qualifies for an exemption from the California Environmental Quality Act (CEQA) under Class 3, Section 15303, as the project involves limited activities on narrow-diameter wells at a site devoid of sensitive habitat and occurring within previously developed roadways.

PRIOR RELEVANT BOARD ACTION(S)

None

Figure 1: AMD-5 and all OCWD Westbay Multi-level Monitoring Wells

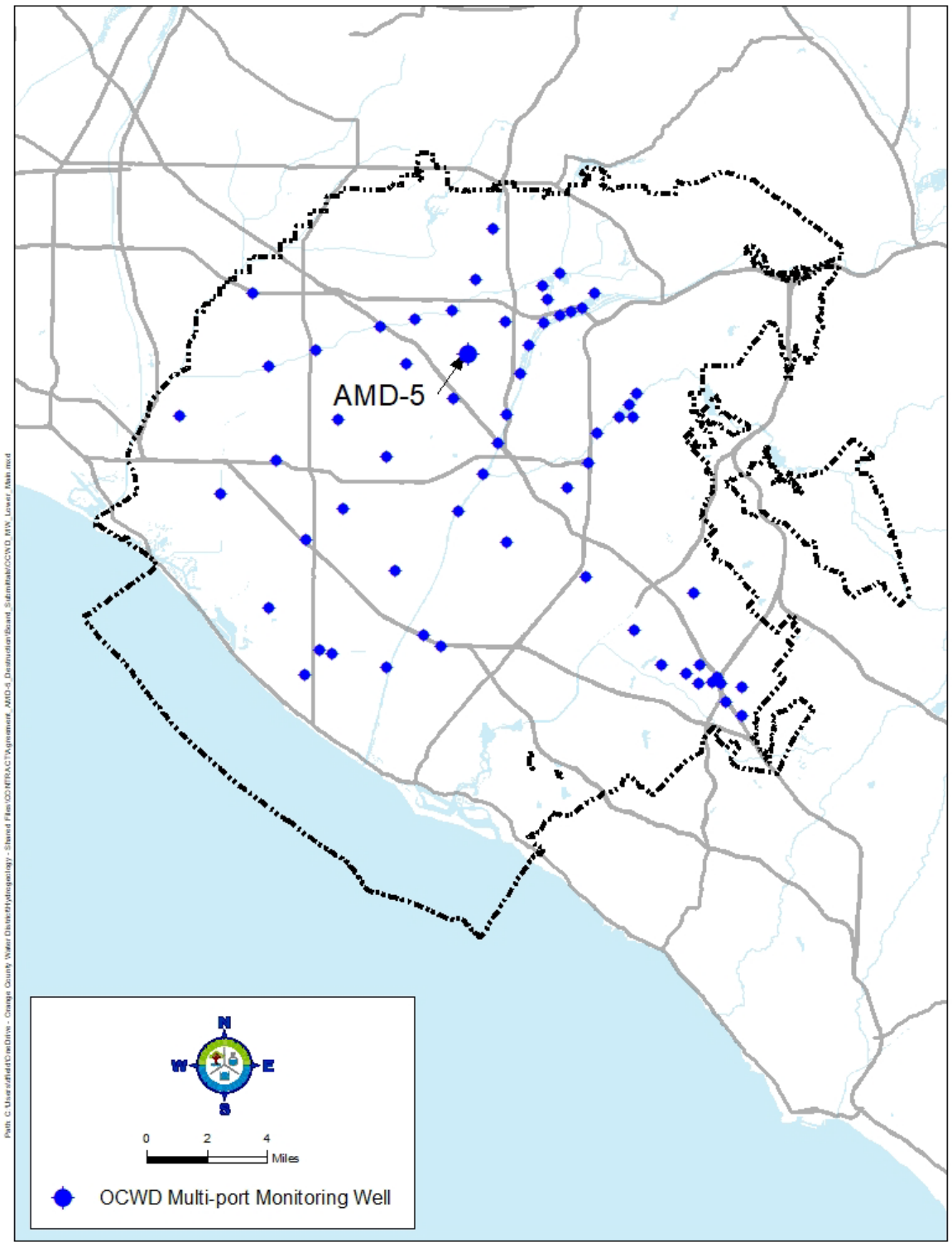
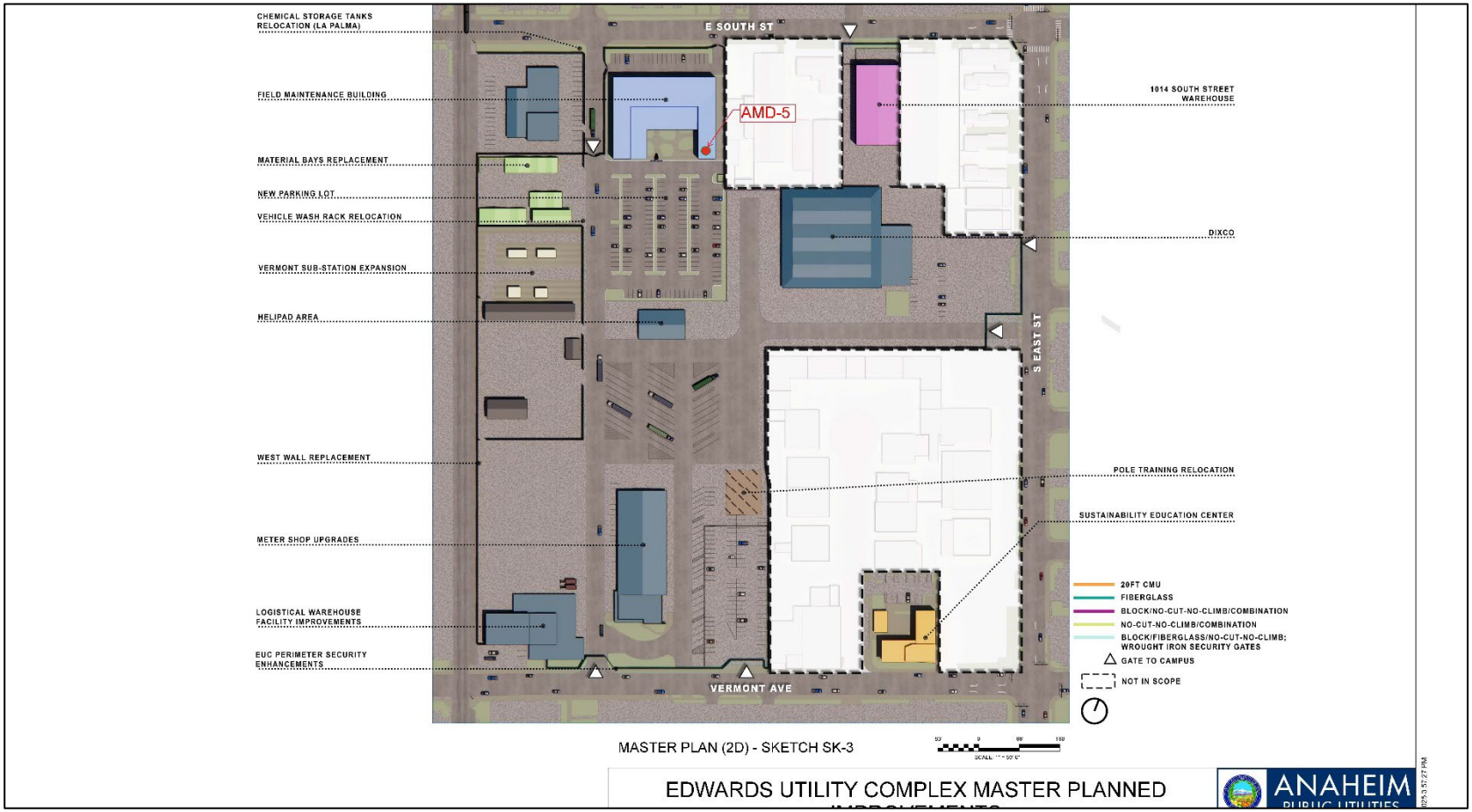


Figure 2: AMD-5 Current Site Conditions

Figure 3: Planned Redevelopment of AMD-5 Well Site



AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Bouley/F. Almario

Budgeted: Yes
Budgeted Amount: $100,000
Cost Estimate: $36,511
Funding Source: R&R
Program/Line Item No.: R25032
General Counsel Approval: N/A
Engineers Report: N/A
CEQA Compliance: N/A

Subject: EMERGENCY REPAIR WORK ORDER RATIFICATION

SUMMARY

The District annually establishes an emergency repair budget to facilitate a rapid response to periodic infrastructure failures and repairs. This budget item is funded from the District's Replacement and Refurbishment (R&R) reserves. Emergency expenditures in this fiscal year have totaled $36,511.

RECOMMENDATION

Agendize for February 18 Board meeting: Ratify Work Order Nos. 5/5A of Agreement No. 1450 and payment to Doty Bros. Construction Company for emergency repairs totaling $36,511.

BACKGROUND/ANALYSIS

The District has implemented several measures to facilitate rapid responses to emergency repairs, such as situations that threaten loss of life or property. These measures are needed to respond immediately to emergencies that cannot wait for the District's normal processes to scope, design, bid, award, and execute construction work. The District has multi-year agreements in place with three contractors to respond to emergencies. The General Manager has been authorized to issue Work Orders in accordance with the emergency agreements. The District establishes an annual line item in each year's budget that is funded by the Replacement and Refurbishment (R&R) fund for emergency work. A budget of $100,000 was established for FY 2025-26. A brief description of the emergency repair is provided below:

In June 2025, a 66-inch valve gearbox at Anaheim Lake needed refurbishment. The mechanical portion of the work was performed by OCWD Field Headquarters staff. Work Order No. 5 was issued to Doty Bros. Construction Company to provide excavation and shoring services to a depth of approximately 15-feet deep. Work Order No. 5A was issued to cover the additional cost of labor and materials. Total contractor invoicing for this repair amounted to $36,511.

Table 1: FY 2025-26 Emergency Repair Budget Summary

Description	Budget
Anaheim Lake Valve Gear Box – June 2025	
Doty Bros. W.O. 5/5A	$ 36,511
Emergency Repairs Total:	$ 36,511
Remaining Repair Budget in FY 2025-26	$ 63,489
Total Budget	$ 100,000

Staff recommends ratification of Work Orders and payments to Doty Bros. Construction Company.

PRIOR RELEVANT BOARD ACTION(S)

3/20/24; R24-3-19: Authorize Amendments to Agreements for Emergency On-Call Repair Services with W.A. Rasic Construction Company, Inc., Doty Bros. Equipment Company, and T.E. Roberts, Inc. for Emergency On-Call Repair Services; and Authorize General Manager to Initiate Emergency Repairs with On-Call Firms.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Bouley

Budgeted: Yes
Proposed Budget: $300,000
Cost Estimate: N/A
Funding Source: CIP
Program/Line Item No.: C25004
General Counsel Approval: Yes
Engineers Report: Completed
CEQA Compliance: Cat. Ex.

Subject: LA PALMA BASIN SHALLOW UNDERGROUND RECHARGE DEMONSTRATION PROJECT ENGINEER'S REPORT AND CATEGORICAL EXEMPTION

SUMMARY

The design for the La Palma Basin Shallow Underground Recharge Demonstration Project is currently in progress. Staff recommends approving the Engineer's Report for the project and filing a Categorical Exemption in compliance with the California Environmental Quality Act guidelines.

Attachment: Engineer's Report for the La Palma Basin Shallow Underground Recharge Demonstration Project

RECOMMENDATION

Agendize for February 18 Board Meeting:

1. Approve the Engineer's Report for the La Palma Basin Shallow Underground Recharge Demonstration Project and determine the project feasible, necessary and beneficial to the lands of the District; and

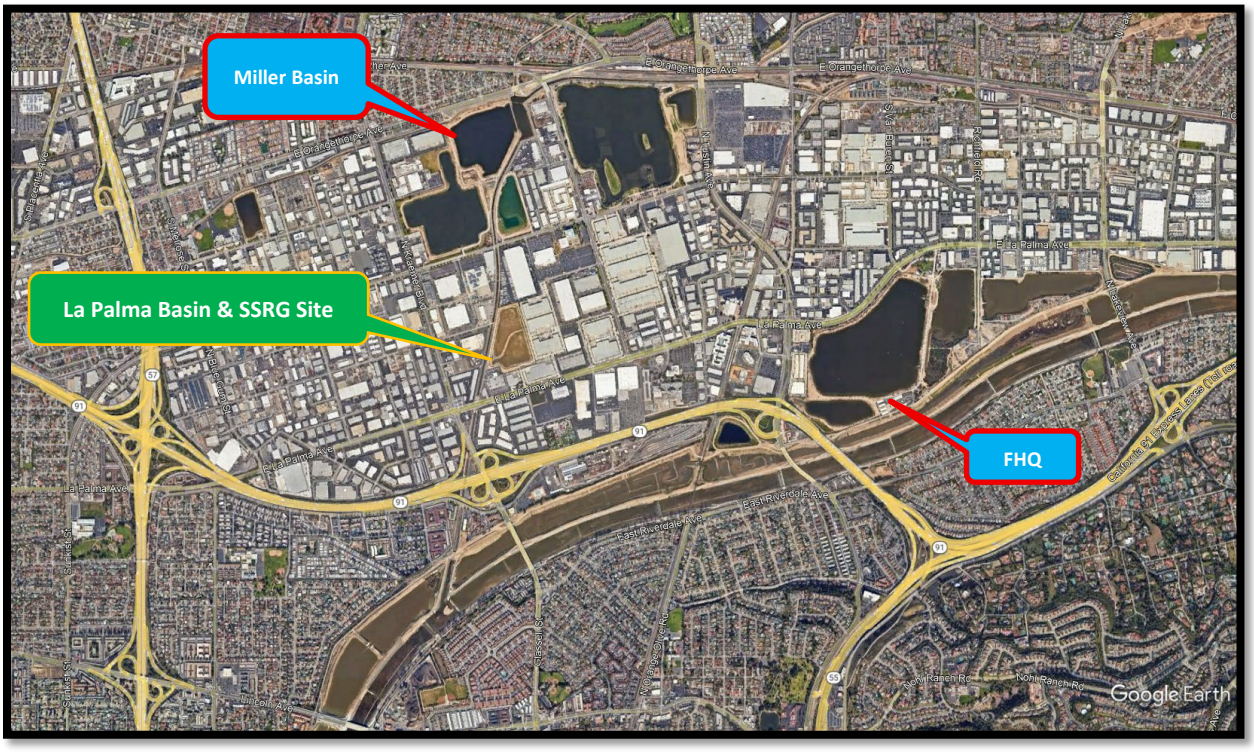
2. Authorize filing of a Categorical Exemption for the La Palma Basin Shallow Underground Recharge Demonstration Project in compliance with the California Environmental Quality Act (CEQA) guidelines

BACKGROUND/ANALYSIS

Orange County Water District (OCWD; the District) owns and operates approximately 1,200 acres of recharge spreading facilities located in and adjacent to the Santa Ana River (SAR), Carbon Creek, and Santiago Creek. La Palma Basin is located north of La Palma Avenue, along Carbon Canyon Diversion Channel approximately halfway between Miller Basin and the Santa Ana River, as shown on Figure 1, below.

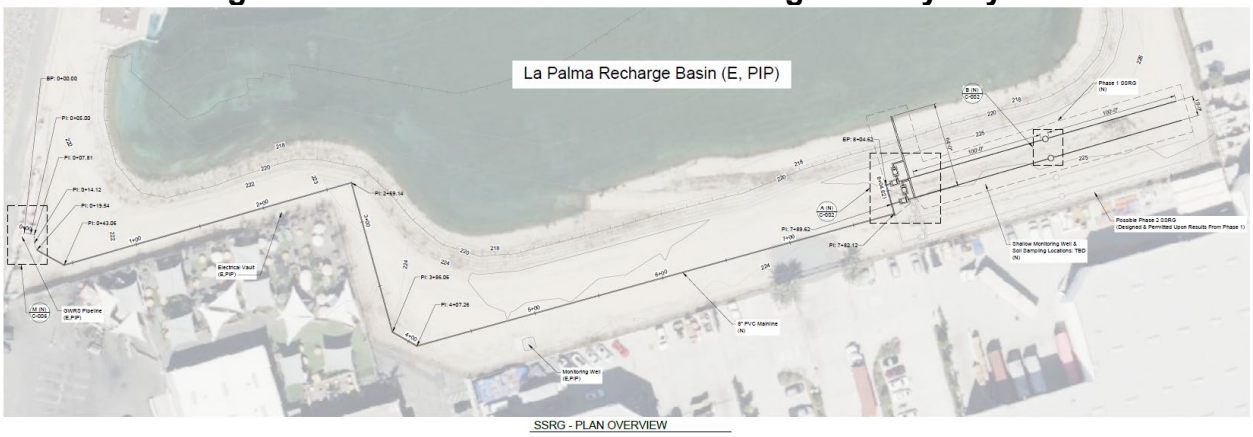
An Engineer's Report was recently completed to evaluate the need, benefits, and cost of constructing the La Palma Basin Shallow Underground Recharge Demonstration Project, consisting of a Sub-Surface Recharge Gallery (SSRG) to test the capacity of recharging Groundwater Replenishment System (GWRS) water in a shallow (< 10 feet deep), subsurface recharge facility.

Figure 1: La Palma Basin and Proposed Project Site



The SSRG would be constructed in the southerly access road, along the southerly perimeter of OCWD's existing La Palma Basin. Figure 2 shows the proposed location of the SSRG at La Palma Basin:

Figure 2: La Palma Subsurface Recharge Gallery Layout



Approximately 0.1 to 1.34 cfs would be conveyed from OCWD's existing GWRS pipeline turnout at La Palma Basin and be routed through the SSRG system. Flow recharged in the SSRG would ultimately co-mingle in the sub-surface with GWRS flow recharged in the existing recharge basin. The project would evaluate the feasibility of shallow sub-surface recharge of GWRS water and provide the basis of design for future shallow recharge systems if proven feasible. These future systems could be placed in developed areas or potentially under paved areas allow for expansion of OCWD's recharge capacity.

The expected project schedule is shown in Table 1.

Table 1: La Palma Basin Shallow Underground Recharge Demonstration Project Schedule Summary

Description	Date
Design	Dec 2024 – Feb 2026
Engineer's Report Approval	Feb 2026
Construction	June 2026 – Nov 2026
Project Performance Monitoring and Evaluation	Dec 2026 – Dec 2027

Project construction will be performed by OCWD Staff with support from Scheevel Engineering. The estimated capital cost of the project is $300,000, which includes $200,000 for out-of-pocket cost to OCWD for materials and an estimated $100,000 of indirect cost for OCWD staff and equipment time. Estimated Operation and Maintenance cost for 1-year is approximately $50,000, assuming that the system will be visually inspected twice-weekly by staff while they are at La Palma Basin for other operational tasks. Scheevel Engineering will provide design engineering, construction phase assistance, start-up and testing, operational support, data collection (at least 1 time every other week), analysis and reporting for the Project.

Staff recommends approving the Engineer's Report for the La Palma Basin Shallow Underground Recharge Demonstration Project and filing a Categorical Exemption in compliance with the California Environmental Quality Act guidelines.

PRIOR RELEVANT BOARD ACTION(S)

None

ENGINEER'S REPORT

FOR

SUBSURFACE RECHARGE GALLERY PILOT PROJECT

Prepared By:

Nate Scheevel, P.E.

February 2026

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1.0 EXECUTIVE SUMMARY

The purpose of this Engineer's Report is to evaluate the need, benefits, and cost of constructing a Sub-Surface Recharge Gallery (SSRG) Pilot Project (Project) to test the recharge Groundwater Replenishment System (GWRS) water in a shallow (< 10 feet deep), subsurface recharge facility. The SSRG would be constructed in the southerly access road, along the perimeter of OCWD's existing La Palma Basin. Approximately 0.1 to 1.34 cfs would be conveyed from OCWD's existing GWRS pipeline turnout at La Palma Basin and be routed through the SSRG system. Flow recharged in the SSRG would co-mingle in the sub-surface with GWRS flow recharged in the existing recharge basin.

Orange County Water District (OCWD; the District) owns and operates approximately 1,200 acres of recharge spreading facilities located in and adjacent to the Santa Ana River (SAR), Carbon Creek, and Santiago Creek. La Palma Basin is located north of La Palma Avenue, along Carbon Canyon Diversion Channel approximately halfway between Miller Basin and the Santa Ana River, as shown on Figure 1. The proposed SSRG would be designed and constructed to be completely demolished/removed after testing, or conversely, if found to be beneficial, the SSRG could remain in-place and/or scaled up in size to function as a long-term recharge feature at La Palma Basin.

If constructed, this project will have the following benefits:

- Evaluate the feasibility of shallow sub-surface recharge of GWRS water.
- Provide the basis of design for subsurface recharge elsewhere in OCWD's system.
- Provide an alternative recharge method that can be applied under-developed areas (parks, ROWs, parking lots etc…)

The Project proposes to test the groundwater recharge of OCWD's GWRS water in shallow subsurface trenches. The pilot project may include multiple phases of testing over several years if initial testing is found to display favorable results. However, due to the uncertainty of the long-term effectiveness of SSRG technologies, OCWD is currently only proposing a phase one test.

This phase 1 Project will include two parallel, approximately 200-foot long, 4-inch diameter, perforated HDPE pipes (one pipe wrapped in filter sock and backfilled with washed gravel and a 2nd pipe wrapped in filter sock and backfilled with soils native to the site) within an approximate three-foot to five-foot deep trench. The trench will run along the immediate perimeter of La Palma Basin within approximately 80 feet of the current wetted perimeter of La Palma Basin. The SSRG is expected to recharge approximately 0.2 cubic feet per second (cfs) (0.13 million gallons per day (MGD) of GWRS water with an initial operational period of approximately one year.

Figure 1
Proposed SSRG Site

Project construction will be performed by OCWD Staff with support from Scheevel Engineering. The estimated capital cost of the project is $300,000, which includes $200,000 for out-of-pocket cost to OCWD for materials and an estimated $100,000 of indirect cost for OCWD staff and equipment time. Estimated Operation and Maintenance cost for 1-year is approximately $50,000, assuming that the system will be visually inspected twice-weekly by staff while they are at La Palma Basin for other operational tasks. Scheevel Engineering will provide design engineering, construction phase assistance, start-up and testing, operational support, data collection (at least 1 time every other week), analysis and reporting for the Project.

2.0 EXISTING RECHARGE FACILITIES

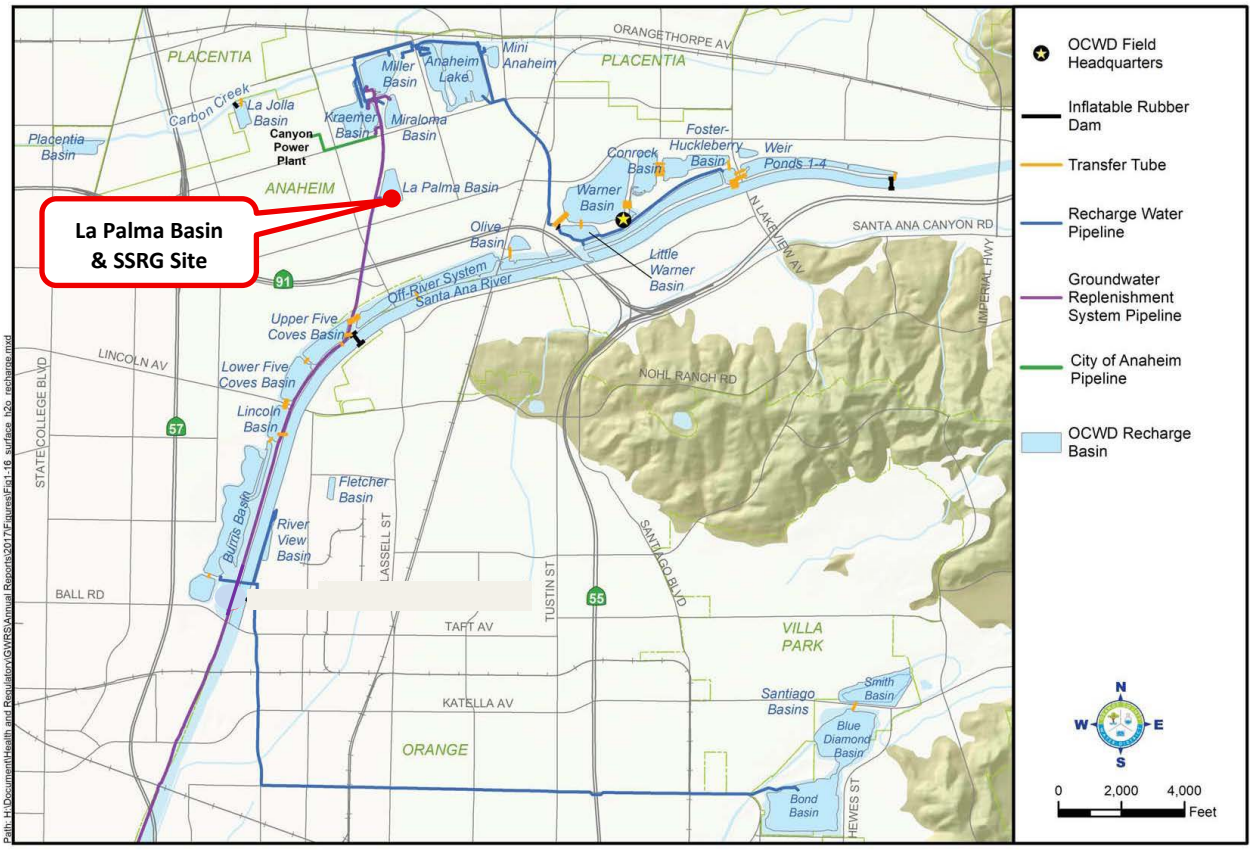
2.1 Background

OCWD owns and operates approximately 1,200 acres of recharge spreading facilities located in and adjacent to the Santa Ana River, Carbon Creek and Santiago Creek. The facilities consist of a series of shallow and deep basins, which allow percolation directly to the aquifers of the Orange County groundwater basin.

