

# Folsom City Council Staff Report

<b>MEETING DATE:</b>	2/24/2026
<b>AGENDA SECTION:</b>	Consent Calendar
<b>ITEM TITLE:</b>	Resolution No. 11557 – A Resolution Authorizing the City Manager to Execute an Agreement with West Yost & Associates, Inc. for \$373,870 from the Water Operating Fund (Fund 520) for Condition Assessment of the City of Folsom’s Water Treatment Plant and Booster Pump Station Facilities
<b>FROM:</b>	Utilities Department

## **RECOMMENDATION / CITY COUNCIL ACTION**

The Utilities Department recommends that the City Council pass and adopt Resolution No. 11557 – A Resolution Authorizing the City Manager to Execute an Agreement with West Yost & Associates, Inc. for \$373,870 from the Water Operating Fund (Fund 520) for Condition Assessment of the City of Folsom’s Water Treatment Plant and Booster Pump Station Facilities.

## **BACKGROUND / ISSUE**

Water from the Folsom Reservoir is treated by the City’s conventional Water Treatment Plant (WTP) located in Folsom near the junction of East Natoma Street and Randall Drive. The WTP consists of three pre-treatment facilities, two Actiflo trains that can treat 25 million gallons per day (MGD) each and the Basin 5 train, which can treat 25 MGD. The total WTP capacity is 75 MGD with a firm capacity of 50 MGD in the event that one of the pretreatment trains is inoperable.

The WTP treats water for the entire City of Folsom (with the exception of the Ashland and American River Canyon systems located north of the American River) and delivers treated water to the system by gravity and via 9 booster pump stations located throughout the water distribution system to serve approximately 82,000 residents through 23,500 potable water connections.

City of Folsom staff has identified a number of assets located at the Water Treatment Plant and at the Booster Pump Station facilities that need to be evaluated as part of this condition assessment as shown below:

- Water Treatment Plant.
  - Chlorine feed room and storage tank structural assessment.
  - Sedimentation Basins 1 through 4 assessment (chain and flights, structural, pumps).
  - Filter backwash splitter box (structural).
  - Filters assets condition assessment (valves, actuators, media).
  - Screw press (homogenizing tanks, dredge, dosing, solids storage).
  - Three (3) Sludge lagoons (pumps and motors).
  - Recycled Backwash floor assessment.
  - Orthophosphate feed room assessment.
  - Site Security assessment.
  - Power Supply assessment (69kV sub-station).
  - Electrical system assessment (VFD's, wiring, soft starts, pump motors).
  - HVAC climate control assessment of critical assets (chlorine room, WTP main power building, orthophosphate/caustic feed room, electrical rooms, polymer rooms).
  
- Booster Pump Station Facilities.
  - Mechanical and structural assessment of all pumps, motors and gears.
  - Backup power generation assessment.
  - Electrical power supply systems and controls.
  - Inspection of all appurtenant conveyance systems (pipes, valves, hardware, coatings).
  - Pump evaluation (flow, suction, discharge pressure, operating capacity, efficiency).

The goal of the condition assessment is to identify and prioritize the condition of each asset, evaluate its remaining serviceable life, recommend various alternatives that consider repairing, replacing in kind, or incorporating into the City's 5-Year Capital Improvement Program and all costs (repair, replacement, design, construction) associated with each alternative to correct the deficiency.

The primary scope of work items associated with the City of Folsom's Water Treatment Plant and Booster Pump Station condition assessment include:

- Task 1: Preliminary Phase.
  - Review of existing utility documents and site investigation.
  - Prepare assessment plan and schedule.
  
- Task 2: Condition Assessment and the Final Report.
  - Asset inventory list.
  - Inspection and testing.

- Assess the condition based on the inspection and testing.
  - Cost estimate and schedule.
  - Prepare draft condition assessment report.
  - Prepare final condition assessment report.
- Task 3: Project Management.
- Project management.
  - Quality control/quality assurance.

This Resolution will authorize the City Manager to execute an agreement with West Yost & Associates, Inc. for \$373,870 from the Water Operating Fund (Fund 520) for condition assessment of the City of Folsom’s water treatment plant and booster pump station facilities.

**POLICY / RULE**

Section 2.36.120 of the Folsom Municipal Code states, in part, that contracts for supplies, equipment, services, and construction with an estimated value of \$77,426 or greater shall be awarded by the City Council.

**ANALYSIS**

On November 3, 2025, the Utilities Department requested proposals for consulting services to provide condition assessment services for the City of Folsom’s Water Treatment Plant and Booster Pump Station facilities. On January 7, 2026, the Utilities Department received proposals from West Yost & Associates, Inc. and NCS Engineering.

The two proposals were assessed by three Utilities Department staff members for technical evaluation prior to reviewing project costs. The proposals were reviewed and scored for project understanding, qualifications, experience, understanding of the scope of work, and project team staffing. The technical evaluations were scored as shown in Table 1.

<b>Consultant</b>	<b>UT 1</b>	<b>UT 2</b>	<b>UT 3</b>	<b>Average</b>
West Yost & Associates, Inc.	76	78	76	76.7
NCS Engineering	66	66	66	66.0

*Table 1: Consultant Technical Scores without Costs*

After reviewing each proposal for project understanding, qualifications, experience, understanding of the scope of work, and project team staffing, the proposals were reviewed for project costs based on the requested scope of work in the request for proposals. The fee schedules for the scope of work outlined in the request for proposals from each consultant are shown in Table 2.

<b>Consultant</b>	<b>Cost</b>	<b>Hours</b>	<b>Cost/Hour</b>
West Yost & Associates, Inc.	\$275,443	900	\$306.05
NCS Engineering	\$195,940	900	\$217.71

*Table 2: Consultant Project Costs*

West Yost & Associates, Inc. was determined to provide the best value to the City based on the scope of work provided in their proposal, the project team and their expertise for these types of projects. West Yost & Associates, Inc. included a detailed and thorough project understanding, detailed scope of work, as well as past relevant experience developing other condition assessment reports for water treatment plants and booster pump station facilities. Based on review of the proposals, the West Yost & Associates, Inc. team distinguished themselves from other proposers by demonstrating greater experience in condition assessment and project management as outlined in the Request for Proposal (RFP). Additionally, the West Yost & Associates, Inc. proposal demonstrated their depth of experience and capability to perform condition assessment by assigning multiple team members per task. Table 3 shows the overall total scores including project costs based on a maximum score of 100.

<b>Consultant</b>	<b>Technical Score (Avg.)</b>	<b>Cost Score</b>	<b>Total Score</b>
West Yost & Associates, Inc.	76.7	14.2	90.9
NCS Engineering	66.0	20.0	86.0

*Table 3: Consultant Overall Scoring Including Project Costs (Does not Include Optional Tasks)*

Both firms also provided a variety of optional tasks for the City to consider in each of the proposals. After further review and consideration, the City deemed three optional tasks from the West Yost & Associates, Inc. proposal as having value added to the condition assessment. The three optional tasks chosen are:

- **Optional Task No. 1: Criticality Assessment.**
  - Prioritizing repair and replacement based on asset criticality regarding water supply and reliability.
  
- **Optional Task No. 2: Level 2 Field Assessment.**
  - More invasive Level 2 field assessment of certain assets based on observed condition of each asset during the Level 1 field assessment. Staff identified the filters at the WTP as needing Level 2 Field assessment.
  
- **Optional Task No. 3: Long-Term Project Cost Estimates and Schedule**
  - This analysis goes beyond 5-years and includes long term project cost estimates out to 10 years

The total cost associated with the three optional tasks is \$98,427 for a revised not-to-exceed total cost of \$373,870.

This Resolution will authorize the City Manager to execute an agreement with West Yost & Associates, Inc. for \$373,870 from the Water Operating Fund (Fund 520) condition assessment of the City of Folsom’s water treatment plant and booster pump station facilities.

**FINANCIAL IMPACT**

If approved the agreement with West Yost & Associates would be for an amount not to exceed \$373,870. Sufficient funds are budgeted and are available in the Water Operating Fund (Fund 520) in FY 2025-26 to provide for this agreement.

**ENVIRONMENTAL REVIEW**

This project is replacement and/or improvement of existing infrastructure with negligible or no expansion of use and therefore is categorically exempt from environmental review under the California Environmental Quality Act as noted in Title 14 – California Code of Regulations, Chapter 3 – Guidelines for Implementation of the California Environmental Quality Act, Article 19 – Categorical Exemptions, Sections 15301 (Existing Facilities), 15302 (Replacement or Reconstruction), and/or 15304 (Minor Alterations to Land).

**ATTACHMENTS**

1. Resolution No. 11557 – A Resolution Authorizing the City Manager to Execute an Agreement with West Yost & Associates, Inc. for \$373,870 From the Water Operating Fund (Fund 520) for Condition Assessment of the City of Folsom’s Water Treatment Plant and Booster Pump Station Facilities
2. Proposal submitted by West Yost & Associates, Inc.
3. Proposal submitted by NCS Engineering
4. Project map

Submitted,

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Marcus Yasutake, Director  
UTILITIES DEPARTMENT

## Attachment 1

**RESOLUTION NO. 11557**

**A RESOLUTION AUTHORIZING THE CITY MANAGER TO EXECUTE AN AGREEMENT WITH WEST YOST & ASSOCIATES, INC. FOR \$373,870 FROM THE WATER OPERATING FUND (FUND 520) FOR CONDITION ASSESSMENT OF THE CITY OF FOLSOM'S WATER TREATMENT PLANT AND BOOSTER PUMP STATION FACILITIES**

**WHEREAS**, the City of Folsom has identified the condition assessment of the City of Folsom's Water Treatment Plant and Booster Pump Station Facilities as a priority to maintain integrity and operation of the water distribution system; and

**WHEREAS**, West Yost & Associates, Inc. by reason of their past experience and abilities for performing these types of services, are qualified to perform the required consulting services for the project; and

**WHEREAS**, sufficient funds are budgeted and available in the Water Operating Fund (Fund 520) for this agreement; and

**WHEREAS**, the agreement will be in a form acceptable to the City Attorney:

**NOW, THEREFORE, BE IT RESOLVED** that the City Council of the City of Folsom authorizes the City Manager to Execute an Agreement with West Yost & Associates, Inc. for \$373,870 from the Water Operating Fund (Fund 520) for Condition Assessment of the City of Folsom's Water Treatment Plant and Booster Pump Station Facilities.

**PASSED AND ADOPTED** this 24<sup>th</sup> day of February, 2026, by the following roll-call vote:

**AYES:** Councilmember(s):  
**NOES:** Councilmember(s):  
**ABSENT:** Councilmember(s):  
**ABSTAIN:** Councilmember(s):

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Justin Raithel, MAYOR

ATTEST:

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Christa Freemantle, CITY CLERK

## Attachment 2



## CITY OF FOLSOM | TECHNICAL PROPOSAL CONDITION ASSESSMENT FOR THE WATER TREATMENT PLANT AND BOOSTER PUMP STATION FACILITIES

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JANUARY 7, 2026  
REVISED: FEBRUARY 17, 2026

WEST YOST & ASSOCIATES



# TRANSMITTAL LETTER

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January 7, 2026

**REVISED:** February 17, 2026

Bryson Pearson  
Water Treatment Plant Manager  
City of Folsom – Utilities Department  
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Folsom, CA 95630

**WEST YOST**  
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westyost.com

## **RE: Response to Request for Proposals for the City of Folsom Condition Assessment for the Water Treatment Plant and Booster Pump Station Facilities**

Dear Bryson:

Completing a comprehensive condition assessment of the City of Folsom's (City) Water Treatment Plant (WTP) and Booster Pump Station (BPS) facilities is a critical step toward strengthening system reliability, identifying redundancy gaps, preparing for future demands, and establishing a repeatable, risk-based asset management program.

