AGENDA
IRVINE RANCH WATER DISTRICT
ENGINEERING AND OPERATIONS COMMITTEE MEETING
TUESDAY, AUGUST 16, 2022

This meeting will be held in-person at the District's headquarters located at 15600 Sand Canyon Avenue, Irvine, California. The meeting will also be broadcasted via Webex for those wanting to observe the meeting virtually.

To observe this meeting virtually, please join online using the link and information below:

Via Web: https://irwd.webex.com/irwd/j.php?MTID=mae108464a00e0a54d2ee9a6e2d3834a2
Meeting Number (Access Code): 2489 272 8733
Meeting Password: pD7EpvemR43

PLEASE NOTE: Webex observers of the meeting will be placed into the Webex lobby when the Board enters closed session. Participants who remain in the "lobby" will automatically be returned to the open session of the Board once the closed session has concluded. Observers joining the meeting while the Board is in closed session will receive a notice that the meeting has been locked. They will be able to observe the meeting once the closed session has concluded.

CALL TO ORDER 1:30 p.m.

ATTENDANCE

| | | |
|---|---|---|
| Committee Chair: | Doug Reinhart | _____ |
| Committee Member: | Karen McLaughlin | _____ |

ALSO PRESENT

| | | | | | |
|---|---|---|---|---|---|
| Paul Cook | _____ | Kevin Burton | _____ | Wendy Chambers | _____ |
| Jose Zepeda | _____ | Paul Weghorst | _____ | Cheryl Clary | _____ |
| Steve Choi | _____ | Jim Colston | _____ | Fiona Sanchez | _____ |
| Rich Mori | _____ | Eric Akiyoshi | _____ | Joseph McGehee | _____ |
| Jacob Moeder | _____ | Malcolm Cortez | _____ | Ken Pfister | _____ |
| Harry Cho | _____ | Alex Murphy | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ |
| _____ | _____ | _____ | _____ | _____ | _____ |

PUBLIC COMMENT NOTICE

If you wish to address the Committee on any item, please submit a request to speak via the "chat" feature available when joining the meeting virtually. Remarks are limited to three minutes per speaker on each subject. Public comments are limited to three minutes per speaker on each subject. You may also submit a public comment in advance of the meeting by emailing comments@irwd.com before 9:00 a.m. on Tuesday, August 16, 2022.

## COMMUNICATIONS

1. Notes: Burton
2. Public Comments
3. Determine the need to discuss and/or take action on item(s) introduced that came to the attention of the District subsequent to the agenda being posted, and determine which items may be approved without discussion.

## INFORMATION

4. UPCOMING PROJECTS STATUS REPORT – CORTEZ / MOEDER / MORI / AKIYOSHI / BURTON

   Recommendation: Receive and file

5. SYPHON RESERVOIR IMPROVEMENT PROJECT DESIGN UPDATE – MORI / BURTON

   Recommendation: Receive and file

## ACTION

6. CONDITION ASSESSMENT FOR STEEL TANKS CONSULTANT SELECTION – JOHNSON / AKIYOSHI / BURTON

   That the Board authorize the General Manager to execute a Professional Services Agreement with V&A Consulting Engineers in the amount of $278,119 for the Condition Assessment for Steel Tanks, Projects 12252 and 12254.

## OTHER BUSINESS

7. Directors' Comments

8. Adjournment

**********

Availability of agenda materials: Agenda exhibits and other writings that are disclosable public records distributed to all or a majority of the members of the above-named Committee in connection with a matter subject to discussion or consideration at an open meeting of the Committee are available for public inspection in the District's office, 15600 Sand Canyon Avenue, Irvine, California ("District Office"). If such writings are distributed to members of the Committee less than 72 hours prior to the meeting, they will be available from the District Secretary of the District Office at the same time as they are distributed to Committee Members, except that if such writings are distributed one hour prior to, or during, the meeting, they will be available electronically via the Webex meeting noted. Upon request, the District will provide for written agenda materials in appropriate alternative formats, and reasonable disability-related modification or accommodation to enable individuals with disabilities to participate in and provide comments at public meetings. Please submit a request, including your name, phone number and/or email address, and a description of the modification, accommodation, or alternative format requested at least two days before the meeting. Requests should be emailed to comments@irwd.com. Requests made by mail must be received at least two days before the meeting. Requests will be granted whenever possible and resolved in favor of accessibility.

August 16, 2022
Prepared by: M. Cortez / J. Moeder / R. Mori / E. Akiyoshi
Submitted by: K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

# UPCOMING PROJECTS STATUS REPORT

## SUMMARY:

A status report of Irvine Ranch Water District's Upcoming Projects is presented to the Committee for information.

## BACKGROUND:

The information, which is provided as Exhibit "A", is a status report submitted quarterly to the Committee for review.

## FISCAL IMPACTS:

Not applicable.

## ENVIRONMENTAL COMPLIANCE:

Not applicable.

## RECOMMENDATION:

Receive and file.

## LIST OF EXHIBITS:

Exhibit "A" – Upcoming Projects Status Report

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# EXHIBIT "A"

## IRWD UPCOMING PROJECTS STATUS REPORT

| Project Name | Start Planning | Start Design | Construction Award | Construction Final Acceptance |
|---|---|---|---|---|
| IBC Sidewalk Relocations | | | | Winter 2023 |
| SR 133 - 36" Trunk Sewer Relocation | | | Winter 2023 | Spring 2023 |
| Riparian View Paving | | | Summer 2022 | Fall 2022 |
| HATS Diversion Structure Relining | | | | Summer 2022 |
| MWRP Compressed Natural Gas and Diesel/Gasoline Fueling Station | | | Fall 2022 | Winter 2024 |
| MWRP Tertiary Filter Rehabilitation | | | Winter 2022 | Fall 2023 |
| Operations Center Purchasing Warehouse | | | Spring 2023 | Fall 2023 |
| MWRP Biosolids Misc. Improvements | | Summer 2022 | | |
| DW Reservoir Air Vent Retrofits | | | | Summer 2022 |
| Coastal Z2 and Z4 Pump Stations Rehabilitation | | | Spring 2023 | Spring 2024 |
| Silverado Bridge 174 DW Improvements | | | Summer 2023 | Spring 2024 |
| Silverado Bridge 175 DW Improvements | | | Spring 2023 | Winter 2024 |
| Woodbridge RW Replacement | | | | Fall 2023 |
| Sewer Siphon Improvements Phase II | | | Spring 2023 | Spring 2024 |
| Main/Cartwright Manhole Rehabilitation | | | Winter 2023 | Spring 2023 |
| El Toro Road Manhole Raise to Grade | | | Winter 2023 | Spring 2023 |
| Lake Forest Woods Sewer Improvements | | | Winter 2023 | Summer 2023 |
| Santiago Canyon Pump Station Improvements | | | | Spring 2023 |
| Turtle Rock Chloramine Booster Station | | | Fall 2022 | Fall 2023 |
| Lake Forest Well No. 2 Treatment and Improvements | | | Winter 2023 | Fall 2023 |
| Wells 10 and 12 Rehabilitation | | | Summer 2022 | Winter 2023 |
| PDF Sodium Hypochlorite Storage and Feed System | | | | Fall 2022 |
| Santiago Creek Dam Outlet Tower and Spillway Improvements | | | Summer 2024 | |
| Rattlesnake Dam Risk Reduction Investigation | Summer 2022 | | | |
| Santiago Canyon Fleming Zone 8 Tank and Zone 8-9 BPS | | | | Winter 2025 |
| Generator Fuel Storage Upgrades | | | Winter 2023 | |
| Orange Heights Zone 6 Reservoir | | | Spring 2023 | Spring 2025 |
| Well OPA-1 PFAS Treatment | | | | Summer 2023 |
| Well ET-1 and SGU PFAS Treatment | | | Fall 2022 | Spring 2024 |
| Baker WTP Diesel Fuel Storage | | | Summer 2022 | Winter 2023 |
| LAWRP Jeronimo Sewer Bypass | | Fall 2022 | | |
| Orange Heights SAC/Baker Pipeline Relocation | | | Fall 2022 | Summer 2023 |
| San Joaquin Reservoir Filtration | | | Summer 2022 | Winter 2024 |
| 15 MG Zone 1 Reservoir Coating Replacement and Improvements | | | | Summer 2022 |
| Zone A to Rattlesnake Reservoir BPS | | | | Fall 2023 |
| LAWRP Modernization | | Fall 2022 | | |
| Orange Heights Zn 5 to 6 and C+ to E Pump Stations | | Summer 2022 | | |
| Syphon Reservoir Improvements | | | Spring 2024 | Spring 2028 |
| Syphon Reservoir Intersection Improvements and Access Road | | | Winter 2023 | Fall 2023 |
| Lake Forest Zone B-C BPS | | | | Winter 2023 |

IRWD UPCOMING PROJECTS STATUS REPORT

| Project Name | Start Planning | Start Design | Construction Award | Construction Final Acceptance |
|---|---|---|---|---|
| LAWRP Whatney Force Main | | Winter 2023 | | |
| Crystal Cove RW PRV | | | | Winter 2023 |
| PA 1, Jeffrey Road Extension RW (RA w/CDC) | | | Summer 2022 | Fall 2022 |
| PA 51, District 5, F and N St DW, RW | | | Summer 2022 | Fall 2022 |
| PA 51, District 5, Astor DW, RW (RA w/Heritage Fields) | | | Summer 2022 | Fall 2022 |
| PA 51, Marine Way from Alton Pkwy to Bake Pkwy DW, RW (RA w/Heritage Fields) | | | Summer 2022 | Fall 2022 |
| PA 51, Marine Way at Bake Parkway DW (RA w/Heritage Fields) | | | Summer 2022 | Fall 2022 |
| PA 51, Serrano Creek Sewer Relocation | | | Summer 2022 | Fall 2022 |
| PA 51, District 5 South Harrier DW, SS, RW (RA with Heritage Fields) | | | Summer 2022 | Fall 2022 |
| PA 51, District 5 South Chinon DW, RW (RA with Heritage Fields) | | | Summer 2022 | Fall 2022 |
| PA 51, Marine Way from Skyhawk to Treble DW, RW (RA with Heritage Fields) | | | Summer 2023 | Fall 2023 |
| PA 51, Treble from GP5 to Marine Way DW, RW (RA with Heritage Fields) | | | Summer 2023 | Fall 2023 |
| PA 1, Orchard Hills Neighborhood 4 RW (RA with TIC) | | | Fall 2022 | Summer 2023 |
| East Orange, Orange Heights Tract 16199 SS, RW | | | Fall 2022 | Spring 2025 |
| East Orange, Orange Heights Tract 17995 DW,SS, RW | | | Fall 2022 | Spring 2025 |
| East Orange, Orange Heights Tract 17995 DW, RW | | | Fall 2022 | Spring 2025 |
| East Orange, Orange Heights Jamboree and Chapman DW SS, RW | | | Fall 2022 | Spring 2025 |
| The Meadows, SS (RA w/Toll Brothers) | | | | Fall 2022 |
| CIP Project Packaging for IRWD Production Wells | In-Process | | | |
| Steel Tank Assessment | In-Process | | | |
| OC San / IRWD IBC 5-Year CORF/Equity Flow Monitoring | In-Process | | | |
| Pump Station and Lift Station Assessment | In-Process | | | |
| IRIS Replacement Planning Model Treatment Plant Cost Update | In-Process | | | |
| CIP Asset Management Phase II - Linear Asset Prioritization | Fall 2022 | | | |
| GIS Master Plan | In-Process | | | |
| | | | | |
| | | | | |

| Category | Months |
|---|---|
| Winter | Jan. Feb. & Mar. |
| Spring | Apr. May & June |
| Summer | Jul. Aug. & Sep. |
| Fall | Oct. Nov. & Dec. |

August 16, 2022
Prepared by: R. Mori
Submitted by: K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

SYPHON RESERVOIR IMPROVEMENT PROJECT DESIGN UPDATE

SUMMARY:

IRWD's engineering design consultant AECOM has completed the 30% design, which includes the Preliminary Design Report (PDR) and 30% construction plans. The PDR is a compilation of findings and recommendations developed through the completion of 15 issue-specific technical memoranda that have been completed over the past year. The PDR establishes the design criteria associated with the major project facilities including the zoned earthen embankment dam, spillway, sloped inlet/outlet, reservoir water quality management system, and algae filtration and disinfection systems. With the preliminary design complete, AECOM is proceeding with the development of the final design. At the Committee meeting, staff will provide a presentation summarizing the overall scope of the project and the status of the design.

BACKGROUND:

Improvements to the Syphon Reservoir are needed to resolve challenges associated with having inadequate seasonal storage for recycled water. Each year, recycled water demands fluctuate considerably due to variations in weather patterns. IRWD's recycled water storage reservoirs allow IRWD to store surplus recycled water produced at IRWD's treatment plants during periods of low demand, generally in winter, and then use the storage during periods of high demand, generally in summer. Without adequate seasonal storage, the excess recycled water supplies during winter are lost to ocean disposal, and IRWD must then purchase costly supplemental imported water to meet summer demands. Based on projected future recycled water supply and demand scenarios, staff determined that an additional 4,500-acre feet (AF) of recycled water seasonal storage will be needed by the year 2030.

In 2020, IRWD contracted with AECOM to design improvements to the Syphon Reservoir that would expand the storage capacity of the reservoir to about 5,200 AF to meet the projected seasonal storage needs. AECOM has completed the 30% design, which includes the PDR and 30% construction plans. The PDR is a compilation of findings and recommendations developed through the completion of 15 issue-specific technical memoranda that have been completed over the past year. The PDR establishes the design criteria associated with the major project facilities including the zoned earthen embankment dam, spillway, sloped inlet/outlet, reservoir water quality management system, algae filtration system, and disinfection system. With the preliminary design complete, AECOM is proceeding with the development of the final design.

At the Committee meeting, staff will provide a presentation summarizing the overall scope of the project and the status of the design. A draft of this presentation is provided as Exhibit "A".

FISCAL IMPACTS:

Staff is updating its financial analysis of the project and will present this information at the Committee meeting.

ENVIRONMENTAL COMPLIANCE:

Not applicable

RECOMMENDATION:

Receive and file.