2.2 Description of Recharge Facilities

OCWD's recharge facilities are divided into five systems: Main River System, Off-River System, Deep Basin System, Burris Basin/Santiago System, and GWRS Basins. Figure 2 depicts the overall layout of these systems and shows the location of the proposed SSRG at La Palma Basin.

Figure 2
Recharge Facilities Map



2.2.1 Main River System

The Main River System consists of the Santa Ana River channel from Imperial Highway southwest to Ball Road. The unlined riverbed has very sandy, highly permeable substrate which infiltrates water very effectively. Recharge rates in the Main River System range from 75 to 150 cfs.

Sand levees are utilized in the river to maximize the wetted surface area, thereby maximizing the recharge rate. Typically, during non-storm events, water flows at depths from 1 to 3 feet. The sand levees only remain intact for flows up to 350 cfs. After major

storm events or accumulation of sediment and biological growth, the system is cleaned with heavy equipment and the levees are rebuilt to restore the system to its maximum infiltration rate.

2.2.2 Off-River System

The Off-River System is parallel to the Santa Ana River and consists of a shallow sheet-flow channel similar to the Main River System. The Off-River System begins at the Imperial Highway Inflatable Dam and ends at the Carbon Creek Diversion Channel. The unlined sandy channel bottom permits water to infiltrate to the underlying aquifer.

Recharge rates vary from approximately 5 cfs to 20 cfs depending on sedimentation accumulation and biological growth. The water depths rarely exceed one foot and velocities are typically large enough to minimize sediment deposition and biological growth. The water transfer facilities in the system have recharge capacities as high as 500 cfs but are limited to 300 cfs due to the presence of an old railroad bridge. Typically flows of 100 cfs or less are maintained in the system and transferred to the Burris Basin System if they reach the end of the Off-River System.

The Off-River System has a relatively poor infiltration rate compared to the other nearby facilities due to the presence of a relatively fine-grained layer of sediment that occurs approximately three feet below the surface of most of the system. In addition, portions of the Off-River System are limited on recharge capability due to mounding interference by the adjacent Santa Ana River and Warner Basin.

2.2.3 Deep Basin System

Warner Basin System (Foster-Huckleberry Pond, Conrock Basin, Warner Basin and Little Warner Basin), Anaheim Lake, Miller Basin, Kraemer Basin, and Miraloma Basin make up the Deep Basin System. The recharge basins range in depth from 10 to 60 feet deep and are underlain by a natural pervious sandy material that allows for infiltration into the underlying aquifer.

Infiltration rates in the Deep Basin System decline with use due to fine sediment clogging, requiring regular draining and cleaning to maintain a maximum recharge rate. Recharge rates for the entire Deep Basin System vary from approximately 150 cfs to 350 cfs. The combined maximum recharge rate of the downstream basins, Anaheim Lake, Miller Basin and Kraemer Basin, is approximately 260 cfs.

2.2.4 Burris Basin/Santiago System

The Burris Basin/Santiago System begins at the confluence of the Carbon Canyon Diversion Channel and the Santa Ana River and ends at the Santiago Basin in Orange. The System consists of a series of deep and shallow recharge basins along the Santa Ana River and Santiago Creek. Five Coves Basins, Lincoln Basin, Burris Basin and Ball Road Basin comprise the Santa Ana River component. The Santiago component of the

system includes the Santiago Basins (Blue Diamond, Bond and Smith Pits) and the Santiago Creek.

Inflow to this system comes from the Off-River System and diversion from the Santa Ana River at the Five Coves Rubber Dam. The maximum inflow rate is 500 cfs. Water moves from the Five Coves Basins at the upper end through Lincoln Basin and into Burris Basin. Water is pumped from the Burris Basin Pump Station at a maximum rate of 200 cfs to the Santiago Basin facilities. The maximum recharge rate for this system is about 150 cfs.

2.2.5 Groundwater Replenishment System Basins

The GWRS Basins recharge the water produced at the GWRS treatment plant. The basins currently capable of recharging these flows include Miller Basin, Kraemer Basin, Miraloma Basin, and La Palma Basin. A pipeline, approximately 14 miles long, transports the water produced at the treatment plant in Fountain Valley to the recharge basins in Anaheim. GWRS water recharges at a greater rate than SAR water because of its high quality, thereby reducing the clogging affect caused by sediment deposition.

The La Palma Basin is only able to recharge GWRS water as opposed to the other basins having the piping in place to also recharge SAR and MWD water. The current operation for this system primarily places GWRS flows into Miraloma and La Palma Basins while maintaining the option of also sending GWRS flows to Kraemer and Miller Basins (primarily during Miraloma or La Palma Basin cleaning events).

3.0 PROJECT PURPOSE AND DESCRIPTION

3.1 Project Purpose

The purpose of the SSRG Project is to test the effectiveness and long-term viability of recharging GWRS water in shallow, horizontal, recharge galleries. If successful, this technology will open up new areas and opportunities for the recharge of GWRS water in addition to using basins and injection wells.

In general, if proven to be successful, the Project would provide new opportunities to recharge GWRS water in new locations and thereby;

- allow OCWD to maintain increased production of the GWRS;
- help take advantage of short-term, high volume SAR storm flow by freeing up GWRS basin capacity;
- assist in emptying the Prado Water Conservation pool quicker during the storm season;
- help capture springtime Prado water conservation releases;
- expand recharge capacity by performing recharge under developed areas or where new basins are not feasible;
- maintain recharge capacity during maintenance and improvement projects, and
- maximize the benefits of the groundwater basin.

The potential output from the GWRS treatment plant has increased from 100 MGD to 130 MGD due to the final expansion of the plant. Currently, four basins can accept GWRS flows: Kraemer Basin, Miller Basin, Miraloma Basin, and La Palma Basin. All except for La Palma Basin are also capable of accepting water from the SAR and MWD water. By diverting GWRS water into SSRG, OCWD could increase its operational flexibility and efficiency with these other basins. The proposed SSRG Project is an opportunity to develop a new technology and to free-up other OCWD recharge facilities.

3.2 Site Location

The proposed SSRG will be located along the southern end of the existing La Palma Basin. A small diameter conveyance pipeline and the SSRG weir boxes, trenches and piping will be excavated into the existing access road and basin cleaning sediment stockpile areas.

3.3 Project Components

The Project will include an above-grade valve and piping connection to the existing GWRS turnout at La Palma Basin. The connection from the existing GWRS pipeline will then be excavated and placed subgrade in a PVC conveyance pipeline, approximately 8 inches in diameter. The conveyance pipeline will be constructed to the east to the SSRG area that is currently used for basin cleaning lay down. The SSRG area is

located east of the main entrance gate to the basin site. The main conveyance pipeline will be split into two lateral systems. Each lateral system will include a weir box that will act as the hydraulic grade and provide flow measurement data for performance monitoring of the project. Flow will exit the first weir box and flow into the 4” diameter recharge gallery piping that will extend approximately 100 linear feet to the east. Excess flow that does not get recharged into the SSRG will exit the first weir box and flow into a second weir box for flow measurement and discharge into the existing La Palma Basin. Two lateral systems are being constructed to test a variation of each 4” diameter pipe technology. One lateral system will include a 4” diameter perforated HDPE pipe backfilled with native soils. The second lateral system will include a 4” diameter perforated HDPE pipe backfilled with clean aggregate to increase the effective wetted/infiltration area of the SSRG. The performance of each lateral system will be compared to the other throughout the test. Additional area is being reserved at the site to test other technologies as well as expand the currently proposed system.

3.4 Testing & Analysis

The Field data collection protocols and test variables are being collaboratively developed between OCWD staff as well as other industry experts. Test variables and performance monitoring metrics will be finalized as the design of the system progresses. Currently design of the system is at approximately 90%, and is being performed by Scheevel Engineering. The following is a preliminary list of test variables being considered by the team.

1) Pre-test soil sampling and testing
2) Pre-test monitoring well water levels and WQ
3) Pre-test WQ at GWRS to 8-inch mainline
4) Test WQ at GWRS to 8-inch mainline
5) Test WQ at inflow weir boxes
6) Test WQ at access manway
7) Test WQ in shallow monitoring wells
8) Test WQ in SSRGs from “backwash or flushing”
9) Test soil sampling and testing at various increments and depths away from each SSRG (within trench zones and in undisturbed native soils)
10) Isolate SSRGs while water is flowing to confirm flow measurement accuracy and clean sediment chambers
11) Analyze sediment chamber sediments
12) Post-test soil sampling and testing
13) Post-test monitoring well water levels and WQ
14) Post-test WQ at GWRS to 8-inch mainline
15) Dissect some areas of each SSRG trench to collect visual data and additional soil samples if needed

3.5 Permits and Regulatory Issues

All work for this project will occur on OCWD owned property, therefore no encroachment or other outside agency permits will be required for the project.

Staff will prepare a categorical exemption in accordance with California Environmental Quality Act (CEQA) guidelines.

4.0 FINANCIAL ANALYSIS

4.1 Construction Cost Estimate

The estimated construction cost for the project is $200,000, as detailed in Table 1.

Table 1 - Construction Cost Estimate

Description	Quantity	Units	Unit Cost ($/unit)	Cost ($)
Valves	5	EA	$1,000	$5,000
Mainline Pipe (8”)	800	LF	$20	$16,000
Weir Boxes	6	EA	$10,000	$60,000
Lateral Piping (6”)	100	LF	$15	$1,500
Return Piping (12”)	100	LF	$25	$2,500
SSRG Piping	200	LF	$3	$600
Clean Rock	50	CY	$200	$10,000
Access Manholes	2	EA	$5,000	$10,000
2” Slotted Piping	200	LF	$20	$4,000
2” Vaults	6	EA	$700	$4,200
Level Loggers	4	EA	$9,000	$36,000
Misc. Fittings	1	LS	$9,000	$9,000
Outside Lab Testing	1	LS	$41,200	$41,200
			Total =	**$200,000**

4.2 Capital Cost Estimate

The estimated total capital cost for the project is $200,000, as shown in Table 2. It includes the material and supplies cost of constructing the SSRG, the cost of engineering services for design and construction phases, and the cost associated with self performing the work.

Table 2 - Capital Cost Estimate

Item	Cost
Construction	$200,000
Contingency	$0
Engineering & CEQA	$0
OCWD Staff & Equipment	$100,000
Total =	**$300,000**

4.3 Annual Operation and Maintenance Cost Estimate

The estimated annual Operation and Maintenance (O&M) cost for the project is $50,000 for 1 year, as detailed in Table 3. It conservatively assumes that visual inspection will be performed twice weekly and that 2 level loggers will require replacement.

Table 3 - Annual O&M Cost Estimate

Description	Quantity	Units	Unit Cost ($/unit)	Cost ($)
Supplies & Equipment	1	LS	20,000	$20,000
Visual Inspection	300	HRS	100	$30,000
			Total =	**$50,000**

5.0 CONCLUSIONS AND RECOMMENDATIONS

The conclusions that can be drawn from this Engineer's Report are as follows:

- SSRG may be developed into a long-term larger scale GWRS water recharge technology to accommodate future increased production of the GWRS and help take advantage of short-term, high volume SAR storm flow by freeing up GWRS basin capacity.

- Help develop technology to recharge GWRS water in areas already developed or where new basins are not feasible, and maintain recharge capacity during maintenance and improvement projects existing GWRS recharge basins.

Given the reasonable cost of this project and the potential for future benefits, it is recommended that OCWD adopt the Sub-Surface Recharge Gallery (SSRG) Pilot Project Engineer's Report.

6.0 PROPOSED IMPLEMENTATION SCHEDULE

The Project has already been designed to approximately 90% completion. Construction would commence in the summer and fall of 2026 with initial startup and testing occurring in the spring or summer of 2027. The construction duration will be dependent upon Staffs time and availability along with Scheevel Engineering's availability.

Operation and testing is expected to occur for a minimum of one year. Then depending upon results, additional testing may occur and/or modifications to the system may be warranted. These additional scope and task items would be brought back to the board for future consideration along with test results from this Phase 1.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Herndon/F. Cason

Budgeted: Yes
Budgeted Amount: $18,000
Cost Estimate: $5,183
Funding Source: General Fund
Program/Line Item No.: 1075.51112.9900
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: RATIFICATION OF ACCESS AGREEMENTS FOR EXISTING MONITORING WELL SITES FOR SECOND HALF OF 2025

SUMMARY

Staff is submitting a summary of well access agreements executed under General Manager authority from July through December 2025 for Board ratification.

RECOMMENDATION

Agendize for February 18 Board meeting: Ratify execution of well access agreements issued to OCWD for the period of July 1 through December 31, 2025 for a total cost of $5,183.

BACKGROUND/ANALYSIS

Many OCWD-owned wells are located on properties owned and managed by other entities, including public agencies and private landowners. To perform groundwater monitoring and well maintenance at these well sites, OCWD acquires and maintains formal access agreements with the respective property owners. These agreements include short-term encroachment permits (typically six months to one year), longer-term license agreements, (generally five years or more), or permanent or semi-permanent property easements.

In the second half of 2025, 9 agreements were newly executed or renewed providing access to 14 well sites at a total cost of $5,183. A summary of the agreements recommended for Board ratification is presented in Table 1.

Table 1. Summary of well access agreements issued to OCWD during the second half of 2025

	Agreement	Issued By	Well(s)	Term	Cost
1.	OM-8 OM-8A Entry Permit Agreement	County of Orange	OM-8, OM-8A	10 years	$ 0
2.	Encroachment Permit FE25-0137	Orange County Flood Control District	SAR-14A, SAR-14B	1 year	$ 708
3.	Encroachment Permit FE25-0145	Orange County Flood Control District	OCWD-M2, OCWD-M2A	1 year	$ 708
4.	Encroachment Permit FE25-0146	Orange County Flood Control District	OCWD-YLR3	1 year	$ 708
5.	Encroachment Permit FE25-0150	Orange County Flood Control District	OCWD-HBM1	1 year	$ 708
6.	Encroachment Permit RE25-0381	Orange County Flood Control District	OCWD-OM1	1 year	$ 735
7.	Encroachment Permit FE25-0087	Orange County Flood Control District	AM-58, AM-61	1 year	$ 708
8.	Encroachment Permit FE25-0116	Orange County Flood Control District	OCWD-35KP12, OCWD-35N01	1 year	$ 708
9.	Encroachment Permit 2025-00064	Orange County Parks	FVM-1	1 year	$ 200
				Total Cost:	**$** 5,183

PRIOR RELEVANT BOARD ACTION(S)

7/16/2025, R25-7-115 - Ratify execution of well access agreements issued to OCWD for the period of January 1 through June 30, 2025.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: R. Bouley/L. Esguerra

Budgeted: Yes
Budgeted Amount: $500,000/$400,000
Cost Estimate: $297,780
Funding Source: R&R/CIP
Program/Line Item No.: R25027/C25001
General Counsel Approval: N/A
Engineers Report: N/A
CEQA Compliance: Cat. Ex.

Subject: AUTHORIZE AGREEMENT WITH GLUMAC FOR FIELD HEADQUARTERS DIESEL FUEL TANK REPLACEMENT AND VEHICLE CHARGING INFRASTRUCTURE DESIGN

SUMMARY

One proposal was received on January 22, 2026 for engineering and design services for the Field Headquarters Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure Design projects. Based on staff's evaluation of the proposal, staff recommends authorizing an Agreement with Glumac, a Tetra Tech Company, for a not-to-exceed amount of $297,780 for engineering and design services.

Attachment: Glumac proposal for FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure

RECOMMENDATION

Agendize for February 18 Board Meeting:

1. Ratify issuance of Addenda 1; and

2. Authorize Agreement with Glumac, a Tetra Tech Company, for a not-to-exceed amount of $297,780 for FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure engineering and design services.

BACKGROUND/ANALYSIS

The 20,000-gallon diesel underground storage tank (UST) located at Field Headquarters (FHQ) was constructed in 1987. No leaks have been observed; however, due to the tank's age, it is at risk of being dropped by JPIA insurance coverage and would become more expensive to insure. The diesel tank and dispenser have been used at FHQ since the 1980's to supply diesel for District off-road equipment under typical operations and as an emergency supply for potential disaster response. The on-site tank is a cost-saving measure because the District can bulk purchase diesel at a discounted rate, while also taking advantage of lower-cost red-dye diesel for off-road use. A gasoline aboveground storage tank (AST) was recently constructed and has been in operation since May 2025 at FHQ. Construction of a 20,000-gallon AST for diesel fuel will have regulatory requirements less stringent than a UST. Potential leaks

can be immediately observed in the AST arrangement, versus having to be indirectly tested for with a UST arrangement.

The California Air Resources Control Board adopted the Advance Clean Fleets (ACF) regulation requiring state and local governments to transition to zero-emissions vehicles (ZEV) for medium and heavy-duty fleet vehicles starting January 1, 2024. The District has elected to follow the purchase pathway for new vehicle purchases to comply with ACF. Beginning on January 1, 2024, 50% of the District fleet purchases in these weight classes shall be ZEV, and on January 1, 2030, 100% of fleet vehicles purchased shall be ZEV. OCWD maintains a fleet of 39 medium and heavy-duty fleet vehicles across three locations: Fountain Valley, Anaheim Field Headquarters, and Prado. Additional electric vehicle charging infrastructure at all locations is required to support the District's transition to zero-emission vehicles, however the most immediate need is at FHQ.

Both projects could require significant changes to the underground infrastructure at FHQ. There will be overlapping civil and electrical improvements that require the designs of both facilities to be coordinated to minimize conflicts and any re-work. Utilizing the engineering and design services of a single consultant for both projects will also provide consistency in design, expedite deliverables, and reduce overall design costs. On November 19, 2025, the Board authorized issuance of a Request for Proposal (RFP) for engineering and design services to prepare construction documents for the FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure Design.

The RFP was issued on December 10, 2025, to four qualified firms and posted on the District website. Staff received one proposal on January 22, 2026, from Glumac, a Tetra Tech Company (Glumac). Staff contacted the firms that did not submit proposals, and those firms indicated that while the RFP provided sufficient scope detail, they lacked the experience required to deliver high-quality services at a reasonable fee. The proposal from Glumac was independently reviewed and scored by staff, and the scoring of the proposal included evaluating the firm's approach and schedule, experience and qualifications of the project manager, experience of the firm and other team members, time commitment of key staff, record of success on recent similar projects, and man-hour estimate. See Table 1 for the proposed score and proposed fee.

Table 1:

Proposal Score and Proposed Fee

Firm	Score (out of 100)	Proposed Fee
Glumac	**75**	**$297,780**

Staff's evaluation of the proposal and consideration of the proposed fee resulted in a recommendation of Glumac for engineering and design services for the FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure Design for the following reasons:

- Glumac was purchased by Tetra Tech, Inc. (Tetra Tech) in 2017. The purchase gave Glumac access to Tetra Tech's expertise in civil engineering, structural engineering, and oil and gas engineering for the design of the diesel tank

replacement. The District and Tetra Tech have a long and successful working relationship and have completed numerous projects together. Tetra Tech is also one of the on-call consultants providing engineering services for the design and construction of PFAS treatment systems.

- Glumac's Project Team has experience with the development of Zero Emission Fleet plans for light, medium, and heavy-duty vehicles to comply with CARB ACF regulations;

- Glumac's Project Team has evaluated Electric Vehicle Charging Station technologies and produce conceptual and full engineered infrastructure plans and;

- Glumac has recent experience working on similar projects with Orange County Public Works and Orange County Waste and Recycling.

Staff recommends authorizing an agreement with Glumac for a not-to-exceed amount of $297,780 for the FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure Design.

A proposed project schedule is shown in Table 1.

Table 1: Project Schedule

Description	Timeline
Diesel Fuel Tank Design	March 2026 – July 2026
Diesel Fuel Tank Construction	September 2026 – May 2027
EV Charging Design	March 2026 – December 2026
EV Charging Construction	March 2027 – March 2028

PRIOR RELEVANT BOARD ACTION(S)

11/19/2025, R12-11-196: Authorizing Request for Proposals for Field Headquarters Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure Design.

6.1.1 Title Page

TETRA TECH High Performance Buildings Group GLUMAC

STATEMENT OF QUALIFICATIONS

Orange County Water District

FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure

Prepared For
Orange County Water District

Date Issued
01.22.2026

Glumac, a Tetra TechCompany
Brian Stern, Director of Energy
(415) 398-7667
bstern@glumac.com

707 Wilshire Blvd., Suite 1550
Los Angeles, CA 90017
Tel: (213) 239-8866
Fax: (213) 239-8816

GLUMAC.COM

6.1.2 Cover Letter

TETRA TECH
High Performance Buildings Group
GLUMAC

Date:
January 22, 2026

Proposal Name:
FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure

RFP-25-012

Submitted to:
Ashlie Palamara,
Contracts Administrator

Address:
707 Wilshire Blvd.
Suite 1550
Los Angeles, CA 90017

Proposal Contact:
Brian Stern,
Director of Energy
(415) 398-7667
bstern@glumac.com

Zach Gates,
Project Manager
(949) 383-4966
ZGates@glumac.com

Subconsultant:
MGAC
707 Wilshire Boulevard
Suite 3000, Floor 30
Los Angeles, CA 90017

Our proposal shall remain valid for 90 calendar days from the date of submittal.

All information submitted within this Proposal is true and correct.

Dear Ashlie Palamara,

The Orange County Water District's promotes water efficiency in efforts to save energy, minimize wastewater and help sustain healthy water resources for future generations. As electric vehicle infrastructure mandates are put into place, precious resources for future generations become increasingly important to users of this new technology. We at Tetra Tech and Glumac commend you for moving forward with fleet electrification in Orange County, and we are here to make the transition as seamless as possible.

We believe that we offer the skillset, personalities, and technical expertise to serve the Orange County Water District (OCWD) in this fleet electrification plan and underground storage tank replacement. That includes the following:

- **Understanding** We are committed to delivering a comprehensive, data-driven roadmap that supports the OCWD's transition to a clean, sustainable transportation future. Our team will assess the current fleet, recommend optimal ZEV replacements, evaluate and plan for scalable EV and infrastructure, and identify viable funding sources to support implementation.
- **Experience** More than 50 fleet electrification plans in our portfolio, with institutions such as the City of San Luis Obispo, Sacramento Municipal Utility District, and the City of Mountain View. Glumac's robust electrical engineering staff has completed multiple EV infrastructure designs for other counties and municipalities in the region.
- **Local Procedures** Tetra Tech and Glumac has worked with and secured more than $1.5 billion in local grants, loans, and incentives for EV and other clean energy projects.
- **Innovative or Advanced Techniques** As a sustainability engineering firm, Tetra Tech and Glumac has a dedicated Zero Emissions Vehicle (ZEV) Fleet team that delivers EV charging infrastructure projects. We provide clients actionable plans and execution to meet their financial, operational, resilience, and code-related needs

We are dedicated to aligning our work with the OCWD's sustainability objectives, ensuring operational feasibility, and fostering long-term resilience through innovative, community-focused solutions. We are eager to move forward with you as a team.

Sincerely,

Brian Stern, CEA | Director of Energy

Firm Background

YEAR FOUNDED
1971

FORM OF ORGANIZATION
Corporate

NUMBER, SIZE, AND LOCATION OF GLUMAC OFFICES
1. Los Angeles - 50
2. Irvine - 24
3. San Diego - 19
4. Sacramento - 27
5. San Francisco - 33
6. Las Vegas - 8
7. Austin - 22
8. Portland - 58
9. Seattle - 41

NUMBER OF EMPLOYEES
285.
We also have access to 30,000+ professionals worldwide, through our parent company, Tetra Tech.

SERVICES OFFERED

FLEET PLANNING SERVICES
- ✓ ZEV transition plans
- ✓ Advanced Clean Fleets compliance
- ✓ Charging needs
- ✓ Site planning
- ✓ Energy resilience
- ✓ Total cost of ownership
- ✓ Incentives/Grants
- ✓ Planning toolds
- ✓ Energy audits
- ✓ Battery storage
- ✓ Microgrid analysis
- ✓ Resilience planning

DESIGN SERVICES
- ✓ Fuel Tank
- ✓ Electrical engineering
- ✓ EVCS equipment
- ✓ Utility coordination
- ✓ Civil engineering
- ✓ Structural engineering
- ✓ Renewable energy systems
- ✓ Back-up power
- ✓ Microgrids
- ✓ Electrical commissioning
- ✓ Design-build support

CONSULTING SERVICES
- Mechanical engineering
- Electrical engineering
- Plumbing engineering
- Energy modeling for code
- Energy modeling for sustainability certification
- Sustainability consulting
- Distributed energy resources (DER) planning
- Decarbonization planning
- Technology integration
- Commissioning

CAPABILITY AND AVAILABILITY
Glumac's staff comprises 285 people. That includes 26 energy staff and 60 electrical staff. In addition, through our parent company, Tetra Tech, Glumac has access to an additional 30,000 staff worldwide. In the event that workload shifts, staff first share work within their local offices and then share work firmwide. We have reviewed our current workload and the scope of OCWD's fleet assessment project, and we are confident we have the staff availability to accomplish the work on time and on budget.