West Yost provides value to the City by combining deep familiarity with Folsom's facilities and staff with the multidisciplinary expertise required to perform this condition assessment efficiently and accurately. Our team has supported the City through planning, asset management, and the construction and commissioning of major WTP improvements, including direct involvement in Actiflo and filtration system upgrades. This firsthand experience gives us a clear understanding of system configuration, constructability constraints, and operational tradeoffs that directly inform practical, defensible evaluations.

Because we understand how the system operates today, its history, and the workarounds staff rely on, our assessments are more targeted and less disruptive to ongoing operations. This approach reduces unnecessary investigations, limits rework, and provides the City with a stronger foundation for long-term capital planning.

Our approach is aligned with the City's objectives to:

- Develop a complete understanding of the WTP, BPS facilities, and their integration with the water distribution system.
- Establish a repeatable, transparent condition assessment framework that City staff can apply well beyond this project.
- Apply Level 1 assessments systemwide and use Level 2 evaluations selectively where additional detail improves decision-making.
- Evaluate and prioritize the condition of all assets identified in the RFP and those confirmed through site evaluations.
- Develop a defensible, risk-based prioritization of improvements categorized as repairs, replace in kind, or Capital Improvement Projects.
- Prepare planning-level cost estimates for maintenance, repair, replacement, and capital improvements.

We confirm that our proposal complies with the RFP and Addendum No. 1, including experience thresholds, required scope and deliverables, and the requested project schedule. West Yost also confirms acceptance of the terms and conditions in the City's sample contract.

We are committed to providing the City with a clear understanding of asset condition and remaining useful life, a prioritized improvement plan, and a methodology that supports safe, reliable, and resilient service over the long term. We value our longstanding partnership with the City of Folsom and welcome the opportunity to continue supporting your infrastructure and operational goals.

Sincerely,

**West Yost**



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**CITY OF FOLSOM**  
**CONDITION ASSESSMENT FOR THE WATER TREATMENT PLANT  
AND BOOSTER PUMP STATION FACILITIES**

JANUARY 7, 2026  
REVISED: FEBRUARY 17, 2026

**CONTACT PERSON**

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## SECTION 1. PROJECT UNDERSTANDING

The City of Folsom’s Water Treatment Plant (WTP) and nine Booster Pump Stations (BPS) form the backbone of a potable water system that must deliver **reliable, high-quality water** under increasing operational, regulatory, and growth pressures. As outlined in the City’s Request for Proposals (RFP), the City’s objective is to develop a **clear and defensible understanding of current asset condition, remaining useful life, and the risk and consequence of failure**. This foundational knowledge will guide the **prioritization of repairs, replacements, and capital improvements** across both the WTP and BPS facilities.



*Folsom Water Treatment Plant Sedimentation Basin No. 5 is representative of the aging, actively operated infrastructure to be evaluated under this condition assessment.*

Our team’s understanding of the City’s needs is informed by the RFP, Addendum No. 1, and the detailed WTP site visit, as well as by direct involvement in the design, construction, and commissioning of major WTP facilities. This perspective allows us to evaluate current asset condition with a clear understanding of original design intent, field-driven modifications, and how systems are actually operated today.

Together, these sources paint a consistent picture: the City is seeking a **repeatable, transparent condition assessment program**, one that goes beyond producing a list of deficiencies. The desired outcome is a framework that City staff can apply for years to come to support operational reliability, capital planning, and long-term asset management.

## UNDERSTANDING THE CITY’S OBJECTIVES

### RELIABLE, HIGH-QUALITY WATER

The City of Folsom’s commitment to delivering reliable, high-quality drinking water is anchored in the **Folsom Water Vision**, which charts a resilient water future for the next 50 years. This project directly supports that vision by providing a clear, data-driven understanding of asset condition and risk across the WTP and BPS facilities.

The condition assessment framework will help the City:

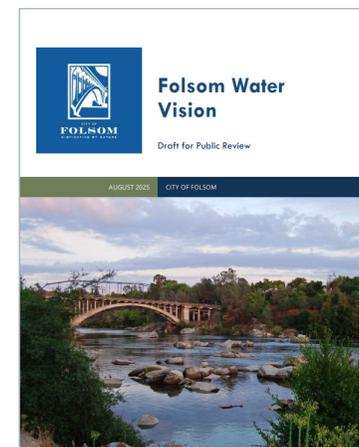
- Proactively address vulnerabilities that could affect water quality or system reliability.
- Confirm treatment and monitoring systems remain robust as assets age or approach capacity.
- Align capital investments with long-term Water Vision priorities.
- Maintain public confidence through transparent, defensible decisions.

**This effort translates the Water Vision’s long-term goals into practical steps that safeguard high-quality water service today and into the future.**

### ESTABLISH A REPEATABLE, RISK-BASED CONDITION ASSESSMENT METHODOLOGY

The City seeks a condition assessment approach that is **standardized, defensible, and aligned with asset-management principles and best practices**. This methodology must:

- Integrate with the City’s Computerized Maintenance Management System (CMMS) platforms, AMS and Lucity, so condition data is efficiently maintained, routinely updated, and readily applied to ongoing decision-making.



- Provide a practical road map that empowers staff to maintain, refresh, and apply condition information in ways that meaningfully inform operational decisions and Capital Improvement Program (CIP) priorities. This road map also helps the City structure future decision making and CIP budget priorities by integrating criticality into a living, adaptable program, which is provided in this proposal as an optional task. As a dynamic framework, it can be refined over time to strengthen data-driven decision-making.

## PROJECT SPOTLIGHT



*Wastewater sump station mechanical equipment inspected as part of the City of Sacramento facilities condition and risk assessment pilot program.*

### **Wastewater and Drainage Sump Station Facilities Condition Assessment CITY OF SACRAMENTO, CA**

West Yost performed a comprehensive condition and risk assessment at five of the City’s wastewater sump stations and five drainage sump stations. The condition assessment included an evaluation of the civil, mechanical, structural, and electrical assets and considered the corrosion assessment of pipes, structures, and outfall pipes. The risk assessment included an evaluation of the remaining useful life of the existing assets and development of a risk framework, which utilized the City’s existing sewer and stormwater pipeline risk factors.

The results of the analysis identified projects and led to the development of a Capital Improvement Program (CIP), and risk assessment results were used to prioritize the CIP projects. Because the City has over 150 lift stations, these 10 condition assessments are serving as a pilot program for City staff to conduct condition assessments on the remaining sump stations.

## IDENTIFY AND PRIORITIZE SYSTEMWIDE IMPROVEMENTS

The City is requesting a prioritized set of improvement projects, immediate, near-term, and long-term, with clear cost and schedule implications. Rather than simply withstanding scrutiny, this prioritization will help the City proactively develop and plan for budget needs and future ratepayer impacts. Improvements will include both smaller projects that City staff can deliver in-house and larger efforts that will inform future CIP planning. By structuring recommendations across short-term (1–5 years) and long-term (6+ years) horizons, the program provides the data needed to make informed decisions for budgeting and rate-setting. In doing so, the City demonstrates due diligence to its ratepayers and confirms investment decisions are grounded in a robust, repeatable methodology.

## STRENGTHEN LONG-TERM RELIABILITY AND OPERATIONAL RESILIENCE

Reliability and redundancy are explicit City priorities, especially as:

- System demands increase south of Highway 50.
- Critical assets (e.g., filters, electrical systems, chemical systems) operate closer to capacity or end of useful life, and
- Regulatory expectations related to safety, electrical compliance, and cybersecurity continue to evolve, including requirements established by the U.S. Environmental Protection Agency (EPA) and the California Division of Drinking Water (DDW) through applicable permits.

*A comprehensive, risk-based condition assessment program will help the City proactively manage these pressures, improve system resilience, and maintain high levels of service to the community.*

## UNDERSTANDING OF PROJECT CHALLENGES

The following key systemwide challenges described in the RFP align closely with those observed during the WTP site visit, reinforcing the need for a systematic, comprehensive condition assessment of critical water infrastructure.

### AGING INFRASTRUCTURE WITH VARIABLE REMAINING USEFUL LIFE

Many of the City's WTP and BPS assets are more than 20 years old. While many continue to perform well, others are showing signs of age-related wear due to environmental conditions, evolving operational demands, or the timing of past capital investments. The City now requires a systematic, facility-wide evaluation to clearly understand the remaining useful life across asset groups and to identify where future risk may be emerging.

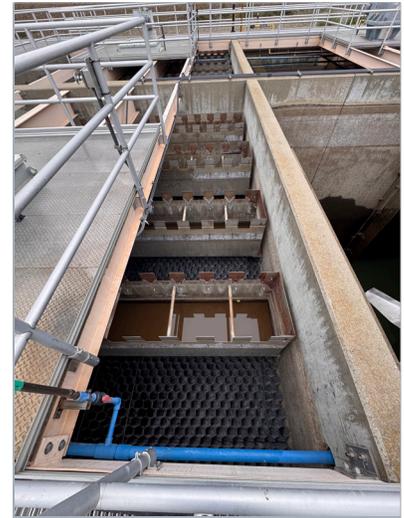
### FILTRATION AND PRETREATMENT LIMITATIONS THAT AFFECT FUTURE CAPACITY

The WTP's existing filtration system, identified by staff as a top reliability concern, is approaching hydraulic and mechanical constraints. Actuator wear, aging valves, media uncertainty, and limited gallery access all contribute to reduced confidence at higher flow rates. Pretreatment systems (Actiflo and Basin 5) have access, structural, and performance considerations that require detailed evaluation.

Similar filtration system constraints were identified during West Yost's recent condition assessments at the Waterman and North Bay Regional WTPs for the City of Fairfield, where filter loading rate limitations, residuals handling bottlenecks, and aging valves and actuators informed phased capital improvement strategies. West Yost applied our proven condition assessment framework to these projects and will do the same for assessment of the City of Folsom's facilities.

### CHEMICAL SYSTEMS WITH SAFETY, CONTAINMENT, AND COMPLIANCE RISKS

Examples such as UV-related degradation of hypochlorite tanks, aluminum chlorohydrate (ACH) containment concerns, unanchored orthophosphate equipment, and corrosion within the hypochlorite building illustrate the types of vulnerabilities that warrant closer attention. These conditions align directly with the identification needs outlined in the RFP and underscore the value of conducting a comprehensive mechanical, structural, and safety assessment.



*Actiflo high-rate clarification system at the City of Folsom Water Treatment Plant. The condition assessment will evaluate structural, mechanical, and process components, including lamella modules, mixers, and access constraints, to support long-term reliability and performance.*



*Electrical equipment is reaching the end of its useful life, becoming obsolete, and spare parts are difficult to find.*

### ELECTRICAL/SCADA SYSTEMS APPROACHING OBSOLESCENCE

Across the existing WTP and BPS network, several critical electrical and control systems are reaching a point where modernization is essential. A number of the site's Programmable Logic Controllers (PLCs) and Human Machine Interfaces (HMIs) are outdated or no longer fully functional, limiting both operational efficiency and the City's ability to troubleshoot or automate key processes. Gaps in HVAC coverage further expose electrical equipment to temperature and humidity conditions that can shorten asset life or lead to avoidable failures. In addition, the 69-kV substation warrants a dedicated, comprehensive assessment to confirm it continues to operate safely and reliably under current and future loading conditions. The City also requires

an updated evaluation of **arc-flash boundaries as well as NFPA 70B** compliance to maintain industry-standard electrical safety practices. Together, these issues have a direct influence on system reliability, emergency response readiness, and the safety of operators who rely on these systems every day.