LIST OF EXHIBITS:

Exhibit "A" – Syphon Reservoir Improvement Project Design Update Presentation


Irvine Ranch
Water District
ENGINEERING &
OPERATIONS
COMMITTEE
SYPHON RESERVOIR IMPROVEMENT
PROJECT DESIGN UPDATE
AUGUST 16, 2022
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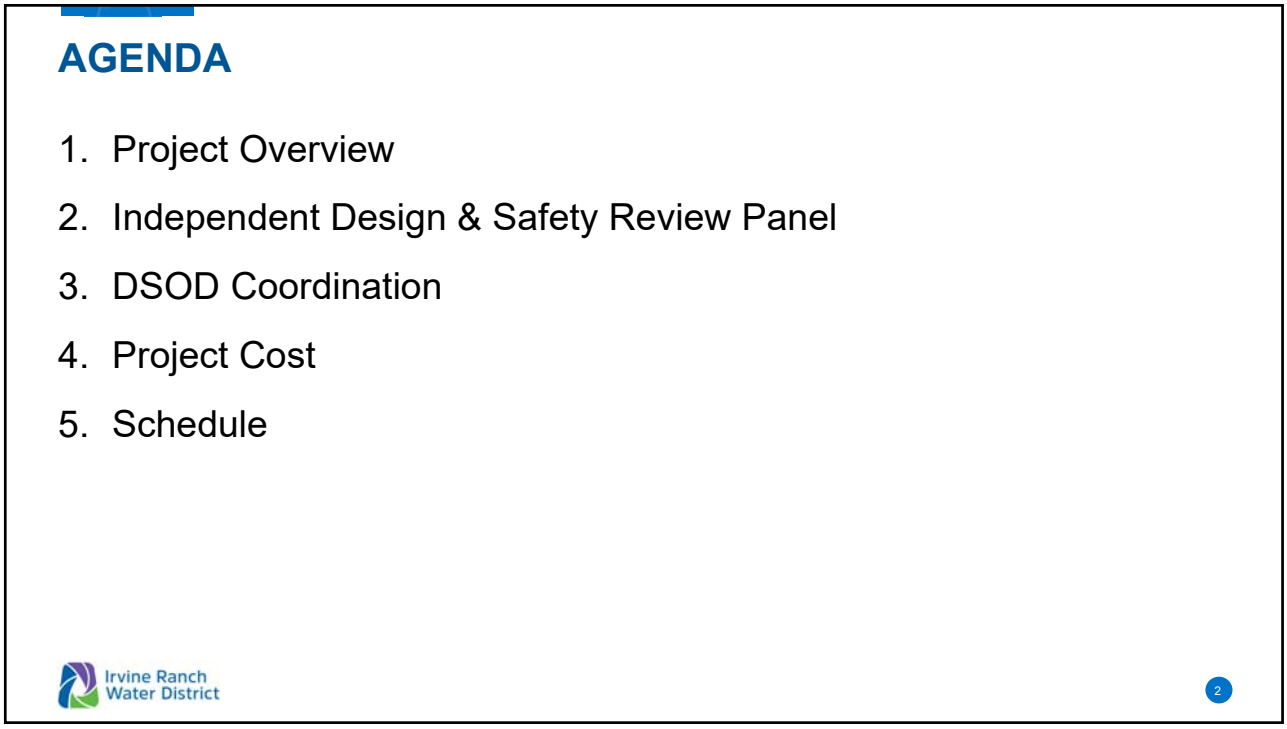
AGENDA
1. Project Overview
2. Independent Design & Safety Review Panel
3. DSOD Coordination
4. Project Cost
5. Schedule
Irvine Ranch
Water District
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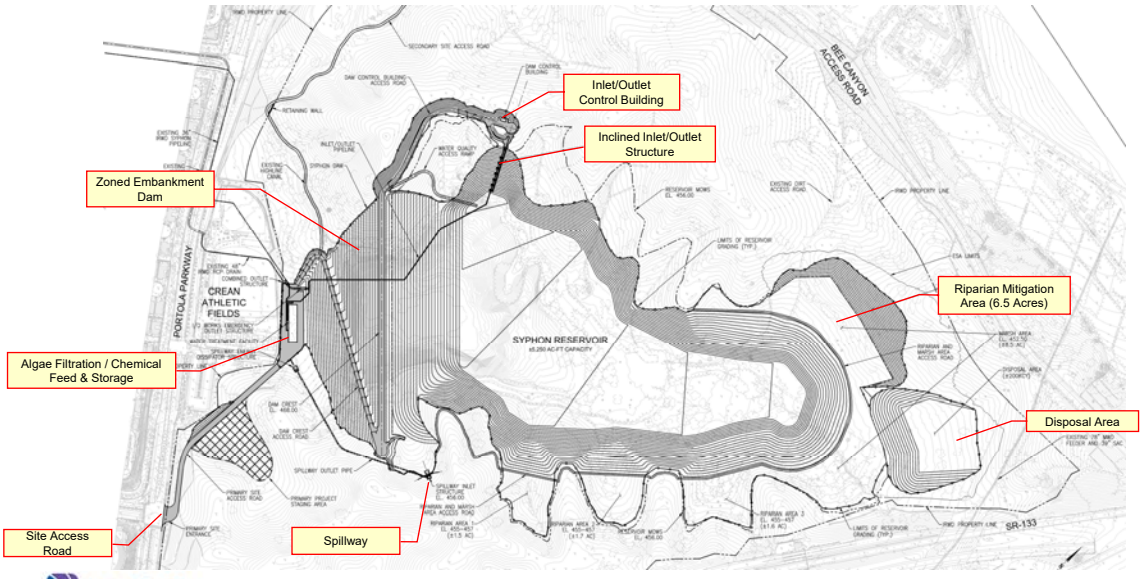
## PROJECT OVERVIEW




Irvine Ranch Water District

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## KEY DESIGN CRITERIA

| | |
|---|---|
| • Storage Capacity | 5,250 acre-feet |
| • Dam Height | 138 feet |
| • Dam Crest Length / Width | 1,500 ft / 30 ft |
| • Elevations | |
| • Dam Crest | 468 ft |
| • Spillway Crest | 456 ft |
| • Dam Toe | 330 ft |
| • Dam Freeboard | |
| • Normal Operations | 12.0 ft |
| • Residual Freeboard (During a Spillway Event) | 6.6 ft |
| • Dam Slopes | 3.25H:1V (Upstream) |
| | 2.5H:1V (Downstream) |

Irvine Ranch Water District

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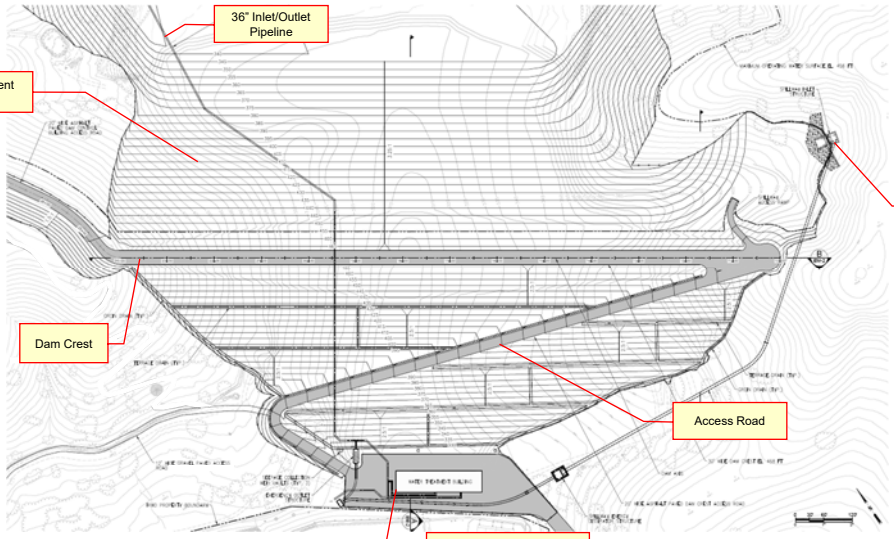
# EMBANKMENT DAM – PLAN




Irvine Ranch Water District

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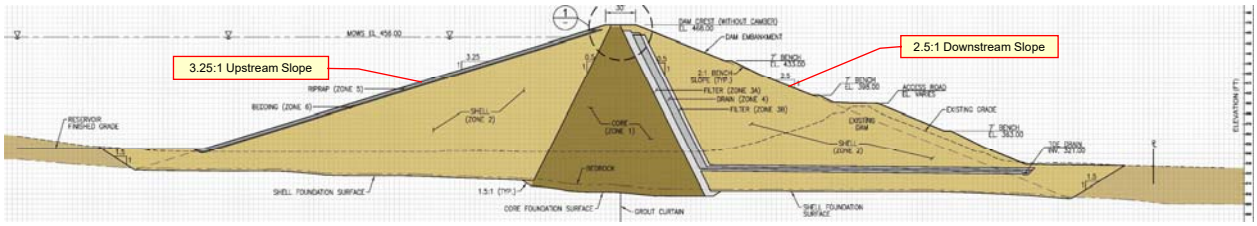
# EMBANKMENT DAM – SECTION




Irvine Ranch Water District

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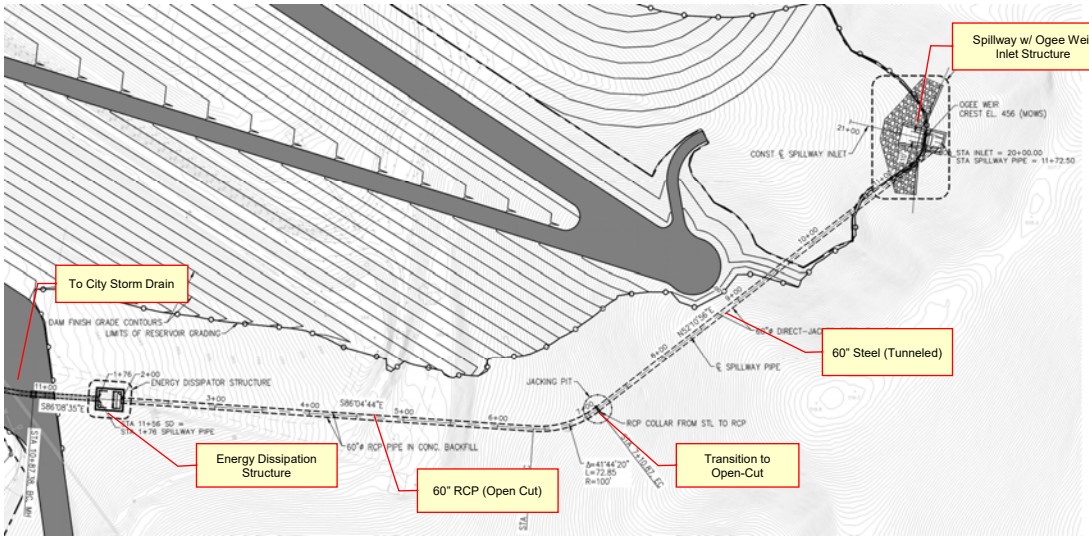
# SPILLWAY – PLAN




Irvine Ranch Water District

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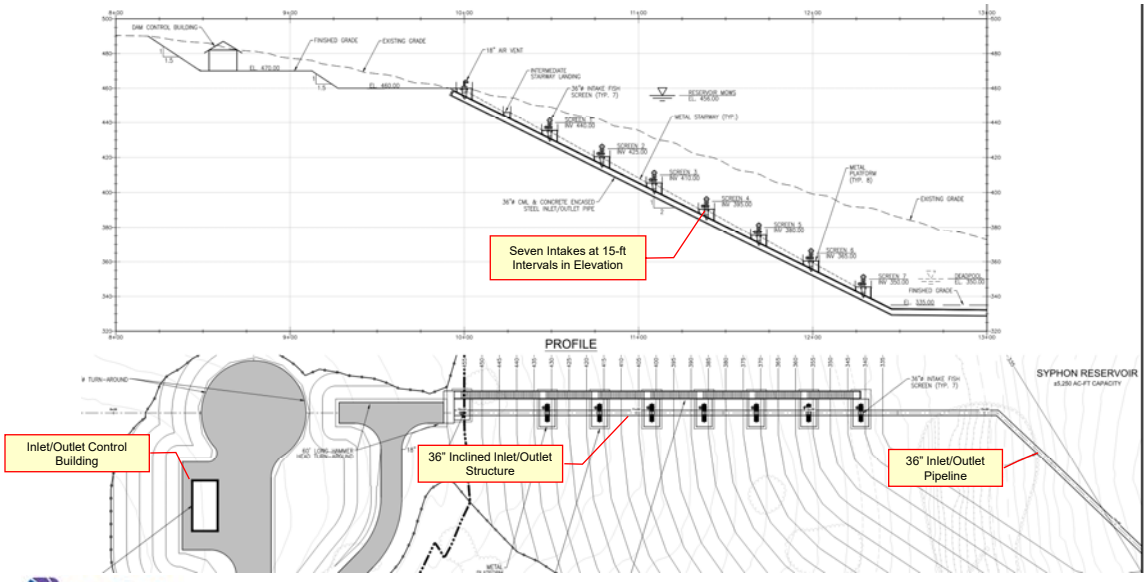
# INLET/OUTLET STRUCTURE – PLAN/SECTION




Irvine Ranch Water District

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## SAND CANYON/PORTOLA INTERSECTION IMPROVEMENTS

*Intersection Project:*

- Modify the intersection for new site access road
- Start date: 2023
- Separate construction contract for only the intersection improvements
- Note: Syphon Improvements Project contractor will extend new site access road and develop staging area at project start


Irvine Ranch Water District

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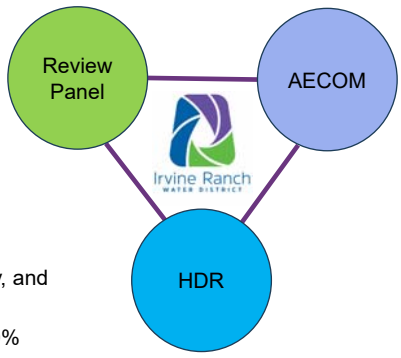
## INDEPENDENT DESIGN & SAFETY REVIEW PANEL

### Review Panel Members:

- Lelio Mejia – Geosyntec Consultants
- Faiz Makdisi – Gannett Fleming
- John Trojanowski – Trojanowski Dam Engineering
- Dan Hertel – Engineering Solutions
- Brett Sanders – Professor of Civil and Environmental Engineering, University of California Irvine




### Review Panel Scope:

- Focused review on critical structure design, design criteria, dam safety, and associated technical studies and analyses
- Workshop approach consisting of workshops at the 30%, 60%, and 90% design completion levels
  - Workshop No. 1 – Completed in April 2022
  - Workshop Nos. 2 and 3 scheduled for February 2023 and July 2023

Irvine Ranch Water District

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## DSOD COORDINATION

CALIFORNIA DEPARTMENT OF WATER RESOURCES

- Continuous communication and coordination with DSOD
  - Routine discussions
  - Focused design and issues meetings/briefings
  - Risk-informed decision making (RIDM) workshop
  - Preliminary design workshop
- DSOD currently reviewing the Preliminary Design
- First installment of $795,000 DSOD application fee paid in July 2022
- DSOD pleased with design development and IRWD's overall approach to dam safety and incorporation of RIDM

Irvine Ranch Water District

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## PROJECT COST

| Item | March 2020 Basis | June 2026 Basis |
|---|---|---|
| Construction Cost | | |
| Dam Improvements | $60.6 M | $126.1 M |
| Algae Filtration and Chlorination/Dechlorination | $12.3 M | $24.3 M |
| Intersection/Access Improvements | $1.7 M | $2.4 M |
| Construction Contingency | $22.4 M(30%) | $30.6 M(20%) |
| Subtotal – Construction Cost | $97.0 M | $183.4 M |
| Escalation to Midpoint of Construction | (not included) | $35.8 M |
| **Total Estimated Construction Cost** | **$97.0 M** | **$219.2 M** |
| Soft Costs (Engineering and Constructability, Environmental, Permitting, CM, IRWD Labor, Legal) | $34.0 M(35%) | $40.8 M(19%) |
| Environmental Mitigation/Restoration/Land Purchase | $15.0 M | $17.0 M |
| **All-In Project Cost** | **$146.0 M** | **$277.0 M** |

Irvine Ranch Water District

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## SCHEDULE

Project Milestones:

| | |
|---|---|
| Preliminary Design Report and 30% Design Submittal | June 2022 (Completed) |
| Final Design Report and 60% Design Submittal | February 2023 |
| 90% Design Submittal | August 2023 |
| 100% Design Submittal | January 2024 |
| Final Bid Package Submittal | March 2024 |
| Construction Bid Opening | May 2024 |
| Construction | June 2024 through June 2028 |

Irvine Ranch Water District

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## QUESTIONS

Irvine Ranch Water District

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August 16, 2022
Prepared by: D. Johnson / E. Akiyoshi
Submitted by: K. Burton
Approved by: Paul A. Cook

ENGINEERING AND OPERATIONS COMMITTEE

CONDITION ASSESSMENT FOR STEEL TANKS
CONSULTANT SELECTION

SUMMARY:

The Condition Assessment for Steel Tanks project includes the evaluation of 14 steel tanks, with a focus on coatings, corrosion, and attached appurtenant features. The work includes detailed condition assessment, cost estimating, and project packaging for design and construction. Staff received and evaluated proposals from three, well qualified teams, and recommends the Board authorize the General Manager to execute a Professional Services Agreement with V&A Consulting Engineers in the amount of $278,119.