Tetra Tech and Glumac foresee no difficulty meeting the scope requirements, timelines and cost schedules, be it in design, construction or occupancy. Client care is at the heart of Tetra Tech and Glumac's work, and an expert and consistent team is at the heart of client care. We value long-term relationships, and trust plays an important role in building and maintaining them.

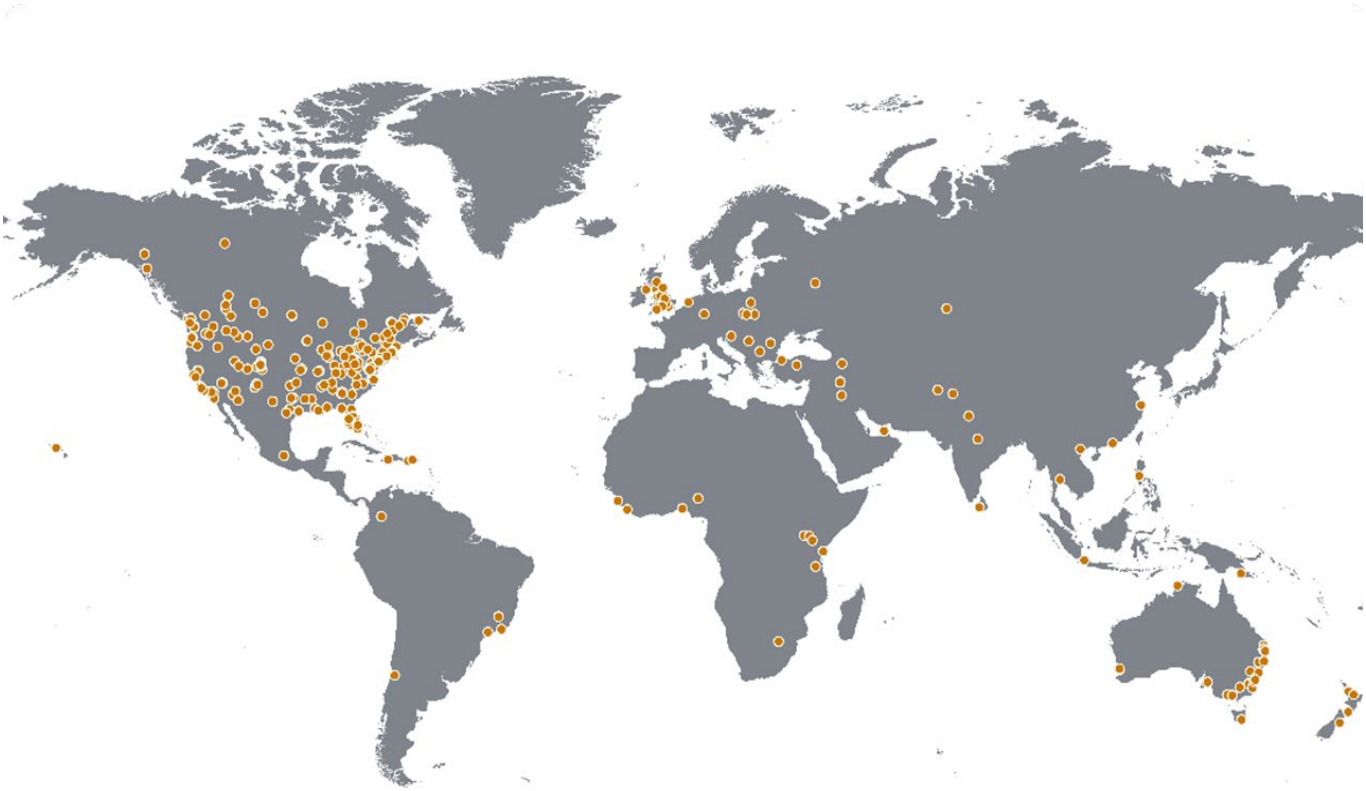
Tetra Tech - A Global Partnership

In 2017, **Glumac** was purchased by its parent company, **Tetra Tech**, a global provider of consulting and engineering services. While Glumac continues to operate independently, with its own internal leadership and branding, **the purchase gave Glumac access to roughly 30,000 staff with varied expertise, throughout Tetra Tech's 550 worldwide offices**.

Glumac is committed to providing excellent, local technical services through core staff in Glumac locations. However, for some of the services required for the Orange County Water District's replacement of the existing underground diesel storage tank and vehicle charging infrastructure at the District's Field Headquarters, we have pulled more resources in the Tetra Tech family. Those include the following:

Glumac
With the goal of being "Engineers for the Sustainable Future," the Glumac team comprises fleet electrification planning and electrical engineers, along with experts in technology integration and energy analysis. Glumac will serve in the role of prime but will have streamlined communication, processes, and billing with the Tetra Tech partners.

Tetra Tech
Tetra Tech's mission is to be the premier worldwide consulting and engineering firm. Tetra Tech brings to this team experts in environmental assessments. That includes services for air quality, water quality, industrial hygiene, safety, geology, and environmental, social, and governance (ESG). Tetra Tech will also provide civil and structural engineering services. Tetra Tech is a publicly traded company, with 53 operating units, of which Glumac is a part of.



50+
Years in Business

300
Engineers and Technical Staff

70+
Net Zero Projects

100+
LEED Associated Professionals

370+
LEED & LBC Projects

1,000+
Government Projects

130+
Transportation Projects

About Glumac

Glumac is a global design and energy consulting firm, focused on creating sustainable and resilient spaces for healthy, productive, and equitable communities. Among our core business functions, our staff help municipalities throughout the nation to electrify their facilities and fleets. Throughout this proposal, you will find we have the experience, partnerships, and approach to help you transition to a zero emissions fleet smoothly.

We do this by making **conventional designs extraordinary, and designing high-performing buildings** that set new standards for a sustainable and low-carbon future.

We offer integrated mechanical, electrical and plumbing engineering, energy, sustainability, building enclosure, technology integration, lighting design consulting, and commissioning services. As part of Tetra Tech's High Performance Buildings Group, Glumac is connected to a global group of building design and building sciences experts.

COMMITMENTS & MEMBERSHIPS

AIA 2030 COMMITMENT

INTERNATIONAL WELL BUILDING INSTITUTE MEMBER KEYSTONE

CLF Carbon Leadership Forum

MEP 2040 Committing to Zero

USGBC MEMBER

INTERNATIONAL LIVING FUTURE INSTITUTE

ADVANCING NET ZERO

fitwel

26
Energy Staff

60
Electrical Staff

6
Sustainability Strategists

50+
Fleet Electrification Projects

10,000+
Vehicle Chargers

50+
Decarbonization and Electrification Projects

$1.5b
In Incentives for Clean Energy Work

Fleet Electrification

A key focus of our firm is supporting clients through the current energy transition, as public and private entities alike undertake decarbonization and electrification efforts. As this effort accelerates for all industries, communities, and geographies, it is important to plan, implement and measure our efforts in alignment with sustainability objectives. With our diverse expertise in building sciences, renewable energy, utility infrastructure and sustainability transportation we are well position to support transition to carbon neutral operations.

Our dedicated energy planning team helps clients to decarbonize their buildings and transportation systems. We provide technical assessments for distributed energy resources (solar PV, battery storage, fuel cells, etc.), electric vehicles and infrastructure retrofits. We have a long history of designing fully electric, high-performance buildings and have provided numerous all-electric feasibility studies for new construction and existing facilities. We understand that as we electrify our infrastructure that supports critical operations there is a greater need for energy resilience. We work to ensure that decarbonizing our clients operations can be done in a way that improves the health, safety, and reliability of their infrastructure systems.

SUPPORTING ELECTRIFICATION EFFORTS

- Building Electrification
- EV Charging Infrastructure
- Load Management
- Renewable Energy
- Battery Storage
- Microgrids

VALUED ELECTRIC VEHICLE PLANNING AND DESIGN CLIENTS

- Lawrence Livermore National Laboratories (LLNL)
- Orange County Public Works
- Contra Costa Sanitary District
- City of San Luis Obispo
- Port of Seattle
- Sacramento Municipal Utility District (SMUD)
- City of Mountain View
- King County Metro Transit
- City of Poway
- Los Angeles Community College District (LACC)
- Contra Costa County
- George Mason University
- San Diego State University
- California State University - Long Beach

6.1.3 Table of Contents

Contents

Experience and Record of Past Performance

Stock photo of electric truck © Adobe

Orange County Waste & Recycling ZEV Plan & EVCS Engineering

ORANGE COUNTY, CA

Glumac and Tetra Tech worked with OCWR to develop a Zero Emissions Vehicle (ZEV) plan for all light, medium, and heavy duty vehicles in the fleet. The plan provides a roadmap for vehicle procurement and EV infrastructure to comply with CARB ACF regulations and support the County's climate Action goals. These vehicles play a crucial role in supporting landfill regions, which also serve as domicile locations for the fleet. Glumac evaluated all 226 vehicles domiciled across five sites. We identified alternative ZEV options and developed conceptual site infrastructure plans with cost estimates. Glumac and Tetra Tech are now providing full engineering design and will support with implementation through construction administration. All projects are pursuing incentives through the SCE Charge Ready Transport Program.

PROJECT FACTS

Size: 226 vehicles, 5 sites
Dates: 2024 - Ongoing
Reference: David Sanchez, Orange County Waste & Recycling, 714.834.4052
Contract Value: $170,000

Contra Costa County ZEV Plan and EVCS Engineering

CONTRA COSTA COUNTY, CA

Glumac is working with Contra Costa County on multiple EV projects. We helped to develop Zero Emissions Vehicle (ZEV) plan for all light, medium, and heavy duty vehicles in the fleet. We developed a dynamic Total Cost of Ownership (TCO) to evaluate pathways and established a roadmap to procure vehicles and construct EV infrastructure, in compliance with CARB ACF regulations and the County's 2035 target for a fully electric fleet. Glumac modeled all 1,500 vehicles located across over 40 sites. Additionally Glumac provided full engineering design services and construction administration for the installation of Phase 1 EV Infrastructure which provides over 100 chargers across the County. We are continuing to support the County with their ZEV transition efforts.

PROJECT FACTS

Size: 1,500 vehicles, 9 sites
Dates: Dec 2023 - Ongoing
Reference: Brendan Havenar-Daughton, Energy Manager, 925.313.2389, brendan.havenar-daughton@pw.cccounty.us
Contract Value: $320,755

Orange County Public Work EVCS Infrastructure Site Assessments

ORANGE COUNTY, CA

Glumac has supported Orange County Public Work (OCPW) with EV infrastructure projects since 2023. Glumac conducted a comprehensive assessment of multiple County facilities and evaluated various approaches to optimize and expand the availability of electric vehicle charging stations. Phase I included an evaluation of various EVCS technology and an assessment of multiple representative sites across the County. These sites have helped to increase the number of EV charging stations in available in the county. Phase 2 provided additional site assessments and conceptual infrastructure engineering plans for roughly 15 locations. Project narratives and site plans are being used by the County in a future design-build solicitation.

PROJECT FACTS

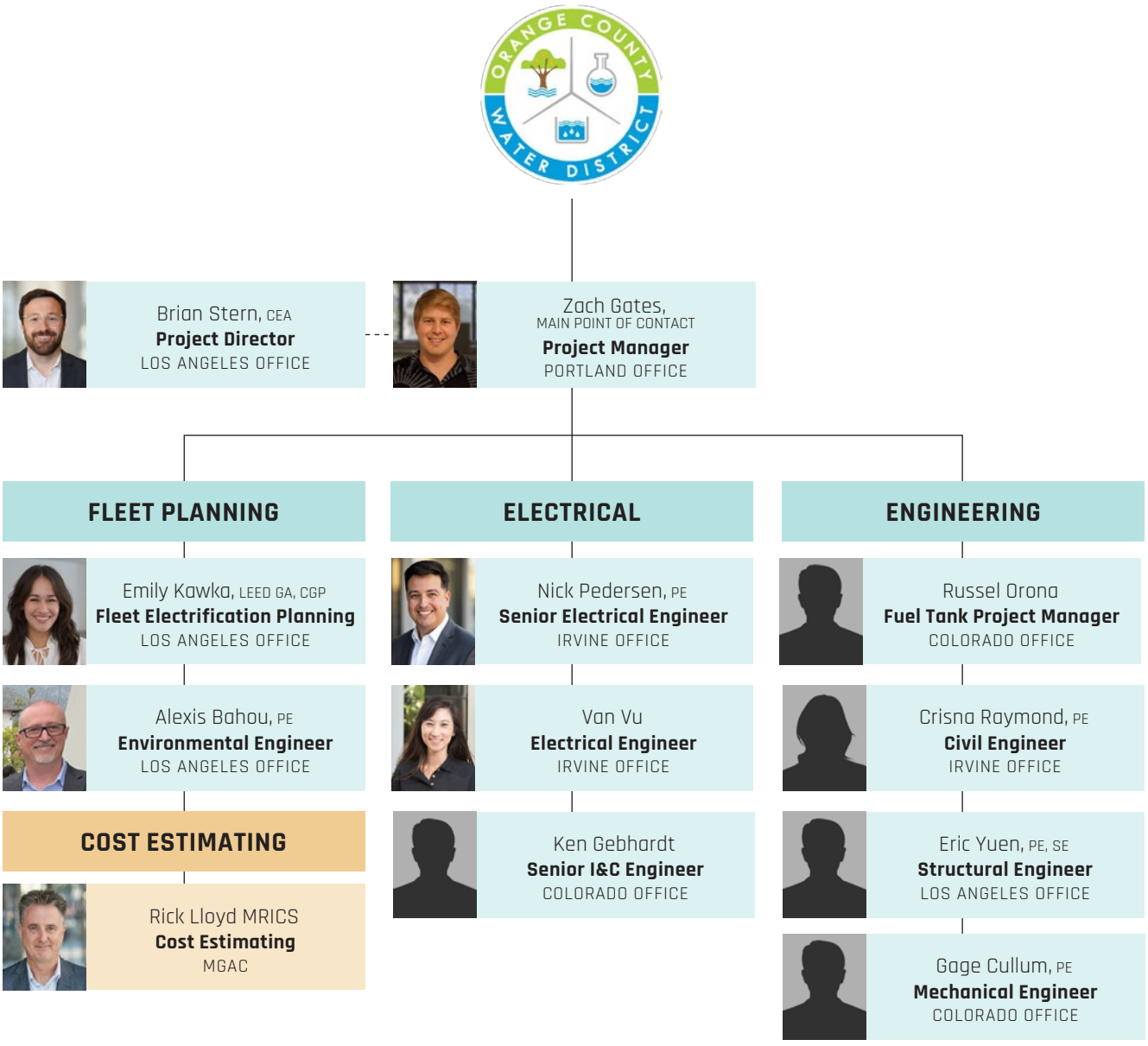
Size: 19 sites
Dates: 2023 - Ongoing
Reference: Robert Shipp, Orange County Public Works, 949.533.5672, robert.shipp@ocpw.ocgov.com
Contract Value: $203,000

Project Team and Qualifications

Organizational Chart

We have assembled a core team, represented below, to execute the majority of this work. We have also assembled a team of experts for further support, seen in the organizational chart below.

Tetra Tech and Glumac will serve as the overall project manager of the transition plan and will lead all technical engineering, fleet inventory, charging needs, tank replacement and funding. Collectively the team will develop a ZEV fleet transition plan to guide OCWD future fleet investments.



The above key personnel will be available to the extent proposed for the duration of the Professional Services Agreement. Glumac provides assurance that changes to the designated project team shall not be made without prior written consent of OCWD.

Staff and Roles

TETRA TECH
High Performance Buildings Group
GLUMAC

Brian Stern will provide executive oversight and QAQC, in the role of Project Director. Brian oversees energy and decarbonization services across the firm. He has extensive experience working with institutional clients to support fleet electrification, including with Orange County and Contra Costa County.

Zach Gates will serve as Project Manager. He will have the dedicated time for communication, resource management, and monitoring the budget for a successful project. He was recently the Project Manager on the Orange County Public Works Electrical Vehicle Charging Station Conceptual Site Plan that included devising strategic approaches to optimize and expand the availability of electric vehicle charging stations.

As Lead Fleet Electrification Planner, **Emily Kawka** will lead day-to-day energy analysis and fleet planning work. She will also determine whether resilience measures and on-site renewable energy should be considered. She brings EV experience with OC Waste and Recycling and the massive confidential CONRAC project.

The electrical team will comprise **Nick Petersen, PE,** as Senior Electrical Engineer and **Van Vu** as Electrical Designer. Nick is a licensed engineer, with experience in the power systems of commercial and industrial buildings, campuses, and Distributed Energy Resources. He will be responsible for analyzing the need for electrical infrastructure upgrades to meet the growing electrical demands. Van brings experience with fleet electrification and will support Nick with load calculations, Revit models, and design.

Crisna Raymond, PE brings extensive experience in water/wastewater projects encompasses pressure and gravity pipelines, wells, pump stations, water treatment plants, and reservoirs. **Eric Yuen, PE, SE** will lead the design, analysis, and detailing of structural engineering. **Alexis Bahou, PE** brings extensive experience with directing site assessment investigations, remedial designs, remedial system construction oversight, operation and maintenance, and facility closure.

MGAC

Established in 1996, **MGAC** is a consultancy firm dedicated to providing fully integrated project, cost, and risk management services to assist clients through all phases of design and construction projects. We efficiently and cost effectively manage budgets, design, scope, bidding, procurement, and installation, combining technical expertise, creative problem solving, and excellent customer service. Over the past five years alone, MGAC has collectively delivered over $8B of education, government, commercial, corporate, cultural, hospitality, institutional, and mission critical projects.

Current Workload

Workload distribution by Project Team Members and Phase

	Current Workload % / Project Commitments	Anticipated Level of Involvement				
		Task 1: Preliminary Design Report	**Task 2:** Final Design	**Task 3:** Permitting	**Task 4:** Bid Phase	**Task 5:** Construction Phase
Zach Gates	**30% Available** Zach has two projects in various stages of construction and is involved in the engineering of another project. With one project still in design, Zach has availability to focus on the successful delivery of this project.	75%	55%	55%	25%	25%
Brian Stern	**15% Available** Brian is actively working on the four projects as Program Manager, two of which will be largely complete soon. His forecasted workload aligns very well with the schedule of this project.	35%	12%	5%	3%	3%
Emily Kawka	**45% Available**	75%	55%	—	—	—
Nick Pedersen	**40% Available**	65%	25%	5%	3%	15%
Van Vu	**55% Available**	25%	55%	—	—	—
Crisna Raymond	**35% Available**	25%	15%	—	3%	3%
Eric Yuen	**35% Available**	25%	15%	—	3%	3%
Alexis Bahou	**30% Available**	25%	15%	—	3%	3%
Rick Lloyd	**35% Available**	—	—	—	85%	—

Project Overview and Approach

Project Overview and Approach

PROJECT MANAGEMENT

Project Management Glumac has an established project management approach that provides clear communication, structured workplans, and quality assurance. This approach has been used to successfully deliver fleet electrification projects for multiple public agencies. Our processes provide that every project meets the highest standards of quality, performance, and client satisfaction, delivering successful outcomes.

Approach: Glumac will provide a structured project management approach and work closely with the District's internal Project Manager. This includes managing the team and overall project activities in order to meet the project schedule and budget; managing subconsultants; maintaining schedule and budget; anticipating and mitigating potential design issues and delays; and coordinating and updating the District on overall progress.

Meetings: Glumac will coordinate and administer the required project meetings per OCWD's request. This includes the project kick-off, site visits with District staff, preliminary design review meetings, and any additional meetings as needed during design. Glumac will work with OCWD to prepare a meeting agenda and will document meeting minutes, including action items. The meeting minutes will be distributed to the team following the meeting.

Schedule: Glumac will prepare, monitor, maintain, and update a project schedule showing significant milestones for the project beginning at the kick-off meeting and ending at contract award for the last submittal package. Glumac shall notify the District if there are any delays or potential delays in any phase of the project. In such case, Glumac shall make up the schedule in subsequent phases of the project or provide information to the District substantiating a request for time extension, which may or may not be approved. The schedule shall be maintained at all times and shall be updated each time progress and milestones are achieved and/or changed. Regular updates will be provided to the team.

Quality Control: Our approach to quality includes clear communication, close collaboration, and technical oversight. We work collaboratively with our clients to develop EV plans and will provide opportunities for the key stakeholders at the District to review all deliverables and plans. This will be provided through regular project meetings and formal review processes for major deliverables. Glumac will provide an internal quality assurance peer review from technical subject matter experts prior to issuing plans or deliverables, in accordance with QA Program guidelines.

Invoicing and Contract Administration: We will work with the District to develop an invoicing schedule and verify that Glumac's invoices meet the District's needs. Invoices will be submitted monthly, based on progress. Administrative time preparing invoices, addressing administrative issues regarding the professional services agreement (i.e. preparing additional services requests or budget modifications) will not be billed.

PROJECT APPROACH

Task 1: Preliminary Design Report

Subtask 1.1: Existing Fleet Assessment

Assess the inventory of fleet vehicles (37 vehicles) and establish a phased EV replacement plan that considers the unique duty cycles; typical and emergency operations; fueling and charging; and regulatory compliance.

Approach: Glumac will review the District's existing fleet inventory (ACF and non-ACF regulated vehicles); current and planned vehicle replacements; and vehicle domicile locations. We will develop a clear understanding of the District's existing fleet and EV transition timeline to understand the requirements for future EV charging needs. We will refer to past fleet planning efforts and reevaluate where need.

We will work with the District to collect the data, including the items below. Data will come from existing vehicle databases, including the District's software systems (if available) and through department interviews. We will work with District staff to fill in any missing gaps based on other fleets with similar operations.

- Vehicle ID, VIN, make, model, type/class, fuel, owned or leased
- Date placed into service, scheduled replacement, total mileage, operating hours
- Assigned department, maintenance responsibility, emergency operations
- Vehicle domicile location, parking hours
- Monthly miles, fuel consumption, maximum distance, primary use
- Operational costs including fuel, maintenance, insurance, licensing, etc.

We will identify the vehicles that are subject to CARB Advanced Clean Fleets (ACF), those that are categorically exempt, and those that will need an exemption waiver. We will assess ACF-regulated vehicles and identify those that currently have commercially available ZEVs and those with no existing options.

Based on the fleet inventory phase, our team will provide the following:

- Analyze the average duty cycle for each vehicle, considering average miles, payload, accessory equipment, idling times, and mission-critical roles.
- Calculate daily energy use for a replacement EV on typical days and during extraordinary days.
- Create a preliminary phased transition plan for fleet vehicles, including recommended makes and models of EVs for near-term vehicles and forecasted replacement EVs by class in future phases.
- Align the transition timeline with existing replacement targets and California regulations, including ACF.

Deliverable: Fleet Assessment Memo, Fleet Database

Subtask 1.2: Electric Vehicle Infrastructure Evaluation

Assess future EV charging needs, including types and numbers of charging stations at all three of the domicile locations. Assess existing electrical infrastructure to support a future EV fleet and charging infrastructure.

Approach: For each of the three site locations, we will collect the following information to determine current electrical load and capacity to inform the EV infrastructure design.

- Existing as-built drawings (e.g., electrical systems, one-line diagrams, panel schedules, civil plans, and parking management systems)
- Electric utility bills and submeter readings (minimum 12 months)
- Planned upgrades or changes to the facility, infrastructure, and/or electrical service
- Output of onsite PV and/or energy storage (if applicable)
- Existing or planned charging stations (if applicable)

Glumac will review the existing and projected future energy demands at each of the locations and

- Collect and evaluate energy usage and demand patterns of existing facilities
- Estimate the future energy usage requirements for each vehicle. We will use this data to assess multiple strategies for EV charging station deployment.

- Establish EVSE requirements at each site. We will present recommendations to the District for review and to confirm the charging strategy at each domicile location.

After assessing the EV charging needs at each domicile location, we will conduct virtual and physical assessments of domiciles to identify locations in the parking lot that will support District operations and minimize installation costs. Site visits will be attended by an Electrical and Civil Engineer.

- Assess existing infrastructure to add EV chargers, including location and electrical service.
- Identify and evaluate potential site-specific challenges.
- Review the ability for the existing utility service and electrical infrastructure to support new EV chargers.
- If additional power is required, we will assess increasing the existing service or installing a new dedicated EV utility service.
- Estimate how charging will impact facility energy use and strategies to mitigate capital and utility costs.

Glumac will provide a high-level assessment of onsite generation and back-up power sources for resilience. This will include a review of various technologies, preliminary siting, and financial analysis.