## RESIDUALS HANDLING SYSTEMS THAT REQUIRE MODERNIZATION

The repurposed flocculation and sedimentation (floc/sed) basins, reclaimed backwash basin, screw press facility, and sludge lagoon pumping configuration all exhibit performance and operational limitations. These processes require a clear evaluation of condition, reliability, and opportunities for improvement.

## BOOSTER PUMP STATION VARIABILITY AND EXPOSURE ISSUES

The City's nine BPS facilities range from 1999 to 2019, exhibit varying levels of structural integrity, generator reliability, electrical condition, and exposure to environmental stresses. To develop a clear understanding of current performance and long-term needs, each site requires a comprehensive mechanical, structural, electrical, hydraulic, and environmental assessment. This includes pump performance field testing and system curve development to verify operational capacity and efficiency. Together, these evaluations are essential to establishing consistent, systemwide reliability.

## SYSTEMWIDE IMPLICATIONS

The WTP and BPS facilities must function as a coordinated system capable of meeting peak ultimate demands, fire flow requirements, and maintaining minimum pressure across diverse topography. Growth south of Highway 50, along with aging infrastructure, will place additional strain on the WTP's filtration capacity, electrical resilience, pumping efficiency, and operational flexibility. The City requires a condition assessment that not only documents today's condition but also positions the system for **future service reliability and sustainable capital planning**.

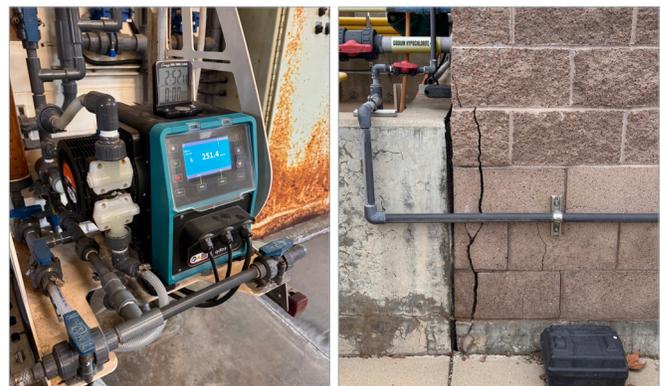
## WHY THIS UNDERSTANDING MATTERS

Our project understanding provides a precise definition of the challenges at hand, aligns directly with the requirements outlined in the RFP, and establishes a clear link between the City's needs and our proposed approach. By articulating the City's objectives, acknowledging real-world operational conditions, and anticipating how the condition assessment outcomes will inform future decision-making, our approach lays the groundwork for a program that is both technically sound and immediately useful to City staff.

The Project Approach that follows builds on this foundation. It explains how our methodology will deliver a repeatable condition assessment program, a transparent and defensible prioritization framework, and a strategic basis for enhancing long-term infrastructure reliability and resiliency.



*The filter gallery contains critical isolation and control valves and Auma actuators that influence filtration reliability, redundancy, and confidence as flows approach higher rates. The condition assessment will evaluate mechanical condition, operability, access limitations, and hydraulic performance to support defensible decisions regarding rehabilitation, phased replacement, and long-term filtration capacity planning.*



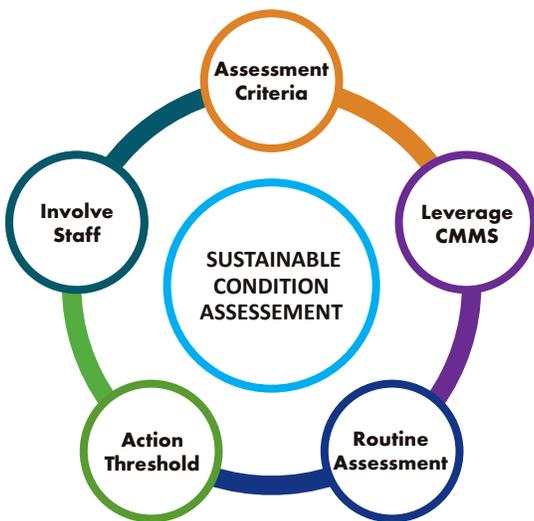
*The hypochlorite metering pumps are housed in a CMU building exhibiting corrosion, coating deterioration, and cracking. While pump upgrades have improved dosing reliability, the condition of the building, containment, and structural elements reflects chemical exposure and deferred rehabilitation. The condition assessment will evaluate mechanical equipment, corrosion mechanisms, structural integrity, and safety considerations to support improvements to chemical system reliability and operator safety.*

## SECTION 2. PROJECT APPROACH

The City owns and operates the Folsom Water Treatment Plant (WTP) and nine booster pump stations (BPS), each with assets of varying ages and operational histories. While routine maintenance, repairs, and modifications are regularly performed, the City does not yet have a formalized, system-wide program for evaluating the life-cycle condition of these assets. Establishing a sustainable condition assessment framework will enable the City to maintain desired service levels, optimize life-cycle costs, and proactively plan for rehabilitation and replacement. This has become a priority as the City seeks to strengthen long-term system reliability and reduce reactive maintenance through strategic, data-driven investment.

Over the last two decades, the WTP has evolved significantly with the addition of major process units (e, g., Actiflo), rehabilitation of existing facilities, and numerous operator-driven improvements. As a result, many systems now operate differently than originally designed. Several assets are more than 20 years old and have experienced strain, some of which is related to historical operational practices that predate current leadership. This has accelerated wear or reduced their remaining useful life. These realities make a structured, transparent, and defensible condition assessment essential for understanding current asset health, remaining life, and risk and consequence of failure, all of which are critical to capital planning.

This project represents a critical step forward in formalizing the City’s asset management approach and establishing a consistent methodology for making risk-based rehabilitation and replacement decisions.



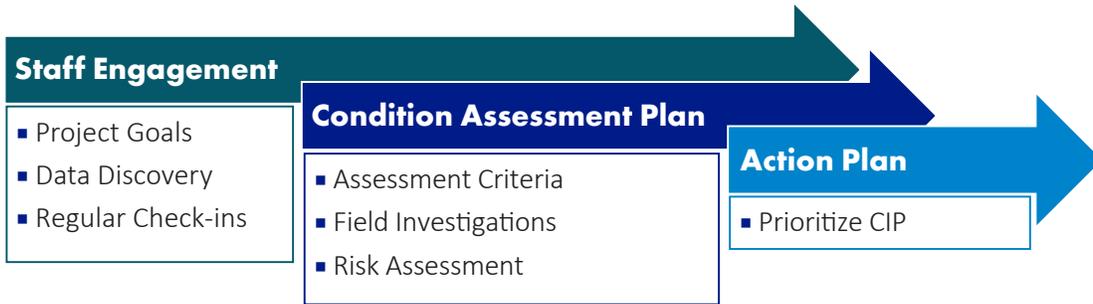
**A visual summary of West Yost's sustainable condition assessment framework.** *The graphic illustrates how five interconnected elements, establishing clear assessment criteria, leveraging the City’s CMMS, conducting routine field assessments, defining actionable thresholds, and fully involving operations staff, work together to create a repeatable, data-driven program for evaluating asset conditions.*

### OUR APPROACH TO YOUR CONDITION ASSESSMENT PROJECT

Our approach to your Project will evaluate assets across their full life cycle rather than relying on static, one-time observations. Using assessment criteria that City staff can easily apply in future years, we will establish a framework for consistent, repeatable scoring informed by visual inspections and support by Supervisory Control And Data Acquisition (SCADA) system, CMMS – AMS and Lucy – plant/facility maintenance records, and Operations & Maintenance (O&M) staff expertise.

The methodology will also incorporate the WTP’s unique operational realities, such as filtration system limitations at higher loading rates, aging or obsolete electrical and instrumentation systems (PLCs/HMIs), chemical containment concerns, and residuals-handling constraints. These factors influence both the likelihood and consequence of failure, and are therefore critical inputs to a comprehensive, long-term asset evaluation.

We use a multi-step approach that engages staff through the entire process. We start with understanding and confirming project goals. This leads to development of a Condition Assessment Plan. This plan lays out the framework for field investigations that form the basis for a prioritized action plan.



West Yost has identified three primary goals for this project:

- Develop a sustainable, renewable methodology for condition assessments.
- Integrate technical rigor with practical implementation to generate a prioritized list of repair and replacement projects.
- Advance the City’s long-term planning for system reliability, performance, and resilience.

### GOAL 1 – DEVELOP A SUSTAINABLE, RENEWABLE METHODOLOGY FOR CONDITION ASSESSMENTS

A sustainable condition assessment program must provide the City with a clear, defensible, and repeatable framework for evaluating asset health and determining when maintenance, rehabilitation, or replacement is warranted. West Yost’s methodology is built around three core components:

- Assessment Criteria:** Establishing consistent, objective criteria that defines how assets are scored based on physical condition, performance, maintainability, remaining useful life, and compliance considerations. These criteria will be tailored to the WTP and BPS operational environment and designed so City staff can readily apply and update them in future years.
- Risk Assessment (Criticality × Condition):** Incorporating criticality, defined as how essential an asset is to treatment reliability, regulatory compliance, and service continuity, into the scoring process helps the City target investments toward the areas of greatest need. This structured approach clarifies where failures would have the highest operational or community impact and where proactive improvements would deliver the greatest benefit.
- Action Plan:** Translating assessment results into a prioritized set of actions, including immediate repairs, near-term rehabilitation, and long-term capital improvements. The action plan will include planning-level cost estimates, recommended sequencing, and integration with the City’s CIP framework.