BACKGROUND:

Phase 1 of the Capital Improvement Program (CIP) Asset Management Program was recently completed and identifies capital repair and rehabilitation (R&R) projects for over 150 pump stations, tanks, lift stations, and well facilities. As a result of the CIP Asset Management Program and the specialized nature of evaluating steel tanks, staff initiated the steel tanks condition assessment project to complete a detailed condition assessment of all steel tanks.

The project scope of work includes asset level condition assessments using Level I (visual, non-invasive condition assessment) and Level II (more involved testing such as concrete penetration and pH measurement, ultrasonic metal thickness testing, and corrosion pit depth measurement) evaluations. It also includes cost estimation and project packaging for design and construction.

Consultant Selection:

Staff invited three consultants to propose on the project and received proposals from all three: Coating Specialists and Inspection Services (CSI), Harper & Associates, and V&A Consulting Engineers. Staff met with all team members during the RFP development and proposal stages to explain the criticality of completing a comprehensive and detailed condition assessment of the steel tanks. The RFP allowed the teams to use their industry expertise to meet IRWD's project needs.

While all the teams were well qualified, V&A presented a well-balanced team, comprehensive project approach, and excellent project understanding that meets IRWD's goals and objectives for this project.

- *Project Team*: V&A is a proven leader in the Southern California area and this team recently completed successful condition assessment projects for Sweetwater Authority, Coachella Valley Water District, Pasadena Water & Power, and Eastern Municipal Water District. The project manager, Brian Briones, has extensive experience with steel tank condition assessments and cathodic protection system evaluations and has previous experience with IRWD as part of the Turtle Ridge Pipelines Corrosion Survey and Cathodic Protection Design.
- *Comprehensive Project Understanding*: V&A's proposal was both clear and comprehensive. Its methodology for completing the work highlighted its solid project management and technical experience with detailed condition assessments for steel tanks.
- *Technical Approach*: V&A articulated a clear approach to condition assessment that uses industry standard methods to evaluate and analyze assets for R&R. Its proposal reflects methods used at the recently successful IRWD's Zone 1 Tank coating project: V&A proposes to drain each tank and use a combination of direct visual and drone technology to complete the inspections. Also, V&A proposed the most robust suite of condition assessment tasks like foundation sounding and pH testing and a detailed cathodic protection system evaluation. V&A's comprehensive proposal matches IRWD's proactive capital asset management approach for these aging steel tanks.

The consultant selection matrix is attached as Exhibit "A", and V&A's scope of work and fee proposal are attached as Exhibit "B". V&A's fee is higher than the other proposals due to the value-added condition assessment tasks that represent a more comprehensive project approach.

FISCAL IMPACTS:

The Condition Assessment for Steel Tanks project will be handled through the Condition Assessment Domestic Water and Condition Assessment Sanitary Sewer, Projects 12252 and 12254. These projects are funded through replacement funds and are included in the FY 2022-23 Capital Budget.

ENVIRONMENTAL COMPLIANCE:

This study is exempt from the California Environmental Quality Act (CEQA) as authorized under the California Code of Regulations, Title 14, Chapter 3, Section 15262 which provides exemption for planning studies.

RECOMMENDATION:

That the Board authorize the General Manager to execute a Professional Services Agreement with V&A Consulting Engineers in the amount of $278,119 for the Condition Assessment for Steel Tanks, Projects 12252 and 12254.

LIST OF EXHIBITS:

Exhibit “A” – Consultant Evaluation Matrix
Exhibit “B” – V&A Scope of Services and Cost Estimate

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# EXHIBIT "A"
## CONSULTANT EVALUATION MATRIX

## Detailed Condition Assessment of Steel Tanks

| Item | Description | Weights | CSI | | Harper & Associates | | V&A | |
|---|---|---|---|---|---|---|---|---|
| A | TECHNICAL APPROACH | | | | | | | |
| 1 | Project Understanding | 30% | 3 | | 2 | | 1 | |
| 2 | Project Approach | 40% | 3 | | 2 | | 1 | |
| 3 | Project Team | 30% | 2 | | 3 | | 1 | |
| | Weighted Score | *100%* | *2.7* | | *2.3* | | *1.0* | |
| B | SCOPE OF WORK | | | | | | | |
| TASK | | | Task Hours | FEE | Task Hours | FEE | Task Hours | FEE |
| 1 | TASK 1 - Project Management | | 6 | $900 | 60 | $11,692 | 71 | $14,508 |
| 2 | TASK 2 - Condition Assessment | | 54 | $24,450 | 188 | $38,573 | 558 | $156,821 |
| 3 | TASK 3 - Capital Project Packaging and Prioritization | | 8 | $1,200 | 291 | $45,600 | 124 | $27,318 |
| 4 | TASK 4 - Final Report and Deliverables | | 8 | $1,200 | 64 | $9,000 | 150 | $32,162 |
| | SUB-TOTAL ENGINEERING SERVICES, FEE | | **76** | **$27,750** | **603** | **$104,865** | **903** | **$230,809** |
| 9.1 | Optional Tasks | | 36 | $20,070 | | | 202 | $47,210 |
| | TOTAL ENGINEERING SERVICES, FEE | | **112** | **$47,820** | **603** | **$104,865** | **1,105** | **$278,019** |
| | Avg $/hr | | | $365 | | $174 | | $256 |
| D | OTHER | | | | | | | |
| | **Miscellaneous Items** | | | | | | | |
| | Multiplier | | - | | - | | - | |
| | Conflict of Interest | | No | | No | | No | |
| | Joint Venture | | Yes | | No | | No | |
| | Addendum Acknowledgement | | N/A | | N/A | | N/A | |
| | Scope of Work Exclusions | | No | | No | | No | |
| | Exceptions taken to IRWD Std. Contract | | No | | No | | No | |
| | Insurance (Professional & General Liability) | | N/A | | Yes, Certs Provided | | Yes, Certs Provided | |
| | **Ranking of Consultants** | | **3** | | **2** | | **1** | |

The "1" ranking is the staff recommended consulting team

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Request for Proposal

# Detailed Condition Assessment of Steel Tanks

Irvine Ranch Water District
06.17.2022

V&A Consulting Engineers, Inc.
Brian Briones, PE | Southwest Regional Manager
11011 Via Frontera, Suite C
San Diego, CA 92127
858.576.0226
bbriones@vaengineering.com
www.vaengineering.com

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Suite C
San Diego, CA 92127

858.576.0226 Tel
510.903.6601 Fax
vaengineering.com

V&A Project No. 22-0061

June 17, 2022

Eric Akiyoshi, P.E.
Engineering Manager – Infrastructure Planning
Irvine Ranch Water District
15600 Sand Canyon Avenue
Irvine, CA 92618

**Re:** Proposal for Detailed Condition Assessment of Steel Tanks

Dear Eric Akiyoshi,

We have thoroughly reviewed your request for proposal (RFP) along with all applicable attachments and V&A Consulting Engineers (V&A) is pleased to submit this proposal for the Irvine Ranch Water District's (IRWD) Detailed Condition Assessments of Steel Tanks. V&A is a firm with a reputation and long-established history providing responsive service and successful solutions specializing in condition assessment and corrosion engineering. For 43 years, the V&A team has provided corrosion engineering services, condition assessment services, and technical support to water and wastewater agencies throughout California and the western United States.

IRWD is seeking a qualified consulting firm that can assist with performing condition assessment and corrosion engineering services. The consultant will be responsible for reviewing relevant information about the 14 steel tanks, and performing field testing and as an optional task cathodic protection surveys. The project will include developing a detailed condition assessment report providing recommendations for repair or rehabilitation if warranted by the findings. The Report will include cost estimates for the implementation of the proposed recommendations. Recommendations approved by IRWD will be packaged and prioritized into a Capital Improvement Plan that will be provided to IRWD design teams. The project goal is to identify equipment and infrastructure recommended for repair or replacement documented into a Condition Assessment and 5-Year Prioritized Project Report.

V&A has assisted numerous clients with evaluating the likelihood of failure and calculating remaining useful life of assets by performing condition assessments. Our Team provides corrosion engineering and condition assessment services from testing to rehabilitation design to construction and, most importantly, ongoing monitoring and maintenance. We know how important relationships are between the client and the consultant and have had the opportunity to talk with members of the IRWD team and believe that we would work very well together.

By signature of this letter, we commit that IRWD will receive our full corporate support and necessary resources for the Condition Assessment and Corrosion Engineering Services included in this proposal. As the President, I am duly authorized to contractually bind V&A Consulting Engineers, Inc. This proposal presented to IRWD is valid for 90 days as of the date of this letter. If you have any questions regarding the proposal presented, please feel free to contact me at 619.436.5789 or dkaye@vaengineering.com, or Brian Briones, Southwest Regional Manager, at 858.779.0339 or bbriones@vaengineering.com. On behalf of our staff, we would like to thank you for the opportunity to be of service to the Irvine Ranch Water District.

Sincerely,
V&A Consulting Engineers, Inc.

Debra Kaye, PE
CEO & President

Brian Briones, PE
Southwest Regional Manager

V&A

11011 Via Frontera
Suite C
San Diego, CA 92127

858.576.0226 Tel
510.903.6601 Fax
vaengineering.com

# Project Understanding

Irvine Ranch Water District (IRWD) is embarking on a new project for detailed condition assessment for its steel tanks as part of the ongoing development of IRWD's Capital Improvement Plan Asset Management Program (CIP AM). As IRWD continues to mature its capital facility asset management and CIP prioritization, IRWD completed Phase 1 of its CIP AM project, which developed five-year risk-based CIP priorities for pump stations, tanks, lift stations, and wells. The Phase 1 project used high-level field condition assessments to inform the likelihood of failure, remaining useful life, and effective age for various facilities.

This current project will develop detailed and comprehensive condition assessment information for 14 steel tanks. The condition assessments will include an evaluation of the physical condition, operating performance, and reliability. Based on the results of this condition assessment, project packages and scopes of work will be developed for facilities in need of repair and rehabilitation. V&A will also determine the remaining useful life and Likelihood of Failure (LOF) of each asset component.

V&A has reviewed the list of 14 steel tanks included in this project and the background documentation provided as appendices to the request for proposal (RFP). Based on the review of the documentation provided, Table 1 presents the V&A's understanding of each tank.

| Tank Facility ID | Tank Facility Name | Year Built | Capacity (MG) | Most Recent Visual Assessment | Assessment Performed By | Cathodic Protection System |
|---|---|---|---|---|---|---|
| DRS005 | East Irvine Zone 4 | 1984 | 2.5 | April 2021 | Workhorse Diving & Salvage | Impressed |
| DRS012 | Portola Hills Zone 8 | 1988 | 2.5 | None | N/A | Impressed |
| DRS016 | Lake Forest El Toro Rd #1 Zone 4 | 1965 | 1.04 | May 2021 | Workhorse Diving & Salvage | Galvanic |
| DRS017 | Lake Forest El Toro Rd #2 Zone 4 | 1969 | 2.05 | May 2021 | Workhorse Diving & Salvage | Galvanic |
| DRS018 | Lake Forest Canada Zone 4 | 1969 | 3.7 | May 2020 | Inland Potable Services, Inc | None or Unknown(1) |
| DRS020 | Lake Forest Zone 5 West | 1989 | 7.8 | April 2019 | Inland Potable Services, Inc | None or Unknown(1) |
| DRS021 | Lake Forest Zone 5 East | 1978 | 7.8 | April 2019 | Inland Potable Services, Inc | None or Unknown(1) |
| DRS035 | Shaw Tank | 1994 | 0.15 | May 2018 | Inland Potable Services, Inc | Galvanic |
| DRS037 | Chapman Tank | 1977 | 0.15 | June 2018 | Inland Potable Services, Inc | Galvanic |
| DRS039 | Williams Tank | 1983 | 0.5 | May 2018 | Inland Potable Services, Inc | Galvanic |
| DRS041 | Modjeska Tank | 1998 | 1.4 | June 2018 | Inland Potable Services, Inc | Galvanic |
| DRS043 | Benner Tank | 1996 | 0.08 | June 2018 | Inland Potable Services, Inc | Galvanic |
| RRS011 | Lake Forest #2 Zone C | 1982 | 2.0 | June 2018 | Inland Potable Services, Inc | None or Unknown(1) |
| RRS012 | Lake Forest Zone D West | 1984 | 7.8 | June 2012 | Inland Potable Services, Inc | None or Unknown(1) |

(1) Information about cathodic protection system not found in background documentation.