- Review energy and operational resilience requirements for fleet operations
- Review various technologies, including solar PV, battery energy storage systems (BESS), back-up diesel generators, and microgrid controls
- Review potential site locations and provide preliminary layouts
- Provide rough order of magnitude (ROM) capital cost, utility savings, and simple payback

Glumac and Tetra Tech will develop conceptual EV charging plans for each of the three sites. We will provide a draft for one (1) round of OCWD review comments. We will incorporate these into final Conceptual EV Charging Plans and include in the Final Preliminary Design Report.

Deliverables: Charging Needs Assessment Memo, Conceptual EV Charging Plans

Subtask 1.3: Cost Estimates and Phased Implementation

Develop cost estimates for each of the three sites.

Approach: A professional cost estimating firm with extensive local experience will be utilized to provide estimates for each of the three sites based on conceptual level design. The cost estimates will provide an evaluation of all costs associated with EV infrastructure at each site, and the fuel tank replacement at FHQ (see Subtask 1.5).

Deliverable: Provided in Preliminary Design Report

Subtask 1.4: Electric Fleet Grant, Loans, and Incentives

Review existing capital budgets; identify and analyze financing mechanisms and strategies; and provide recommendations for pursuing grants and incentives.

Approach: Our team will work with the District to assess existing capital plans and budgets and will explore new alternative funding and financing opportunities for vehicle procurement and infrastructure projects. We will provide a comprehensive review of options and best practices from other public agencies. This will include identifying potential grants, rebates, tax credits, and utility incentives. We will review opportunities with the District and verify if the District can apply for funding as soon as it becomes available.

Deliverable: Provided in Preliminary Design Report

Subtask 1.5: Field Headquarters Diesel Fuel Tank Replacement

Evaluate the existing 20,000-gallon underground diesel storage tank and associated refueling facility located at the Field Headquarters site and develop a conceptual design for installation of an above ground diesel storage tank and refueling system.

Approach: The Glumac and Tetra Tech team will provide the services noted below. LDIS, a Tetra Tech company, specializes in oil & gas engineering and will lead this work.

- Review current refueling area for compliance with current building, fire safety, and air quality standards.
- Provide recommendations for modifications or improvements to bring the facility into compliance.
- Summarize permitting requirements completed during design phase and to be completed by Contractor.
- Host a design review meeting to discuss with FHQ operators to understand vehicles requirements
- Develop conceptual site layouts considering diesel fuel delivery routing, location of dedicated EV charging stations, employee and guest parking.
- Provide a project narrative, initial engineering calculations, preliminary project and construction schedule including impacts to existing operations, and technical specifications.

Deliverable: Provided in Preliminary Design Report

Subtask 1.6: Preliminary Design Report

Provide a Preliminary Design Report summarizing the findings of Task 1.

Approach: Glumac will develop a draft report and provide one (1) round of review from OCWD with two hard copies and one digital copy. We will review and incorporate comments and provide a final hard copy and digital copy.

Deliverable: Preliminary Design Report

Task 2: Final Design

Subtask 2.1: 75% Design Submittal

Prepare a 75% Design Submittal for OCWD review.

Approach: Glumac and Tetra Tech will prepare two separate drawing packages. The 75% design drawings will include:

1. FHQ EV Charging Infrastructure
    - Basis of Design
    - Calculation Tables
    - Sheet Specifications
    - Electrical Site Plan
    - Power Site Plan
    - Single Line Diagram and Panel Schedules
    - Electrical Details
2. FHQ Diesel Fuel Tank Replacement
    - Basis of Design
    - Engineering Design
    - Fuel Storage Tank and Fueling Station Data Sheet
    - Tank and Fueling PI&D
    - Instrumentation Plans
    - Structural Plans
    - Piping Plans
    - Electrical Grounding Plans

Deliverable: 75% Design Submittals

Subtask 2.2: 100% Design Submittal

Prepare a 100% Design Submittal for OCWD review.

Approach: Glumac and Tetra Tech will incorporate all revisions from the 75% design review and prepare draft 100% plans and specifications. The cost estimating firm will produce a cost estimate for the FHD EV project and the Diesel Fuel Tank project.

Deliverable: 100% Design Submittals, Cost Estimates Report

Subtask 2.3: Final Design Submittal

Prepare Final Design Drawings.

Approach: Glumac and Tetra Tech will incorporate all revisions from the 100% design review. We will then prepare final construction plans, bid item schedule, specifications, and technical provisions for both projects. We will provide an engineer's estimate of probable costs and provide a detailed bid item schedule to be completed by the bidding contractors.

Deliverable: Final Design Drawings

Task 3: Permitting

Coordinate permitting requirements with regulatory agencies for the construction of the two projects.

Approach: Our team will prepare permit applications on behalf of the District and/or specify permits the Contractor is responsible to complete. It is anticipated the following will be required: Anaheim Fire, Orange County Public Health, South Coast Air Quality Management District, and Anaheim Public Utilities

Task 4: Bid Phase

Provide bid phase services including bid support, addenda preparation, and conforming sets of contract documents.

Approach: Our team will work with the District and provide the following:

- Agenda for and attendance at the pre-bid meeting.
- Bidding support as it pertains to the contract documents and drawing, up to five (5) RFIs.
- Documentation for up to three (3) addenda. Any addenda will be prepared, issued, and documented.
- Incorporate any revisions made by addenda and issue a conformed set of specifications and signed construction plans.

Task 5: Construction Phase

Provide construction administration support including project management, submittal/shop drawing review, responses to requests for information (RFIs) and record drawing preparation.

Approach: Our team will provide the following:

- Attend construction meetings as needed to support OCWD, up to five (5) meetings
- Provide field inspection services, up to forty (40) hours
- Review contractor submittals for completeness and conformity with the contract documents, up to ten (10)
- Review contractor's request for information and prepare responses to the contractor, up to ten (10)
- As appropriate, we will incorporate OCWD comments and/or revisions along with contractor deviations from conformed set to draft documents and finalize all record drawings.

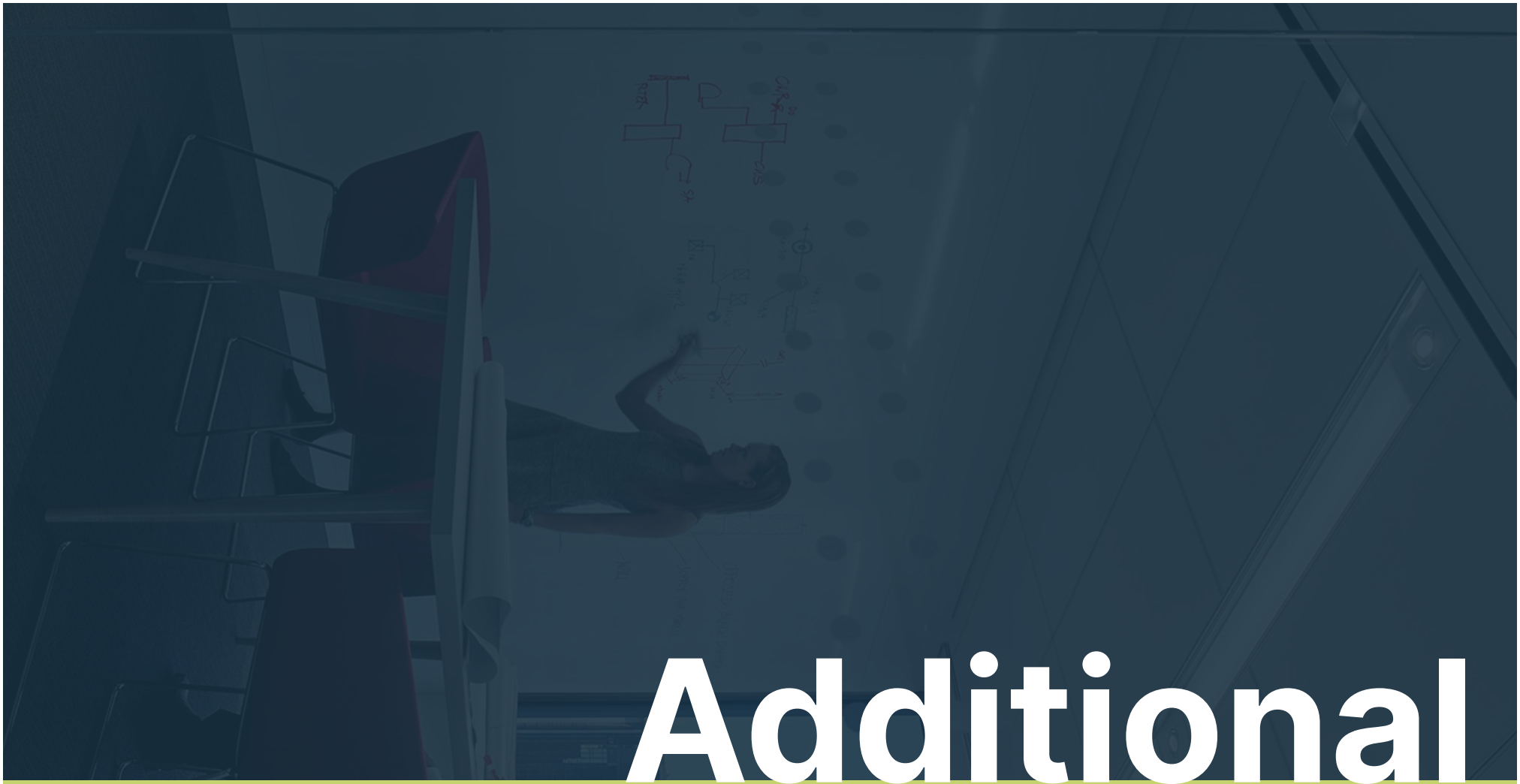
Project Schedule

Glumac and Tetra Tech commit to meeting the following schedule as outlined in the RFP.

Award Project Design	February 18, 2026
Notice to Proceed	March 2, 2026
Design Kick-off Meeting	March 16, 2026
PDR Submittal	April 13, 2026
75% Design Submittal – AST Plans	May 25, 2026
100% Design Submittal – AST Plans	June 22, 2026
Final Design Submittal – AST Plans	July 6, 2026
Advertise Construction Contract – AST Plans	*July 2026*
Open bids for Construction Contract – AST Plans	*August 2026*
Award Construction Contract – AST Plans	*September 2026*
Construction – AST Plans	*September 2026 to May 2027*
75% Design Submittal – EV Charging	*August 2026*
100% Design Submittal – EV Charging	*October 2026*
Final Design Submittal – EV Charging	*December 2026*
Construction – EV Charging	*March 2027 to March 2028*

Project Assumptions

1. **Records:** We assume that provided as-built drawings, utility information, and fleet data provided by OCWD are accurate and complete.
2. **Construction Meetings:** We assume that construction meetings will have the option for Glumac and Tetra Tech staff to participate virtually. In some instances, a Project Manager or staff equivalent to the assigned technical lead will represent Glumac and Tetra Tech in the Construction Meeting when the assigned technical lead is not available.
3. **Record Drawings:** We assume the contractor will provide our team with accurate red-line drawings showing the changes made in the field.
4. **Process Diagrams:** Process design basis, modeling, and Process Flow Diagrams (PFDs) are excluded from our scope of work.
5. **Tank Replacement Design:** The tank replacement project includes the following assumptions and exclusions:
    a. No new electrical loads requiring power, no power system analysis or studies required.
    b. No cathodic protection addition or design
    c. No electrical equipment datasheets, lighting protection or electrical representation required.
6. **Tank Removal:** It is assumed that the permitting for tank removal will be provided by the contractor. Glumac and Tetra Tech have included consulting services to assist in developing project scoping documents. We assume that the contractor will manage and perform all required planning and testing for this scope.
7. **Survey:** Glumac and Tetra Tech will engage a third-party subconsultant firm to provide a site survey. A budget allowance has been included for this work.
8. **Geotech:** Geotechnical Engineering services are excluded from our scope.



Additional Services

Additional Services

ADDITIONAL SERVICES OR POTENTIAL SCOPE MODIFICATIONS

The Glumac and Tetra Tech proposal does not include any specific additional services. Outlined below are our comments about potential modifications for OCWD's consideration.

1. **Site Survey:** Glumac and Tetra Tech have included scope and fees for a site survey. If a site survey is not required based on availability of as-builts, the site survey can be removed from the project scope.
2. **Cost Estimating:** if desired by OCWD, the cost estimating firm can provide cost estimates at the 75% and Final Design Submittal milestones for the FHQ and Diesel Fuel Tank projects. We have included cost estimating services at the conceptual level and 100% Design level in our scope and fee.
3. **Onsite Generation & Storage:** Glumac will provide a high-level assessment of onsite power generation and storage during the Preliminary Assessment Phase. Full engineering design of those systems is not included. If OCWD would like to include full engineering design of onsite power generation and storage based on the results of the preliminary evaluation, the additional scope can be added to the project.
4. **Tank Removal:** It is assumed the contractor selected will provide permitting for the existing diesel tank removal. Glumac and Tetra Tech have included consulting services to assist in reviewing during the Task 1: Preliminary Design Phase to develop a project summary narrative and identify required forms. Additionally, we have included hours in our budget for Tetra Tech's environmental consulting specialist to support. Additional environmental services can be contracted as an add service including for additional consulting, environmental oversight, testing management, and remediation planning.

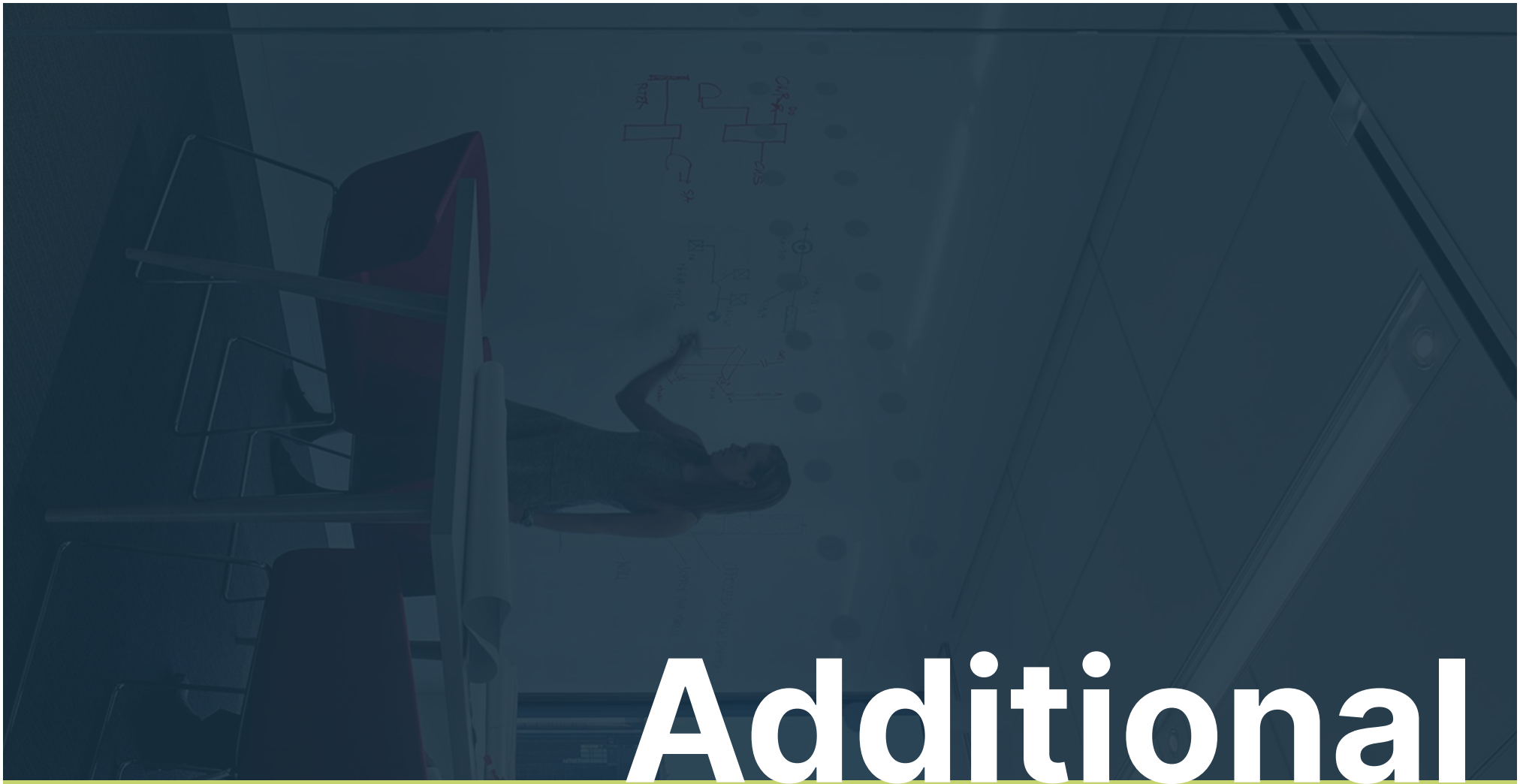
Man-Hour Estimate

Man-Hour Estimate

Project Role	1.1 Existing Fleet Assessment	1.2 Electric Vehicle Infrastructure Evaluation	1.3 Cost Estimates and Phasing	1.4 Electric Fleet Grant, Loans, and Incentives	1.5 FHQ Diesel Fuel Tank Replacement	1.6 Preliminary Design Report	**Phase 1: Preliminary Design Report**	2.1 Survey + 75% Design Submittal	2.2 100% Design Submittal	2.3 Final Design Submittal	**Phase 2: Final Design**	3.1 Permitting	**Phase 3: Permitting**	4.1 Bid Phase	**Phase 4: Bid Phase**	5.1 Submittal/shop Drawing Review	5.2 RFI Responses	5.3 Record Drawing preparation	5.4 Construction Meetings	5.5 Field Inspection Services	**Phase 5: Construction Phase**	**TOTAL Project Hours**
Project Director	4	2	2	2	0	4	14	4	2	1	7	2	2	2	2	1	1	1	1	1	5	**30**
Project Manager	4	4	8	4	8	8	36	20	12	10	42	12	12	10	10	4	6	4	20	4	38	**138**
Sr. DER Electrical Engineer	2	18	4	4	0	14	42	16	10	8	34	6	6	10	10	6	6	2	6	0	20	**112**
Electrical Engineer	0	22	0	0	0	4	26	42	14	8	64	2	2	12	12	10	10	16	0	0	36	**140**
Fleet Analyst	48	24	8	8	0	12	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**100**
Mech, Process, Piping, I&C	0	0	0	0	32	8	40	100	48	24	172	8	8	6	6	6	4	10	1	0	21	**247**
Fuel Tank Design	0	0	0	0	24	8	32	40	20	16	76	4	4	4	4	3	2	5	1	0	11	**127**
Fuel Tank PM/Eng Lead	0	0	0	0	24	4	28	20	10	8	38	4	4	4	4	2	2	2	2	0	8	**82**
Survey	0	0	0	0	0	0	0	60	0	0	60	0	0	0	0	0	0	0	0	0	0	**60**
Civil Engineer	0	16	6	0	16	27	65	36	28	24	88	2	2	21	21	15	11	11	4	0	41	**217**
BIM Production Specialist	0	0	0	0	0	0	0	12	8	8	28	0	0	4	4	0	0	4	0	0	4	**36**
Environmental Specialist	0	0	0	0	16	4	20	0	0	0	0	4	4	2	2	0	2	2	0	0	4	**30**
Cost Estimator	0	0	54	0	10	0	64	0	100	0	100	0	0	0	0	0	0	0	0	0	0	**164**
On-Call Field Inspection	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	40	**40**
Total Hours by Phase:	**58**	**86**	**82**	**18**	**130**	**93**	**467**	**350**	**252**	**107**	**709**	**44**	**44**	**75**	**75**	**44**	**57**	**57**	**35**	**45**	**228**	**1523**

Classification	Firm	Personnel
Project Director	Glumac, a Tetra Tech Company	Brian Stern
Project Manager	Glumac, a Tetra Tech Company	Zach Gates
Sr. DER Electrical Engineer	Glumac, a Tetra Tech Company	Nick Pedersen
Electrical Engineer	Glumac, a Tetra Tech Company	Van Vu
Electrical Designer	Glumac, a Tetra Tech Company	Andrew Choi
Fleet Analyst	Glumac, a Tetra Tech Company	Emily Kawka
BIM Production Specialist	Glumac, a Tetra Tech Company	
Fuel Tank PM/Engineering Lead	LDIS, a Tetra Tech Company	Russel Orona
Mechanical, Process, Piping, I&C Design	LDIS, a Tetra Tech Company	Gabe Cullum, Ken Geghardt, Kaylen Iles
Fuel Tank & Fueling Station Design	LDIS, a Tetra Tech Company	Britta Thornton, Nabeal W. Khatib
Civil Engineer	Tetra Tech	Chrisna Raymond, Jodie Yu
Structural Engineer	Tetra Tech	
Environmental Specialist	Tetra Tech	Alexis Bahou
Cost Estimator Director	MGAC	Rick Lloyd
Sr. Cost Estimator	MGAC	
Cost Estimator	MGAC	

Additional Glumac and Tetra Tech personnel may support the project within the job classifications above. Glumac and Tetra Tech will engage an additional subconsultant firm to provide a site survey for the FHQ site.



Additional Statements

CERTIFICATE OF LIABILITY INSURANCE

DATE(MM/DD/YYYY)
09/18/2025

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:	
Aon Risk Insurance Services West, Inc. Los Angeles CA Office 707 Wilshire Boulevard Suite 2600 Los Angeles CA 90017-0460 USA	PHONE (A/C. No. Ext): (866) 283-7122	FAX (A/C. No.): (800) 363-0105
	E-MAIL ADDRESS:	

INSURED	INSURER(S) AFFORDING COVERAGE	NAIC #
Glumac, A Tetra Tech Company 900 SW Fifth Avenue Suite 1600 Portland OR 97204 USA	INSURER A: Safety National Casualty Corp	15105
	INSURER B: Allied World Surplus Lines Insurance Co	24319
	INSURER C: American International Group UK Ltd	AA1120187
	INSURER D:	
	INSURER E:	
	INSURER F:	

COVERAGES **CERTIFICATE NUMBER:** 570115458913 **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS. **Limits shown are as requested**

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY CLAIMS-MADE X OCCUR X X, C, U Coverage GEN'L AGGREGATE LIMIT APPLIES PER: POLICY X PRO-JECT X LOC OTHER:			GL6676804	10/01/2025	10/01/2026	EACH OCCURRENCE DAMAGE TO RENTED PREMISES (Ea occurrence) MED EXP (Any one person) PERSONAL & ADV INJURY GENERAL AGGREGATE PRODUCTS - COMP/OP AGG	$2,000,000 $1,000,000 $10,000 $2,000,000 $4,000,000 $4,000,000
A	AUTOMOBILE LIABILITY X ANY AUTO OWNED AUTOS ONLY HIRED AUTOS ONLY SCHEDULED AUTOS NON-OWNED AUTOS ONLY			CA 6676805	10/01/2025	10/01/2026	COMBINED SINGLE LIMIT (Ea accident) BODILY INJURY (Per person) BODILY INJURY (Per accident) PROPERTY DAMAGE (Per accident)	$5,000,000
C	X UMBRELLA LIAB X OCCUR EXCESS LIAB CLAIMS-MADE DED RETENTION			62785232	10/01/2025	10/01/2026	EACH OCCURRENCE AGGREGATE	$5,000,000 $5,000,000
A A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY ANY PROPRIETOR / PARTNER / EXECUTIVE OFFICER/MEMBER EXCLUDED? Y/N N (Mandatory in NH) If yes, describe under DESCRIPTION OF OPERATIONS below	N / A		LDC4068970 AOS PS4068969 WI	10/01/2025 10/01/2025	10/01/2026 10/01/2026	X PER STATUTE OTH-ER E.L. EACH ACCIDENT E.L. DISEASE-EA EMPLOYEE E.L. DISEASE-POLICY LIMIT	 $1,000,000 $1,000,000 $1,000,000
B	Environmental Contractors and Prof			03120276 Prof/Poll-Claims Made Cov SIR applies per policy terms & conditions	10/01/2025	10/01/2026	Each Claim Aggregate	$5,000,000 $5,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)

Stop Gap Coverage for the following states: OH, ND, WA, WY.

CERTIFICATE HOLDER

Glumac, A Tetra Tech Company
900 SW Fifth Avenue,Suite 1600
Portland OR 97204 USA

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE

Aon Risk Insurance Services West, Inc.

Holder Identifier : 300

Certificate No : 570115458913

ACORD 25 (2016/03)

6.1.10 OCWD Standard Agreement

Tetra Tech and Glumac request the following terms and be added to the terms and conditions:

To the fullest extent permitted by law, the total liability, in the aggregate, of Contractor, Contractor's officers, directors, partners, employees, agents, and subconsultants, to OCWD, and anyone claiming by, through, or under OCWD for any claims, losses, costs, or damages whatsoever arising out of, resulting from or in any way related to this Project or Agreement from any cause or causes, including but not limited to negligence, professional errors and omissions, strict liability, breach of contract, or breach of warranty, shall not exceed the total compensation received by Contractor or $1,000,000, whichever is greater. OCWD further covenants that it will not, under any circumstances, bring a lawsuit, demand, or claim of any kind against Contractor's individual employees, officers, directors or agents and that OCWD's sole remedy will be against Contractor.