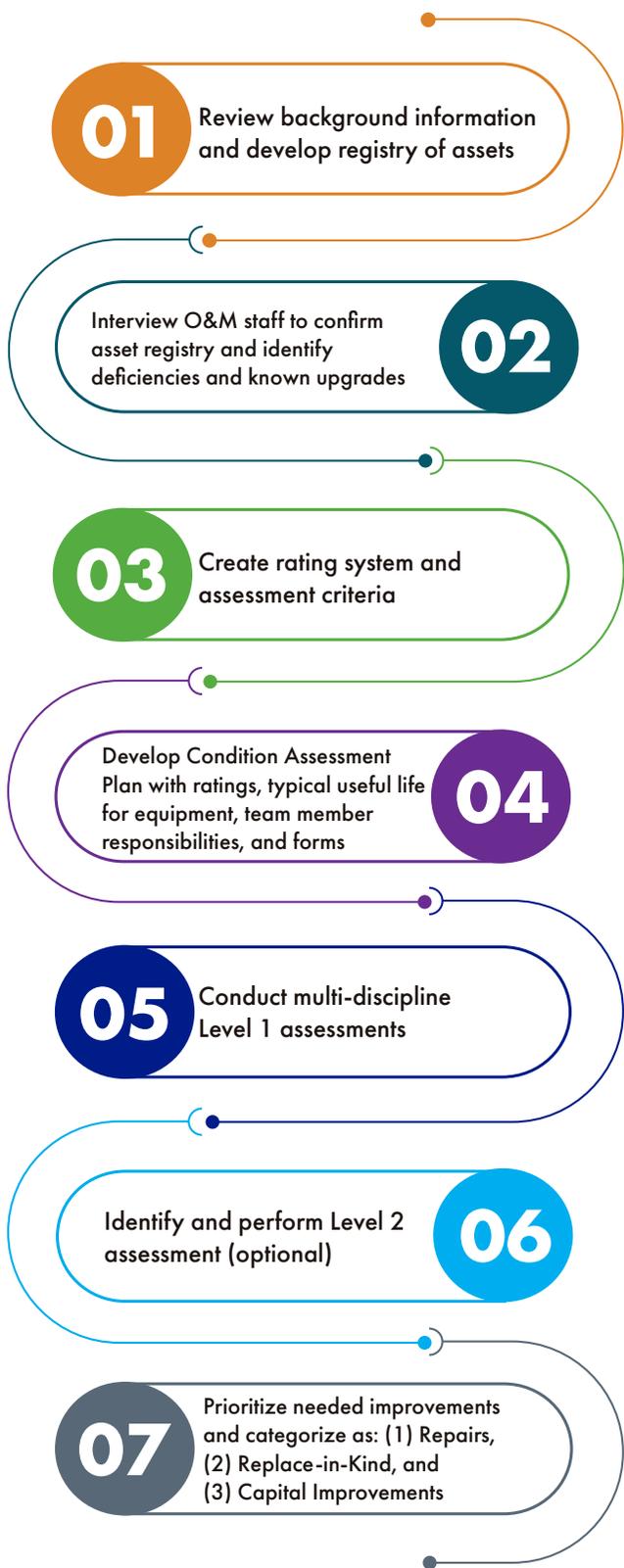
### GOAL 2 – INTEGRATE TECHNICAL RIGOR WITH PRACTICAL IMPLEMENTATION

- Involve Staff:** Our multidisciplinary team brings deep expertise in mechanical, structural, electrical and instrumentation, and process systems, along with extensive experience at water treatment and pump station facilities. We will collaborate closely with City staff, so findings reflect actual operational practices, current system constraints, and anticipated future needs, including capacity increases drive by growth south of Highway 50. Our recommendations will be actionable, grounded in field-verified conditions, and aligned with the City’s O&M experience and CIP planning.
- Leverage CMMS:** Operational insights from City staff, such as filtration hydraulic limitations, Actiflo access challenges, sludge lagoon conveyance issues, and the need for a phased modernization roadmap, will be incorporated directly into the assessment. This confirms the evaluation captures both asset condition and operational realities, resulting in a practical, reliable roadmap for improving system performance, redundancy, and long-term resilience.

### GOAL 3 – BUILD ON THE CITY’S PROGRESS TOWARD LONG-TERM SYSTEM RELIABILITY AND PERFORMANCE

- Routine Assessment:** West Yost understands the City’s ongoing investments in infrastructure improvements, plant optimization, and long-range planning, including the development of the Folsom Water Vision which outlines a resilient 50-year strategy for securing and sustaining the City’s water future. Our team will build on this momentum by identifying opportunities to strengthen asset redundancy, extend asset life, and reduce operational and regulatory risk. The resulting assessment will provide a defensible, data-driven foundation that supports Water Vision objectives and enhances long-term planning for continued delivery of safe, reliable, high-quality water service.

Figure 1. Approach to Field Investigations



## WEST YOST'S APPROACH TO CONDUCTING FIELD INVESTIGATIONS FOR CONDITION ASSESSMENTS

Field investigations are fundamental to accurately understanding asset condition. West Yost conducts these evaluations efficiently and cost-effectively by first developing a clear understanding of each asset's function, operational constraints, and historical performance. This preparation allows us to plan site access strategically and focus field time on gathering the most meaningful and actionable information.

Before any field investigations are conducted, a **Condition Assessment Plan** will be developed in collaboration with City staff to establish the framework, assets to be included, sequencing, and resources required to complete the field investigations efficiently and with minimal disruption to operations. The Condition Assessment Plan will include a detailed schedule that identifies fieldwork windows and accounts for facility accessibility. A resource plan will identify key staff from both the City and the assessment team. The Condition Assessment Plan will define the order of facility assessments based on operational priority, criticality, and logistical efficiency to maximize productivity during site visits. West Yost will prepare a draft assessment form to standardize data collection, inspection criteria, and condition rating inputs across all facilities. This structured approach will promote consistency, transparency, and repeatability in the evaluation process and support accurate comparison of asset condition across the City's water treatment plant and BPS facilities.

### PRE-FIELD INVESTIGATION TASKS

Before the field investigations, we will develop a comprehensive understanding of how each asset contributes to the overall function and performance of the water treatment plant and booster pump stations. An asset inventory list will be compiled of assets to be inspected at each facility to house asset condition data, attributes, and remaining useful life. This involves not only reviewing existing documentation such as record drawings and maintenance histories, but by also conducting interviews with O&M staff who are most familiar with the WTP and BPS facilities. We have found these discussions are the most productive and hold higher value if they are held on-site rather than in a formal office setting as they encourage deeper insights into operations and provide more detailed information.

These discussions will specifically explore the known performance issues and operational workarounds such as:

- Filter instability at higher loading rates
- Aging actuators and isolation valves
- Confined-space limitations
- Degradation of chemical storage and containment systems
- Obsolete PLCs, panels, and non-functional HMIs across the facility
- Structural and hydraulic limitations within the reclaimed backwash and residuals handling systems



*Chemical storage tank facing operational challenges and filter valve actuators approaching the end of their useful life.*

Based on review of existing documentation and interviews with City staff, a desktop analysis will be performed to evaluate preliminary performance requirements and estimated remaining useful life of assets at each facility.

### CONDITION ASSESSMENT METHODOLOGY

Asset rating and assessment criteria will be developed to use when assessing facilities as part of preparing the Condition Assessment Plan. **Table 1** below is an example of a rating and assessment criteria table that our team has used successfully on recent projects.

**Table 1. Condition Assessment Ratings**

Grading Definition	Cond. Rating Level	Site/Civil Criteria	Corrosion	Coating	Structural	Mechanical	Electrical/Instrument
<b>Immediate Attention</b>	5	Condition is beyond acceptable level, major cracking, severe ponding	Severe	Delaminated	Failing, Holes, Unsafe	Frozen/Broken	Exposed, Burned, Arcing
<b>Poor</b>	4	Above average wear and tear, some cracking of pavement	Moderate	Moderate Rust	Cracked, Loose, or Spalling Concrete	Leaks/ Damaged/ Noise/Vibration	Disrepair
<b>Fair</b>	3	Average wear and tear, minor cracking, and ponding of water	Minor	Some Rust	Housekeeping Issues - Moderate	Noise/Vibration and Wear - Moderate	Housekeeping Issues - Moderate
<b>Good</b>	2	Minor defects or deterioration	Minimal	Faded	Housekeeping Issues - Light	Noise/Vibration and Wear - Light	Housekeeping Issues - Light
<b>Excellent</b>	1	New condition	New	New	New	New	Code Compliant - New

### PRIORITIZED FIELD EVALUATIONS

City staff have identified several facility areas of particular concern for several WTP and BPS assets. These include certain aspects of the WTP Chlorine Feed Room, Chlorine Fiberglass Tanks, Sedimentation Basins, Filter Backwash Splitter Box, and Filters. The Zone 5 North BPS Generator and sound wall have also been identified as areas of concern. Each of these areas will be included with the field evaluations.

The initial filed investigations will consist of a Level 1 evaluation inspection, which uses non-invasive inspection techniques. If Level 1 results indicate the need for further evaluation, a Level 2 evaluation will be recommended using more detailed and potentially invasive/destructive methods. The scope and technique of the Level 2 evaluation are defined based on the Level 1 evaluation findings.

*For budgeting purposes, the scope of services provides for Level 1 evaluations of all assets and includes optional Task 4.3 for Level 2 evaluations, subject to approval by City staff. Where Level 2 evaluations are recommended but not performed under this project, the CIP will document those recommendations for future Level 2 assessments.*

Tables 2 and 3 describe the tools available for the Level 1 and Level 2 evaluations and how we will use them.

Table 2. Level 1 Evaluation	
Tool	Description
<b>Visual Inspection</b>	Completed by specialists in each discipline. Inspection forms, along with digital photographs and videos, will be used to document the condition assessments. The visual inspection will consider the maintenance history and O&M staff interviews in the inspection, along with the review of record drawings and other available information. The visual inspection will also identify code compliance issues.
<b>Structural Inspection</b>	Includes a review of available geotechnical information and a comparison of the design to current building and seismic codes. Non-destructive methods will be used.
<b>Coatings Inspection (Corrosion)</b>	Measure coating thickness on metal surfaces of equipment and piping. Areas of corrosion will also be identified.
<b>Ultrasonic Metal Thickness</b>	An ultrasonic meter will be set to measure pump suction and discharge piping wall thickness to determine the level of corrosion inside the metal pipes.

Table 3. Level 2 Evaluation	
Tool	Description
<b>Other technologies to be utilized if Level 2 evaluations are determined to be needed</b>	<ul style="list-style-type: none"> <li>■ Vibration analysis of pumps and motors</li> <li>■ Surface penetrating radar for rebar location and spacing</li> <li>■ Thermographic analysis of electrical equipment</li> <li>■ Power testing of electrical equipment</li> <li>■ Oil analysis of transformers</li> <li>■ Calibration of instruments</li> <li>■ Sonar and CCTV of piping</li> <li>■ Leak detection of piping</li> <li>■ X-ray location of rebar</li> <li>■ Concrete coring or sandblasting</li> <li>■ ASCE/SEI Tier 1, 2, and 3 analyses</li> <li>■ Noise monitoring</li> </ul>

### CIP PRIORITIZATION AND CONDITION ASSESSMENT REPORT

Following the field evaluation phase, assets/facilities needing replacement or rehabilitation to extend service life will be determined. We will apply the rating and assessment criteria to prioritize projects based on risk, which is defined as the combination of condition and criticality. If criticality is not defined at an asset-level, general facility criticality will be used to prioritize projects. The risk-based approach is an essential consideration in identifying and prioritizing system improvements. All facility areas of concern will be addressed within the **Condition Assessment Report**. A prioritized list of projects, with

estimated costs for implementation, will be recommended for in-house repair, in-kind-replacement, or incorporating into the City’s Capital Improvement Plan based on our findings and collaboration with City staff.

A key part of selecting, categorizing, and ranking the projects will be discussions with the City. A series of well-organized workshops will be held between Engineering and O&M departments to provide a collaborative approach, allowing staff to be engaged in the decision-making process.

The final product of this process will be a Condition Assessment Report with the following:

- Detailed field evaluation findings
- Recommended projects placed into one of the following categories:
  - Immediate (1 to 2 years)
  - Near-term (2 to 5 years)
  - And long-term (5 to 10 years)
- Detailed project descriptions with planning-level cost estimates for immediate (1 to 2 years) and near-term (2 to 5 years) projects.
- A CIP that is defensible, transparent, and aligned with the City’s operational and financial realities.