Table 1. Steel Tank Information

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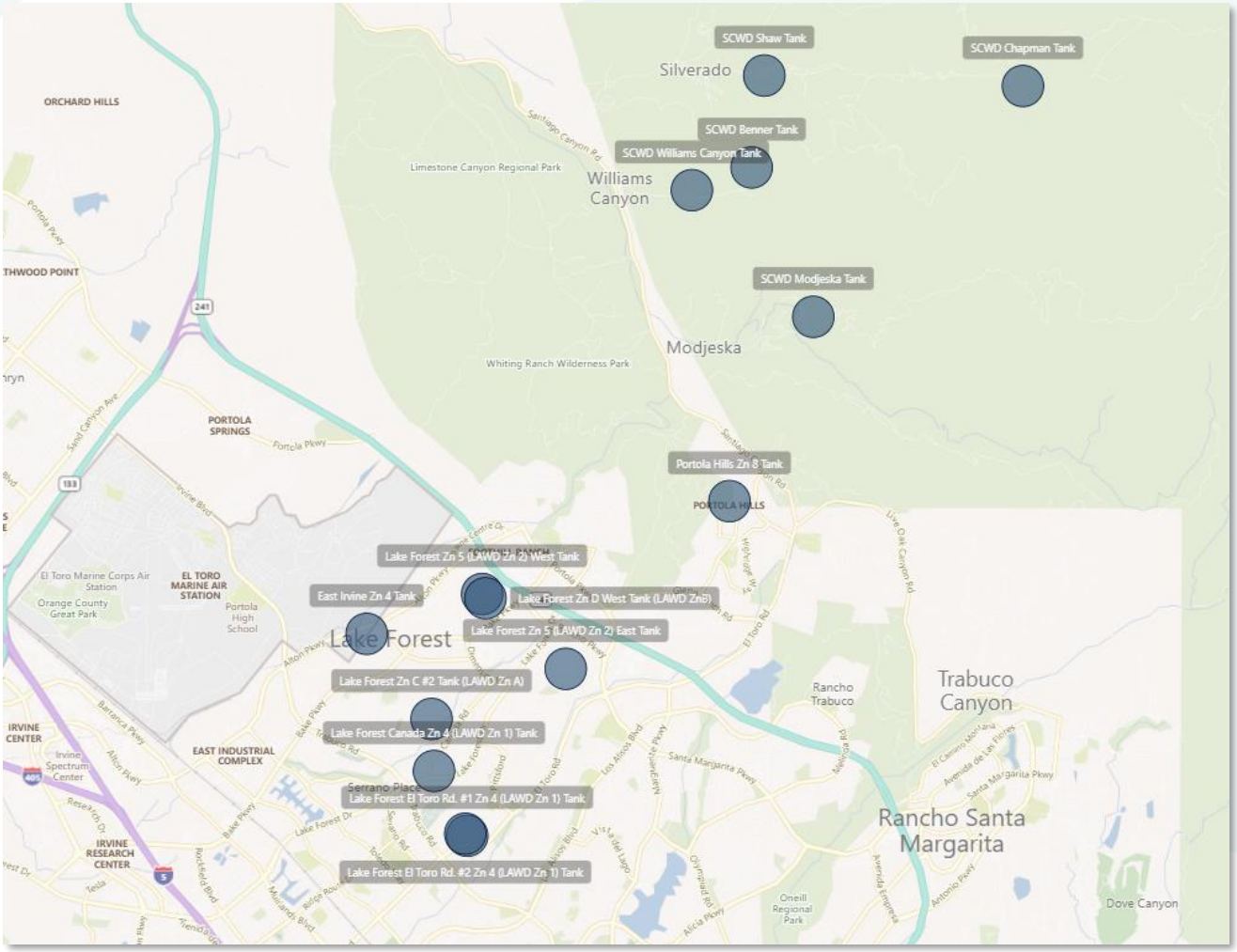
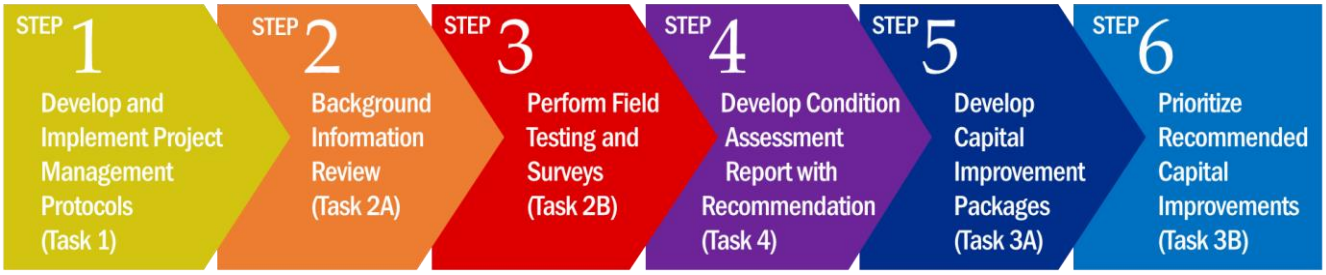



Figure 1. Locations of Steel Tanks

# A. Scope




The V&A team is committed to performing the Scope of Work as outlined in Part II of the RFP. We propose to complete this project in a six-step process that will efficiently deliver results. We look forward to discussing our specific approach methods for each task with IRWD staff and will make any necessary adjustments based on those discussions.

## Task 1 - Project Management

V&A will manage this project for IRWD by adhering to proposed schedules and staying within the proposed budget for each task. We will take the time to understand the requirements and needs of the project so that each project scope is well defined. Having a well-defined scope sets the project budget and schedule up for success. Regular coordination and communication throughout each project will be imperative to maintain the schedule and budget as well. V&A maintains **close working relationships** with its clients throughout the duration of a project through verbal and written communications to ensure all work is performed as required.

Additionally, V&A has instituted internal controls to facilitate monitoring of both progress and cost for projects tracked through a **project management system** called **Ajera**. Project hours and direct costs are available to the project manager in real-time. Ajera allows continuous comparison of actual project performance against the project plan, identification of deviations in the performance, evaluation of alternatives, and corrective action to complete the scope of work within the project schedule and budget. Each project manager receives a weekly summary report of projects assigned to them. This weekly summary presents contract amounts, budget hours, spent hours, and the remaining budget. This Report is monitored by the project manager weekly at a minimum, if not daily. Any discrepancies found are formally addressed in meetings between the Chief

Operating Officer, Regional Manager, principal-in-charge, and project manager. Notification of any variances will be provided to IRWD immediately. This process has a long history and is a proven tool that keeps V&A on schedule and on budget with our clients.

**Brian Briones, the Senior Project Manager,** will be responsible for managing the project costs and schedule. He will also act as the main point of contact for day-to-day needs and will receive support from Glenn Willson, Principal-In-Charge, for contractual and quality control needs.

## Quality Assurance/Quality Control Approach

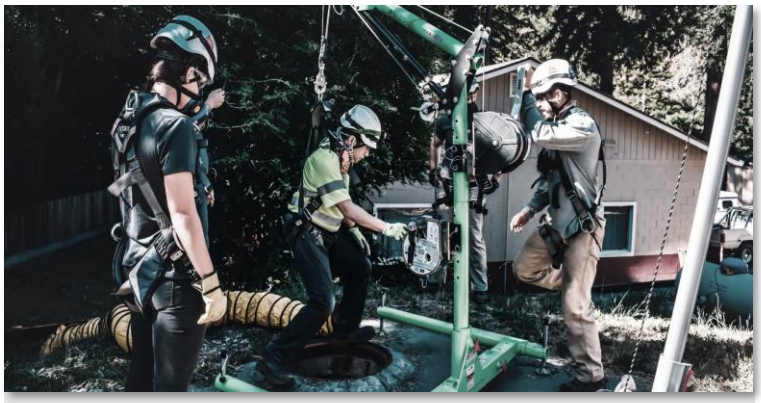

V&A manages risk by requiring a mandatory review of all data, reports, plans and specifications, entailing proper formatting, correct grammar, and technical information reviews. V&A ensures plans and specifications are in accordance and meet agency/client design guidelines.

V&A has a well-developed internal **Quality Assurance/Quality Control** (QA/QC) process. The project deliverables, such as reports, drawings, or specifications, will be reviewed by a qualified team of V&A staff for technical accuracy, consistency with the intent of the task's scope of work, grammar, and format. The project manager will usher the deliverables through this process so that each work product delivered to IRWD meets V&A's high-quality standards.

Quality is achieved when work is adequately planned, assigned, executed, and checked. **Noy Phannavong, P.E. (V&A's Condition Assessment Practice Lead) and Chris Sheldon, P.E. (V&A's Corrosion Practice Lead), will be responsible for ensuring QA/QC procedures are followed and documented.** This includes field data collection and reporting. Our QA/QC program includes two internal reviews of data collection procedures, field and laboratory test results, design documents, calculations, as well as engineering reports prior to submittal. We recognize the importance of quality control and that it is diligently performed throughout the project and not just immediately prior to our client delivery.

The project duration is assumed to be six (6) months. This task includes the following project management work activities:

1. Monitor project progress, including work completed, work remaining, budget expended, schedule, estimated cost of work remaining, and estimated cost at completion; manage activities within the total project budget.
2. Monitor project activities for potential changes and anticipate changes whenever possible; with approval, modify project tasks, task budgets, and approach to keep the overall project within budget and on schedule.
3. Manage the quality of all work activities and project deliverables.
4. Prepare monthly invoices, including a monthly status report summarizing the work status relative to budget and schedule. The project schedule shall



*V&A engineers are confined space trained and certified, and we are committed to safety with a robust safety program and excellent safety record. Our team members are certified through the National Association of Corrosion Engineers (NACE) and Society of Protective Coatings (SSPC) to ensure our data meets the rigorous quality standards our clients expect.*

also be updated monthly for inclusion in the monthly status report.

5. Submit status reports bi-weekly on Monday consisting of a brief (one or two paragraphs) e-mail summarizing the activities completed in the previous week, the activities planned for the upcoming week, and critical decisions that need to be made.
6. Submit required prevailing wage documents and DAS forms as required by the State of California Department of Industrial Relations for all field-testing work. Comply with prevailing wage laws and certified payroll requirements.
7. Organize, attend, and conduct meetings to keep the project running efficiently. Prepare and submit meeting agendas for IRWD review and concurrence at least five days prior to the meeting. Prepare draft and final minutes for all meetings and workshops and submit them to IRWD within one week of the meeting. Three (3) 2-hour virtual meetings will be attended by two (2) V&A professionals, including:
    a. Kickoff meeting
    b. Present draft condition assessment
    c. Present final condition assessment, including Capital Improvements Prioritization

# Task 2 – Condition Assessment

The primary goals of the condition assessment task are to identify equipment and infrastructure recommended for repair or replacement. The subtasks included under Task 2 will be documented and compiled into a Condition Assessment (Task 4) and 5-Year Prioritized Project (Task 3) Report.

## Background Information Review

Our Team will collect and review all relevant background information and data for the 14 steel tanks, including the GPS/GIS data, record drawings and specifications, operation and maintenance records, repair and rehabilitation history, cathodic protection and/or corrosivity survey data, previous condition assessment reports, and any other available documentation relevant to the project. The review will be used to prepare for and schedule the condition assessment and survey fieldwork.

## Condition Assessment

V&A will perform the field condition assessments, testing, and surveys per established industry standards, including AMPP (formerly NACE) and Cal-OSHA. The 3-person or 4-person field crew will be certified for the testing and confined space entry as required. This project will assess the condition of each of the tanks, including, at a minimum, the following (IRWD is doing a concurrent mechanical, electrical, I&C, and site condition assessment, and all other appurtenances not directly attached to the tanks):

- General site conditions (pavement, curbs, site drainage, site security, fencing, signage, etc.)
- Continuous defects or features such as defective coatings, corrosion on the floor, wall, weld joint corrosion
- Deformed or broken appurtenances
- Multiple failed components
- Cathodic protection system
- Significant erosion, corrosion, or surface damage (including steel wall, tank roof, access hatches, and tank footings)
- Defective appurtenant features such as steps, ladders, platforms, inlet/outlet pipe(s), columns, overflow pipe

Based on the RFP and discussions with IRWD staff, it is V&A's understanding and approach that the fieldwork will be performed in three separate mobilizations. The mobilizations will be staggered, so IRWD staff have time to put tanks back into operations while taking the next batch of tanks offline, dewatered, and cleaned.

Based on V&A's initial review of the documentation provided in the RFP, V&A has made the assumptions presented in Table 2 for each of the three mobilizations.

| Mobilization | Tanks | Total Combined Capacity (MG) | Crew Size | No. of Days to Complete Assessment Field Work | Month to be Performed |
|---|---|---|---|---|---|
| First | DRS035 - Shaw Tank<br>DRS037 - Chapman Tank<br>DRS039 - Williams Cyn Tank<br>DRS041 - Modjeska Tank<br>DRS043 - Benner Tank | 2.28 | 3-person | 2.5 | Aug. 2022 |
| 2 | To Be Determined | ~ 18.6 | 4-person | 5 | Sept. 2022 |
| 3 | To Be Deterrmined | ~ 18.6 | 4-person | 5 | Oct. 2022 |