OCWD and Contractor waive all liquidated and/or consequential or special damages, including, but not limited to, loss of use, profits, revenue, business opportunity, or production, for claims, disputes, or other matters arising out of or relating to the Contract or the services provided by Contractor regardless of whether such claim or dispute is based upon breach of contract, willful misconduct or negligent act or omission of either of them or their employees, agents, subconsultants, or other legal theory, even if the affected party has knowledge of the possibility of such damages. This mutual waiver shall survive termination or completion of this Contract.

6.1.11 Billing

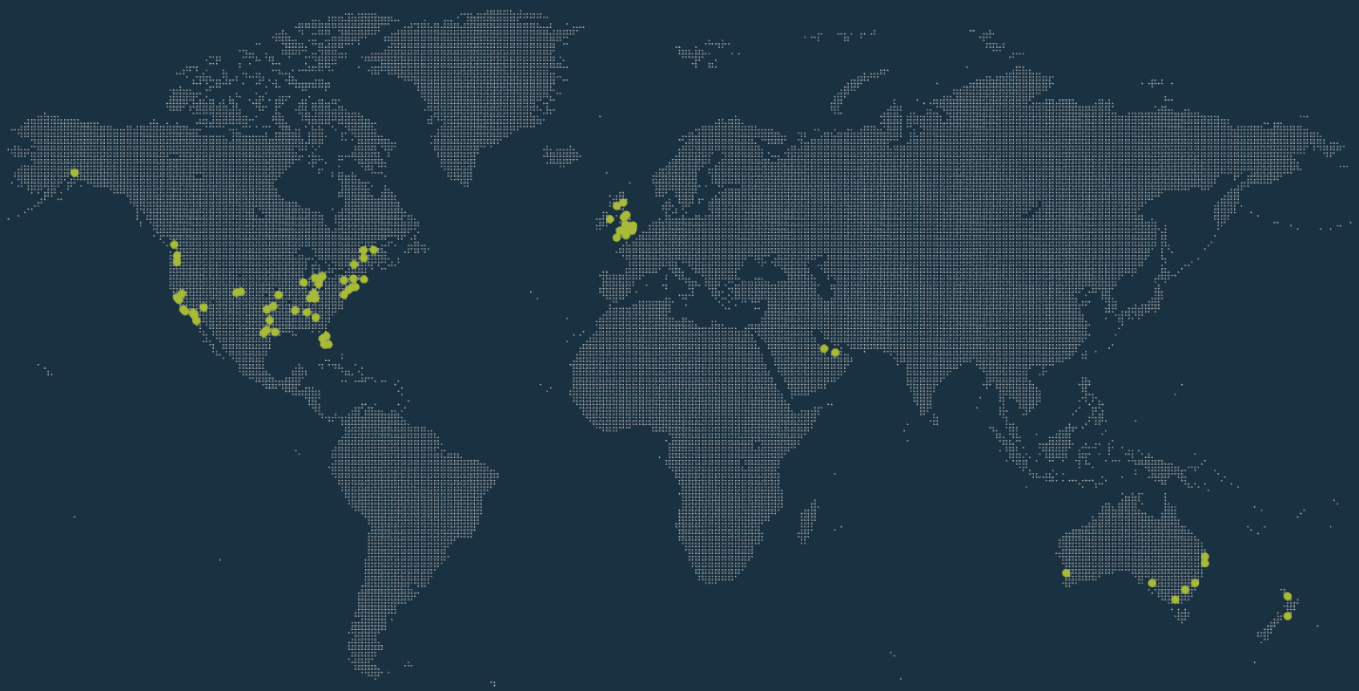
Tetra Tech and Glumac accept the requirements stated in Section 6.1.11 of the RFP.

6.1.12 Conflict of Interest

Tetra Tech and Glumac, individuals employed by, or firms employed by or associated, do not have a conflict of interest with the Project.

6.1.13 Equal Employment Opportunity and Affirmative Action Requirements

Tetra Tech and Glumac are proud to be an Equal Opportunity Employer and confirms that we comply with all EEO and Anti-Discrimination legislation in all jurisdictions in which we operate. Our firm has a current Affirmative Action Plan and complies with all legal guidelines and EEO reporting responsibilities. Throughout our history, we have prioritized the equitable inclusion of all people. All qualified candidates will be considered without regard to race, color, religion, national origin, military or veteran status, gender, age, disabilities, sexual orientation, gender identity, pregnancy and pregnancy-related conditions, genetic information, and any other characteristics protected by the law. We invite resumes from all interested parties.



TETRA TECH
High Performance Buildings Group

GLUMAC

LET'S TALK

Zach Gates
Project Manager
(949) 383-4966
ZGates@glumac.com

Brian Stern
Director of Energy
(415) 398-7667
bstern@glumac.com

Appendix: Resumes

Brian Stern, CEA

PROJECT DIRECTOR / DIRECTOR OF ENERGY

BIO

Brian is Glumac's Director of Energy and leads a team of energy consultants and engineers that support various strategic energy planning, modeling, auditing and retro-commissioning projects. He brings expertise in building decarbonization, infrastructure resilience, and distributed energy resources. He is among Glumac's firm-wide leaders in EV charging projects.

KNOWN FOR

- Building Decarbonization
- Energy Resilience
- Climate Action

TENURE

- With Glumac Since: 2014
- In the Industry Since: 2013

EDUCATION & LICENSES

- B.S. Mechanical Engineering, University of California, Los Angeles
- Certified Energy Analyst, CABEC (2017)
  - NR19-17-30014

PROFESSIONAL AFFILIATIONS

- United States Green Building Council, Los Angeles Chapter, Member
- International Living Future Institute, Member

HOME OFFICE

Los Angeles

PROJECT ROLE

As Director of energy, Brian will provide executive oversight and will work on scope development, cost evaluations and corporate staffing resources. Brian will be responsible for ensuring the design of the electric vehicle charging infrastructure meets the specific goals and objectives of Nevada County, that quality services are provided, and client satisfaction is ensured.

RELEVANT PROJECT EXPERIENCE

Orange County Waste and Recycling Fleet Electrification Plan, Orange County, CA

- Developed a fleet electrification plan for a CARB ACT compliance
- Provided infrastructure assessments and energy resilience strategy

Lawrence Livermore National Lab Site 200 EV Study, Livermore, CA

- Provided EV charging station engineering feasibility studies for 40+ parking locations
- Developed a campus EV development plan to secure Department of Energy funding

Central Coast Community Energy Electric Vehicle Technical Assistance and Implementation, Various Locations, CA

- Technical assistance for installing EV charging stations at commercial and multifamily customer sites

Confidential CONRAC Electric Vehicle Charging Strategy, Confidential Location

- Developed a strategy for EV charging to a consolidated rental car facility at one of the busiest airports globally

Sacramento Municipal Utility District (SMUD) Electrification and Energy Efficiency Program Support, Various Locations, CA

- Multi-year energy program contract to provide technical assistance to SMUD customers with electrification and building decarbonization efforts

Zach Gates

PROJECT MANAGER / MAIN POINT OF CONTACT

BIO

Zach brings six years of diverse project management experience in the AEC industry, spanning both contracting and design consultation roles. Known for his collaborative approach and commitment to teamwork, Zach thrives in environments that foster project camaraderie and shared goals.

KNOWN FOR

- Project Management
- EVCS Infrastructure
- Capital Planning

TENURE

- With Glumac Since: 2021
- In the Industry Since: 2019

EDUCATION & LICENSES

- M.A. Business Administration, University of East London
- B.A. Business Management, California State University Long Beach
- LEED Green Associate

PROFESSIONAL AFFILIATIONS

- United States Green Building Council, Member

HOME OFFICE

Portland

PROJECT ROLE

As Project Manager, Zach will be leading Glumac's engineering team with the goal of providing a high-quality product. He will oversee the day-to-day management of the team and be the main point-of-contact for the OCWD. Zach will be responsible for scheduling and managing the project milestones and will see that major components of the project are on track and completed.

RELEVANT PROJECT EXPERIENCE

Orange County Waste and Recycling Fleet Electrification Plan, Orange County, CA

- Developed a fleet electrification plan for a CARB ACT compliance
- Provided infrastructure assessments and energy resilience strategy

Orange County Public Works Electric Vehicle Charging Station (EVCS), Orange County, CA

- Conceptual site plans for EVCS for 21 sites throughout Orange County
- Conceptual drawings used in pursuing complete design and installation of roughly 15-300 EVCS over a 5 year schedule

Confidential Technology Office / Lab Client, San Diego, CA

- TI build out of two-story,125,000 sf building, including labs, office, and support spaces. Labs include anechoic chambers and electronics labs
- Included mechanical, electrical, and plumbing design and engineering

Stocker Street Creative, Los Angeles, CA | **Targeting LEED Gold**

- 314,012 sf, four (4) buildings with a parking structure
- Four (4) TV/movie studios; one (1) office building; one (1) mixed-use building, housing studio support (makeup, hair, etc.) and lease-able office space
- Includes MEP engineering

Emily Kawka, LEED GREEN ASSOCIATE, CGP

FLEET ELECTRIFICATION PLANNING

BIO

Emily is a motivated energy specialist; prior to joining Glumac, she worked on a thesis of data-driven modeling and analysis of residential building energy consumption and demand flexibility. She brings strength in data science, energy use, energy modeling, electricity load profiles, and technical writing.

KNOWN FOR

- Data Science
- Electric Vehicles
- Energy Modeling

TENURE

- With Glumac Since: 2023
- In the Industry Since: 2019

EDUCATION & LICENSES

- B.S. Chemical Engineering, Michigan State University
- M.S. Civil Engineering, Michigan State University
- National Association of Home Builders Certified Green Professional (CGP)

PROFESSIONAL AFFILIATIONS

- United States Green Building Council, Los Angeles Chapter, Member
- American Society of Heating, Refrigerating, and Air-Conditioning Engineers, Member

HOME OFFICE

Los Angeles

PROJECT ROLE

In the role of Fleet Planning Lead, Emily will assess the OCWD's existing vehicles and the EV alternatives. Emily will support the project team by providing fleet electrification planning, energy and total-cost-of-ownership modeling for the OCWD. She will assess resilience and onsite renewable energy.

RELEVANT PROJECT EXPERIENCE

Orange County Waste and Recycling Fleet Electrification Plan, Orange County, CA

- Developed a fleet electrification plan for a CARB ACT compliance
- Provided infrastructure assessments and energy resilience strategy

Confidential CONRAC Electric Vehicle Charging Strategy, Confidential Location

- Developed a strategy for EV charging to a consolidated rental car facility at one of the busiest airports globally

Contra Costa County Distributed Energy Resource Plan, Martinez, CA

- Assisted with the planning and implementation of energy efficiency, demand response, EV charging infrastructure, fleet electrification, battery energy storage systems, and solar systems

King County Metro Transit System Electrification Planning, Various Locations, WA | **Targeting Envision Platinum**

- Sustainability consulting for the infrastructure to support the conversion to a zero-emission fleet by 2035, including Envision documentation

San Diego State University Carbon Neutrality Plan, San Diego, CA

- Established a roadmap to decarbonize campus energy, building, and transportation system
- Developed a fleet electrification to transition campus vehicles and deploy charging infrastructure

BIO

Nick has over 20 years of experience as an electrical engineer in a wide variety of functions. His expertise is in the power systems of commercial and industrial buildings, campuses, and Distributed Energy Resources.

KNOWN FOR

- EV Charging Infrastructure
- Solar PV Systems
- Battery Storage Systems

TENURE

- With Glumac Since: 2025
- In the Industry Since: 2000

EDUCATION & LICENSES

- MBA, Baker University
- B.S. Electrical Engineering, Kansas State University
- Licensed Professional Engineer
  - AR, CA, CO, FL, KS, MA, MI, MN, MO, NE, NY, OK, OR, SD, TX, WA

PROFESSIONAL AFFILIATIONS

- American Society of Heating, Ventilation and Air Conditioning Engineers
- Institute of Electrical and Electronics Engineers
- Illuminating Engineering Society
- Clean Energy Business Council

HOME OFFICE

Irvine

Nick Pederson, PE

SENIOR ELECTRICAL ENGINEER

PROJECT ROLE

As the Senior Electrical Engineer, Nick will play a crucial role in developing overall scope strategy, lead the electrical designers, provide quality control, and report on progress to the project team and the OCWD. Nick will also be the Engineer of Record for construction documents and specifications related to this project.

RELEVANT PROJECT EXPERIENCE

Orange County Waste and Recycling Fleet Electrification Plan, Orange County, CA

- Developed a fleet electrification plan for a CARB ACT compliance
- Provided infrastructure assessments and energy resilience strategy

Orange County Public Works Electric Vehicle Charging Station (EVCS), Orange County, CA

- Conceptual site plans for EVCS for 21 sites throughout Orange County
- Conceptual drawings used in pursuing complete design and installation of roughly 15-300 EVCS over a 5 year schedule

Golden Empire Transit District Bus EV Readiness, Bakersfield, CA*

- Designed the electrical, PV, and battery storage systems in preparation for a large addition of electric vehicle charging stations for fleet vehicles at central office and depot
- Electrical power for electric vehicle chargers, a small building, and a hydrogen fueling center

City of Montclair Police Station, Montclair, CA*

- Designed the electrical power and EV charging systems, which included special considerations for resiliency and reliability for first responders

Ridgecrest Corporate Yard, Ridgecrest, CA*

- Designed electrical, PV, lighting, and EV charging systems
- Designed electrical power and charger installation for four (4) dual-port Level II chargers and two Level III rapid charging stations

TETRA TECH

Crisna Raymond, PE
Civil Engineer

EXPERIENCE SUMMARY

Ms. Raymond has 29 years of engineering expertise in design and construction support, specializing in both water/wastewater and transportation projects. Her extensive experience in water/wastewater projects encompasses pressure and gravity pipelines, wells, pump stations, water treatment plants, and reservoirs.

In the realm of transportation, she has worked on new arterial roads, street improvement and widening projects, storm drainage systems, grading, and site improvements.

Education:
BS, Civil Engineering, University of Washington, Seattle, 1996

Registrations/Certifications:
Registered Civil Engineer: California No. 69403, 2006

Office Location:
Irvine, CA

Total Years of Experience:
(1996) 29

Years with Tetra Tech:
(05/2002) 23

EXPERIENCE

PFAS On Call Contract, Orange County Water District, CA. 2021–2024. Civil Engineer. IX/GAC treatment for PFOS and PFOA design for 18 affected wells in Main Orange County Basin. Design, estimating capital and operating costs, coordinating with vessel suppliers, and construction management for:

- **Serrano Water District Well #5 and #9 (In Operation):** 3,000-GPM IX System with a bag filter pre-treatment, 3,000-GPM booster pump station and new chemical feed system for disinfection.
- **Kimberly Well 1A (In Operation):** Located on a very small site with a single well, facility designed to produce 3,000 GPM using an IX System with a bag filter pre-treatment and new chemical feed system for disinfection.
- **Fullerton Main Plant (In Operation):** Plant treats six on-site wells with a total capacity of 10,100 GPM. PFOS, PFOA, and VOCs removed using 6- to 12-f00t diameter, 40,000 lb. GAC vessels discharging into a forebay, then pumped into distribution system. Remaining wells treated with an IX system consisting of eight vessels and bag filters for pre-treatment.
- **Yorba Linda Water District Headquarters Plant (In Operation):** System treats water from 10 wells with a total capacity of 17,400 GPM. An IX System consisting of 11 pairs of lead/lag vessels (22 vessels total), bag filter pretreatment, booster pump station, and new on-site generation system for chlorine disinfection. Extensive analysis of site improvements completed to get system onto existing site.
- **Kimberly 2 PFAS WTP, Fullerton, CA.** Final design to provide PFAS treatment at city's Kimberly 2 Well. Plant treats flow from one well with future planning to add a second well to treatment site for a total capacity of 4.6 MGD. Treatment processes include 5-micron bag filters, ion exchange pressure vessel contactors, and new chemical feed facilities for sodium hypochlorite. Demolished booster pump station and replaced well pump to support delivery of water through treatment and directly into distribution.
- **Sherrill Well PFAS WTP (Ongoing).** This project is for the final design to provide PFAS treatment at the Golden State Water Company Sherrill Well. The 500 gpm plant will treat flow from one well through 5-micron bag filter and ion exchange pressure vessel contactors. The well pump is being replaced to support delivery of the water through treatment and directly into distribution.

SARER Phase 1B Channel and Recharged Basin Project, San Bernardino Valley Municipal Water District, Highland, CA. 2019–2020. Civil Engineer. Multi-disciplined design, engineering, and construction management services for project, in cooperation with client's partners San Bernardino Valley Water Conservation District, Wester Municipal Water District, and Riverside Public Utilities. Provided constructability and value engineering review of 60-percent drawings, preparation of construction documentation, support during bidding process, and construction management and inspection for facility installation.

Foothill Pipeline Relocation, San Bernardino Valley Municipal Water District, Highland, CA. 2018–2019. Civil Engineer. Designed large diameter pipeline that relocated approximately 1,800 LF of 78-inch steel pipe around proposed expansion of San Manuel Casino. Steel pipe required impressed current cathodic protection system and insulating joints at both points of connection. New pipe alignment required relocation of a 54-inch SD pipe

Foothill Toll Road South Utility Relocations, Transportation Corridor Agency, CA. 2006–2007. Project Engineer. Design to relocate required utilities along 17-mile extension of Toll Road. Coordinated relocations with various utility companies and cities, identified easements and prior rights ownership, and began process for Master Utility Agreements for Phase 2 construction. Prepared preliminary relocation plan and profiles for 30-percent cost estimating by contractor.

Sepulveda Feeder Pump Stations, Metropolitan Water District, Venice, CA. 2023–Ongoing. Civil Engineer. Project initiated to enhance water delivery reliability in the west area, especially during low State Water Project deliveries or Jensen plant outages. Project included two new pump stations along Sepulveda Feeder, supplementing Greg Avenue Pump Station, which operated at full capacity during recent droughts. Initial phase designed for up to 30 cfs improved system flexibility and facilitate maintenance in Jensen Exclusive Area, with potential future expansion to 160 cfs. Project executed using a Progressive Design-Build approach, with J.F. Shea as the Design-Builder and Tetra Tech as the Lead Engineer.

Carlsbad Desalination Intake Pump Station – Design of a 300 MGD Dilution Pump Station, Phase 1, Kiewit Shea Desalination, Carlsbad, CA. 2021. Project Engineer. Design-build project for design and construction of brine dilution pumps at plant with minimal production shutdown. Project consists of hydraulic pump modeling and design of dilution pumps, discharge piping, brine piping, and flowmeter facilities, NRG forebay modifications including new screen backwash pumps and tunnel bulkheads, a new electrical building, and the associated civil and grading work. Project included extensive structural rehabilitation work and a new floating dock in lagoon. Provided instrumentation and controls for new facility operation and ties in new signals to plant's control system. Project had many environmental factors and required working closely with local permitting agencies, city, and plant operators as well as Encina Power station.

Compton East Reservoir and Booster Pump Station, Liberty Utilities, Compton, CA. 2017–2020. Project Engineer. Design of a booster pump station, including site development, to pump potable water from a new 650,000-gallon reservoir into water system. Design-Build project provided potable water storage to East Compton Water System and reduced reliability from imported water.

Burbank Empire/I-5 Pump Station and Storm Drain, City of Burbank, CA. 2011–2012. Project Engineer. Design of a storm drain pump station and storm drainpipe re-alignment as part of a larger Caltrans project to construct a grade separation of Empire/San Fernando Avenue at Metrolink railroad tracks and I-5.

Progressive Design-Build, Advanced Water Purification Facility at RP-4 Phase 1, Inland Empire Utilities Agency, Chino, CA. 2025-Ongoing. Project Engineer. Phase 1 Progressive Design-Build Advanced Water Purification Facility (AWPF) at RP-4, developing the Basis of Design, 30 percent and 60 percent design packages for this cornerstone of IEUA's Chino Basin Program to enhance regional water-supply reliability and groundwater sustainability. The AWPF will produce 15,000 acre-feet per year (AFY) of purified water by treating RP-4 tertiary effluent, Title 22 tertiary water from RP-1 and RP-4 via IEUA's recycled water backbone, and Tertiary effluent from the Rialto WWTP.

Mitsubishi Microgrids for San Diego Gas and Electric (SDG&E) substations, Design-Build, Morrow Meadows Corporation, San Diego County, CA. 2022-2024. Project Engineer. Tetra Tech is providing 30-percent, 90-percent, and issued-for-construction civil, structural, electrical, and communication design for four new SDG&E microgrids, located adjacent to the Boulevard, Clairemont, Elliot, and Paradise SDG&E substations. The civil design primarily consists of equipment layout, grading, security fencing, and drainage. The structural design includes many different equipment pads and retaining walls needed for civil designs. The electrical and communication design focus is on the equipment selection coordination, power supply and communication design, conduit routing, site lighting, and site security.

Prairie City State Vehicular Recreation Area WTP, California Department of Parks and Recreation, Rancho Cordova, CA. 2021–2022. Project Engineer. Engaged by Aerojet Rocketdyne, Inc. and in collaboration Parks and Recreation, conducted a preliminary design review and secured a Division of Drinking Water permit for installation and operation of ion exchange (IX) treatment equipment at Prairie City State Vehicular Recreation Area. IX treatment necessary for removal of perchlorate from well feed water. Documented engineering review and evaluated

Man Hong (Eric) Yuen, PE, SE

Structural Engineer

EXPERIENCE SUMMARY

Mr. Yuen has 18 years of experience in the design, analysis, and detailing of structural engineering. He is knowledgeable in reinforced concrete, masonry, structural steel and wood frame design, and construction for a variety of building and infrastructure projects including reservoirs and water/wastewater treatment facilities, as well as seismic retrofit of existing structures.

Education:
MS, Structural Engineering, California State Polytechnic University Pomona, 2016

BS, Civil Engineering, California State Polytechnic University, 2007

Registrations/Certifications:
Professional Engineer:
California, No. 75983, 2009
Montana, No.63246, 2020
Colorado, No. 56159, 2019

Professional Structural Engineer:
California, No. 6177, 2014
Oregon, No. 94532, 2019

Cal OES Safety Assessment Program Evaluator Training

Fall Protection (Ladders, Scaffolding, Aerial Lifts), 10/2022

H^2S Protection Training
Respiratory Protection Training
Confined Space Training, 10/2022

Professional Affiliations:
American Institute of Steel Construction

Office Location:
San Dimas, CA

Total Years of Experience:
(2007) 18

Years with Tetra Tech:
(03/2007) 18

EXPERIENCE

Kimberly 1A PFAS, Orange County Water District, Fullerton, CA. 2019. Structural Engineer. Prepared plans and specifications for construction of a PFAS system. Fullerton Main Plant treats six on-site wells with a total capacity of 10,100 GPM. PFOS, PFOA, and VOCs removed using 6- to 12-foot-diameter, 40,000 Ib. GAC vessels discharge into a forebay, then pumped into distribution system. Remaining wells treated with an Ion Exchange system consisting of eight vessels and bag filters for pre-treatment. New wellhead construction requires demolition of light frame metal pump building and concrete pump pedestal.

Yorba Linda Water District Headquarters PFAS, Orange County Water District, Yorba Linda, CA. 2019. Structural Engineer. Prepared plans and specifications for construction of a PFAS system that treats water from 10 wells with a total capacity of 17,400 GPM. An Ion Exchange System consists of 11 pairs of Lead/ Lag Vessels (22 vessels total), bag filter pre-treatment, booster pump station, and new on-site generation system for chlorine disinfection. Completed an extensive analysis of site improvements to get system on existing site. New PFAS treatment facility construction involved partial demolition of concrete slab

Kimberly Well 2 PFAS Design, OCWD, Fullerton, CA. 2023-2025. Lead structural Engineer. This project is for the final design to provide PFAS treatment at the City of Fullerton Kimberly 2 Well. The plant will treat flow from one well with future planning to add a second well to the treatment site for a total capacity of 4.6 MGD. Treatment processes include 5 micron bag filters, ion exchange pressure vessel contactors, and new chemical feed facilities for sodium hypochlorite. The existing booster pump station is being demolished as part of this project and the well pump is being replaced to support delivery of the water through treatment and directly into distribution.

Sherrill PFAS WTP Design, OCWD, Anaheim, CA 2023-2025. Lead structural Engineer. Final design to provide PFAS treatment at the Golden State Water Company Sherrill Well. The 500 gpm plant will treat flow from one well through 5 micron bag filter and ion exchange pressure vessel contactors. The well pump is being replaced to support delivery of the water through treatment and directly into distribution.

Main Plant PFAS WTP, City of Fullerton, CA. 2023–2025. Structural QA-QC Reviewer. Tetra Tech provided design and construction services for plant that will treat six on-site wells with a total capacity of 10,100 GPM. PFOS, PFOA and VOCs will be removed using 6- to 12-foot-diameter, 40,000 Ib. GAC vessels will discharge into a forebay then be pumped into the distribution system. Remaining wells will be treated with an IX system consisting of eight vessels and bag filters for pre-treatment.