*For budgeting purposes, the scope of services provides for detailed project descriptions, planning level cost estimates, and schedule for immediate (1 to 2 years) and near-term (2 to 5 years) projects and includes an Optional Task 4.4 for the development of detailed project descriptions and cost estimates for long-term (5 to 10 years) projects.*

<p><b>Optional Task:</b> We understand not all assets or facilities have been evaluated for criticality. Therefore, we have included an optional task to complete a criticality evaluation of the process areas of the water treatment plant and each of the booster pump stations and their assets. West Yost will meet with the City to review and confirm the evaluation criteria and make any necessary adjustments. Each facility will then be evaluated for criticality using the finalized criteria.</p> <p><b>PROGRAM SUSTAINABILITY</b></p> <p>Our condition assessment framework, using clearly developed and agreed upon assessment criteria and risk definition, will allow the City to evaluate and track how asset condition trends may change over time. The Condition Assessment Plan will include a guide for conducting a Level 1 assessment including definitions for each assessment criteria with</p>	COND. RATING	DESCRIPTION	REPRESENTATIVE PHOTOGRAPH
	<b>Level 1</b>	<p><b>Little or no damage to concrete</b></p> <p>Hardness ..... hard surface</p> <p>Surface profile ..... smooth, apparently intact</p> <p>Cracks ..... hairline width, minimal frequency</p> <p>Spalling ..... none</p> <p>Reinforcement ..... not exposed or damaged</p>	
	<b>Level 2</b>	<p><b>Minor surface damage</b></p> <p>Hardness ..... soft surface layer to 1/8-inch depth</p> <p>Surface profile ..... fine aggregate exposed</p> <p>Cracks ..... hairline width, minimal frequency</p> <p>Spalling ..... shallow spalling, minimal frequency</p> <p>Reinforcement ..... not exposed or damaged</p>	
	<b>Level 3</b>	<p><b>Moderate surface damage</b></p> <p>Hardness ..... soft surface layer to 1/4-inch depth</p> <p>Surface profile ..... large aggregate exposed or protruding</p> <p>Cracks ..... up to 1/32-inch width, moderate frequency</p> <p>Spalling ..... shallow spalling, minimal frequency</p> <p>Reinforcement ..... exposed; minor damage, minimal frequency</p>	
	<b>Level 4</b>	<p><b>Loss of concrete mortar and damage to reinforcement</b></p> <p>Hardness ..... soft paste beyond 1/4-inch depth</p> <p>Surface profile ..... large aggregate exposed, loose, or missing</p> <p>Cracks ..... 1/8- to 1/4-inch width, moderate frequency</p> <p>Spalling ..... deep spalling, moderate frequency</p> <p>Reinforcement ..... exposed with damage, moderate frequency</p>	
	<b>Level 5</b>	<p><b>Bulk loss of concrete and reinforcement</b></p> <p>Hardness ..... soft paste beyond 1-inch depth</p> <p>Surface profile ..... large aggregate exposed, loose, or missing</p> <p>Cracks ..... over 1/2-inch width, or narrower and frequent</p> <p>Spalling ..... deep spalling, high frequency</p> <p>Reinforcement ..... consumed; loss of structural integrity</p>	
<p><i>Provided by: V&amp;A Consulting Engineers, Inc. All rights reserved.</i></p>			

photographs demonstrating the various condition levels. This will support current as well as future assessments and promote a consistent, qualitative evaluation over time.

This methodology allows long-term projects to be periodically re-evaluated, confirming replacements or rehabilitations are scheduled at optimal times. Further, this allows the City to regularly update its CIP for use in financial needs analysis.

## PROJECT MANAGEMENT

Effective project management is essential to delivering a project aligned to the owner's specific project priorities. West Yost's project management philosophy emphasizes proactive communication, disciplined quality control, and accountability at every stage of delivery. Our approach confirms all work products are completed on schedule, within budget, and at the highest level of technical and operational value to the City.

### COMPREHENSIVE PROJECT MANAGEMENT PLAN (PMP)

At project initiation, **Dianna Jensen, PE**, will prepare a detailed Project Management Plan tailored to the City's condition assessment effort. The PMP will define the project scope, objectives, schedule, communication protocols, roles and responsibilities, and procedures for managing risk, change, and quality. As a living document, the PMP will be updated as work progresses to confirm the team remains fully aligned with City expectations as well as project activities support Folsom's goals for reliability, redundancy, and long-term asset stewardship.

### QUALITY ASSURANCE AND QUALITY CONTROL (QA/QC)

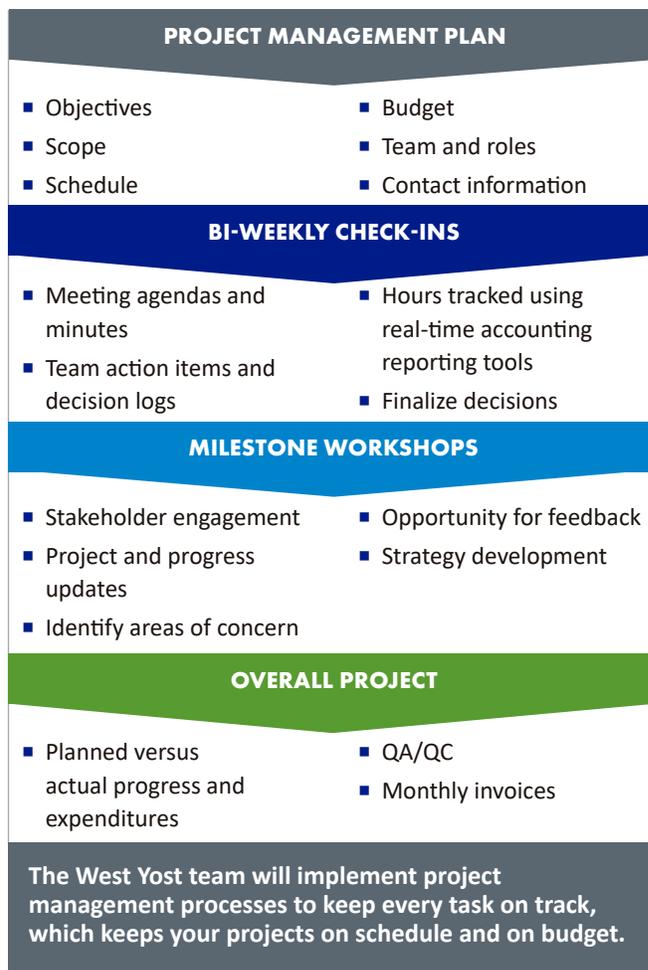
West Yost maintains a robust QA/QC program that is integral to our delivery of condition assessment and asset management projects. This project will be supported by an independent QA/QC team, led by **Tim Banyai, PE**, whose expertise spans treatment processes, pumping systems, structural evaluation, mechanical and electrical systems, and asset management. The QA/QC team will participate in the internal kickoff to understand project objectives, assessment criteria, and review milestones, remaining engaged throughout delivery.

All deliverables, including the Condition Assessment Plan, field findings, cost estimates, improvement recommendations, and draft/final reports, will undergo formal technical review using West Yost's internal QA/QC checklists. This process confirms consistency, technical accuracy, and alignment with the City's RFP requirements, confirming all recommendations are practical, defensible, and ready to support CIP development.

### PROACTIVE PROJECT MONITORING AND MONTHLY STATUS REPORTING

To maintain transparency and timely coordination, monthly project status reports will accompany each invoice. These reports will:

- Summarize work completed during the reporting period
- Identify upcoming activities and key milestones



- Provide updated schedule and budget status
- Highlight emerging challenges or risks and recommended corrective actions

This structured and predictable reporting process enables the City to monitor progress closely, make informed decisions, and adjust priorities as needed to maintain project momentum.

### REGULAR CHECK-INS AND PRINCIPAL OVERSIGHT

West Yost conducts monthly internal project reviews with senior leadership to evaluate schedule, budget, and technical progress. For this project, we recommend biweekly progress meetings with City staff to discuss sequencing, access coordination, critical path activities, and status of deliverables.

As **Principal-in-Charge, Kelye McKinney, PE**, will remain actively engaged throughout the project to confirm ongoing alignment with City expectations, provide guidance on key decisions, and reinforce resource availability to maintain schedule and quality.

### SCHEDULE ADHERENCE AND ISSUE RESOLUTION

The City has emphasized the importance of completing this project within the anticipated 6- to 9-month window following contract execution. West Yost will review the schedule during every check-in meeting to verify milestone completion and identify risks that may influence progress. With real-time tracking tools for monitoring resources and task dependencies, we will implement corrective actions early to avoid delays and maintain full visibility into schedule performance.

### DOCUMENTATION AND ACCOUNTABILITY

To support clarity and continuity, West Yost will document project communications and decisions through structured meeting notes, action item logs, and decision logs. These tools provide traceability, strengthen transparency, and reduce rework during field investigations, analysis, and report preparation.

By combining our detailed understanding of the Folsom WTP and BPS facilities, firsthand construction experience at your plant, and our specialized expertise in condition assessment and asset management, West Yost is uniquely positioned to deliver a targeted, implementable assessment that strengthens system reliability.

Our project management approach provides not only a well-structured, repeatable assessment framework, but also a practical roadmap for prioritizing near-term and long-term improvements, supporting informed decision-making, and sustaining the City’s commitment to safe, resilient, and high-quality water service.



*This sludge lagoon receives pretreatment residuals. A floating pump system is used to transfer sludge to the screw press feed day tanks due to insufficient hydraulic grade to convey sludge by gravity as originally intended. This labor-intensive workaround illustrates a clear opportunity for optimization. The condition assessment will evaluate residuals conveyance, lagoon operations, and dewatering integration to identify improvements that reduce operational burden, improve reliability, and better align solids handling infrastructure with long-term operational goals.*

### 3. SCOPE OF SERVICES

TASK 1. PRELIMINARY PHASE		
Work Tasks	Objectives	Deliverables
1.1 Review of Existing Utility Documents and Site Investigation	<ul style="list-style-type: none"> <li>Obtain information needed to complete the field evaluations</li> <li>Develop a Condition Assessment Plan that supports a long-term sustainable program</li> </ul>	<ul style="list-style-type: none"> <li>Data request list</li> <li>Field visit to each facility site</li> <li>Staff interviews</li> </ul>
1.2 Prepare Condition Assessment Plan and Schedule	<ul style="list-style-type: none"> <li>Establish the framework, assessment criteria, assets to be included, sequencing, and resources required to complete the field evaluations efficiently and with minimal disruption to operations</li> </ul>	<ul style="list-style-type: none"> <li>Draft and Final Condition Assessment Plan</li> <li>Secure file sharing site</li> <li>Workshop Agenda, Presentation, and Meeting notes</li> </ul>
TASK 2. CONDITION ASSESSMENT AND FINAL REPORT		
Work Tasks	Objectives	Deliverables
2.1 Asset Inventory List	<ul style="list-style-type: none"> <li>Collect the data needed to evaluate asset and facility condition</li> </ul>	<ul style="list-style-type: none"> <li>Updated Asset Registry</li> </ul>
2.2 Level 1 Field Assessment	<ul style="list-style-type: none"> <li>Gather the most meaningful and actionable information through a Level 1 field assessment</li> </ul>	<ul style="list-style-type: none"> <li>Level 1 field assessment of project facilities</li> </ul>
2.3 Assess the Condition Based on the Level 1 Field Assessment	<ul style="list-style-type: none"> <li>Develop list of improvement projects with capital costs and implementation schedule for replacement or rehabilitation</li> </ul>	<ul style="list-style-type: none"> <li>List of prioritized projects in the immediate (1-2 years), near-term (5 years), and long-term (5-10 years) needs categories</li> </ul>
2.4 Cost Estimate and Schedule		
2.5 Prepare Draft Condition Assessment Report	<ul style="list-style-type: none"> <li>Document the evaluations conducted and present prioritized CIP and prepare a draft Condition Assessment Report for City review and comment</li> </ul>	<ul style="list-style-type: none"> <li>Project prioritization workshop agenda, presentation, and summary notes</li> </ul>
2.6 Prepare Final Condition Assessment Report	<ul style="list-style-type: none"> <li>Address City comments on the draft and prepare final Condition Assessment Report</li> </ul>	<ul style="list-style-type: none"> <li>Draft and final Condition Assessment Report</li> </ul>
TASK 3. PROJECT MANAGEMENT		
Work Tasks	Objectives	Deliverables
3.1 Project Management	<ul style="list-style-type: none"> <li>Actively manage the activities, communication, and deliverables to provide high-quality work products and timely service</li> </ul>	<ul style="list-style-type: none"> <li>Project Kickoff meeting</li> <li>Meeting agendas minutes and presentation materials</li> </ul>
3.2 Quality Control/Quality Assurance	<ul style="list-style-type: none"> <li>Provide independent technical review to verify all work products are accurate, complete, and consistent with project scope of work, requirements, industry standards, and meet quality expectations</li> </ul>	<ul style="list-style-type: none"> <li>Monthly progress reports</li> <li>Monthly invoices and project schedules</li> </ul>
OPTIONAL TASK 4. OTHER SERVICES		
Work Tasks	Objectives	Deliverables
4.1 Criticality Assessment 4.2 Performance Data Analysis 4.3 Level 2 Field Assessment 4.4 Long-Term Project Cost Estimate & Schedule	<ul style="list-style-type: none"> <li>Provide optional services that are value added to the assessment</li> </ul>	<ul style="list-style-type: none"> <li>If these options are selected, Draft and Final Technical Memorandum summarizing results</li> <li>Database and spreadsheet files used to develop performance analyses</li> <li>Detailed project descriptions, cost estimates, and schedules for Long-term projects included in Condition Assessment Report</li> </ul>

## TASK 1. PRELIMINARY PHASE

### OBJECTIVE: DEVELOP A CONDITION ASSESSMENT PLAN THAT SUPPORTS A LONG-TERM SUSTAINABLE ASSET MANAGEMENT PROGRAM

#### TASK 1.1 REVIEW OF EXISTING UTILITY DOCUMENTS AND SITE INVESTIGATION

West Yost will prepare and maintain a list of items requested, the person responsible for collecting the information, when the information is needed by, and when the information was provided. We will also prioritize the Data Collection List to identify those items needed immediately versus items that will be needed later.