Table 2. Condition Assessment Field Assumptions

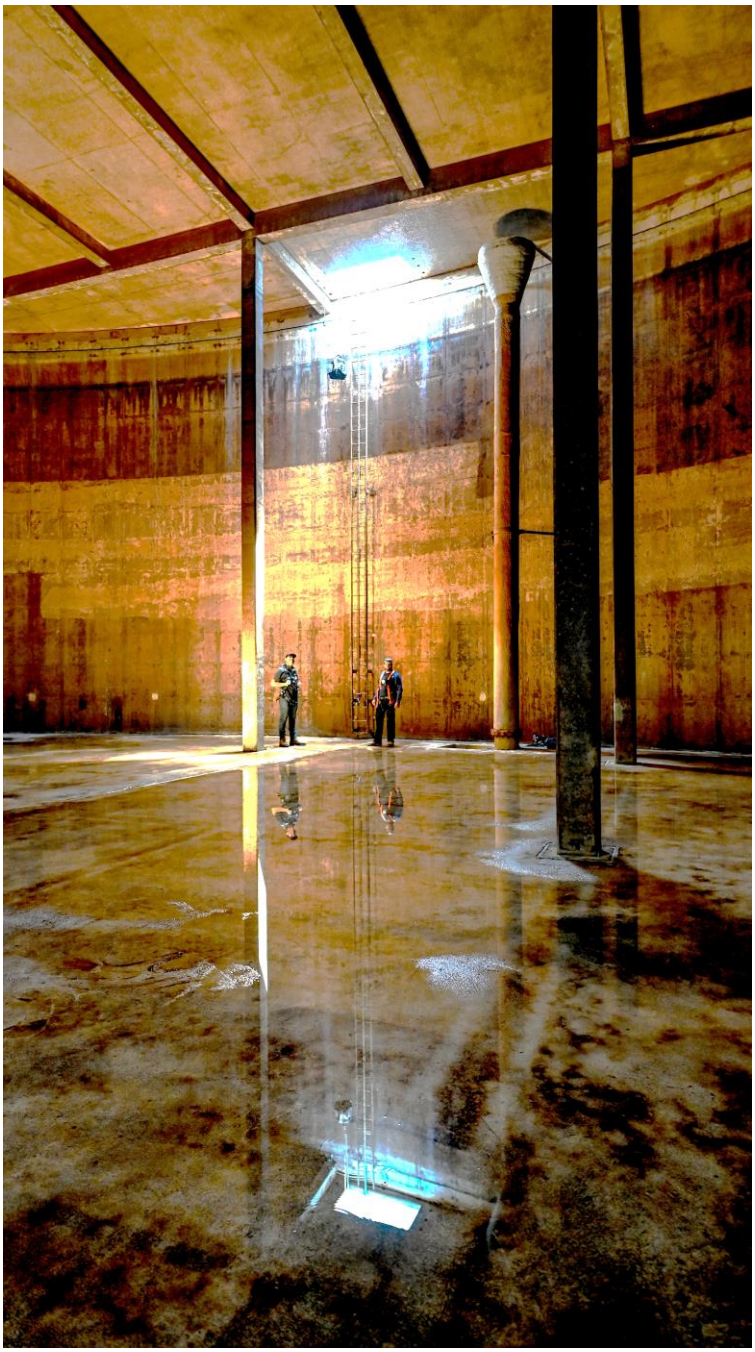
A typical facility visit will start in the early morning with a safety meeting and a brief overview of what work will be performed. IRWD will have the facility offline, dewatered, and cleaned prior to V&A arriving onsite. IRWD representatives from Facilities, Distribution Operation, and Engineering groups will be available as required to perform the work. Visual observations will be performed from the exterior of the tank prior to setting up for confined space entry into the tank. V&A will have all equipment necessary on site to perform a safe confined space entry into the tank and will meet IRWD's confined space policy. A drone will be used within tanks to document elevated areas of the tank that cannot be reached by ladders. A sample video showing drone footage performed by V&A inside a steel tank within the past few month can be viewed at the following web address - https://vaengineering.egnyte.com/dl/sMLtqusrMD (password: 48bwtdmDNMdk). The footage will be used for V&A to take quantitative measurements from the roof of the tank where it seems necessary based on visual observation. If V&A visually observes areas of the tank that warrant additional testing and cannot be reached with a ladder or from the top of the tank, then scaffolding will be erected by a contractor to provide access to the area. The scaffolding contractor cost is not included in this scope of work and would be included as an additional task if directed by IRWD.

## The following subsections describe V&A's approach and methodology to performing the condition assessments:

1. **Visual Corrosion Assessment** – Perform visual observations of the concrete (if applicable) and metallic surfaces within and around the tank. A drone will be used to provide observations of the elevated portions of the tank, including rafters, as required. The observations will be documented with digital photographs and field notes. Record drawings will be used to identify locations of observed defects. The condition of concrete and metallic surfaces will be rated using the VANDA® Concrete and Metal Condition Indices.
2. **Metal Thickness** – Ultrasonic testing will be performed at up to 10 locations (or a minimum of 40 measurements), including safely accessible piping, structural supports, or other metallic structures at each tank.
3. **Corrosion Pit Depth** – Measure pit depth where significant metallic corrosion pitting is observed, and a UT measurement is not successful. A depth gauge will be used for pit depth measurements.
4. **Coatings Assessment** – Visually assess the rusting on coated steel surfaces by noting defect areas and severity in accordance with ASTM D610, Standard Practice for Evaluating Degree of Rusting on Painted Steel Surfaces. Perform dry film thickness (DFT) testing on coatings (up to 10 locations or a minimum of 20 measurements) present on metal surfaces of equipment and piping at each storage tank.
5. **Concrete Sounding** – Assess the concrete condition by "sounding" to listen for discontinuities and penetration measurements

(using a chipping hammer) to find the depth to sound material in safely accessible areas.

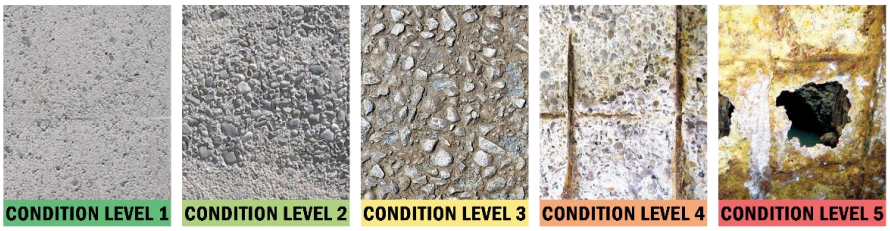
6. **Concrete Penetration Testing** – Penetration measurements involved applying a consistent level of force from a chipping hammer to remove loose material from the concrete surface until solid, hard material is reached and then measuring the depth of the resulting cavity.
7. **Concrete Surface pH Testing** – Conduct in-situ pH measurements of concrete structures to determine the pH of the concrete exposed to the wastewater environment.
8. **Photos** – Document the condition assessment and corrosion evaluation with digital photographs. Up to 20 photos will be obtained at each tank.
9. **Optional Task: Cathodic Protection Evaluation** – Cathodic protection/corrosion monitoring surveys must be performed while the tanks are in service. These surveys will be performed separately from the condition assessment work. A 2-person crew will perform the work over a 2-week period with two mobilizations. The work will be scheduled so that it does not impact the condition assessment field work schedule.
    a. Measure tank-to-water potentials to assess the level of corrosion activity on the internal submerged metallic portions of the tanks. Reservoirs featuring CP systems will be evaluated to the criteria established in NACE SP0169 for corrosion protection.
    b. Record GPS coordinates (precision within 3 feet), data, and photographs using a tablet with the Survey123 application, which directly interfaces with ArcGISI.
    c. Tank-to-water potentials by submerging a calibrated portable reference electrode into the tank from the roof access hatch and other available locations as required to get enough data to understand the corrosion activity and performance of the existing CP system while the tank is at a normal operating level.
    d. Potential measurements will be taken at 5-foot depth intervals. Anode current output will be measured from the CP system controller if available. All measurements will be recorded with a calibrated high impedance multimeter.
    e. Record rectifier operation and outputs as required.



**Our trademarked VANDA® Indices are a condition assessment rating system for metallic and concrete assets.**

### VANDA® CONCRETE CONDITION INDEX

The VANDA™ Concrete Condition Index was created by V&A Consulting Engineers to provide consistent reporting of corrosion damage based on an objective criterion. Typical examples of each condition level are shown at right.




### VANDA® METAL CONDITION INDEX

The VANDA™ Metal Condition Index was created by V&A Consulting Engineers to provide consistent reporting of corrosion damage based on an objective criterion. Typical examples of each condition level are shown at right.


## Task 3 – Capital Improvements Packaging and Prioritization

V&A will define CIP packages for each steel tank facility. V&A has experience in defining capital improvement packages and most recently developed a 25-year/$25 million CIP for cathodic protection improvements for one of the largest water districts in southern California. Project packages will be defined at the asset level for each facility, prioritized, and organized such that they can be handed off to IRWD's various Engineering design teams. Each project package will include cost estimates for each facility. The Condition Assessment Report (Task 4) will include remaining useful life (RUL) estimates for assets and recommended time frames for implementation of improvements. Under this task, recommendations will be ranked RUL and LOF. The ranking will be used to package projects and articulate requirements clearly to meet the needs of IRWD's design teams.

Cost estimating is typically performed by V&A in most condition assessment and corrosion engineering projects. While V&A performs the field work, areas for rehabilitation needs are quantified. V&A maintains close working relationships with southern California contractors that specialize in coatings/linings repair, structural repairs, including concrete and steel components, and installation of cathodic protection systems. V&A will leverage those relationships to develop accurate cost estimates based on quantities obtained in the field.

## Task 4 – Final Report and Deliverables

V&A will prepare a Condition Assessment Report (Report) that summarizes the condition assessment approach and methodology, photographs, documents the findings with graphical and illustrative figures as needed, operational deficiencies relayed by Operations, age, condition, and provides detailed recommendations for replacement and/or rehabilitation. The Report will be submitted in draft form to IRWD staff for one round of review and comments. V&A will conduct a review meeting (virtually) with IRWD staff, then finalize the Report based on comments received. The draft submittal will be submitted in electronic form (PDF). Upon resolution and incorporation of review comments, eight (8) copies of the Final Condition Assessment Report and one (1) electronic copy in PDF will be submitted to IRWD.

### Condition Assessment Observations for Steel Water Tank

Severe corrosion on interior ladder

Corrosion nodules observed on the interior tank wall

Corrosion of fasteners at the base of a bolted steel tank roof support center column

# B. Team

V&A's proposed project team has a combined experience totaling more than 100 years of providing condition assessment and corrosion engineering services. The Team that V&A has selected for this project has the specific work experience needed to address the scope of services described in your RFP. We are very confident that IRWD will be satisfied with our technical capabilities as well as our abilities to provide excellent client service.

The members of the proposed project team have completed several challenging condition assessment and corrosion engineering projects and can ensure IRWD that we have the experience required to complete the work. The V&A team has completed projects that required extensive field surveys, data evaluation, engineering analysis, program development, CIP packaging and prioritization, and detailed rehabilitation design that have resulted in solutions to correct several problems or deficiencies at significant cost savings to the client. The proposed project staff is committed to successfully delivering the consulting engineering services that arise from this project.

## The following are additional benefits of hiring the V&A Team for IRWD's condition assessment needs:

- Extensive experience with large corrosion and condition assessment projects and maintenance/monitoring programs that require collecting, analyzing, and presenting the data from these complex projects
- Proven performance record for cost and schedule control
- Capability to successfully resolve complex corrosion and condition issues
- Commitment to the provision of training and safety for V&A team members

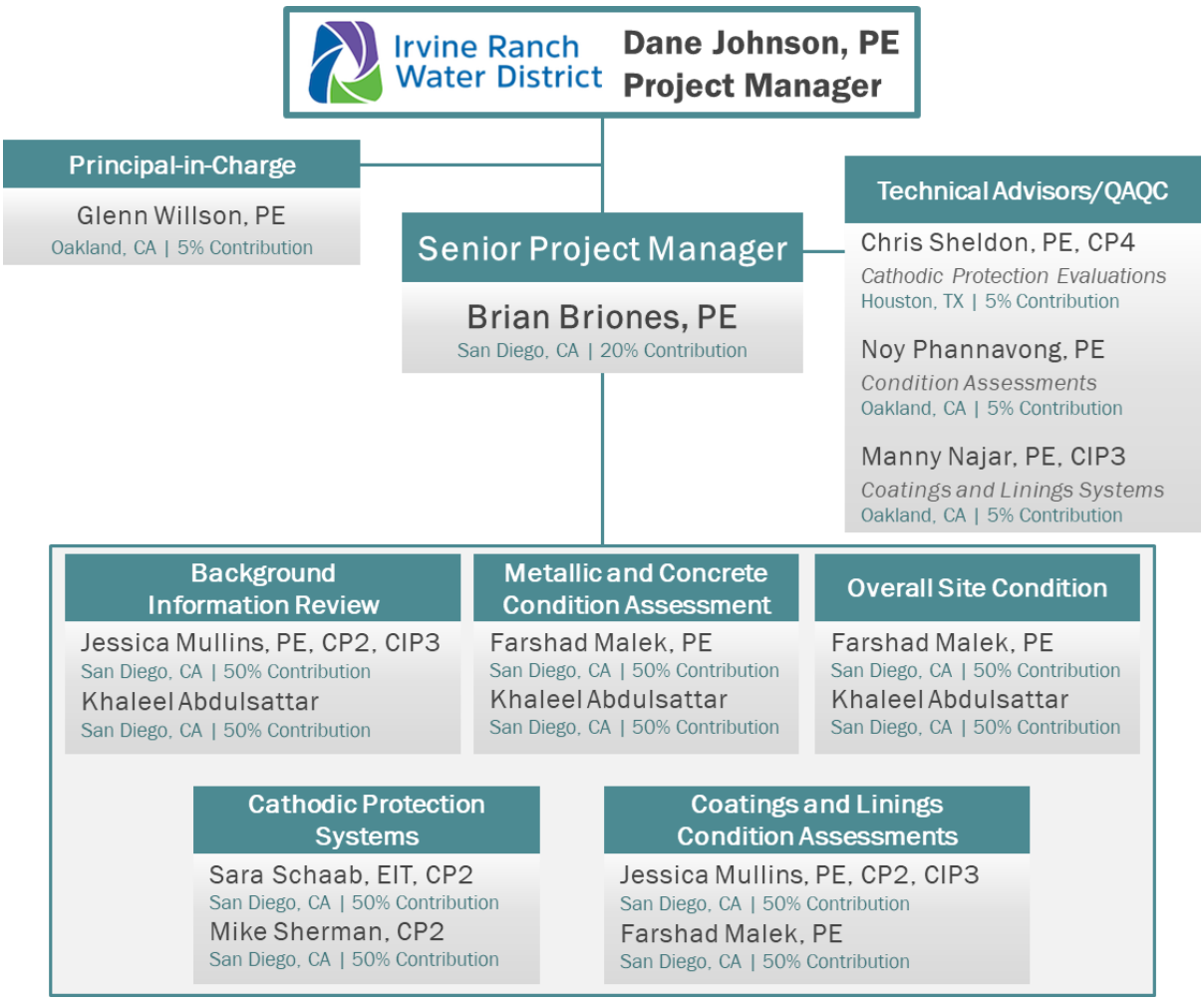
## A Team You Can Depend On

V&A's Project Team will be led by **Brian Briones, PE, with 20 years of project management**, corrosion engineering and condition assessment experience. Brian will be supported by a knowledgeable and experienced team that has successfully completed projects of similar magnitude for other agencies throughout California. V&A's unmatched experience and knowledge in corrosion evaluation, condition assessment, and development of recommendations to extend useful life of water facilities will exceed the expectations of IRWD. Our team of experts – many respected as top-in-their-field – practice industry-standard management techniques ensuring delivery of efficient and cost-effective services. As shown in our proposed organizational chart and Personnel section of the proposal, the V&A team offers technical strength and has a proven track record delivering complex and critical projects. Senior Project Manager, Brian Briones, will lead the team and project from our north county San Diego office. We are fully dedicated to this project.

## More About the Project Manager

Brian believes in maintaining close working relationships with clients. Communication is critical to ensuring the team's technical approach aligns with the Irvine Ranch's project goals while staying within proposed budget and schedule. Bi-weekly progress meetings via phone or video conference followed up with summary emails will keep the Irvine Ranch's decision-makers well informed and in agreement with upcoming tasks. Progress meetings will be used to provide an update to project stakeholders, such as various Irvine Ranch departments, cities, permitting agencies, and subconsultants/ contractors. Brian will be instrumental in making sure cost-savings measures are being implemented to obtain the data required to make decisions that are transparent and defensible.