John Garthe Reservoir PFAS Treatment, City of Santa Ana, CA. 2023–Ongoing. Structural Engineer. Final design for PFAS treatment at John Garthe site, supplied by five wells to produce up to 13.8 MGD. New centralized treatment plant removes PFAS from well supply line prior to storage at reservoir. Treatment equipment includes 5-micron cartridge filters, ion exchange pressure vessel contactors, new on-site generation, and storage and feed facilities for sodium hypochlorite. Evaluated well pumps on an individual basis and will replace or modify as needed to meet new plant and system demands.

SGU PFAS Treatment Plant, Irvine Ranch Water District, Irvine, CA. 2021–2023. Structural Engineer. Design and construction support for 12 shallow wells affected by very high VOC levels and PFAS located on site of former El Toro Marine Base. Design included GAC treatment and replacement of an air stripper system. City requires pipeline permitting.

Well ET-1 PFAS, Irvine Regional Water District, Irvine, CA. 2020. Structural Engineer. Prepared plans and specifications for construction of a PFAS system. Developed ET-1 to increase utilization of Irvine Subbasin through

recovery and treatment of VOC- impaired, poor-quality groundwater. Project cleaned up contaminated VOCs with treated water used for non-potable purposes.

Albert Robles Center for Water Recycling and Environmental Learning (Formerly known as GRIP), Water Replenishment District of Southern California, Pico Rivera, CA. 2016–2019. Structural Engineer. New 13,000-acre-feet-per-year of fully advanced treated recycled water. Structures include a two-story administration building with a rooftop garden, a 45,000-SF process building, a 3-MG buried concrete equalization tank, and a dozen ancillary structures. Administration building has rigid floor and roof diaphragms with concentric steel braced frames as lateral force resisting elements. Process building has a steel-framed roof and concrete masonry shear walls. An extensive network of cable trays and piping supported from roof for gravity and seismic loads. Equalization tank is a buried, rectangular concrete structure designed in accordance with ACI 350. Ancillary structures are a combination of reinforced concrete, steel, and masonry.

Pure Water Oceanside Advanced Water Purification Facility, City of Oceanside, CA. 2018–2021. Lead Structural Engineer. To counteract growing reliance on imported water supply while increasing local water supplies, and to meet city's long-term goal of 50% water independence by 2030, designed a new Advanced Water Purification Facility (AWPF). AWPF provides highly treated water supply with specific purpose to recharge MGB in upper San Luis Rey recycled water service area through indirect potable reuse as a component of overall Pure Water Oceanside project. AWPF built on a former recycled water storage pond at San Luis Rey WRF. AWPF process designed as a multi-barrier treatment process and includes microfiltration, reverse osmosis, and ultraviolet advanced oxidation process. AWPF also includes chemical storage and feed equipment for conditioning, stabilizing and membrane cleaning. Facilities design includes influent flow storage, flow diversion, and associated pumping.

PFAS Arlington Desalter Plant, Western Municipal Water District, Riverside, CA. 2025-Ongoing. Lead Structural Engineer. Provided technical support to Western Municipal Water District (WMWD) for the evaluation and design of a new treatment process for per- and polyfluoroalkyl substances (PFAS) removal at the Arlington Desalter in Riverside County, CA. The 7.25 MGD facility utilizes reverse osmosis (RO) and blending to reduce nitrate and total dissolved solids (TDS) in groundwater from the unadjudicated Arlington Sub-basin, supplying potable water to the Cities of Norco and Corona. The project involved engineering review of the proposed ion exchange (IX) treatment system for PFAS removal from the RO bypass stream, including assessment of operational compatibility, hydraulic integration, and treatment performance. Work included evaluation of sizing, siting, cost, and permitting considerations to support amendment of the facility's domestic water supply permit. Recommendations addressed pilot testing, system optimization, and alignment with upcoming EPA and California Division of Drinking Water (DDW) PFAS regulations to ensure regulatory compliance and continued delivery of safe, high-quality drinking water.

South Gate Park Wells PFAS, City of South Gate, South Gate, CA. 2025-Ongoing. Lead Structural Engineer. Design services to the City of South Gate for Per- and Polyfluoroalkyl Substances (PFAS) treatment systems at South Gate Park Wells 14, 18, and 19. The project includes project management, preliminary engineering, technical memoranda, detailed design plans, specifications, and cost estimates. Work involves water quality review, treatment system evaluation, and selection of best available technologies to achieve PFAS removal and regulatory compliance. The design incorporates options for pilot and bench testing, vessel sizing and media selection, integration of volatile organic compound (VOC) and future 1,4-dioxane treatment, and hydraulic and bypass pipeline design. The project ensures long-term operational flexibility and reliable delivery of safe drinking water to the South Gate community.

Centralized PFAS Treatment Plant for Persimmon Well 1 & Farna Wells 1 & 2, Golden State Water Company, Arcadia and Temple City, CA. Lead Structural Engineer. Providing engineering design services to Golden State Water Company (GSWC) for PFAS treatment system improvements at the Farna Well 1 & 2 and Persimmon Well 1 sites within the Foothill/South Arcadia Water System in Arcadia and Temple City, CA. Building on Tetra Tech's PFAS Evaluation Study, the project involves preparation of prepurchase documents, design plans, technical specifications, and bid documents for centralized granular activated carbon (GAC) treatment facilities. Work includes evaluation of pumping capacity, motor control center (MCC) sizing, transmission main design, and preparation of Division of Drinking Water (DDW) waiver documentation as needed. The design ensures treatment performance compliance, capacity reliability, and consistency with GSWC's systemwide PFAS mitigation strategy.

Palmyrita WTP PFAS Removal, City of Riverside, Riverside, CA. 2025-Ongoing. Lead Structural Engineer. The City of Riverside has authorized Tetra Tech to provide design, construction management and inspection services for site modifications at the Palmyrita WTP for Per- and Polyfluoroalkyl Substances (PFAS) removal. The expansions to the site will treat the raw water from the existing 4 wells in the North Orange Well Field after it is blended with the effluent from the existing Palmyrita WTP.

TETRA TECH

ALEXIS M. BAHOU, PE

Environmental Engineer

EXPERIENCE SUMMARY

Mr. Bahou has over 30 years of environmental project management experience and an in-depth knowledge of environmental regulatory requirements by local oversight agencies such as fire departments, health-care agencies, the Department of Toxic Substances, and regional water quality control boards in southern California. He has extensive experience with directing site assessment investigations, overseeing pilot tests, remedial designs, remedial system construction oversight, air monitoring, waste profiling and disposal, operation and maintenance, and facility closure. He also has negotiating experience meeting with local regulatory oversight agencies here in southern California and conducting scoping meetings to layout the project framework and obtain regulatory buy-in. Mr. Bahou has also managed large multi-site programs in the western United States and fully understands how to direct project teams, provide technical guidance, identify critical resources, coordinate schedule delivery, manage contract finances, and discuss program related items directly with the client. He has provided these types of services for commercial, municipal, and industrial sites.

EDUCATION

MBA, Business Administration, Pepperdine University, 2002

BS, Civil Engineering, California State University - Chico, 1991

REGISTRATIONS/ AFFILIATIONS

Professional Engineer: California, 1996 (C 55321), Civil Engineering

TRAINING/ CERTIFICATIONS

OSHA 40-hour Hazardous Waste Site Health and Safety Training (29 CFR 1910.120)

OSHA 8-hour HAZWOPER Training (29 CFR 1910.120)

OFFICE

Pasadena, CA

YEARS OF EXPERIENCE

33 years

YEARS WITH TETRA TECH

5.5 years

EXPERIENCE

Program Manager, Environmental Site Investigation and Remediation Services, Southern California Area, Los Angeles Department of Water and Power (LADWP). Provided overall management accountability for a $9.5M contract to support LADWP with environmental investigation and remediation services on various LADWP facilities including Sylmar Converter Station (SCS), Western District Headquarters (WDH), Valley Generating Station, and Streetlight Maintenance Facility, etc. After becoming Program Manager in 2022, Mr. Bahou improved team communication by implementing biweekly and bimonthly project client meetings to review scope, schedule, and budget and provide LADWP the opportunity to provide feedback on our performance. These meetings were well received by LADWP and resulted in increased project performance, improved project delivery, and increased financial performance. As a result, Mr. Bahou also increased technical resources by 25 percent and our annual project work over 90% ($1.9M per year from $1M/year).

City of LA RAP, Nevin Park Site, 1527 and 1531 East Street, Los Angeles, California. Project manager to implement a soil management plan for the City of Los Angeles RAP prior to redevelopment of the property into a park for the local community. The SMP required the removal and disposal of the upper two feet of soil across the site followed by backfill and compaction of clean import fill approved by the DTSC. Project management responsibilities included SCAQMD Rule 1466 air monitoring during excavation of impacted soil, daily stockpile inspections, soil excavation oversight of 1,484 tons of lead impacted soil classified as non-RCRA hazardous waste, confirmation soil sampling, import fill sampling and testing, sampling and testing of unknown UST waste contents discovered excavation activities, documentation of UST removal, and oversight of backfill and compaction of clean import fill. Following field activities, a final completion report was submitted to the DTSC on August 30, 2024, and subsequently approved on October 17, 2024.

Project Manager, 9422 South Broadway, Los Angeles, CA, 94B, LLC. Managed a multidiscipline project team on a $1.4M site investigation and remediation project located at 9422 South Broadway in Los Angeles, California which is being sold and redeveloped into mixed use. The project is funded by the Equitable Communication Revitalization Grant (ECRG) program under the DTSC. Site investigation activities have been conducted to evaluate subsurface impacts in the soil, soil gas, and groundwater. A total of 12 soil borings, were advanced to evaluate current soil and soil gas conditions in the upper 60 feet. Three additional borings were advanced up to 135 feet below ground surface (bgs) to evaluate the potential presence of groundwater. The results of the investigation indicate high levels of tetrachloroethene (PCE) in the soil gas likely associated with adjacent offsite sources including a former plating facility, tin shop, and oils facility. These findings are a

financial benefit to both the City of LA and 94B, LLC as mitigation funding will mostly likely be approved by DTSC under the ECRG program. Future site mitigation work will likely include removal of PCE impacted soil to the base of the subterranean garage followed by installation of a vapor barrier in support of site redevelopment. A recently completed Past Performance Questionnaire (PPQ) by the client indicated a 10 rating for all criteria for work associated the site investigation activities.

City of Los Angeles Department of Recreation and Parks, Hansen Dam Recreational Area, Lake View Terrace, CA. Project manager for a special study which included a facility inventory and condition assessment of the existing recreational resources and associated infrastructure, biological survey, mapping and survey of existing trails, and assessment of safety hazards for the Hansen Dam Recreational Area. The recreational area is located in north Los Angeles County consists of approximately 1,400 acres. The purpose of the work was to assess the quality and locations of existing facilities to support the future development of new recreational opportunities and to enhance the natural features at the park prior to engaging in a major planning effort. During field activities, the field teams performed visual inspections of numerous facility assets listed in a compressive evaluation criteria matrix which included building structures, utilities, HVAC systems, non-building permanent assets, assessed and mapped all official and unofficial trails, and completed a biological survey. The condition of each asset was rated using a three tiered color coded grading system. Assessed and evaluated items were given a grade based on a three-tiered grading scale. Location of items were collected with GIS mapping and inventory and the condition assessment of recreational assets was entered into a searchable database. Field work was conducted in October 2020 and all seven draft reports were submitted to the City in December of 2020.

Principal Engineer, Streetlight Maintenance Headquarters, Los Angeles, CA, LADWP. Provided technical engineering support for the Streetlight Maintenance Headquarters located at 611 North Hoover Street in Los Angeles, California. The site is currently a vacant lot and will be redeveloped into a new facility including above grade commercial office space and subterranean parking. Supported the evaluation of various remediation options associated with on and offsite contamination impacting the site including hydrocarbons and chlorinated compounds. Prior to development of the RAP various remedial options were evaluated considering cost, implementability, effectiveness and future site redevelopment. Based on a series of evaluations, the final proposed remedy included excavation of soil to remove onsite chemicals in the vadose zone, installation of a permeable reactive barrier (PRB) to prevent migration from residual soil contamination from impacting the site, monitor natural attenuation to verify effectiveness of the PRB, and installation of a vapor barrier to mitigate vapor intrusion from residual soil contamination and PCE impacted groundwater to the new commercial building structure.

Principal Engineer, Slauson and Wall Site Investigation, City of Los Angeles Department of Recreation and Parks, Los Angeles, CA. Mr. Bahou conducted services for a site investigation conducted at a former industrial site located in Los Angeles. The project site was former electrical manufacturing facility for over 60 years and later occupied by various commercial and industrial businesses. The investigation was conducted to assist City of Los Angeles Housing and Community Investment Department (HCIDLA) with the future redevelopment of the property into a community park and affordable housing. The field work included soil, soil gas and groundwater investigations to evaluate current site conditions and develop a site conceptual model. The initial investigation was performed on a fast track basis to facilitate reimbursement to the City of Los Angeles through an escrow account. Field and reporting activities were completed in two weeks and the results concluded the primary COCs consist of trichloroethene (TCE) and tetrachloroethene (PCE) in soil gas and lead in soil. Additional investigation work was completed to further evaluate site conditions including installation and sampling of additional shallow and deep soil gas probes, multiple shallow and deep soil borings and one groundwater monitoring well. The information was used to prepare a supplemental site investigation and current conditions report which included a human health risk assessment and the development of site specific screening levels. The report was submitted to the Department of Toxic Substances Control. Additional investigation work will be required to complete the site conceptual model and prepare a remedial action plan for the site prior to site redevelopment

Project Manager, Former Standard Nickel and Chromium Facility Investigation, DTSC, Chatsworth, CA . Mr. Bahou managed a one year fast track supplemental site investigation (SSI), pilot test, and remedial design for a former chromium and nickel plating facility located in south Los Angeles. The SSI was conducted to determine the nature and extent of hexavalent chromium (CrVI) and PCE impacts in the soil and groundwater associated with historic site operations. The investigation consisted drilling 14 soil borings to depths up to 115 feet below grade surface (bgs) and installing of 25 soil gas probes to 15 feet bgs, 11 groundwater wells to 140 feet bgs, and two dual nested soil vapor extraction (SVE) wells to 60 feet bgs. Following the site assessment work, two pilot tests were conducted which included chemical injection of Calcium Poly Sulfate (CPS) into the soil and groundwater and conducting a SVE test. The final remedial design document included excavation of soil and surface material impacted with VOCs and CrVI, treatment of VOCs in the vadose zone using 14 SVE and 13 horizontal extraction wells, treatment of CrVI in the vadose zone using eleven injection vaults and 48 injection points.

Russel Orona

Fuel Tank Project Manager

EXPERIENCE SUMMARY

Mr. Orona is a results-oriented professional with more than 30 years of tangible project experience in the Energy business sector, both as an employee of Oil and Gas operating companies and as an employee of various Project Management, Engineering, Design, Procurement, and Construction Management consulting firms.

Mr. Orona has spent 20+ years working for three operating companies, Amoco Production Company, Summit Midstream Corporation and Sterling Energy Investments LLC, with assignments in executive management of natural gas operations, natural gas production and facility infrastructure development and construction. He has also spent 10+ years working for three project management consulting companies, ENGlobal Engineering (now ENG), ZAP Engineering & Construction Services and LDIS, LLC in project management, business development and project engineering. Through these career experiences, he has gained valuable business knowledge as it relates to capital projects from both a client and a contractor perspective resulting in a thorough understanding of project needs, workflow processes, and business drivers, from the conceptual project planning phase through capitalization, engineering, design, procurement, construction, start up, operation, risk mitigation, and contractual obligations.

Mr. Orona has more than 30 years of experience managing EPCM, EPC, and T&M contracts with numerous clients at all domestic producing oil and gas basins. He has extensive experience managing midstream operations, managing overall performance of his project teams, and managing entire project lifecycles, from value engineering through to project completion, commissioning, and construction, completing projects on schedule and at or under budget. He is highly experienced in the oversight of risk factors to include safety, quality, and construction management.

RELEVANT EXPERIENCE

LEADERSHIP

Operations Manager

- ✓ Responsible for a 50+ employee Oil and Gas Midstream company with overall P&L responsibility for the field and facilities operation. Led all execution aspects of the business including direct Operations Personnel, Project Management, Engineering Management, Business Development, Procurement, Project Controls and Construction. Accountable for developing and fostering all client relationships and production revenue.

Engineering Director

- ✓ Responsible for building and leading the Engineering disciplines accountable for executing project deliverables.
- ✓ Disciplines include Civil / Structural Engineering & Design, Process Engineering, Mechanical Engineering, Mechanical Design, Electrical Engineering & Design, and Instrumentation Engineering & Design.
- ✓ Led development of various design standards within each respective discipline.

Director of Projects

- ✓ Responsible for initializing and executing midstream projects.
- ✓ Mentored engineering consulting firm on weekly project reviews for discussion of project details such as: scope, schedule, budget, performance metrics, risk factors, and project execution.

EDUCATION

BS, Engineering – Mechanical, University of Colorado-Boulder

AREA OF EXPERTISE

Project Management

Executive Leadership

Mechanical Engineering

REGISTRATIONS/ AFFILIATIONS

NA

TRAINING/CERTIFICATIONS

N/A

OFFICE

Arvada, CO

YEARS OF EXPERIENCE

30

YEARS WITHIN FIRM

1

CONTACT

rorona@ldisllc.com

Russel.Orona@tetratech.com

Office: 303-953-5333

Direct: 970-571-5034

PROJECT MANAGEMENT (2010-2025 EXPERIENCES)

LDIS, LLC

Upstream and Midstream Facilities and Gas Pipeline Gathering Multiple Projects, Oil & Gas Plays USA

- Project Manager
  - ✓ Interfaced with client leadership team as main point of contact to develop upstream and midstream facilities and pipeline designs in support of the client's drilling and facilities upgrades in multiple gas basins.
  - ✓ Led multi discipline Engineering and Design team to complete the several gas and oil projects to enhance recovery and production within an oil and gas play.
  - ✓ Weekly technical interface with the client and engineering team.
  - ✓ Delivered all projects on schedule and within budget.

Sterling Energy Investments

Midstream Facilities and Gas Pipeline Gathering Development EPCM, Multiple Projects, DJ Basin, Colorado

- Director of Engineering
  - ✓ Interfaced with executive and operations leadership teams on a weekly basis as main point of contact to develop Mechanical, Process, and EI&C Design Projects for various gas plant facilities and field well pad projects required to support the client's drilling activity in the DJ Basin.
  - ✓ Each project originated from an economic evaluation based on our client's drilling program as well as enhancements to the gas plant recovery of NGL for downstream markets. The Design is reviewed and optimized by contract engineering firms and new projects are generated and executed.
  - ✓ Lead team for conception, engineering, design, procurement, construction and commissioning of a 70 MMSCFD Cryogenic Plant expansion.
  - ✓ On average, Sterling Energy executed 8-10 wellhead project and 5-7 plant facilities projects annually.
  - ✓ On schedule and at or under budget for all projects completed to date.

Summit Midstream Corporation

Midstream Gas Facilities EPCM, Multiple Projects, DJ Basin, Colorado

- Project Manager
  - ✓ Interfaced with executive and operations leadership teams on a weekly basis as main point of contact to develop Mechanical, Process, and EI&C Design Projects for various gas plant and field facilities projects required to support the client's facility expansion activity in the DJ Basin.
  - ✓ Each project originates from an economic evaluation based on our client's facilities expansion program as well as enhancements to the gas plant recovery of NGL for downstream markets. The Design is reviewed and optimized by contract engineering firms and new projects were generated and executed.
  - ✓ On average, Summit Midstream executed 4-5 plant facilities projects annually.
  - ✓ On schedule and at or under budget for all projects completed to date.

Summit Midstream Corporation

Midstream Gas Facilities EPCM, Multiple Projects, Bakken Formation, North Dakota

Project Engineer

- ✓ Coordinated and supervised 4 major gas plant expansions with an estimated total capital cost of $35 million dollars.
- ✓ Directed 4 engineering consulting teams to budget, schedule, design, and generate engineering deliverables.
- ✓ Coordinated procurement, construction and installation of equipment and infrastructure and participated in all aspects of contractor duties.
- ✓ Managed various Mechanical and Electrical as built projects.
- ✓ Delivered all projects on schedule and within budget.

ZAP Engineering and Construction Services

Midstream Gas Facilities and Pipeline Gathering EPCM, Multiple Projects, Utah, Colorado, Wyoming and North Dakota

Project Manager

- ✓ Interfaced with client leadership team as main point of contact to develop pipeline designs and associated facilities in support of the client's drilling and facilities upgrades in multiple gas basins.
- ✓ Led multi discipline Engineering and Design team to complete the several midstream gas and oil projects to enhance recovery and production within an oil and gas play.
- ✓ Daily technical interface with the client.

Ken Gebhardt

Senior I&C Engineer/
EI&C Engineering & Design Manager

EXPERIENCE SUMMARY

Electrical Engineer with more than 35 years of engineering experience, specializing in industrial automation, control, and instrumentation for the past 30 years. Responsibilities include EI&C group management; project I&C lead; Subject Matter Expert roles; P&ID development and standardization; instrumentation specification, standardization and sizing; HAZOP and LOPA/SIL assessment participation; checking; and all I&C related construction deliverables.

RELEVANT EXPERIENCE

ENERGY

Momentum Midstream/DTM Compression, and Gas Treating Facility
Lead I&C engineer for various facility projects. Equipment included H2S removal, amine trains, CO2 sequestration, dehydration trains, reciprocating compressors, instrument air, storage tanks and load out areas.

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Spire Storage West – Clear Creek Expansion – Wyoming
Lead I&C engineer responsible for expansion of natural gas injection and withdrawal facilities. Equipment included compressors, JT skids, choke heaters, sulfur removal equipment, pumps, separators, tanks, NGL transport loading and metering, and auxiliary equipment.

ExxonMobil, Hawkins Gas Separation Plant – Hawkins, Texas
Lead I&C Engineer for FEED, detailed design, for a 180 MMCFD gas plant for cryogenic separation of sour field gas into a natural gas liquids stream, a methane stream for sale, and a residual nitrogen stream for re-injection.
Responsible for all I&C deliverables. Owner's engineer for both BPCS and SIS control system FAT. Performed field engineering in support of I&E construction activities.

Peregrine Midstream Partners, Liquids Handling Facility – Pawnee Creek, Colorado
Lead I&C engineer, performed instrumentation specification and sizing. Responsible for all I&C deliverables required for construction and operation of plant.

Encana, Central Processing Facility Expansions – Eagle Ford Basin, Texas
As-built investigation and upgrades to multiple existing facilities with liquid handling, produced oil stabilization, and storage to support increased oil production of 2,000 to 14,000 bpd at each facility. Performed instrumentation and LACT skid specification. Design included site surveys and update of existing P&ID and I&C documentation to reflect as-is installation.

Upstream and Midstream Oil and Gas Clients
Lead I&C for multiple Clients. Fast tracked projects include compressor stations, gathering facilities, and meter runs. Tasks included specification of meter runs, analyzers, gas chromatographs, and LACT skids.

EDUCATION

North Dakota State University – BS, Electrical and Electronics Engineering

AREA OF EXPERTISE

Controls & Instrumentation Engineering

REGISTRATIONS/ AFFILIATIONS

Registered Engineer-In-Training (EIT)

ISA – Regular Member

TRAINING/CERTIFICATIONS

PEC/Basic Orientation, SafeLand USA, TRAP

MSHA Underground and Surface Certified (expired)

US Government Security Clearance - Secret (expired)

OFFICE

Arvada, Colorado

YEARS OF EXPERIENCE

30+

YEARS WITHIN FIRM

7

CONTACT

kgebhardt@ldisllc.com

Ken.Gebhardt@tetratech.com

303.953.5333

CHEMICAL

Coastal Chemical, Ammonium Nitrate Plant – Battle Mountain, Nevada
Configuration of Rosemount System 3 DCS, including PID loops, interlocking, alarming, historical trending, and reports. Created graphic screens for operator interface and performed operator training. Designed O2 analyzer sample system consisting of enclosure, analyzer, and all electrical/mechanical items required to sample, purge, and calibrate analyzer. At site set up DCS equipment and performed loop checks. Supported plant startup by customizing displays, tuning analog loops, creating reports, and setting up historical trending.

Coastal Chemical, Conversion of Existing Nitric Acid, Ammonia, and LoDAN Plants to Rosemount DCS – Cheyenne, Wyoming
Conversion of operating LoDan, Ammonium Nitrate, Acid, and Ammonia plants from pneumatic, Fisher Provox DCS, and Square D PLC to Rosemount System 3 DCS over 3 week plant turn-around. Updated P&ID to reflect existing plant, updated electrical schematics, generated loop diagrams, and configured DCS. At site performed loop checks, customized displays, configured reports, set up historical trending, and supported plant startup. Created training manuals and provided training classes for operators and maintenance personnel.

MINING

Henderson Mine/Mill Conveyor Project - Empire, Colorado
Control system design for 15-mile hard rock conveyor system. System design utilized Allen-Bradley PLC's, a fiber optic network, Allen-Bradley ControlLogix Gateway, and FIX32 graphical interface. Generated project specifications for control panels, PLC programming, HMI configuration, fiber optic network, and CCTV system. Developed P&ID, system architecture, & shutdown interlock matrix. Generated functional description, logic diagrams, test plans, operator manuals and maintenance manuals. Performed system check out and start up. Performed operator and maintenance training classes. Responsible for cost tracking and schedule for cost plus fee contract.