The data collection effort will include a review of the following:

- Asset listing from AMS and Lucity
- As-built drawings and records
- Network drawings and control system schematics
- O&M history from past 5 years, including information on raw water, partially treated water, treated water, and recent repairs or replacements
- Asset attributes for major equipment, including pump curves
- Previous condition assessments or other reports for WTP or BPS facilities
- Summary documentation of current capital improvement projects currently undergoing planning or design

Upon completion of review of available data, West Yost will meet with City staff, including engineering and O&M staff, at the WTP and BPS facilities to conduct a preliminary field assessment. We will gather information from informational interviews including:

- Confirmation of asset list
- Access constraints
- Confined space requirements
- Past O&M experiences
- Current facility constraints / issues
- Areas of concern and focus for analyses

#### TASK 1.2 PREPARE CONDITION ASSESSMENT PLAN AND SCHEDULE

A Condition Assessment Plan will be prepared for the systematic evaluation of assets for each facility.

A desktop analysis will be performed based on site visits and interviews conducted in Task 1.1. This analysis will evaluate preliminary performance requirements and the estimated remaining useful life of assets that are included in the asset registry. Based on informational interviews conducted in Task 1.1 and the desktop analysis, an assessment schedule will be developed and proposed to the City. The detailed schedule will outline facility sequencing and fieldwork windows, considering facility accessibility.

A progressive protocol will be developed to evaluate the condition of assets at each facility utilizing an initial assessment (Level 1) followed by more detailed optional assessment (Level 2), if recommended, based on asset criticality and initial observed condition.

The Condition Assessment Plan will include rating and assessment criteria for the systematic evaluation of assets at the WTP and BPS facilities. The condition scoring will be developed based on the following grading scale:

1. Excellent
2. Good
3. Fair

4. Poor
5. Immediate Action

Condition criteria will be in the following categories:

- Site/Civil
- Corrosion
- Coating
- Structural
- Mechanical
- Electrical, Instrumentation and Controls

The Condition Assessment Plan will include a guide for conducting the Level 1 assessment including processes to be taken out of service for assessment. The guide will include definitions for each assessment criteria with photographs demonstrating the various condition levels. This will support the current as well as future assessments and promote a consistent, qualitative evaluation over time.

A Workshop will be held with City staff to review and gather feedback on the Draft Condition Assessment Plan.

#### TASK 1 ASSUMPTIONS

- City will provide all requested data.
- City will provide single consolidated set of comments on the draft Condition Assessment Plan.
- Condition Assessment Plan Workshop will be one-hour in duration and held via Microsoft Teams. City staff will review the Draft Condition Assessment Plan ahead of the Workshop.

#### TASK 1 DELIVERABLES

- Prepare and submit a data request
- Summary notes from field visits and informational interviews
- Draft and Final Condition Assessment Plan
- Secure file sharing site
- Workshop presentation, agenda, and minutes

## TASK 2. CONDITION ASSESSMENT AND FINAL REPORT

**OBJECTIVE: PREPARE ASSESSMENTS OF THE EXISTING CONDITIONS OF THE WTP AND BPS FACILITIES. DEVELOP A SERIES OF NEAR- AND LONG-TERM IMPROVEMENTS TO ADDRESS DEFICIENCIES.**

### TASK 2.1 ASSET INVENTORY LIST

Using the data collected in Task 1.1, West Yost will develop and maintain an inventory list of assets at each facility to be inspected. The inventory list will house asset condition data, attributes, and remaining useful life. The asset inventory list will be updated throughout the project as data is developed. The asset inventory list will be provided to the City in a format to have data easily loaded into the City's Computerized Maintenance Management System (CMMS) platforms (AMS for the WTP and Lucity for the BPS facilities).

### TASK 2.2 LEVEL 1 FIELD ASSESSMENT

West Yost and the assessment team will conduct a Level 1 field assessment consisting of non-invasive inspection and testing of facility assets. The assessment will follow the methodology and criteria prepared in Task 1.2. The field assessments will be scheduled with City staff to obtain access. Overall field assessments activities are expected to require

up to three days of onsite work by West Yost and our subconsultants. The condition assessment team will consist of civil, process-mechanical, structural, instrumentation and controls, and electrical engineers experienced in the design, operation, and control of water facilities.

### **TASK 2.3 ASSESS THE CONDITION BASED ON THE LEVEL 1 FIELD ASSESSMENT**

Asset condition data collected in Tasks 1.1 through 2.2 will be evaluated to assign a condition score. The condition score will be applied to the asset, and a consolidated asset and facility score will be developed. The remaining useful life of each asset will be estimated using 1) data generated under Task 2, and 2) published service life information, where available.

Recommendations will be developed for each facility based on the results of Task 2.3 (and Optional Tasks 4.1, 4.2, and 4.3, if executed by the City). Each recommended improvement will be categorized as repair, replace in kind, or incorporate into City's CIP. Recommendations will include and/or identify:

- Immediate, near-term and long-term rehabilitation, reconditioning and/or repair to equipment and structures or modifications
- Further detailed analysis
- Re-inspection frequencies
- Maintenance modifications
- Repair or replacement analysis
- Prioritized repairs and replacements
- Implementation plan schedule and phasing

### **TASK 2.4 COST ESTIMATE AND SCHEDULE**

In accordance with Association for the Advancement of Cost Engineering (AACE) recommended practices, West Yost will prepare planning-level cost estimates for each asset action using a Class 5 AACE estimate, which reflects a very early project definition level of roughly 0 to 2 percent. Recommended improvement projects will be categorized into one of the following:

- Immediate (1 to 2 years)
- Near-term (2 to 5 years)
- Long-term (5 to 10 years)

Detailed project descriptions, cost estimates, and schedules will be prepared for Immediate (1 to 2 years) and Near-Term (2 to 5 years) projects. The development of cost estimates and schedule for Long-Term (5 to 10 years) projects is included in Optional Task 4.4. Should Optional Task 4.4 not be selected by the City, West Yost will include high-level descriptions of Long-Term projects in the 10-year schedule.

West Yost will prepare for and facilitate a two hour workshop with the City to gather and incorporate feedback on a preliminary improvement project 5-year schedule. Should the City choose for the optional task of evaluating long term (5 to 10 year) projects, then this workshop will include those as well. Improvement projects beyond the 10-year schedule will be identified for future consideration.

### **TASK 2.5 PREPARE DRAFT CONDITION ASSESSMENT REPORT**

A draft report summarizing evaluation, findings, and recommendations will be produced and will include the analysis and all condition-based recommendations. A draft report will be produced and submitted to the City for review and comment. Four hard copies and one electronic copy will be submitted.

West Yost will prepare for and lead a workshop presenting the draft report to City staff.

## TASK 2.6 FINAL CONDITION ASSESSMENT REPORT

Upon receipt of City comments, West Yost will produce a final report. One electronic copy will be submitted.

### TASK 2 ASSUMPTIONS

- Knowledgeable operations and maintenance staff will be present for the field assessments. It is assumed the City will open any electrical panels required for assessment and implement all lock out/tag out safety measures.
- Costs for each improvement project at a Class 5 AACE level.
- Workshops will be hosted via Microsoft Teams.
- City will provide a single consolidated set of comments on draft Condition Assessment Report.
- Condition Assessments will be performed following the Condition Assessment Plan. Processes will only be taken out of service according to the Condition Assessment Plan.

### TASK 2 DELIVERABLES

- Updated asset inventory list with condition data
- Preparation and leadership of a draft improvement project schedule review workshop
- Database and spreadsheet files used to develop data analysis
- Preparation and leadership of a draft report review workshop
- Draft and Final Condition Assessment Report

## TASK 3. PROJECT MANAGEMENT

**OBJECTIVE: ACTIVELY MANAGE THE ACTIVITIES, COMMUNICATION, AND DELIVERABLES TO PROVIDE HIGH-QUALITY WORK PRODUCTS AND TIMELY SERVICE.**

### TASK 3.1 PROJECT MANAGEMENT

West Yost will coordinate and attend a Kickoff Meeting with City staff and West Yost's Project Manager and Project Engineer. West Yost will prepare and submit an agenda in advance of the meeting, and notes will be provided to the City within one week after the meeting.

West Yost will coordinate and attend biweekly Progress Meetings with key City staff. The Project Manager will attend the biweekly meetings, with other key staff attending as necessary, depending on meeting agenda. Meetings will cover critical path items, schedule, budget, and any other issues requiring attention, and review interim results, as needed.

West Yost will submit an initial schedule with pertinent milestones for the major tasks involved in the project. The schedule will be updated monthly, or more often, as required. West Yost will manage the project team to meet schedule and budget requirements. Monthly project progress reports will be submitted that provide a summary of the project's progress for the most recent calendar month and include the following as a minimum: summary of work completed by task, list of proposed activities for the upcoming month, list of pending information needed to support the planned activities, percent complete/budget status summary, and an updated project schedule. Monthly invoices will be submitted representing all work performed for the preceding billing period and as captured in the monthly progress report.

### TASK 3.2 QUALITY CONTROL/QUALITY ASSURANCE

West Yost will provide internal QA/QC of all submittals prior to submitting to the City.

The Project Manager and a senior staff member not directly involved in the project will conduct technical reviews of all work products. This technical review team represents staff with focused experience in condition assessment and asset management and will review all technical products prior to issue.

### TASK 3 ASSUMPTIONS

- Budgeting assumes up to 9-month project duration.
- Kickoff Meeting is assumed to be a one-hour in-person meeting attended by key City staff.
- Bi-weekly progress meetings are assumed to be 30-minutes in duration and will be held via Microsoft Teams, unless otherwise noted.

### TASK 3 DELIVERABLES

- Project Kickoff meeting
- Meeting agendas and minutes
- Monthly progress reports
- Monthly invoices and project schedules

## TASK 4. OTHER SERVICES (OPTIONAL)

### OBJECTIVE: PROVIDE OPTIONAL SERVICES THAT ARE VALUE ADDED TO THE ASSESSMENT

#### TASK 4.1 CRITICALITY ASSESSMENT

Asset criticality if not currently defined at each asset for the WTP and BPS facilities, and therefore, without this optional task, the general criticality is what will be used for the risk assessment. If the City chooses this optional service, West Yost will lead an evaluation of asset criticality for a refined evaluation of asset risk to prioritize repair and replacement. West Yost will meet with the City to confirm the criteria and make any adjustments deemed necessary. The Criticality Assessment will be used in Task 2 to determine the risk rating for each asset to inform asset and facility prioritization.