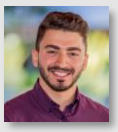
**We have selected team members with specific work capabilities best suited to your project, including licensing, credentials, and experience. This Team is committed to successfully delivering effective corrosion engineering services and has completed multiple projects in tandem. Resumes are provided in the Appendix | Resume section.**



# Project Team and Roles

**Detailed resumes containing discussions of project experience, education, and certifications for each proposed team member are provided in the Appendix | Resume section.**

| | | |
|---|---|---|
|  | **Principal-in-Charge** | **Glenn Willson, PE** |
| | Glenn will oversee the Team, deliverables, and ensure quality control procedures are followed and will serve as a liaison with IRWD in case project issues arise. | |
|  | **Senior Project Manager** | **Brian Briones, PE** |
| | Brian will be the primary contact to the IRWD and manage the Team, work, budget and deliverables for the project. | |
|  | **Technical Advisory/QAQC** | **Chris Sheldon, PE, CP4** |
| | Chris is a subject matter expert in corrosion engineering and will work with the Team to review all deliverables for corrosion evaluation technical accuracy. | |
|  | **Technical Advisory/QAQC** | **Noy Phannavong, PE** |
| | Noy is a subject matter expert in condition assessment and will work with the Team to review all deliverables for condition assessment technical accuracy. | |
|  | **Technical Advisory/QAQC** | **Manny Najar, PE, CIP3** |
| | Manny is a subject matter expert in coatings management and will work with the Team to review all deliverables for coatings management technical accuracy. | |
|  | **Background Information Review** | **Jessica Mullins, PE, CP2, CIP2** |
| | Jessica will analyze drawings, data, and relevant reports and will bridge results, conclusions, and recommendations of existing and new information. | |
| | **Coatings and Linings Condition Assessments** | |
| | Jessica will review various testing method results to assess the coating and linings of the project's equipment and infrastructure to provide IRWD recommendations for improvements and the development of design packages. | |
|  | **Metallic and Concrete Condition Assessment** | **Farshad Malek, PE** |
| | Farshad will perform field testing of structures to collect valuable data, including material assessments, CP appurtenances, and coatings/linings. He will analyze the collected data and provide reporting and recommendations, and the development of design packages. | |
| | **Overall Site Condition** | |
| | Farshad will assess overall site condition and provide reporting and recommendations for improvement and/or repair, and development of design packages. | |

| | | |
|---|---|---|
|  | **Cathodic Protection Systems** | **Sara Schaab, EIT, CP2** |
| | Sara will perform methods of field testing/surveys to collect valuable data, including measuring potentials, condition of anodes and rectifiers, adjustments to rectifier outputs in the field, and recommendations for improvements, and development of design packages. | |
|  | **Cathodic Protection Systems** | **Mike Sherman, CP2** |
| | Mike will perform methods of field testing/surveys to collect valuable data, including measuring potentials, condition of anodes and rectifiers, and adjustments to rectifier outputs in the field. | |
|  | **Background Information Review** | **Khaleel Abdulsattar** |
| | Khaleel will analyze drawings, data, and relevant reports and will bridge results, conclusions, and recommendations of existing and new information. | |
| | **Metallic and Concrete Condition Assessment** | |
| | Khaleel will perform field testing of structures to collect valuable data, including material assessments, CP appurtenances, and coatings. He will analyze the collected data and provide reporting and recommendations. | |
| | **Overall Site Condition** | |
| | Khaleel will assist Farshad in assessing the overall site condition and provide reporting and recommendations for improvement and/or repair. | |

# C. Experience

## Relevant Project Experience

V&A has focused on infrastructure preservation and sustainability for more than 43 years. We have provided dedicated, field-based corrosion evaluation and condition assessment services on more than 100 projects for utility and agency clients throughout California, including Irvine Ranch. We have assisted numerous clients with infrastructure condition assessment projects, providing technology/tool evaluation, fieldwork planning and execution, permitting, and analyzing data collected to provide defensible recommendations for repair and/or replacement that align with agency capital improvement budget targets.

**V&A's in-house condition assessment capabilities and specialized services:**

- Visual investigation with photographic and video documentation (drone and 360-camera)
- Dimensional measurements
- Concrete delamination survey (sounding)
- Concrete surface pH
- Concrete penetration
- Surface penetrating radar for reinforced concrete
- Ultrasonic thickness testing on metals
- Broadband electromagnetic scanning of metals
- VANDA® concrete & metal ratings indexes

**The following project experience is relevant and similar in nature to Irvine Ranch Water District's project scope.**

## Sweetwater Authority

### On-Call Cathodic Protection Services – Technical Support Tank Assessments, San Diego, CA

*New Test Station*

*At-grade Test Station*

Since 2005 and contracted through 2022, V&A has provided design services, annual corrosion/CP surveys, and condition assessment of the Sweetwater Authority's cathodic protection (CP) systems for the water transmission system (pipelines and steel tanks). For an active task order, V&A is currently assessing the condition and performed cathodic protection evaluations for 11 steel storage tanks and 3 hydropneumatic tanks. Assessment methods include visual assessment, documentation of elevated areas (rafters and roof) with the use of a drone, concrete sounding, penetration testing, surface pH measurements, ultrasonic thickness testing, and coating/lining evaluation. V&A is working closely with Sweetwater to coordinate and schedule the work with District staff so that impacts on operations are minimized.

**REFERENCE**

***Sweetwater Authority***

Chris Bauer, PE
Engineering Manager
619.409.6751
cbauer@sweetwater.org

$258,082
2018 – Active

**ROLE: Prime**

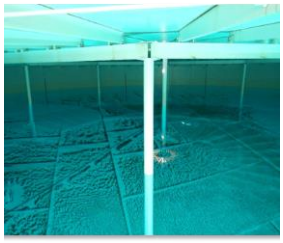
- Glenn Willson, PE – PIC
- Brian Briones, PE – Project Mgr.
- Chris Sheldon, PE, CP4 - Tech Advisor
- Noy Phannovong, PE – Tech Advisor
- Manny Najar, PE, CIP3 – Tech Advisor
- Farshad Malek, PE – Cond. Assessment
- Jessica Mullins, PE, CIP2, Project Eng.
- Sara Schaab, EIT – Assoc. Engineer
- Khaleel Abdulsattar, Graduate Eng.
- Mike Sherman, CP2 – Corrosion Tech

# Coachella Valley Water District

## Corrosion Protection Improvements, Coachella, CA

V&A performed corrosion engineering services for the Bombay Beach Pipeline, Mid-Valley Pipeline, Storm Channel, 27 steel reservoirs, and canal structures. For the steel reservoirs, surveys performed include measuring potentials at 5-foot depth increments, evaluating the condition of the anodes and rectifiers, and adjusting the rectifier outputs in the field in order to meet the NACE International criteria for corrosion protection. V&A developed recommendations for repair, including cost estimates, and design documents for proposed improvements. V&A is currently providing engineering services during construction, including the development of submittal and request for information responses, field testing, and cathodic protection system energization.

*Reservoir 1092-1*



*Interior of Reservoir 1092-*

**REFERENCE**

***Coachella Valley Water District***

Angel Herrera
Electrical Supervisor
760.398.2661 ext. 2426
aherrera@cvwd.org

$416,104
2019 - present

**ROLE: Prime**

- Glenn Willson, PE – PIC
- Chris Sheldon – Tech Lead/ QAQC
- Brian Briones, PE – Project Mgr.
- Jessica Mullins, PE – Project Eng.
- Sara Schaab, CP2, EIT – Assoc. Engineer
- Mike Sherman, CP2 – Corrosion Tech

# Pasadena Water & Power

## Glenoaks Reservoir 1666 Condition Assessment, Pasadena, CA

V&A assessed the condition of the Glenoaks Reservoir 1666 for the City of Pasadena Water and Power. Pasadena was interested in purchasing the tank from the City of Glendale Water and Power for recycled water storage. V&A's assessment assisted Stantec's tank purchase evaluation providing recommendations and cost estimates for repair. The tank is a 1.25-million-gallon welded steel tank. Assessment methods consisted of interior and exterior visual observations, obtaining dimensions of structural members, ultrasonic thickness testing, pit depth measurements, and dry film thickness testing of coatings. Ratings and recommendations were provided for the foundation, floor, wall, overflow pipe, influent/effluent piping, center column, roof, roof access hatches, roof supports, exterior/interior ladders, level gauge well, drain, roof vents, manway, and utility boxes.

*Glenoaks Reservoir 1666*

*Verifying Dimensions of Structural Members*

**REFERENCE**

***Stantec***

Autumn Glaeser, PE
Project Manager
805.285.9093
autumn.glaeser@stantec.com

$14,207
2017 – 2017

**ROLE: Subconsultant**

- Glenn Willson, PE – PIC
- Brian Briones, PE – Project Mgr.
- Mike Sherman – Asst. Engineer

# City of San Diego

## Pomerado Park Reservoir Upgrades Corrosion Engineering, San Diego, CA

V&A reviewed cathodic protection (CP) survey data and coatings condition assessment data obtained by others. V&A developed a basis of design recommendations and detailed design for CP replacement and coatings replacement. V&A developed cost estimates for both CP replacement and options, including coating and lining rehabilitation or existing coating removal, containment, and replacement. Coating evaluations included removal options, product review, options for containment, and coating system applications, including a three-coat epoxy system and 100% solids polyurethane.

*Interior Coating Assessment*


*ICCP Rectifier*

**REFERENCE**

***Dokken Engineering***

Chris Thomas
Project Manager
858.514.8377
cthomas@dokkenengineering.com

$51,150
2018 – 2021

**ROLE: Subconsultant**

- Glenn Willson, PE - PIC
- Brian Briones, PE – Project Mgr.
- Manny Najar, PE – Coatings Specialist
- Sara Schaab, CP2, EIT – Assoc. Engineer
- Mike Sherman – Asst. Engineer

# East Orange County Water District

## Reservoirs CP Annual Survey, Orange County, CA

Since 2016, V&A has performed cathodic protection annual surveys for EOCWD's pipelines, flow control facilities, and storage reservoirs. The Andres Reservoir and Newport Reservoir are both steel tanks with impressed current CP systems and have capacities of 11.5 MG and 1 MG, respectively. The Barret reservoir is a 0.25MG steel tank with a galvanic CP system. V&A conducts regular surveys of the CP systems to verify that adequate corrosion protection is being provided. The surveys include measuring potentials at 5-foot depth increments, evaluating the condition of the anodes and rectifiers, and adjusting the rectifier outputs in the field in order to meet the NACE International criteria for corrosion protection. V&A also develops design documents for recommendations, and routine maintenance on the CP systems, replacing broken and/or missing test stations and rectifier components.

*Newport Reservoir*

*Impressed Current Rectifier*

**REFERENCE**

***East Orange County Water District***

Jeff Smtyh, PE
Engineering Manager
714.538.5815
jsmyth@eocwd.com

$123,073
2016 – Active

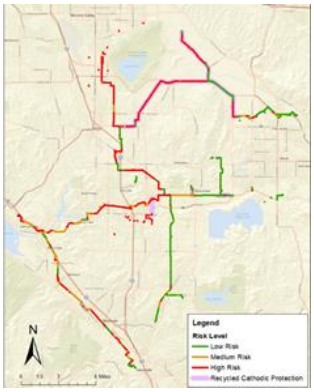
**ROLE: Prime**

- Glenn Willson, PE – PIC
- Brian Briones, PE – Project Mgr.
- Sara Schaab, PE, Associate Eng.
- Mike Sherman, CP2 – Corrosion Tech

# Eastern Municipal Water District

## Corrosion Protection and CIP Program, Riverside County, CA

The District's combined steel pipeline transmission system is composed of over 700 miles of potable water pipelines and over 100 miles of recycled water pipelines that supply to a variety of customers. It is critical that the pipelines are protected through measures such as corrosion monitoring, cathodic protection (CP), and coatings/lining systems to allow the EMWD to continue to improve the efficiency of its system.




*Recycled Water Risk Results*

**REFERENCE**

***Eastern Municipal Water District***

Fermin Balvaneda
Civil Engineer
951.928.3777 ext. 4481
balvanef@emwd.org

$273,164
2019 - 2021

**ROLE: Prime**

- Glenn Willson, PE – PIC
- Chris Sheldon, PE, CP4 – Tech Adviser
- Brian Briones, PE – Project Mgr
- Mike Sherman, CP2 - Corrosion Tech

V&A has developed a Corrosion Protection Plan (CPP) that assessed current practices, recommended best practices, assessed staffing and resource needs, developed implementation guidelines, identified high-level assessments of infrastructure; developed short-, medium-, and long-term optimization plans, and prioritizes a five-year CPP program with clear and achievable milestones. EMWD expanded the project to a 25-year CPP/CIP program that was ultimately developed by V&A, including cost estimates for implementation in five-year increments. The program's goal is to protect and ensure the structural integrity of the EMWD's projects and existing facilities.