Alacer Gold, Copler Gold Mine – Turkey
Lead Instrumentation and Controls Engineer for initial definitive feasibility study for treatment of sulfide ore utilizing pressure oxidization. Specification of instrumentation with exotic materials and other requirements to meet extreme temperature, pressure and corrosive/erosive requirements of the process.

FOOD & BEVERAGE

Coors Brewing – Golden, Colorado
Lead Instrumentation and Controls Engineer various small capital projects where I performed programming, engineering, instrumentation specification, and start-up, commissioning for all facets of brewing including:

- Grain Handling
- Kilns
- Malthouse
- Cellars
- Conditioning
- Packaging
- CIP/SIP Systems
- Palletizers
- Dust Handling
- Spent Grain Handling

Designs included explosion proof, intrinsically safe circuits and purging of control panels for installation in electrically hazardous areas.

Coors Brewing, Brew Line Upgrade – Golden, Colorado
Engineering/design of Fisher-Rosemount Delta V control system for upgrade of existing brew lines. Design and specifications for Foundation Fieldbus, ASi, Profibus, and HART networks; traditional I/O interconnects; control panels, safety circuits, instrument locations drawings, and cable tray/conduit drawings. Performed field engineering in support of I&E construction, loop check, and start-up activities.

Coors Brewing, Malthouse Conversion – Golden, Colorado
Conversion of multi-level Malthouse to new PLC system over a 2-day shutdown with no operational issues. As built of existing documentation. Developed change over plan with construction. Had 8 crews each working in a different area at the same time to complete conversion is 4 day window.

Jolly Rancher New Hard Candy Kitchen – Wheat Ridge Colorado
Designed and implemented control system consisting of GE 90-70 PLC, GE Mini OIT terminals, and FIX/DMACS on OS/2 operator interface. Configured operator interface, database, historical trending, reports, and graphic screens. Programmed PLC's and OIT terminals. Generated operator manual and provided training. At plant site performed start up support. Responsible for schedule, procurement, and requirements coordination with client.

Gage Cullum, PE
Mechanical Engineer
Mechanical Department Manager

EXPERIENCE SUMMARY

Mechanical Engineer and Mechanical Department Manager with 11 years of experience within the oil and gas industry; eight as an engineer and three as a Mechanical and E&IC Drafter/Designer. Engineering responsibilities have included facility commissioning, material requisitions, specifications, technical bid evaluations, and vendor drawing verification for equipment and standardized designs common to oil and gas production and storage facilities. Additional duties have included studies for regulatory compliance for construction and emission requirements, equipment cost estimates, first fill calculations, materials tracking, pipe wall thickness calculations and economic evaluations.

Field experience has included facility commissioning, pipeline evaluation, refinery utility evaluation, fabrication shop inspections, facility upgrade opportunity evaluations, factory acceptance testing, equipment verification and gathering of site data.

Working knowledge of equipment specifications include:

- Vapor Recovery Units (VRU)
- Compression (Recip, Rotary Vane/Screw)
- Instrument Air Packaged Units
- TEG Dehy Units
- Amine Units
- Process Pumps
- Instrumentation
- Process Coolers
- Lease Automatic Custody Transfer (LACT)
- Wastewater Treatment
- Gas Meter Packages
- Packaged Equipment Skids
- Separators
- Heater Treaters
- Pressure Vessels
- Wellheads
- Piping
- Valves
- Chemical Injection Skids
- Elevated Flares
- Combustors
- Oil Stabilization

RELEVANT EXPERIENCE

ENERGY

Momentum – Gillis Facility – Louisiana
Mechanical Engineer responsible for the specification, bid evaluation, and drawing document review for TEG Dehy Units, Reciprocating and Screw Compressors for CO2 service, API 12F Tanks, and utility pumps. Responsibilities included vendor coordination and bid evaluation for technical recommendation to purchase $20M+ in equipment, and to later evaluate technical drawings to ensure compatibility and function of equipment within the system. Project is ongoing and is intended to be operational by late 2024.

Momentum – Interconnects – Louisiana/Texas
Mechanical Engineer responsible for the specification, bid evaluation and drawing document review for Inlet Filter Separators, Dehydration Units, Meter Skids, Flow Control Valve skids, and closed drain tanks. Responsibilities included vendor coordination, bid evaluation and equipment integration across 10+ interconnect sites. Reviewed, verified, and incorporated 3rd party client specifications across various facilities.

LDIS – Standards – Pipe Wall Thickness Calculator
Lead the LDIS Mechanical team in creating a standardized Pipe Wall Thickness Calculator for use with ASME B31.3, B31.4, and B31.8 piping codes, streamlining the verification and generation of client and LDIS piping specifications. Designed and

EDUCATION

Colorado School of Mines

BS, Mechanical Engineering

2017

AREA OF EXPERTISE

Mechanical Engineering

REGISTRATIONS/ AFFILIATIONS

Professional Engineer
Colorado: 62494
Louisiana: 49088
Texas: 157193

TRAINING/CERTIFICATIONS

PEC/SafeLandUSA

CPR/First Aid

Ariel Basic Product Training for Reciprocating Compressors

ASME B31.3 SME Course

Wyoming-Montana Safety Council (Expired)

- 24-Basic Orientation Plus
- 24-FSS Frontier Refinery
- HF-Alky

OFFICE

Arvada

YEARS OF EXPERIENCE

11

YEARS WITHIN FIRM

11

CONTACT

GCullum@ldisllc.com

Gage.Cullum@tetratech.com

(303)-302-6691

implemented macros within the tool, automating key calculations and optimizing user accessibility for more efficient and error-free operation.

DTM – Pelican/Longstreet/Deadwood Facilities – Louisiana
Mechanical Engineer responsible for generating various calculation tools for equipment volumes of each facility to estimate maximum intended inventories of flammable hydrocarbons for PSM classification. Assisted in the integration of reverse osmosis water treatment system and charge pump for amine regeneration at facilities.

M5 Midstream – Compressor Stations – Louisiana
Mechanical engineer responsible for generating functional tool for calculating TEG and Amine first fill volumes to minimize fiscal losses of costly products at the Clients expense. Evaluated piping systems and vessels of dehydration TEG and amine units in conjunction with various disciplines to ensure the accuracy of the calculation.

Devon – Stateline 10 Compressor Station – Texas
Lead Mechanical Engineer responsible for the specification, bid evaluation and drawing document review for ASME VIII vessels, coalescing filters, and utility pumps. Coordinated with vendors throughout the RFQ and bid processes to provide technical evaluation of equipment and recommendation of Vendor to the client. Performed vendor drawing review to ensure functionality of equipment within the design.

BPX – Grand Slam CDP Commissioning – Texas
Commissioning lead for compression, oil storage and heater treaters for Train 3 of Grand Slam CDP facility. Responsibilities included vendor coordination for onsite commissioning activities, construction verification, equipment validation. Performed instrument air and nitrogen leak tests, water and oil fills of tanks and vessels, and facility walkdowns to ensure full functionality and integration of equipment for final handover to BPX for startup.

Fulcrum Energy – Pipeline/Facility Verification – Colorado
Lead Mechanical Engineer for evaluation of pipeline infrastructure in Walden, CO. Identified pipeline interconnects between various facilities with operations and facility engineers to determine maximum throughput of existing system used to determine feasibility of 2023 drilling program of Fulcrums assets. Provided guidance on hydrotesting and other requirements per ASME B31.3 and B31.8 piping codes. Generated AFE estimating tool used to determine the economic advantages of various well pad configurations.

Holly Frontier – Cheyenne Refinery – Wyoming
Performed walkdowns and evaluations of all utility systems within the entire Cheyenne Refinery ahead of the transition to Renewable Diesel. Responsibilities included generating P&ID's, evaluating existing infrastructure for modified throughput requirements of new equipment, and to identify any components that required immediate attention to increase system efficiency. Lead Mechanical engineer in the specification and design of Wastewater Treatment System to process byproducts created when refining renewable diesel.

XTO – Central Tank Batteries Value Engineering – Delaware Basin
Mechanical engineer in supporting role for generation of Skid Modularization, H_2S, Flare selection and Compressor selection studies. Responsibilities of skid modularization study included identifying economical advantages of skid construction as well as create a tool to calculate shipping and test weights of single vessels or complete skids without prior vendor documentation. H_2S study required an understanding of NACE MR0175 to identify areas/situations where the client would need to install vessels/piping that were constructed in accordance with NACE. Responsibilities of Flare and Compressor selection included initial specification generation and continuous communication with various vendors in order to estimate and recommend equipment to the client.

Clear Creek Resource Partners – Production Batteries – Colorado
Lead mechanical engineer responsible for design specifications and material requisitions for new equipment required for new construction and existing upgrades for Production Batteries in Northern Colorado. Responsible for coordination with other discipline leads to ensure compatibility of equipment, piping, and instrumentation. Major equipment included: Fired Production Separators, Vapor Recovery Units, Combustors, LACT Units, Storage Tanks, Process Coolers and Pressure Vessels. Other duties included participation and input to the PHA/HAZOP, economic evaluation for future drill program, vendor coordination and shop visits for preliminary inspections, and the supervision of equipment extraction/transportation from off-site location.

Anadarko Petroleum Corporation – Compressor Stations – Colorado
Mechanical engineer responsible for field verification of equipment/piping/valve installation for 100+ component systems across 5 different compressor stations in northern Colorado. Efforts required independent and group site visits and was responsible for coordinating with client field personnel of work to be performed. All data was cataloged and organized in a clear and concise manner that allowed the client to view all pertinent equipment data within a single document.

Rick Lloyd MRICS

Senior Director

Rick Lloyd brings over 30 years of experience in construction cost planning and estimating services on a wide range of domestic and international projects. He has notable expertise in the education, aviation, justice, healthcare, and government sectors. Rick's extensive experience in cost estimating spans all phases of design and construction, including preconstruction and post-construction cost reports, claims reviews and settlements, and project management services. In addition, Rick has conducted and participated in value engineering exercises on many projects.

EDUCATION

Bachelor of Science, Quantity Surveying, Thames Polytechnic

PROFESSIONAL CERTIFICATIONS, REGISTRATIONS, AFFILIATIONS

10-Hour Certification, Occupational Safety and Health Administration

Member, Royal Institution of Chartered Surveyors

RELEVANT EXPERIENCE

City of Anaheim, Public Utilities, Sustainability Education Center, Electric Vehicle Charging Stations
Anaheim, California, United States
Senior Cost Consultant

Orange County, Fire Station #20
Irvine, California, United States
Senior Cost Consultant | 12,500 SF

Judicial Council of California, Orange County Collaborative Courthouse Feasibility Study Santa Ana, California, United States
Senior Cost Consultant | 82,000 SF

Chapman University, Rinker Campus, Parking Structure Modifications
Irvine, California, United States
Senior Cost Consultant

Los Angeles Department of Water and Power, Buildings Conditions Assessment
Los Angeles, California, United States
Senior Cost Consultant | 890,000 SF

University of California, Irvine, Center for Child Health Parking Structure Irvine, California, United States
Senior Cost Consultant

City of Costa Mesa, Donald Dungan Library and Park Expansion Costa Mesa, California, United States
Senior Cost Consultant | 22,000 SF

City of Irvine, Great Park Central Library
Irvine, California, United States
Senior Cost Consultant

Los Angeles International Airport, Jenny Employee Lot Electric Bus Charging
Los Angeles, California, United States
Senior Cost Consultant

City of Long Beach, Long Beach Civic Center Long Beach, California, United States
Senior Cost Consultant | 600,000 SF

City of Huntington Beach, Oak View Community Center Master Plan
Huntington Beach, United States
Senior Cost Consultant | 41,000 SF

Santa Monica Business Park, Campus Re-Development Santa Monica, California, United States
Senior Cost Consultant | 652,801 SF

U.S. Department of Veterans Affairs, Fresno Clinic Parking Garage Fresno, California, United States
Senior Cost Consultant

University of Southern California, Parking Structure Chiller Plant Los Angeles, California, United States
Senior Cost Consultant

U.S. Department of Energy, Stanford Linear Accelerator, Critical Utilities Infrastructure Revitalization, Seismic Retrofit Study Menlo Park, California, United States
Senior Cost Consultant

GLUMAC
A TETRA TECH COMPANY

PRICE PROPOSAL

FHQ Diesel Fuel Tank Replacement and Vehicle Charging Infrastructure

Orange County Water District REV. 1

February 3, 2026

Prepared by:
Glumac
17885 Von Karman Ave, 5th Floor
Irvine, CA 92612

Brian Stern
bstern@glumac.com

Prepared for:
Orange County Water District

RFP Number:
RFP-25-012

Price Proposal

Fee Summary

Phase	EV	Fuel Tank	Total
Phase 1: Preliminary Design Report	**$53,935**	**$39,015**	**$92,950**
1.1 Existing Fleet Assessment	$10,590		$10,590
1.2 Electric Vehicle Infrastructure Evaluation	$17,720		$17,720
1.3 Cost Estimates and Phased Implementation	$11,835	$6,075	$17,910
1.4 Electric Fleet Grant, Loans, and Incentives	$3,960		$3,960
1.5 FHQ Diesel Fuel Tank Replacement		$24,450	$24,450
1.6 Preliminary Design Report	$9,830	$8,490	$18,320
Phase 2: Final Design	**$59,630**	**$72,660**	**$132,290**
2.1 Survey + 75% Design Submittal	$27,570	$35,070	$62,640
2.2 100% Design Submittal	$23,110	$27,030	$50,140
2.3 Final Design Submittal	$8,950	$10,560	$19,510
Phase 3: Permitting	**$5,440**	**$4,060**	**$9,500**
3.1 Permitting	$5,440	$4,060	$9,500
Phase 4: Bid Phase	**$8,280**	**$6,690**	**$14,970**
4.1 Bid Phase	$8,280	$6,690	$14,970
Phase 5: Construction Phase	**$28,490**	**$19,580**	**$48,000**
5.1 Submittal/shop Drawing Review	$5,060	$4,120	$9,180
5.2 RFI Responses	$5,510	$3,530	$9,040
5.3 Record Drawing preparation	$5,210	$5,600	$10,810
5.4 Construction Meetings	$6,510	$1,330	$7,840
5.5 Field Inspection Services	$6,200	$5,000	$11,200
Total	**$155,775**	**$142,005**	**$297,780**

Billing

Glumac/Tetra Tech propose to invoice monthly at our hourly rates per the terms of the sample Services Agreement. Site Survey work will be billed as a fixed fee, scope provided by subconsultant, with no additional markup. Monthly billing will include itemized accounting of hours of personnel, hourly rates, and percent completion for each task identified.

Fee Breakdown by Task/Subtask and Associated Personnel

Project Role	Billing Rate	1.1 Existing Fleet Assessment	1.2 Electric Vehicle Infrastructure Evaluation	1.3 Cost Estimates and Phasing	1.4 Electric Fleet Grant, Loans, and Incentives	1.5 FHQ Diesel Fuel Tank Replacement	1.6 Preliminary Design Report	**Phase 1: Preliminary Design Report**	2.1 Survey + 75% Design Submittal	2.2 100% Design Submittal	2.3 Final Design Submittal	**Phase 2: Final Design**	3.1 Permitting	**Phase 3: Permitting**	4.1 Bid Phase	**Phase 4: Bid Phase**	5.1 Submittal/shop Drawing Review	5.2 RFI Responses	5.3 Record Drawing preparation	5.4 Construction Meetings	5.5 Field Inspection Services	**Phase 5: Construction Phase**	**TOTAL Project Hours**	**TOTAL Project Fee**
Project Director	$300	4	2	2	2	0	4	14	4	2	1	7	2	2	2	2	1	1	1	1	1	5	**30**	**$9,000**
Project Manager	$225	4	4	8	4	8	8	36	20	12	10	42	12	12	10	10	4	6	4	20	4	38	**138**	**$31,050**
Sr. DER Electrical Engineer	$285	2	18	4	4	0	14	42	16	10	8	34	6	6	10	10	6	6	2	6	0	20	**112**	**$31,920**
Electrical Engineer	$215	0	22	0	0	0	4	26	42	14	8	64	2	2	12	12	10	10	16	0	0	36	**140**	**$30,100**
Fleet Analyst	$165	48	24	8	8	0	12	100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	**100**	**$16,500**
Mech, Process, Piping, I&C	$160	0	0	0	0	32	8	40	100	48	24	172	8	8	6	6	6	4	10	1	0	21	**247**	**$39,520**
Fuel Tank Design	$170	0	0	0	0	24	8	32	40	20	16	76	4	4	4	4	3	2	5	1	0	11	**127**	**$21,590**
Fuel Tank PM/Eng Lead	$200	0	0	0	0	24	4	28	20	10	8	38	4	4	4	4	2	2	2	2	0	8	**82**	**$16,400**
Survey	$156	0	0	0	0	0	0	0	60	0	0	60	0	0	0	0	0	0	0	0	0	0	**60**	**$9,350**
Civil Engineer	$150	0	16	6	0	16	27	65	36	28	24	88	2	2	21	21	15	11	11	4	0	41	**217**	**$32,550**
BIM Production Specialist	$150	0	0	0	0	0	0	0	12	8	8	28	0	0	4	4	0	0	4	0	0	4	**36**	**$5,400**
Environmental Specialist	$275	0	0	0	0	13	4	20	0	0	0	0	4	4	2	2	0	2	2	0	0	4	**30**	**$7,500**
Cost Estimator	$225	0	0	54	0	10	0	64	0	100	0	100	0	0	0	0	0	0	0	0	0	0	**164**	**$36,900**
On-Call Field Inspection	$250	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	40	40	**40**	**$10,000**
Total Hours by Phase:		58	86	82	18	130	93	467	350	252	107	709	44	44	75	75	47	44	57	35	45	228	**1523**	**$297,780**

**Billing Rates include blended average for this summary table. Rate Table below includes all job classifications.*

***Subconsultant for survey work includes a fixed fee of $9,350. Rough order or magnitude hours provided above*

Hourly Rates

Outline below are hourly rates for the Glumac and Tetra Tech team. We have proposed a 4% increase for each classification in January 2027.

Classification	Rate	Firm	Personnel
Project Director	$300	Glumac, a Tetra Tech Company	Brian Stern
Project Manager	$225	Glumac, a Tetra Tech Company	Zach Gates
Sr. DER Electrical Engineer	$285	Glumac, a Tetra Tech Company	Nick Pedersen
Electrical Engineer	$215	Glumac, a Tetra Tech Company	Van Vu
Electrical Designer	$185	Glumac, a Tetra Tech Company	Andrew Choi
Fleet Analyst	$165	Glumac, a Tetra Tech Company	Emily Kawka
BIM Production Specialist	$150	Glumac, a Tetra Tech Company	
Fuel Tank PM/Engineering Lead	$200	LDIS, a Tetra Tech Company	Russel Orona
Mechanical, Process, Piping, I&C Design	$160	LDIS, a Tetra Tech Company	Gabe Cullum, Ken Geghardt, Kaylen Iles
Fuel Tank & Fueling Station Design	$170	LDIS, a Tetra Tech Company	Britta Thornton, Nabeal W. Khatib
Civil Engineer	$150	Tetra Tech	Chrisna Raymond, Jodie Yu
Structural Engineer	$150	Tetra Tech	
Environmental Specialist	$275	Tetra Tech	Alexis Bahou
Cost Estimator Director	$300	MGAC	Rick Lloyd
Sr. Cost Estimator	$250	MGAC	
Cost Estimator	$200	MGAC	

Additional Glumac, Tetra Tech and subconsultant personnel may support the project within the job classifications above. Site survey work will be provided by a subconsultant as a fixed fee.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: P. Parmar/C. Carroll

Budgeted: Yes
Budgeted Amount: $80,000
Cost Estimate: $2,229
Funding Source: New Equipment
Program/Item No.: E25.17110.1038
General Counsel Approval: N/A
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: PURCHASE ORDER TO AB SCIEX LLC FOR SUPPORT EQUIPMENT FOR ONE PAL LIQUID INJECTION SYSTEM FOR AN EXISTING LIQUID CHROMATOGRAPHY / TANDEM MASS SPECTROMETER (LC/MS/MS)

SUMMARY

A budgeted new liquid injection system was recently purchased by District lab staff in October 2025. However, due to vendor oversight, several required pieces of support equipment were not included in the original purchase. Due to this vendor error, a 90% discount has been given for these necessary parts to complete the installation of the liquid injection system to continue sample analysis for per-and polyfluoroalkyl substance (PFAS) analyses and for contaminants of emerging concern (CECs) with existing instrumentation.

Attachment: Quotation #12243602 from AB SCIEX LLC, dated 02/02/2026.

RECOMMENDATION

Agendize for February 18 Board meeting: Authorize issuance of Purchase Order to AB Sciex LLC in the total amount of $2,229 for the purchase of supporting valve and cooling rack for a recently purchased PAL RSI 537 Liquid Injection System.

BACKGROUND AND RATIONALE

The District's Philip L. Anthony Water Quality Laboratory ('lab') performs PFAS and CEC analyses in support of many monitoring programs, including for Groundwater Producers, pilot- and full-scale treatment systems, GWRS permit compliance, Santa Ana River monitoring, and basin-wide groundwater monitoring. For these testing methods, the lab has used Liquid Chromatography–Tandem Mass Spectrometry (LC-MS/MS) instruments sample analysis since 2007. The lab currently operates PAL liquid injection systems on the three Sciex LC-MS/MS instruments, two of which primarily analyze PFAS, and one primarily used to analyze for CECs such as pharmaceuticals and personal care products (PPCPs). A replacement PAL system was recently purchased in October 2025 following Board approval in the amount of $63,677 to replace the oldest system that is now 11 years old.

However, during scheduled installation in January 2026 it was discovered by the vendor service engineer that several key pieces of equipment were not appropriately included in the original quotation for purchase and installation was required to be postponed until those parts are received. Given the vendor's error in quoting these parts, they have offered OCWD a 90% discount on the parts to help expedite the purchase and installation of the new autosampler. The

total overall spend remains under the $80,000 budget between the original expenditure of $63,677 and the additional $2,229.

As such, the lab recommends the purchase of one supporting valve and cooling rack for a recently purchased PAL RSI 537 Liquid Injection System to accommodate the expected increases in PFAS sampling.

PRIOR RELEVANT BOARD ACTIONS

10/15/25, R52-10-184: Authorize issuance of Purchase Order to AB Sciex LLC in the total amount of $63,677 for the purchase of one PAL RSI Liquid Injection System

11/17/21, R21-11-167: Authorize issuance of Purchase Order to AB Sciex LLC for an amount not to exceed $496,540 for the purchase of a Liquid Chromatograph/Tandem Mass Spectrometer

1/22/14, R14-1-3: Authorize issuance of Purchase Order to AB Sciex LLC for an amount not to exceed $446,240 for the purchase of a Liquid Chromatograph/Tandem Mass Spectrometer

4/20/11, R11-4-57: Authorize issuance of Purchase Order to AB Sciex for an amount not to exceed $437,133 for the purchase of the 5500 Q Trap system - Liquid Chromatograph / Tandem Mass Spectrometer (LC/MS/MS) instrument

QUOTATION

AB SCIEX LLC
1201 Radio Rd
REDWOOD CITY, CA 94065-1217
United States

Tele : +1 (877) 740-2129 opt 1
Fax : +1 (650) 631-4803
Email : orders.americas@sciex.com

Quote Number	12243602
Account Number	47126
Quote Date	02-FEB-2026
Valid To	01-MAR-26
Reference	Sciex internal ref# Q-219292
Freight Terms	SX - Prepaid and Add
Free On Board	Factory
Payment Terms	Net 30 days
Taxable	Yes
Sales Representative	Yongtong Lao
Administrator	Brian Nguyen

To:

Lily Sanchez
Orange County Water District
18700 Ward St
FOUNTAIN VALLEY, CA 92708-6921
United States

Tele : 714-378-3344
Fax :
Email : lsanchez@ocwd.com

Item No	Part Number	Description	Duration	Quantity	UOM	Unit List Price	Unit Net Price	Total Extended Price
1.1	5054557	VALVE DRIVE MODULE FOR VICI VALVES		1	EA	4,251.66	340.13	340.13
		Universal valve drive for all PAL3 VICI valves. Includes 1 pc Valve Drive module and 1 pc PAL Bus connection cable. For PAL3 only. Requires PAL3 injection Valve (sold separately).						
2.1	5054555	PELTIER COOLED STACK 6 DW MTP/VIAL RACKS		1	EA	13,679.00	1,094.32	1,094.32
		Peltier cooled stack (temperature range 4°C to 40°C) can accommodate 6 standard or deepwell microtitre plates or 2 mL vials (6 x 54 vial trays). Includes Power Supply (110V/220V) and cables. For PAL3 only.						
3.1	4441649	20µL Sample Loop for Valco Cheminert Injector Valv		1	EA	218.38	21.84	21.84
		20µL sample loop for Valco Cheminert injector valve for CTC. Made of stainless steel.						
4.1	P1001183	6 PORT CHEMINERT INJECTION VALVE W/ TWO LARGER-BOR		1	EA	5,021.60	502.16	502.16
		6-port Cheminert Injection Valve, Ports 1, 2: 0.40mm bore size, Ports 3,4,5,6: 0.25mm bore size, 16000psi / 1100bar, includes PAL LCInjector with needle seal press-fit G22, Waste-Tubing for VICI and Rheodyne Valves, Sample Loop not included. For PAL 3 only.						
5.1	5054563	APG REMOTE CABLE		1	EA	304.95	30.49	30.49
		PAL Connecting cable APG Remote for Agilent 1290 Infinity II systems. For PAL3 only.						