#### TASK 4.1 DELIVERABLE

- Draft and final TM documenting the criticality assignment as an appendix to the Condition Assessment Report

#### TASK 4.2 PERFORMANCE DATA ANALYSIS

West Yost will review and analyze five years' (July 2020 through July 2025) of raw and treated water quality data from the WTP as well as additional data provided by the City that represent unusual and more challenging source water quality events. The purpose of the analysis will be to inform 1) an initial evaluation of the existing WTP's ability to produce regulatory-compliant treated water and to satisfy expectations, and 2) recommendations for optimizing the operation of the WTP by a limited number of staff, particularly during more challenging water quality conditions.

Key raw water quality parameters will include but are not limited to: turbidity (for raw, settled, and filter water); general mineral, total dissolved solids, hardness, alkalinity and pH data; microbiological data (including data for Cryptosporidium, Giardia, total and/or fecal coliforms, and E. coli); total organic carbon (TOC); dissolved organic carbon (DOC); chemical dosage data; and lead and copper monitoring data.

#### TASK 4.2 ASSUMPTIONS

- The City will provide five years (2020 through 2025) of raw and treated water quality data for the existing WTP, including all testing conducted during this period, as well as additional relevant data from unusual or more challenging events in earlier periods.

#### TASK 4.2 DELIVERABLES

- Draft and final TM documenting the analysis results as an appendix to the Condition Assessment Report
- Database and spreadsheet files used to develop performance analyses

## TASK 4.3 LEVEL 2 FIELD ASSESSMENT

Based on the findings of Tasks 2.2 and 2.3, more invasive Level 2 field assessments may be recommended. Level 2 field assessments will vary in scope depending on the observed condition of each asset during the Level 1 field assessments and the type of assets in question. If a Level 2 field assessment triggers the need for CEQA, we will include that in this proposed optional task.

The cost of each Level 2 field assessment will vary depending on the type of testing required. The actual scope and fee will be mutually agreed upon between West Yost and the City prior to performing any work.

### 4.3.1 FILTERS LEVEL 2 FIELD ASSESSMENT

Based on conversations with staff, we are recommending a Level 2 field assessment to be performed to assess the filters.

This task will focus on:

- Developing a clear understanding of the **practical, reliable filtration capacity** of the existing filters, particularly as the Water Treatment Plant approaches buildout flows.
- Performing a **Level 2 condition assessment of key components** of the existing filter systems

The evaluation will be used to inform capital planning decisions related to filter rehabilitation, expansion, and supporting infrastructure improvements.

#### SCOPE OF SERVICES

West Yost will perform a focused evaluation of filtration system performance using a combination of historical data review, targeted analysis, and limited field testing as appropriate. The task will include the following elements:

##### 1. Historical Performance Data Review

West Yost will review available historical filter performance data, including filter run times, unit filter run volume (UFRV), headloss development, effluent turbidity trends, and backwash frequency. Performance will be evaluated across a range of operating conditions to identify patterns associated with increasing filtration rates and varying source water quality.

##### 2. Correlation to Filtration Rate and Operational Constraints

Performance trends will be correlated to approximate filtration loading rates (gpm/SF), seasonal operating conditions, and known operational constraints, including backwash scheduling practices and residuals handling capacity. The analysis will focus on identifying filtration rate thresholds beyond which performance degrades disproportionately, such as significant reductions in run time or increased backwash frequency.

##### 3. Limited Filter Challenge Testing (If Warranted)

If historical data are insufficient to confirm observed or predicted performance limitations, West Yost will support limited, full-scale filter challenge testing on a small number of filters. Challenge testing, if conducted, will be:

- Limited to two selected filters, one from each set (1998 generation filters and 2004 generation filters);
- Performed at incrementally elevated filtration rates coordinated with Operations staff;
- Executed primarily by City staff, with West Yost providing test protocols, monitoring guidance, and data interpretation.

Challenge testing will focus on evaluating filter run time, UFRV, headloss development, and effluent turbidity stability at higher loading rates. Testing will be conducted in a manner that minimizes disruption to plant operations.

#### 4. Filter Facility Hydraulic “Fatal Flaws” Review

West Yost will perform a cursory review of available filter facility hydraulic profiles, record drawings, and operational information to identify potential hydraulic constraints or “fatal flaws” that may not be limiting filter performance under current conditions but could exacerbate performance issues at higher filtration rates. This review will focus on filter influent and effluent hydraulics, balancing provisions, and control elements. This effort is intended as a screening-level evaluation and will not include development of new hydraulic models.

#### 5. Filter Media, Trough, Concrete, and Underdrain Surveillance (Level 2 Assessment)

This task will provide a targeted evaluation of filter media condition, verify the bed depths of anthracite and sand per filter design criteria, filter box concrete, filter troughs, and underdrain configuration to determine whether these components are contributing to observed filtration performance limitations or are reaching end of useful life. The scope is intended to replicate key elements of prior filter surveillance studies conducted at the WTP while remaining appropriately bounded and non-intrusive.

West Yost will perform filter media and underdrain surveillance on a limited number of representative filters, coordinated with City Operations staff. The task will include the following elements:

##### a) Selection of Representative Filters

In coordination with City staff, West Yost will select two filters for surveillance, representing the two primary filter design “generations” at the facility.

##### b) Filter Troughs and Concrete Condition Assessment

West Yost will perform a visual and functional assessment of filter troughs and accessible concrete surfaces within the selected filters. This assessment will include:

- Visual evaluation of trough alignment, levelness, spacing, and apparent deformation and corrosion;
- Identification of conditions that could contribute to uneven backwash distribution, short-circuiting, or localized media disturbance;
- Visual assessment of concrete surfaces for cracking, spalling, surface degradation, or other signs of distress that could affect filter performance or long-term durability.
- The assessment will be based on field observations, available record drawings, and operational input. This effort is intended to identify performance-relevant condition issues and does not include structural analysis, load rating, or design of concrete repairs.

##### c) Filter Media Surveillance

- West Yost will support filter surveillance activities similar to those performed in prior studies, including:
- Measurement of media depths and freeboard;
- Visual observation of media condition and stratification;
- Collection of media core samples (anthracite and sand) for laboratory analysis.

Media sampling and laboratory testing will be performed by a third-party laboratory contracted directly by the City. West Yost will review and interpret laboratory results, including effective size, uniformity coefficient, and comparison to design criteria and prior test results.

##### d) Underdrain Configuration and Failure-Mode Assessment

West Yost will evaluate the installed underdrain system based on available record documents, as-built drawings, manufacturer information, and known failure modes for the installed technology. This evaluation will assess whether the underdrain design could plausibly contribute to uneven flow distribution, localized clogging, or early turbidity breakthrough. Intrusive inspection of underdrain plenums is not included in this task.

## e) Comparison to Prior Surveillance Results

Findings from the current surveillance will be compared to results from prior filter surveillance studies, if available, to identify trends in media loss, changes in media characteristics, or emerging issues that may affect long-term performance.

## 6. Findings and Documentation

Results from Task 4.3 will be summarized in a technical memorandum or incorporated into the Condition Assessment Report. Findings will be used to inform remaining useful life estimates, rehabilitation planning, and evaluation of whether observed performance limitations are primarily media-related, hydraulic, or operational in nature. Findings will also identify whether filter trough condition or concrete distress may be contributing to localized performance issues or should be considered in future rehabilitation or replacement planning. Findings will be framed in terms of:

- Reliable continuous filtration capacity;
- Short-term peak or contingency operation;
- Implications for filter rehabilitation, expansion, and supporting infrastructure.

### SCOPE LIMITATIONS

Tasks 4.3.1 does not include:

- Development of detailed hydraulic models;
- Evaluation of concrete and trough condition will be limited to visual and functional observations and will not include structural analysis, material testing, or development of repair details.
- Intrusive inspection of underdrain plenums;
- Full-scale rehabilitation design or construction services;
- Expanded challenge testing beyond the limited scope described above.

Any additional testing or intrusive evaluation beyond this scope would require separate authorization.

#### TASK 4.3 ASSUMPTIONS

- For 4.3.1, the City will secure services for sampling and laboratory analysis for filter media on two sets of filters
- Additional Level 2 field assessments that may be identified during the Level 1 field assessments are not included in this optional scope. The detail of level 2 analysis is currently limited to the filters as described in this task. West Yost will be happy to submit additional proposals for level 2 assessments per the City's request

#### TASK 4.3 DELIVERABLES

- For 4.3.1, the Filter Level 2 Field Assessment findings will be produced in a technical memorandum to be included in the Condition Assessment Report

### TASK 4.4 LONG-TERM PROJECT COST ESTIMATES AND SCHEDULE

In accordance with Association for the Advancement of Cost Engineering (AACE) recommended practices, West Yost will prepare planning-level cost estimates for each asset action identified as Long-Term (5 to 10 years) in Task 2.4 using a Class 5 AACE estimate, which reflects a very early project definition level of roughly 0 to 2 percent.

#### TASK 4.4 DELIVERABLES

- Project descriptions, schedules, and estimates will be included in the Condition Assessment Report

The RFP assumes a baseline of 900 total project hours. Our base scope is consistent with this assumption. The proposal includes 238 additional hours associated with Optional Tasks 4.1 through 4.4, which we believe meaningfully enhance the City's ability to translate condition findings into actionable, long-term planning decisions. These tasks are identified separately, as required by the RFP, a more detailed explanation of West Yost's rationale for inclusion is also provided in the cost proposal cover letter.