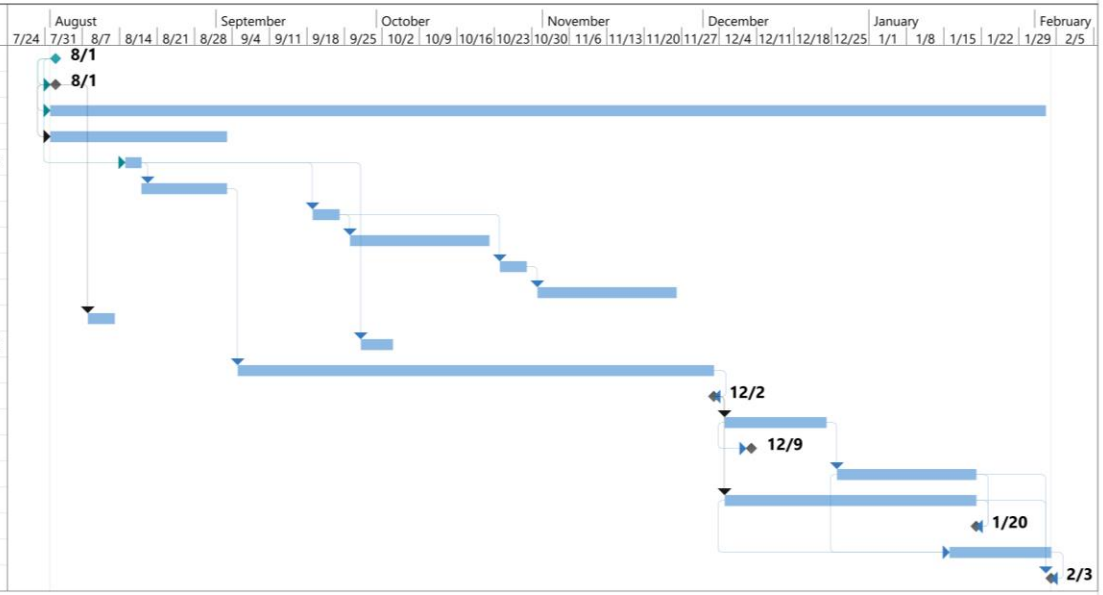
# D. Schedule

Irvine Ranch Water District

PROPOSED SCHEDULE
Detailed Condition Assessments of Steel Tanks

V&A consulting engineers

| ID | Task Name | Duration | Start | Finish |
|---|---|---|---|---|
| 1 | Notice to Proceed | 1 day | Mon 8/1/22 | Mon 8/1/22 |
| 2 | Kickoff Meeting | 1 day | Mon 8/1/22 | Mon 8/1/22 |
| 3 | Project Management Activities | 134 days | Mon 8/1/22 | Thu 2/2/23 |
| 4 | Background Information Review | 25 days | Mon 8/1/22 | Fri 9/2/22 |
| 5 | Condition Assessments at 5 Tanks (1st Mobilization) | 3 days | Mon 8/15/22 | Wed 8/17/22 |
| 6 | Analyze Data (1st Mobilization) | 12 days | Thu 8/18/22 | Fri 9/2/22 |
| 7 | Condition Assessment at 5 Tanks (2nd Mobilization) | 5 days | Mon 9/19/22 | Fri 9/23/22 |
| 8 | Analyze Data (2nd Mobilization) | 20 days | Mon 9/26/22 | Fri 10/21/22 |
| 9 | Condition Assessment at 4 Tanks (3rd Mobilization) | 5 days | Mon 10/24/22 | Fri 10/28/22 |
| 10 | Analyze Data (3rd Mobilization) | 20 days | Mon 10/31/22 | Fri 11/25/22 |
| 11 | Cathodic Protection Survey at 9 Tanks | 5 days | Mon 8/8/22 | Fri 8/12/22 |
| 12 | Cathodic Protection Survey at 5 Tanks | 4 days | Wed 9/28/22 | Mon 10/3/22 |
| 13 | Development of Draft Condition Assessment Report | 65 days | Mon 9/5/22 | Fri 12/2/22 |
| 14 | Submit Draft Condition Assessment Report | 1 day | Fri 12/2/22 | Fri 12/2/22 |
| 15 | IRWD Review of Draft Condition Assessment Report | 15 days | Mon 12/5/22 | Fri 12/23/22 |
| 16 | Workshop - Present Draft Conditon Assessment | 1 day | Fri 12/9/22 | Fri 12/9/22 |
| 17 | Development of Final Condition Assessment Report | 20 days | Mon 12/26/22 | Fri 1/20/23 |
| 18 | Develop Capital Improvement Project Packages | 35 days | Mon 12/5/22 | Fri 1/20/23 |
| 19 | Submit Final Report and CIP Packages | 1 day | Fri 1/20/23 | Fri 1/20/23 |
| 20 | Prioritize Recommended Capital Improvements | 15 days | Mon 1/16/23 | Fri 2/3/23 |
| 21 | Workshop - Present Final Deliverable Documents | 1 day | Fri 2/3/23 | Fri 2/3/23 |




Project: Schedule - IRWD Cond
Date: Fri 6/17/22

| | | | | | | | |
|---|---|---|---|---|---|---|---|
| Task | Project Summary | Manual Task | Start-only | Deadline |
| Split | Inactive Task | Duration-only | Finish-only | Progress |
| Milestone | Inactive Milestone | Manual Summary Rollup | External Tasks | Manual Progress |
| Summary | Inactive Summary | Manual Summary | External Milestone | |

Page 1

# E. Budget

A proposed budget, which encompasses the scope of work detailed in Irvine's RFP, is presented in a resource allocation estimate and is provided separately in a sealed envelope.

# F. Joint Venture

V&A is submitting this proposal as a Prime and will not be working with another firm as a joint venture.

# G. Conflict of Interest

V&A confirms that personal or organizational conflicts of interest prohibited by law do not exist.

# H. Contract

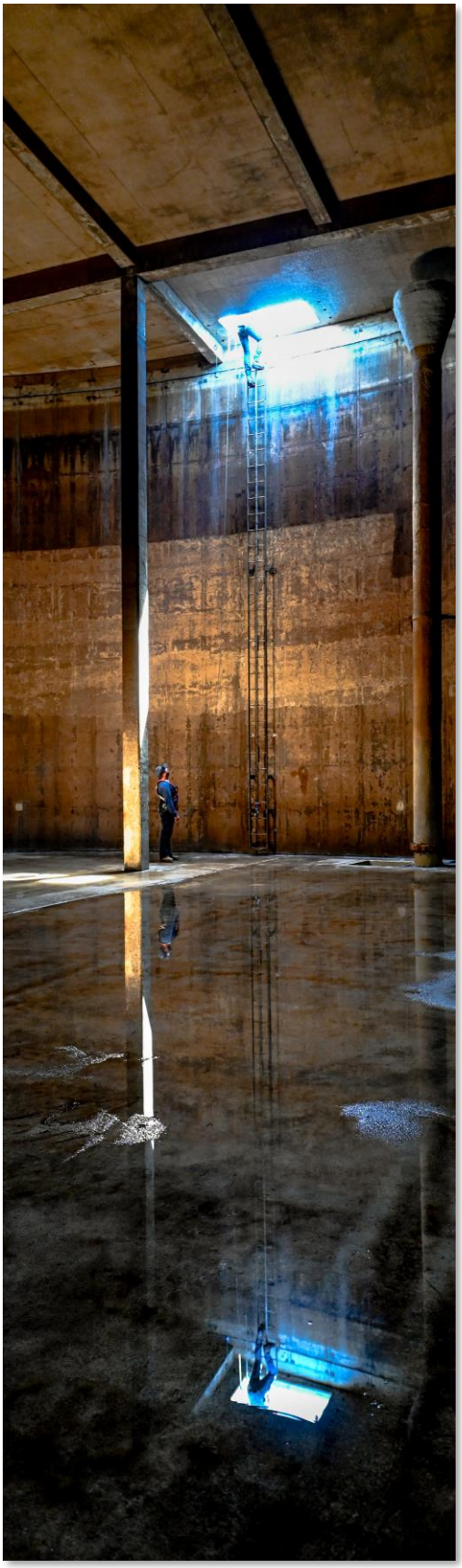
V&A will not request any modifications to IRWD's Professional Services Agreement.

# I. Insurance

V&A has included a copy from our provider on the following page for the required coverages as shown in the Professional Services Agreement are satisfied under our existing insurance policy.

# J. Public Work Requirements

V&A's DIR registration number is 1000007205



# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 8/25/2021

**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<br>AssuredPartners Design Professionals Insurance Services, LLC<br>3697 Mt. Diablo Blvd Suite 230<br>Lafayette CA 94549<br><br>License#: 6003745<br>V&ACONS-02 | CONTACT NAME: Dani Schulze<br>PHONE (A/C, No, Ext):<br>FAX (A/C, No):<br>E-MAIL ADDRESS: DesignProCerts@AssuredPartners.com |
| INSURED<br>V&A Consulting Engineers, Inc.<br>1000 Broadway, Suite 320<br>Oakland CA 94607 | INSURER(S) AFFORDING COVERAGE — NAIC #<br>INSURER A : XL Speciality Insurance Company — 37885<br>INSURER B : Hartford Accident and Indemnity Company — 22357<br>INSURER C : Sentinel Insurance Company — 11000<br>INSURER D :<br>INSURER E :<br>INSURER F : |

**COVERAGES** **CERTIFICATE NUMBER:** 1923413106 **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.

| INSR LTR | TYPE OF INSURANCE | ADDL INSD | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| C | X COMMERCIAL GENERAL LIABILITY<br>CLAIMS-MADE / X OCCUR<br>X Contractual Liab<br>Included<br>GEN'L AGGREGATE LIMIT APPLIES PER:<br>POLICY / X PRO-JECT / X LOC<br>OTHER: | Y | Y | 84SBWBF2643 | 9/8/2021 | 9/8/2022 | EACH OCCURRENCE<br>DAMAGE TO RENTED PREMISES (Ea occurrence)<br>MED EXP (Any one person)<br>PERSONAL & ADV INJURY<br>GENERAL AGGREGATE<br>PRODUCTS - COMP/OP AGG<br> | $ 2,000,000<br>$ 1,000,000<br>$ 10,000<br>$ 2,000,000<br>$ 4,000,000<br>$ 4,000,000<br>$ |
| B | AUTOMOBILE LIABILITY<br>X ANY AUTO<br>OWNED AUTOS ONLY / SCHEDULED AUTOS<br>X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY | Y | Y | 84UEGAA1983 | 9/8/2021 | 9/8/2022 | COMBINED SINGLE LIMIT (Ea accident)<br>BODILY INJURY (Per person)<br>BODILY INJURY (Per accident)<br>PROPERTY DAMAGE (Per accident)<br> | $ 1,000,000<br>$<br>$<br>$<br>$ |
| C | X UMBRELLA LIAB / X OCCUR<br>EXCESS LIAB / CLAIMS-MADE<br>DED / X RETENTION $ 10,000 | Y | Y | 84SBWBF2643 | 9/8/2021 | 9/8/2022 | EACH OCCURRENCE<br>AGGREGATE<br> | $ 4,000,000<br>$ 4,000,000<br>$ |
| | WORKERS COMPENSATION AND EMPLOYERS' LIABILITY<br>ANYPROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH) Y / N<br>If yes, describe under DESCRIPTION OF OPERATIONS below | N / A | | | | | PER STATUTE / OTH-ER<br>E.L. EACH ACCIDENT<br>E.L. DISEASE - EA EMPLOYEE<br>E.L. DISEASE - POLICY LIMIT | <br>$<br>$<br>$ |
| A | Professional & Pollution Liability | N | Y | DPR9982857 | 9/8/2021 | 9/8/2022 | Per Claim<br>Annual Aggregate<br>Retro Date: 07/26/79 | $5,000,000<br>$5,000,000 |

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

Umbrella Liability policy is a follow-form underlying General Liability/Auto Liability/Employers Liability.
FOR PROPOSAL PURPOSE ONLY

**CERTIFICATE HOLDER**

*SAMPLE*

**CANCELLATION** 30 Day Notice of 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

VCO

# CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY): 07/01/2021

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**<br>Aon Risk Services, Inc of Florida<br>1001 Brickell Bay Drive, Suite #1100<br>Miami, FL 33131-4937 | **CONTACT NAME:** Aon Risk Services, Inc of Florida<br>**PHONE (A/C, No, Ext):** 833-506-1544 **FAX (A/C, No):**<br>**EMAIL ADDRESS:** work.comp@trinet.com |
| | **INSURER(S) AFFORDING COVERAGE** — **NAIC #**<br>**INSURER A :** ACE American Insurance Company — 22667 |
| **INSURED**<br>TriNet Group, Inc. L/C/F V&A Consulting Engineers Inc<br>9000 Town Center Parkway<br>Bradenton, FL 34202 | **INSURER B :**<br>**INSURER C :**<br>**INSURER D :**<br>**INSURER E :**<br>**INSURER F :** |

**COVERAGES** **CERTIFICATE NUMBER:** 15320579 **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.

| INSR LTR | TYPE OF INSURANCE | ADDL INSR | SUBR WVD | POLICY NUMBER | POLICY EFF (MM/DD/YYYY) | POLICY EXP (MM/DD/YYYY) | LIMITS | |
|---|---|---|---|---|---|---|---|---|
| | COMMERCIAL GENERAL LIABILITY | | | | | | EACH OCCURRENCE | $ |
| | ☐ CLAIMS-MADE ☐ OCCUR | | | | | | DAMAGE TO RENTED PREMISES (Ea occurrence) | $ |
| | | | | | | | MED EXP (Any one person) | $ |
| | | | | | | | PERSONAL & ADV INJURY | $ |
| | GEN'L AGGREGATE LIMIT APPLIES PER: | | | | | | GENERAL AGGREGATE | $ |
| | ☐ POLICY ☐ PROJECT ☐ LOC | | | | | | PRODUCTS - COMP/OP AGG | $ |
| | ☐ OTHER | | | | | | | |
| | **AUTOMOBILE LIABILITY** | | | | | | COMBINED SINGLE LIMIT (Ea accident) | $ |
| | ☐ ANY AUTO | | | | | | BODILY INJURY (Per person) | $ |
| | ☐ OWNED AUTOS ONLY ☐ SCHEDULED AUTOS | | | | | | BODILY INJURY (Per accident) | $ |
| | ☐ HIRED AUTOS ONLY ☐ NON-OWNED AUTOS ONLY | | | | | | PROPERTY DAMAGE (Per accident) | $ |
| | | | | | | | | $ |
| | ☐ **UMBRELLA LIAB** ☐ OCCUR | | | | | | EACH OCCURRENCE | $ |
| | ☐ **EXCESS LIAB** ☐ CLAIMS-MADE | | | | | | AGGREGATE | $ |
| | ☐ DED ☐ RETENTION $ | | | | | | | |
| A | **WORKERS COMPENSATION AND EMPLOYERS' LIABILITY** Y / N<br>ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? N<br>**(Mandatory in NH)**<br>If yes, describe under DESCRIPTION OF OPERATIONS below | N / A | | WLR_C69136333 | 07/01/2021 | 07/01/2022 | X PER STATUTE ☐ OTH-ER | |
| | | | | | | | E.L. EACH ACCIDENT | $ 2,000,000 |
| | | | | | | | E.L. DISEASE - EA EMPLOYEE | $ 2,000,000 |
| | | | | | | | E.L. DISEASE - POLICY LIMIT | $ 2,000,000 |
| | | | | | | | | |

**DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)**
Workers' Compensation coverage is limited to worksite employees of V&A Consulting Engineers Inc. a co-employment agreement with TriNet HR III, Inc.

-sample-

**CERTIFICATE HOLDER**

V & A Consulting Engineers, Inc.
1000 Broadway
Suite 320
Oakland, CA 94607

**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 Services, Inc of Florida



**ACORD 25 (2016/03)** The ACORD name and logo are registered marks of ACORD

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# Appendix | Resumes

Detailed resumes containing discussions of project experience, education, and certifications for each proposed team member are provided on the following pages.

| Team Member | Role |
|---|---|
| Glenn Willson, PE | Principal-in-Charge |
| Brian Briones, PE | Senior Project Manager |
| Chris Sheldon, PE, CP4 | Technical Advisory/QAQC |
| Noy Phannavong, PE | Technical Advisory/QAQC |
| Manny Najar, PE, CIP3 | Technical Advisory/QAQC |
| Jessica Mullins, PE, CP2, CIP2 | Background Information Review<br>Coatings and Linings Condition Assessments |
| Farshad Malek, PE | Metallic and Concrete Condition Assessment<br>Overall Site Condition |
| Sara Schaab, EIT, CP2 | Cathodic Protection Systems |
| Mike Sherman, CP2 (CA) | Cathodic Protection Systems |
| Khaleel Abdulsattar | Background Information Review<br>Metallic and Concrete Condition Assessment<br>Overall Site Condition |

V&A

11011 Via Frontera
Suite C
San Diego, CA 92127

858.576.0226 Tel
510.903.6601 Fax
vaengineering.com

V&A Project No. 22-0061

June 17, 2022

Irvine Ranch Water District
Engineering Department
15600 Sand Canyon Avenue
Irvine, California
92618

Attn: Eric Akiyoshi, PE

**Subject:** Fee Proposal to Provide Professional Services – Detailed Condition Assessment of Steel Tanks (PR 12252 & 12254)

Dear Eric Akiyoshi,

V&A Consulting Engineers (V&A) is pleased to submit this fee proposal for the Irvine Ranch Water District's (IRWD) Request for Proposal (RFP) for Detailed Condition Assessment of Steel Tanks. Our proposal is submitted separately as required per the subject RFP.