Quotation List Price Total	23,475.59	USD
Less Discount Total	- 21,486.65	USD
Quotation Sub Total	1,988.94	USD
Estimated Shipping and Handling	60.07	USD
Estimated Sales Tax	179.20	USD
Quotation Total	2,228.21	USD

QUOTATION

AB SCIEX LLC
1201 Radio Rd
REDWOOD CITY, CA 94065-1217
United States

Tele : +1 (877) 740-2129 opt 1
Fax : +1 (650) 631-4803
Email : orders.americas@sciex.com

Quote Number	12243602
Account Number	47126
Quote Date	02-FEB-2026
Valid To	01-MAR-26
Reference	Sciex internal ref# Q-219292
Freight Terms	SX - Prepaid and Add
Free On Board	Factory
Payment Terms	Net 30 days
Taxable	Yes
Sales Representative	Yongtong Lao
Administrator	Brian Nguyen

Sales tax will be included, if applicable, at time of invoice.

For further information on how SCIEX processes your personal data, please view our Privacy Policy (https://sciex.com/privacy-policy).

Please read carefully:
This quotation, and Company's TERMS AND CONDITIONS OF SALE FOR PRODUCTS AND/OR SERVICES, as applicable, (the "TERMS") set forth the terms pursuant to which the Company would sell the product(s) or service(s) listed in this quotation, unless any other valid agreement exists or is executed between you and Company with respect to these products or services. By issuing a purchase order or otherwise ordering or accepting product(s) or services, you expressly confirm that you intend to be bound by and agree to the terms of this quotation and the TERMS to the exclusion of all other terms not expressly agreed to in writing by an authorized representative of Company, and that the purchase and sale transaction between you and Company is subject to and will be governed by this quotation and the TERMS. The applicable TERMS*, which are incorporated by reference into this quotation and any resulting contract, can be found on Company's website at http://www.sciex.com/legal-terms-and-conditions.
Once on the page, click on the country identified on the top left hand corner of this quotation, and either the "products" or "services" link as applicable. Company products and services are covered by only those warranties set forth in its limited warranty statement* which can be found at http://www.sciex.com/warranty . Operating software and stand alone software is licensed and not sold. The terms of license are included in the End User License Agreement (EULA)* provided with the software, a copy of which can be found at http://www.sciex.com/products/software .*To obtain a copy of either the TERMS, limited warranty statement or EULA, or if you have any questions, please call Company's customer service department using the contact information supplied on the left hand corner of this quotation.

AGENDA ITEM SUBMITTAL

Meeting Date: February 11, 2026

To: Water Issues Committee
Board of Directors

From: John Kennedy

Staff Contact: L. Haney/A. Hutchinson

Budgeted: Yes
Budgeted Amount: $100,000
Cost Estimate: $99,620
Funding Source: General Fund
Program/Line Item No. 1044.53001
General Counsel Approval: Required
Engineers/Feasibility Report: N/A
CEQA Compliance: N/A

Subject: AGREEMENT WITH JACOBS TO UPDATE AND ADD OPERATIONAL CAPABILITIES TO OCWD'S RECHARGE FACILITIES MODEL

SUMMARY

In 2009, CH2M HILL (now Jacobs) completed development of a computer model of the District's recharge system in Anaheim and Orange. This model has been refined and maintained since 2009 and has proven invaluable for evaluating and assessing the additional recharge benefits of various improvements and projects. Staff proposes next-generation improvements to update the model and incorporate operational functions, enabling recharge system operators to optimize real-time recharge operations.

Attachment: Jacobs Engineering Group, Inc. Recharge Facilities Model (RFM) Update 2025, September 19, 2025

RECOMMENDATION

Agendize for February 18 Board meeting: Authorize issuance of an Agreement with Jacobs Engineering Group, Inc., for an amount not to exceed $99,620 to update and add operational capabilities to OCWD's Recharge Facilities Model.

BACKGROUND/ANALYSIS

In 2009, CH2M HILL (now Jacobs) completed development and calibration of a comprehensive computer model of OCWD's recharge system. The model simulates Prado Dam operations, Santa Ana River flow, imported water flow, each recharge facility, and the District's pumping stations and pipelines that convey recharge water. A key feature of the model is its ability to account for the rate of percolation of each recharge facility, including the rate of percolation decline caused by clogging.

The model runs on a desktop personal computer using a graphical user interface and has been used extensively since 2009 to evaluate changes in recharge that would occur if the District were to construct improvements to the recharge system, such as removing sediment from Santa Ana River water, adding new recharge facilities, increasing the Prado Dam water conservation pool, and potential future changes in Santa Ana River base flows.

When the model was first created, using GoldSim software, additional Excel spreadsheets were used to provide input data and export model results. With improvements to GoldSim software, the use of Excel spreadsheets is no longer needed. By updating the model to eliminate the use of Excel spreadsheets, run times will be reduced and the process of setting up and evaluating future model runs will be significantly streamlined.

Most significantly, an update to the model is needed to allow simulations of near-term future operations in a manner that provides recharge operators with tools to optimize recharge operations. This will be particularly useful during the winter months when a water conservation pool exists behind Prado Dam. The updated model will support operators by identifying optimal basin operation and maintenance schedules to maximize recharge efficiency and accelerate drawdown of the Prado conservation pool.

Finally, this update process will involve recharge operations staff to ensure they are fully trained and able to use the model upon project completion. This will provide additional staff who are able to use the model effectively.

The proposed scope of work, which is attached, includes three core tasks to update and enhance the OCWD Recharge Facilities Model. The scope also includes optional tasks, which staff is not recommending at this time. The work focuses on improving model usability, performance, and operational decision support through updated dashboards, optimization capabilities, and documentation.

Task 1 – Data and Model User Interface Updates
This task updates the Recharge Facilities Model to the latest version of GoldSim and migrates key model inputs from external spreadsheets into integrated model dashboards. Basin characteristics and operational controls will be reviewed and incorporated into dashboards to fully enable scenario analysis. Additional model outputs will be added to track Burris/Santiago pumping costs using electrical rate information provided by OCWD.

Task 2 – Model Optimization
This task enhances the model to support operational optimization using Monte Carlo approach within the GoldSim Player version or GoldSim Pro optimization tools. Jacobs will work with OCWD to define cost functions, decision variables, and constraints. The model will be configured to evaluate operational strategies under average, wet, and dry inflow scenarios, including one scenario using Forecast Informed Reservoir Operations (FIRO) inflow estimates. Sample optimization runs will be completed to demonstrate model functionality.

Task 3 – Project Management and Documentation
This task includes overall project management, coordination meetings, and documentation. Jacobs will conduct bi-weekly coordination calls, facilitate in-person workshops to review model updates and optimization results, and prepare a technical memorandum documenting model changes and operational guidance for optimization.

The total anticipated duration for Tasks 1 through 3 is approximately three to six months from notice to proceed.

Due to the expertise required to change the computer code used by the model, it was anticipated that Jacobs would be retained to make periodic updates and improvements to the model on an as-needed basis. The model has been updated several times over the years to keep up with software updates, changes to the recharge system, changes to Prado Dam, etc. Staff recommends continuing with Jacobs due to their unique familiarity with the model's underlying code, institutional knowledge, and the need to minimize implementation risks. In this case, awarding the Recharge Facilities Model update to the original model developer minimizes risk, avoids unnecessary duplication of effort, and best protects the District's long-standing investment in the model.

Staff recommends authorization to issue an Agreement with Jacobs Engineering Group, Inc. for an amount not to exceed $99,620 to update and add operational capabilities to OCWD's Recharge Facilities Model.

PRIOR RELEVANT BOARD ACTIONS

3/18/2023, R23-3-31: Authorize issuance of Amendment No. 1 to Agreement No. 1474 with Jacobs Engineering Group, Inc., for an additional $18,621 for a total contract amount not to exceed $28,442 for updates to the recharge facilities computer model.

2/18/15, R15-2-21: Authorize issuance of Amendment No. 3 to Professional Services Agreement No. 538 with CH2M HILL, for an amount not to exceed $24,472 for updates to the recharge facilities computer model and a contract extension to December 31, 2015.

3/20/13, R13-3-23: Authorize issuance of Amendment No. 2 to Professional Services Agreement No. 538 with CH2M HILL, for an amount not to exceed $24,082 for updates to the recharge facilities computer model.

1/20/10, R10-1-8: Authorize issuance of Amendment No. 1 to Professional Services Agreement No. 538 with CH2M HILL, for an amount not to exceed $30,000 for updates to the recharge facilities computer model.

1/21/2009, R09-1-12: Authorize issuance of Professional Services Agreement to CH2M HILL for an amount not to exceed $249,300 for development of a computer model of the recharge system.

11/19/2008, M08-147: Authorize issuance of Request for Proposals for the development of a computer model for the groundwater recharge system

Jacobs

Recharge Facilities Model (RFM) Update 2025

Orange County Water District

September 19, 2025

Jacobs

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September 19, 2025

Adam Hutchinson
Recharge Planning Manager
Orange County Water District
18700 Ward Street,
Fountain Valley, CA 92708

Subject: OCWD Recharge Facilities Model – Update 2025

Dear Mr. Hutchinson,

Jacobs Engineering Group Inc. appreciates the opportunity to assist Orange County Water District (OCWD) with improvements related to the previously developed OCWD Recharge Facilities Model.

Enclosed is our proposal, which contains our understanding of the requested scope of work based on previous e-mail communications. The total proposed fee for the scope of work without optional tasks is **$99,620.00** and the total fee including optional tasks is **$182,320.00.**

We are prepared to begin work immediately upon authorization by OCWD. Should you have any questions or require additional information, please do not hesitate to contact Marcelo Reginato at 858.405.2408 (marcelo.reginato@Jacobs.com). If selected, we assume mutually agreeable terms and conditions will be negotiated with the district.

Regards,

Jacobs Engineering Group Inc.

Marcelo Reginato
Project Manager

Marielle Coquia
Manager of Projects

1. Project Understanding

In 2009, CH2M (now Jacobs) developed an operations model for the OCWD recharge basins. Subsequently, OCWD has used the model to understand recharge benefits related to potential projects or change in operations. The user interacts with the model via dashboards and model results can be retrieved from dashboards or loaded into spreadsheet tools for further analysis.

The model has gone through many small changes since 2009. One main change was related to an upgraded version of the model platform, GoldSim, which allowed scenario analysis to be integrated with the model. In order to take full benefit of scenario analysis, the model dashboards must be updated. This has been done for some critical variables, but not all dashboards were updated in the first version of the OCWD RFM.

This proposal focuses on two improvements:

- Update of the model dashboards that would allow the full use of the GoldSim scenario capabilities.
- Implementation of Optimization routine to help operations in short term forecasted flows in the Santa Ana River.

Other model improvements will be suggested as optional tasks; those activities include model calibration extension and change in percolation equations.

2. Solution/Methodology

The project is organized into four primary tasks, detailed in the sections that follow. Tasks 1 through 3 are non-discretionary and will be executed as part of the core scope. Task 4 is optional and will require written approval from the client prior to initiation. Accordingly, the schedule for Task 4 is independent of the timelines for Tasks 1, 2, and 3.

The model update will utilize the latest version of the GoldSim Monte Carlo simulation software—GoldSim 15, released on January 7, 2025 (Build #257). This version introduces several significant enhancements designed to improve simulation performance, usability, and modeling flexibility. Among the most notable additions is the new Controller element, which streamlines the implementation of feedback control systems using built-in methods such as Deadband, Proportional, and PID control. This new model feature could be implemented as an operational option for some of the recharge basins. GoldSim 15 also incorporates architectural upgrades and predictive branching algorithms that accelerate simulation speeds by 50% to 200% for medium to large models, while reducing memory usage by up to 15%.

One of the key factors contributing to slow performance in the OCWD RFM model is the extensive use of external Excel spreadsheet inputs. Task 1 of this project specifically targets a substantial reduction in these external links, which is expected to significantly improve model runtime. Additional enhancements in GoldSim 15 include a redesigned toolbar interface, improved scenario management, new keyboard shortcuts, and the ability to execute simulations in hidden mode via command line.

2.1 Tasks

Task 1 Data and Model User Interface

This task will include all the current model inputs that are controlled in the input spreadsheet into GoldSim model dashboards. The task will map the current model inputs that are outside the GoldSim domain, in spreadsheets, and will add model dashboards to accommodate those inputs. The consultant will be in communication with OCWD to confirm the import of variables from the spreadsheet to model dashboards, especially timeseries of inputs, which OCWD might prefer to have in spreadsheets. This task will include model output totalizing Burris/Santiago pumping with electrical rate to track cost of the pumping. It is assumed that OCWD will provide the information related to the electrical rate and cost per kWh.

The subtasks of Task 1 include:

1.1 Update to current version of GoldSim – The model will be updated to the latest GoldSim platform version (Version 15 Build #257), and a new player version of the model will be created. This model version will be used for comparison after all other model changes are implemented. This subtask will also be used to re-gain familiarity with the model and identify model elements that are currently linked to external spreadsheets.

1.2 Review and map Basin controls in the model – This will include review of all basin characteristics (storage tables, max and min elevations, etc.). The reviewed data will be mapped and prepared to be migrated to a model Dashboard. This includes the check of the controls for Raymond, Placentia and La Jolla basins that had limitations on controls.

1.3 Add Basin Controls to Dashboards – The mapped basin input data will be migrated to a new model Dashboard.

1.4 Additional outputs – Additional model outputs will be added, this includes totalizing Burris/Santiago pumping with electrical rate to track cost of the pumping

Task Deliverables

Updated GoldSim player model file that will have most, if not all, model input variables from the Control.xlsx and Inflow.xlsx files incorporated into GoldSim dashboards.

Task 2 Optimization

GoldSim Player does not support the Optimization Module, which is only available in the GoldSim Pro version. There is the possibility of using Monte Carlo simulation to mimic optimization, however, this is not based on Linear programming and is more like a brute force concept to find a minimal cost.

An initial assessment will be done since the optimization GoldSim feature is only available in the GoldSim Pro version and will require OCWD to purchase a license from GoldSim. The initial assessment will identify cost function and state variables that will be used in the simulation. If the amount of state variables are limited, with a limited range of potential values, a simplified Monte Carlo approach that can be used in the player version could be an option to OCWD and could avoid the purchase of a GoldSim license. Monte Carlo simulation can be a good fit if all of the following are true:

1. **Few Decision Variables**: The number of variables is small (e.g., 2–5). This keeps the dimensionality of the search space manageable.
2. **Narrow Variable Ranges**: Each variable has a limited range of possible values. This increases the chance of randomly sampling near-optimal solutions.
3. **Simple Constraints**: Constraints can be easily expressed using conditional logic (e.g., if A + B ≤ 100). You can discard or penalize infeasible solutions.
4. **Smooth Objective Function**: The function you're trying to optimize doesn't have sharp discontinuities or many local optima. This makes it easier for random sampling to find good solutions.
5. **Post-Processing is Acceptable**: It is possible to analyze results outside GoldSim (e.g., in Excel) to identify the best-performing scenarios.

Other options, like building an external SIMPLEX algorithm to optimize cost outside GoldSim in theory is possible, however would require a large effort not consistent with the goals of the model update and beyond the expected budget. Therefore, the current viable options for optimization are:

1. **Optimization Scenarios done by Jacobs** - Setting up cost function and variables with OCWD and have a way to report those variables as a log. Send the information to Jacobs, which will run the optimization scenario, obtain the results and publish in a format that can be analyzed by OCWD (spreadsheet tables). This format will require approximately 2 hours of Jacobs time per optimization and summary of results once all variables are defined and optimization cost function is determined.
2. **Monte Carlo Simulations -** Have model Monte Carlo capabilities active so the user of player version could run multiple simulations, collect the results and determine which combination of parameters would offer the least cost (brute force optimization).

3. **Optimization by OCWD (with GoldSim PRO)** - Set up optimization cost function so OCWD could run optimization in GoldSim PRO (this will require OCWD to acquire a GoldSim License).

The subtasks of Task 2 include:

2.1 Prepare the Model for Optimization Routine – Work with OCWD to select the preferred option to do model optimization. Identify any logic or variables that will be relevant to model optimization to avoid recursive loop errors. Review the model to assure Monte Carlo simulations can be executed with the original model code. Work with OCWD to determine which model variables will be used in Monte Carlo Simulations.

2.2 Define cost function and system variables to be optimized – Jacobs will work with OCWD to design a cost function that reflects OCWD goals for system optimization. A log file of cost function variables will be created for future optimization scenarios. Optimization tests will be realized depending on the selected approach.

2.3 Establish initial conditions dashboard – A new dashboard will be created for optimization and Monte Carlo simulations. This dashboard can be used by the user as a first high level analysis prior to an optimization procedure.

2.4 Create Inflow Scenarios (3 inflow scenarios) – Three inflow model scenarios will be created representing average, wet and dry conditions for the Santa Ana River. Historical flow data available will be used.

2.5 Utilize FIRO inflow estimates as a user defined data series. – It is assumed that FIRO data will be available to be used in the model, model then will be set up to include inflow estimates and optimization will be run with the FIRO inflow estimates. A maximum of 1 FIRO scenarios will be run.

2.6 Optimization of 3 model scenarios that will optimize operation for a 3-to-4-month period - Three scenarios will be selected as examples for optimization based on previous subtasks. The three optimization scenarios will be run and results will be presented in a workshop meeting (Task 3).

Task Deliverables

Updated GoldSim model file with optimization logic, including cost function. A sample of optimization for basin recharge based on 3 model scenarios will be developed during this task. The updated version of the model will have either an optimization procedure or a Monte Carlo approach depending on the OCWD decision.

Task 3 Project Management/Documentation

Jacobs is assuming this will be a 3-to-6-month effort without optional tasks. Task 3 includes hours for coordination meetings with OCWD, Assuming 1 in-person workshop of maximum 2 hours each for each task (Tasks 1 and 2) and one 1 hour bi-weekly call plus preparation.

Task 3 also includes limited documentation in the form of a Technical Memo, focused on the updates to the model inputs and dashboards and operational instructions on how to conduct the model optimization based on the decided approach OCWD will take (using GoldSim PRO or using a simplified Monte Carlo Approach) after an initial evaluation is conducted under Task 2.

3.1 PM Tasks – Assumes approximately 22 weeks of project work

3.2 Meetings - Assuming 1 in-person workshop of 2 hours for each task 1 through 3 and one 1 hour bi-weekly call plus preparation

3.3 TM/User guide Update - Limited documentation focused on the updates and only operational instructions for optimization procedure

Deliverables

Two in-person workshops, the first one to go over Task 1 model input changes and model scenarios and a second one to go over Task 2 optimization process with examples. A draft of the technical memo (no more than 20 pages) documenting the model input improvements and the steps in the optimization process to be reviewed by OCWD. The TM will be reviewed, and a final version will be delivered.

Task 4 Optional Tasks

Task 4 is being designated as an Optional Task and would only be executed under additional approval by OCWD. The following activities are included under this Task.

a) Ensure model can handle Warner and Anaheim Lake pumping condition, where water is pumped from the basin as it fills. This expands the available storage. A review of the current logic will be needed prior to modification of the logic.

b) Examine Miller Basin Percolation Decay and potentially develop custom equations for this basin. It is assumed that OCWD has historical percolation data that can be used in the development of a new percolation equation.

c) Exclude BCV and imported water in 2004-2009. More information is needed for this task; this apparently will impact the calibration period of the model.

d) Exclude when GWRS water only. It is assumed that time series of data will be available to determine when GWRS water was being sent to the recharge basins.

e) Analysis of historical monthly recharge versus modeled recharge. It is assumed that historical data is available.

f) Documentation of optional work executed.

It seems that items (c) and (d) are simple tasks that could be incorporated during project Task 1 when all model inputs will be reviewed.

3. Schedule

Exhibit 1 shows the proposed schedule for the project after the notice to proceed. It is expected that Task 1 will be approximately a one-month effort leading the main tasks related to the Optimization tasks under Task 2. Optional Task 4 schedule is not presented in Exhibit 1 but it is estimated that optional tasks could take 16 weeks to be concluded.

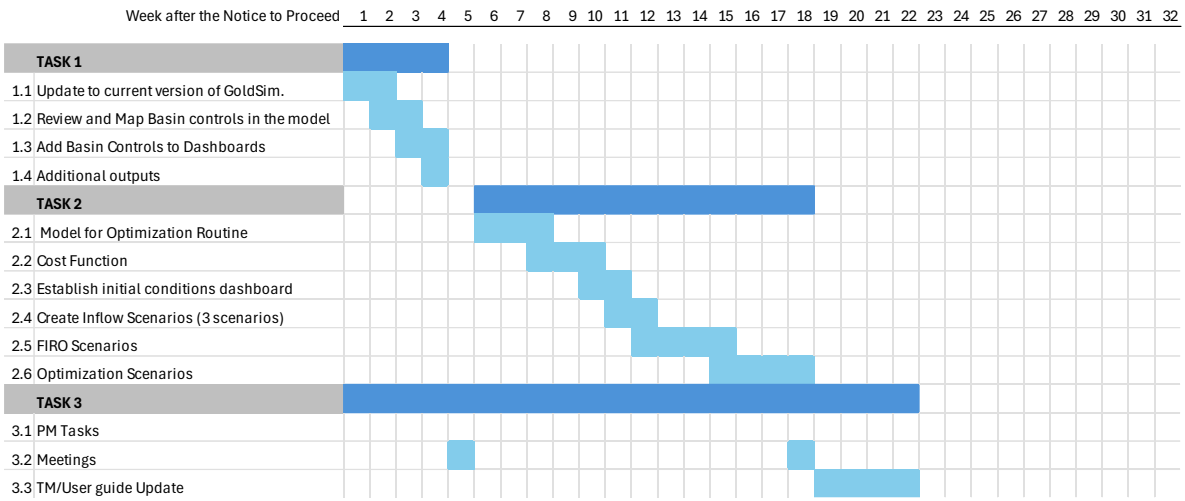

Exhibit 1: Proposed schedule

4. Fee

The project cost and fee associated with this scope of work are presented in Exhibit 2. The scope of work described herein will be performed on a time and materials basis; the total fee will not be exceeded without prior approval from OCWD. Exhibit 3 shows the current billing rates.

Exhibit2: Project fee

		Hours	Price
1. Data and User Interface		126	$ 24,334.00
1.1	Update to current version of GoldSim	16	$ 3,448.00
1.2	Review and map basin controls in the model	44	$ 9,572.00
1.3	Add basin controls to dashboards	48	$ 8,072.00
1.4	Additional outputs	18	$ 3,242.00
2. Optimization		224	$ 50,164.00
2.1	Model for optimization routine	48	$ 12,072.00
2.2	Cost function	36	$ 9,032.00
2.3	Establish initial conditions dashboard	32	$ 6,440.00
2.4	Create inflow scenarios (3 scenarios)	38	$ 7,550.00
2.5	FIRO scenarios (1 scenario)	20	$ 3,764.00
2.6	Optimization scenarios (3 scenarios)	50	$ 11,306.00
3. Project Management/Documentation		104	$ 25,122.00
3.1	PM Tasks	20	$ 5,220.00
3.2	Meetings	30	$ 7,340.00
3.3	TM/User guide Update	54	$ 12,562.00
	Total without Optional Tasks	**454**	**$ 99,620.00**
4. Optional Tasks		390	$ 82,700.00
4.1	Expand Calibration	100	$ 21,320.00
4.2	Review percolation decay formulas	100	$ 21,320.00
4.3	Warner and Anaheim Lake pumping condition	16	$ 4,176.00
4.4	Miller Basin Percolation Decay with new custom equations for this basin.	60	$ 11,792.00
4.5	Exclude BCV and imported water in 2004-2009.	12	$ 2,676.00
4.6	Exclude when GWRS water only.	12	$ 2,676.00
4.7	Look at historical monthly recharge vs modeled recharge.	42	$ 8,052.00
4.8	Documentation of optional work executed	48	$ 10,688.00
	Total with Optional Tasks	**844**	**$ 182,320.00**

Exhibit 3: Billing rates for 2026

Jacobs Engineering Group Inc.
Professionals and Technicians
2026 Hourly Billing Rates

Classification	2026 Rate
Principal-in-Charge	$343
Principal Professional 2	$301
Principal Professional 1	$261
Sr. Professional 2	$232
Sr. Professional 1	$219
Project Professional 2	$204
Project Professional 1	$179
Staff Professional 2	$146
Staff Professional 1	$136
Engineering Technician	$207
Technician	$124
Admin/Clerical	$145

EXPENSES

Expense Type	Rate
Auto Mileage	Current IRS Rate + 10%
Auto Rental	Actual + 10%
Other Travel (FTR Guidelines)	Actual + 10%
Equipment Rental	Actual + 10%
Postage/Freight	Actual + 10%
Reprographics	Actual + 10%
Subcontractors	Actual + 10%

Note:
Rates subject to change January 1, 2027