Attached is a fee estimate summary and detailed Resource Allocations Estimate (RAE) presenting V&A's cost services on a per hour or per item basis that was used to develop the cost estimate for each task as presented in Section IV. E. Budget of the proposal. Hourly rate schedules for the proposed V&A project team members. Per the RFP, the following items were considered when developing the fee proposal:

- Compensation is based on an hourly rate plus reimbursables with a not-to-exceed upper limit unless authorized by IRWD.
- Fee proposal includes a breakdown of labor hours by employee billing classification and the cost of non-labor services. The breakdown shown in the attached table corresponds to the Scope of Work outlined in Section A of the proposal.
- The Fee Proposal and RAE as presented does not include the cost for this optional task for erection of scaffolding. However, the fee proposal and RAE does include an optional task to perform cathodic protection surveys for all 14 tanks. The total estimated cost is **$278,119.**

By signature of this letter, we commit that IRWD will receive our full corporate support and necessary resources to provide professional services for Detailed Condition Assessment for Steel Tanks. As the President, I am duly authorized to contractually bind V&A Consulting Engineers, Inc. This cost proposal presented to the IRWD is valid for 90 days as of the date of this letter. We look forward to discussing our proposed Scope of Work and Fee Estimate in detail with IRWD.

If you have any questions regarding the proposal presented, please feel free to contact me at 619.436.5789 or dkaye@vaengineering.com or Brian Briones, Southwest Regional Manager at 619.322.1272 or bbriones@vaengineering.com. On behalf of our staff, we would like to thank you for the opportunity to be of service to Irvine Ranch Water District.

Sincerely,
V&A Consulting Engineers, Inc.

Debra Kaye, PE
President

Brian Briones, PE
Southwest Regional Manager

V&A

11011 Via Frontera
Suite C
San Diego, CA 92127

858.576.0226 Tel
510.903.6601 Fax
vaengineering.com

# Resource Allocation Estimate

JOB NO: 22-0061

6/17/2022

CLIENT: Irvine Ranch Water District

PROJECT NAME: Detailed Condition Assessment of Steel Tanks

| Task | Description | Principal-in-Charge | Senior Project Manager | Project Manager | Project Engineer | Associate Engineer | Engineering Assistant | Project Admin/Clerical | Total Labor Hours | Subtotal Labor Cost | Subtotal ODC | Total Labor Cost and ODC by Task |
|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | Project Management | 4 | 18 | 25 | | | | 24 | 71 | $ 14,508.00 | | $ 14,508.00 |
| 2 | Conditon Assessment | | 6 | 122 | 146 | 156 | 128 | | 558 | $109,836.00 | $ 46,985.00 | $ 156,821.00 |
| 3 | Capital Project Packaging and Prioritization | 4 | 10 | 22 | 84 | | | 4 | 124 | $ 27,318.00 | | $ 27,318.00 |
| 4 | Final Report Deliverables | 2 | 8 | 28 | 84 | 24 | | 4 | 150 | $ 32,162.00 | | $ 32,162.00 |
| 5 | Optional Task - Cathodic Protection Surveys | | 2 | | 92 | 16 | 92 | | 202 | $ 35,726.00 | $ 11,584.00 | $ 47,310.00 |
| | Subtotal Direct Labor Hours | 10 | 44 | 197 | 406 | 196 | 220 | 32 | 1105 | | | |
| | Hourly | $ 305.00 | $ 267.00 | $ 250.00 | $ 209.00 | $ 187.00 | $ 141.00 | $ 93.00 | | | | |
| | Subtotal Direct Labor Cost | $ 3,050.00 | $ 11,748.00 | $ 49,250.00 | $ 84,854.00 | $ 36,652.00 | $ 31,020.00 | $ 2,976.00 | | $219,550.00 | $ 58,569.00 | $ 278,119.00 |

| Other Direct Costs | | Unit Cost | Units | No. of Units | | | | | | Subtotal ODC | |
|---|---|---|---|---|---|---|---|---|---|---|---|
| | CSE Truck & Equip | $ 130.00 | per day | 23 | | | | | | $ 2,990.00 | |
| | Mileage | $ 0.59 | per mile | 1000 | | | | | | $ 585.00 | |
| | Quanix DFT Gauge (up to 200 mils) | $ 200.00 | per day | 13 | | | | | | $ 2,600.00 | |
| | Olympus 38DL/Epoch XT UT Gauge | $ 85.00 | per day | 13 | | | | | | $ 1,105.00 | |
| | 4-Gas Confined Space Meter | $ 50.00 | per day | 13 | | | | | | $ 650.00 | |
| | 12,000 CFM Trailer Mounted Ventilation Blower | $ 350.00 | per day | 13 | | | | | | $ 4,550.00 | |
| | Drone with Inspection Camera | $ 250.00 | per day | 13 | | | | | | $ 3,250.00 | |
| | Prevailing Wage Markup | 25% | percentage of labor cost | $ 116,856.00 | | | | | | $ 29,214.00 | |
| | Hotel | $ 200.00 | per night | 46 | | | | | | $ 9,200.00 | |
| | Per Diem | $ 75.00 | per day | 59 | | | | | | $ 4,425.00 | |
| | Subcontractor - Scaffolding (cost+10%) | $ - | per tank | 0 | | | | | | $ - | |
| | Subtotal Other Direct Costs | | | | | | | | | $ 58,569.00 | |

| GRAND TOTAL ESTIMATED COST | $278,119.00 |
|---|---|

# Resource Allocation Estimate

JOB NO: 22-0061

6/17/2022

CLIENT: Irvine Ranch Water District

PROJECT NAME: Detailed Condition Assessment of Steel Tanks

| Task Item | | Labor | | | | | | | | | ODCs | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Task | Description | Principal-In-Charge | Senior Project Manager | Project Manager | Project Engineer | Associate Engineer | Engineering Assistant | Project Admin/Clerical | Total Labor Hours | Subtotal Labor Cost | CSE Truck & Equip (per day) | Mileage (per mile) | Quanix DFT Gauge (up to 200 mils) (per day) | Olympus 38DL/Epoch XT UT Gauge (per day) | 4-Gas Confined Space Meter (per day) | 12,000 CFM Trailer Mounted Ventilation Blower (per day) | Drone with Inspection Camera (per day) | Prevailing Wage Markup (percentage of labor cost ) | Hotel (per night) | Per Diem (per day) | Subcontractor - Scaffolding (cost+10%) (per tank) | Subtotal ODC | Total Cost by Task |
| 1 | **Project Management** | 4 | 18 | 25 | 0 | 0 | 0 | 24 | 71 | $ 14,508.00 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 14,508.00 |
| | *Project Setup* | 2 | 1 | | | | | 4 | 7 | $ 1,249.00 | | | | | | | | | | | | $ - | $ 1,249.00 |
| | *DIR Coordination* | | 1 | | | | | 10 | 11 | $ 1,197.00 | | | | | | | | | | | | $ - | $ 1,197.00 |
| | *Invoicing* | | 6 | | | | | 6 | 12 | $ 2,160.00 | | | | | | | | | | | | $ - | $ 2,160.00 |
| | *Bi-Weekly Status Reports* | | | 13 | | | | | 13 | $ 3,250.00 | | | | | | | | | | | | $ - | $ 3,250.00 |
| | *QAQC* | 2 | 4 | | | | | 4 | 10 | $ 2,050.00 | | | | | | | | | | | | $ - | $ 2,050.00 |
| | *Kickoff Meeting* | | 2 | 4 | | | | | 6 | $ 1,534.00 | | | | | | | | | | | | $ - | $ 1,534.00 |
| | *Draft Condition Assessment Meeting* | | 2 | 4 | | | | | 6 | $ 1,534.00 | | | | | | | | | | | | $ - | $ 1,534.00 |
| | *Final Condition Assessment Meeting* | | 2 | 4 | | | | | 6 | $ 1,534.00 | | | | | | | | | | | | $ - | $ 1,534.00 |
| 2 | **Conditon Assessment** | 0 | 6 | 122 | 146 | 156 | 128 | 0 | 558 | $ 109,836.00 | $1,690.00 | $ 351.00 | $2,600.00 | $ 1,105.00 | $ 650.00 | $ 4,550.00 | $3,250.00 | $ 21,514.00 | $ 7,600.00 | $ 3,675.00 | $ - | $ 46,985.00 | $ 156,821.00 |
| | *Document Review* | | | 6 | 18 | | | | 24 | $ 5,262.00 | | | | | | | | | | | | $ - | $ 5,262.00 |
| | *First Mobilization (5 tanks, total capacity of 2.28 MG)* | | | | | | | | 0 | $ - | | | | | | | | | | | | $ - | $ - |
| | *Coordination, Equipment Prep, Data* | | 2 | | 4 | 20 | 4 | | 30 | $ 5,674.00 | | | | | | | | | | | | $ - | $ 5,674.00 |
| | *Travel* | | | 4 | 4 | | 4 | | 12 | $ 2,400.00 | | | | | | | | | | | | $ - | $ 2,400.00 |
| | *Field Work (2.5 days, 3-person crew)* | | | 24 | 24 | | 24 | | 72 | $ 14,400.00 | 3 | 200 | 3 | 3 | 3 | 3 | 3 | $ 16,800.00 | 6 | 9 | | $ 9,387.00 | $ 23,787.00 |
| | *Second Mobilization (5 tanks, total capacity of ~18.6 MG)* | | | | | | | | 0 | $ - | | | | | | | | | | | | $ - | $ - |
| | *Coordination, Equipment Prep, Data* | | 2 | | 4 | 24 | 4 | | 34 | $ 6,422.00 | | | | | | | | | | | | $ - | $ 6,422.00 |
| | *Travel* | | | 4 | 4 | 4 | 4 | | 16 | $ 3,148.00 | | | | | | | | | | | | $ - | $ 3,148.00 |
| | *Field Work (5 days, 4-person crew)* | | | 40 | 40 | 40 | 40 | | 160 | $ 31,480.00 | 5 | 200 | 5 | 5 | 5 | 5 | 5 | $ 34,628.00 | 16 | 20 | | $ 18,799.00 | $ 50,279.00 |
| | *Third Mobilization (5 tanks, total capacity of ~18.6 MG)* | | | | | | | | 0 | $ - | | | | | | | | | | | | $ - | $ - |
| | *Coordination, Equipment Prep, Data* | | 2 | | 4 | 24 | 4 | | 34 | $ 6,422.00 | | | | | | | | | | | | $ - | $ 6,422.00 |
| | *Travel* | | | 4 | 4 | 4 | 4 | | 16 | $ 3,148.00 | | | | | | | | | | | | $ - | $ 3,148.00 |
| | *Field Work (5 days, 4-person crew)* | | | 40 | 40 | 40 | 40 | | 160 | $ 31,480.00 | 5 | 200 | 5 | 5 | 5 | 5 | 5 | $ 34,628.00 | 16 | 20 | | $ 18,799.00 | $ 50,279.00 |
| 3 | **Capital Project Packaging and Prioritization** | 4 | 10 | 22 | 84 | 0 | 0 | 4 | 124 | $ 27,318.00 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 27,318.00 |
| | *Develop Capital Improvement Project Packages* | 2 | 8 | 16 | 56 | | | 4 | 86 | $ 18,822.00 | | | | | | | | | | | | $ - | $ 18,822.00 |
| | *Prioritize Recommended Capital Improvements* | 2 | 2 | 6 | 28 | | | | 38 | $ 8,496.00 | | | | | | | | | | | | $ - | $ 8,496.00 |
| 4 | **Final Report Deliverables** | 2 | 8 | 28 | 84 | 24 | 0 | 4 | 150 | $ 32,162.00 | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ - | $ 32,162.00 |
| | *Draft Report* | 2 | 6 | 24 | 72 | 24 | | 4 | 132 | $ 28,120.00 | | | | | | | | | | | | $ - | $ 28,120.00 |
| | *Final Report* | | 2 | 4 | 12 | | | | 18 | $ 4,042.00 | | | | | | | | | | | | | $ 4,042.00 |
| 5 | **Optional Task - Cathodic Protection Surveys** | 0 | 2 | 0 | 92 | 16 | 92 | 0 | 202 | $ 35,726.00 | $1,300.00 | $ 234.00 | $ - | $ - | $ - | $ - | $ - | $ 7,700.00 | $ 1,600.00 | $ 750.00 | $ - | $ 11,584.00 | $ 47,310.00 |
| | *Tanks Cathodic Protection Surveys* | | | | | | | | 0 | $ - | | | | | | | | | | | | $ - | $ - |
| | *Coordination, Equipment Prep, Data* | | 2 | | 4 | 16 | 4 | | 26 | $ 4,926.00 | | | | | | | | | | | | $ - | $ 4,926.00 |
| | *Travel (2 mobilizations)* | | | | 8 | | 8 | | 16 | $ 2,800.00 | | | | | | | | | | | | $ - | $ 2,800.00 |
| | *Field Work (5 days, 2-person crew)* | | | | 80 | | 80 | | 160 | $ 28,000.00 | 10 | 400 | | | | | | $ 30,800.00 | 8 | 10 | | $ 11,584.00 | $ 39,584.00 |
| | **Units** | 10 | 44 | 197 | 406 | 196 | 220 | 32 | 1105 | | 23 | 1000 | 13 | 13 | 13 | 13 | 13 | 116856 | 46 | 59 | 0 | | |
| | **Rate** | $ 305.00 | $ 267.00 | $ 250.00 | $ 209.00 | $ 187.00 | $ 141.00 | $ 93.00 | | | $ 130.00 | $ 0.59 | $ 200.00 | $ 85.00 | $ 50.00 | $ 350.00 | $ 250.00 | $ 0.25 | $ 200.00 | $ 75.00 | $ - | | |
| | **Total** | $ 3,050.00 | $ 11,748.00 | $ 49,250.00 | $ 84,854.00 | $ 36,652.00 | $ 31,020.00 | ####### | | $ 219,550.00 | $ 2,990.00 | $ 585.00 | $ 2,600.00 | $ 1,105.00 | $ 650.00 | $ 4,550.00 | $ 3,250.00 | $ 29,214.00 | $ 9,200.00 | $ 4,425.00 | $ - | $ 58,569.00 | $ 278,119.00 |