TASK HOURS BY TEAM MEMBER	Kelye McKinney, PE, Principal-in-Charge	Dianna Jensen, PE, Project Manager	Andy Smith, PE, Civil/Site Mechanical	Ryan Morgan, PE, Civil/Site Mechanical	Anne Girtz, PE, Planning and Implmnt.	Rachel Shonwit, EIT, Deputy PM	Austin Oerding, Civil/Site Mechanical	Tara Mertz, Elect., I&C, and SCADA	Greg Williamson, PE, Elect., I&C, and SCADA	Christian Neher, EIT, Elect., I&C, and SCADA	J.P. Davis, PE, CCM, QSP, Planning and Implmnt.	Steve Polillo, Civil/Site Mechanical	Admin IV	Tim Banyai, PE, QA/QC Reviewer	V&A	TJC	LABOR HOURS
<b>Task 1. Preliminary Phase</b>																	
Subtask 1.1 Review of Existing Utility Documents and Site Investigation		4	2	2		20	4		2	2	4			2		16	58
Subtask 1.2 Prepare Condition Assessment Plan and Schedule		8	2			32							8	2		32	84
<b>Subtotal, Task 1 (hours)</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>52</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>4</b>	<b>10</b>	<b>48</b>	<b>152</b>
<b>Task 2. Condition Assessment and Final Report</b>																	
Subtask 2.1 Asset Inventory List					4	12											16
Subtask 2.2 Inspection and Testing			24	24			24		24	24		8			46	40	214
Subtask 2.3 Assess the Condition Based on the Inspection			16	20	8	12		4	8	8							76
Subtask 2.4 Cost Estimate and Schedule		8	20	20	8	8		2	8	8							82
Subtask 2.5 Prepare Draft Condition Assessment Report		8			16	40							8		82	58	212
Subtask 2.6 Prepare Final Condition Assessment Report		2			4	8							4				18
<b>Subtotal, Task 2 (hours)</b>	<b>0</b>	<b>18</b>	<b>60</b>	<b>64</b>	<b>40</b>	<b>80</b>	<b>24</b>	<b>6</b>	<b>40</b>	<b>40</b>	<b>0</b>	<b>8</b>	<b>12</b>	<b>0</b>	<b>128</b>	<b>98</b>	<b>618</b>
<b>Task 3. Project Management</b>																	
Subtask 3.1 Project Management	8	32				16									22	24	102
Subtask 3.2 Quality Control / Quality Assurance	12													16			28
<b>Subtotal, Task 3 (hours)</b>	<b>20</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>22</b>	<b>24</b>	<b>130</b>
<b>Task 4. Other Services (Optional)</b>																	
Task 4.1 Review of Existing Utility Documents and Site Investigation	2	4			16	32							4				58
Task 4.2 Prepare Condition Assessment Plan and Schedule		4	40			4	16	24					8	4			100
Task 4.3 Level 2 Field Assessment		1	51			126							4	10	10	10	212
Task 4.4 Long-Term Project Cost Estimate and Schedule		4	20	20	4	4			8	8				2			70
<b>Subtotal, Task 4 (hours) OPTIONAL</b>	<b>2</b>	<b>9</b>	<b>71</b>	<b>20</b>	<b>20</b>	<b>162</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>12</b>	<b>10</b>	<b>10</b>	<b>340</b>
<b>TOTAL w/o Optional Tasks</b>	<b>20</b>	<b>62</b>	<b>64</b>	<b>66</b>	<b>40</b>	<b>148</b>	<b>28</b>	<b>6</b>	<b>42</b>	<b>42</b>	<b>4</b>	<b>8</b>	<b>20</b>	<b>20</b>	<b>160</b>	<b>170</b>	<b>900</b>
<b>TOTAL with Optional Tasks</b>	<b>22</b>	<b>71</b>	<b>135</b>	<b>86</b>	<b>60</b>	<b>310</b>	<b>28</b>	<b>6</b>	<b>50</b>	<b>50</b>	<b>4</b>	<b>8</b>	<b>28</b>	<b>22</b>	<b>170</b>	<b>180</b>	<b>1240</b>

#### 4. PROJECT SCHEDULE

	DURATION	START	FINISH	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC
<b>WTP and BPS Condition Assessments</b>	38 weeks	3/16/2026	12/4/2026										
Notice to Proceed	0 days	3/16/2026	3/16/2026										
<b>Task 1. Preliminary Phase</b>													
1.1. Review of Existing Utility Documents and Site Investigation	4 weeks	3/23/2026	4/24/2026										
Field Visits and Staff Interviews	1 week	4/20/2026	4/24/2026										
1.2. Prepare Assessment Plan and Schedule	6 weeks	3/23/2026	5/8/2026										
Draft Condition Assessment Plan	1 week	5/4/2026	5/8/2026										
Final Condition Assessment Plan	1 week	5/18/2026	5/22/2026										
<b>Task 2. Condition Assessment and Final Report</b>													
2.1 Asset Inventory List	38 weeks	4/13/2026	12/4/2026										
2.2 Level 1 Field Assessment	3 weeks	6/1/2026	6/19/2026										
2.3 Assess the Condition Based on the Level 1 Field Assessment	12 weeks	6/22/2026	9/11/2026										
2.4 Cost Estimate and Schedule	4 weeks	8/31/2026	9/25/2026										
2.5 Prepare Draft Condition Assessment Report	3 weeks	9/28/2026	10/16/2026										
2.6 Prepare Final Condition Assessment Report	3 weeks	11/16/2026	12/4/2026										
<b>Task 3. Project Management</b>													
3.1 Project Management	38 weeks	3/16/2026	12/4/2026										
3.2 Quality Control / Quality Assurance	38 weeks	3/16/2026	12/4/2026										
<b>Optional Task 4. Other Services</b>													
4.1 Criticality Assessment	4 weeks	3/30/2026	5/1/2026										
4.2 Performance Data Analysis	6 weeks	5/4/2026	6/12/2026										
4.3 Level 2 Field Assessments	4 weeks	7/13/2026	8/14/2026										
4.4 Long-Term Project Cost Estimates and Schedule	4 weeks	8/31/2026	9/25/2026										

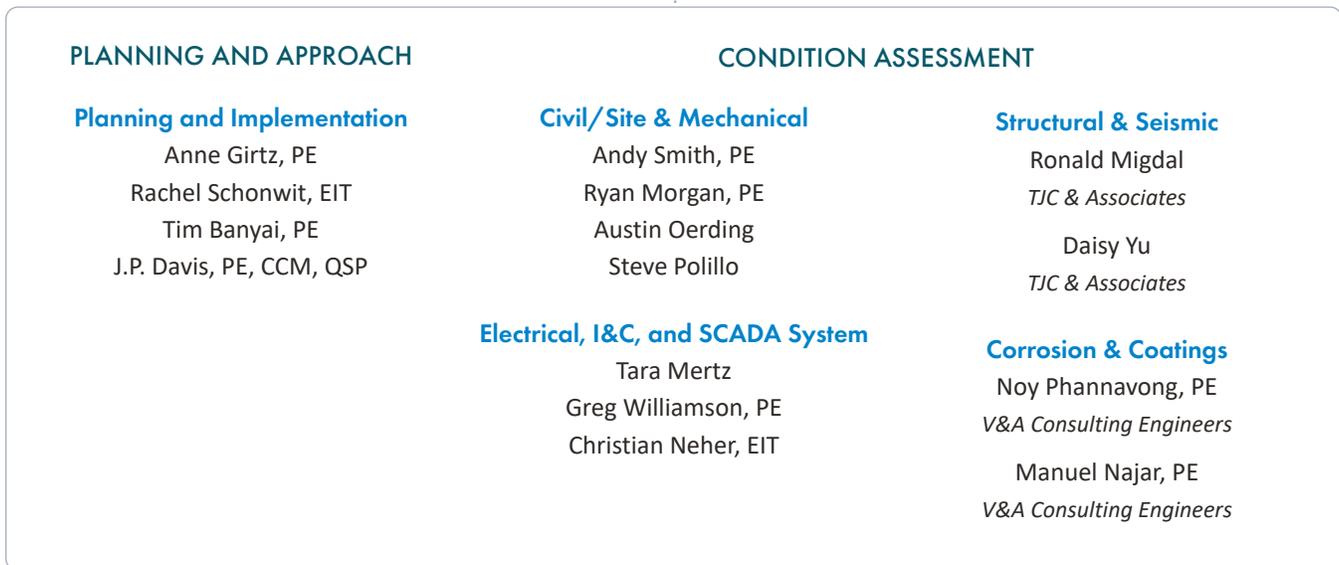
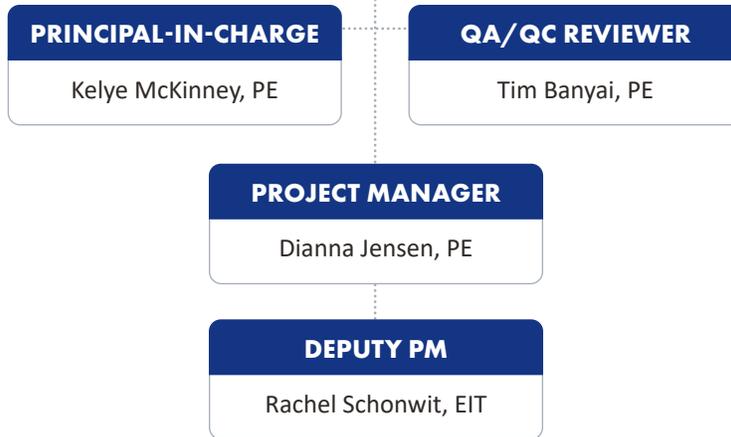
#### KEY

- Task
- Milestone

## 5. PROJECT TEAM QUALIFICATIONS AND EXPERIENCE



CITY OF  
**FOLSOM**  
DISTINCTIVE BY NATURE



### TEAM ORGANIZATION

To support the City of Folsom’s Water Treatment Plant and Booster Pump Station condition assessment, we have assembled a team with extensive experience in water treatment facilities, booster pump stations, and multidisciplinary asset evaluations. Our team includes specialized subconsultants providing structural and corrosion expertise to support targeted assessments. Resumes for our project team are included in **Appendix A** of this proposal.

**KEY STAFF:** West Yost key staff include the following team members.



**Dianna Jensen, PE**

**Project Manager: Asset Management Program Support, Condition Assessment & Recommendations**

Dianna brings decades of experience in both the public and private sectors, specializing in public works and water resources. She is a proven leader with a track record of progressive responsibility. Dianna is skilled at building strong cross-departmental relationships, improving operational efficiency, and leading high-profile initiatives involving diverse stakeholders.

**SIMILAR PROJECT EXPERIENCE**

- West Yost Asset Management Business Sector Leader
- City of Davis, CA: Public Works Director/City Engineer
- City of Davis, CA: Water Operations Manager
- Ontario Municipal Utilities Company, City of Ontario, CA: Asset Management Program QA/QC



**Rachel Schonwit, EIT**

**Deputy Project Manager: Planning, Implementation; Recommendations - Remaining Useful Life, R&R Planning**

Rachel has specialized experience in Enterprise Asset Management implementation. She executes projects aligned with client objectives and goals. Her asset management experience includes condition assessments, risk assessments, renewal prioritization, utility performance, and metric benchmarking.

**SIMILAR PROJECT EXPERIENCE**

- Asset Management Plan and Hydraulic Model, Ross Valley Sanitary District, CA: Project Engineer
- Ben E. Nutter Terminal Sewer Rehabilitation, Port of Oakland, Oakland, CA: Deputy Project Manager/Pipeline Condition Assessment Lead
- Design Services for Sanitary Sewer Lift Stations and Pipeline Rehabilitation at Oakland International Airport, Port of Oakland, CA: Deputy Project Manager and Project Engineer



**Kelye McKinney, PE**

**Principal-in-Charge**

Kelye has over thirty years' experience serving in the public and private sector focused on water resources and utility development and capital improvements. She is a detailed project and program manager, as well as trusted owner's advisor. She serves as Principal-in-Charge on projects for West Yost northern California clients and is focused on meeting client needs through appropriate project resourcing and regular communication

**SIMILAR PROJECT EXPERIENCE**

- Fruitridge Vista System Valuation, Sacramento, CA: Project Manager / Principal-in-Charge
- Wastewater and Drainage Sump Station Facilities Station Condition Assessment, City of Sacramento, CA: Principal-in-Charge
- Wells 80, 81, 82, 83 and 84, Sacramento Suburban Water District, CA: Project Manager / Owner's Representative
- Water Master Plan Update, City of Lincoln, CA: Principal-in-Charge



**Tim Banyai, PE**

**QA/QC Reviewer: Planning and Approach - Planning and Implementation**

Tim has decades of experience developing master plans and detailed designs for wastewater and collection systems including conditions assessment. Tim has served as project manager, lead project engineer, technical advisor, and quality control reviewer for these projects. Tim has also performed over 100 condition assessments on treatment plants and pumping stations. Tim has a strong record of developing cost-effective and innovative solutions and is known for managing multi-disciplinary teams for infrastructure improvement projects. He also has direct experience as an operator for a treatment plant, providing unique insights for successful implementation.

**SIMILAR PROJECT EXPERIENCE**

- Wastewater and Drainage Sump Station Facilities Station Condition Assessment, City of Sacramento, CA: QA/QC Reviewer and Senior Technical Advisor
- WTP Master Plan Condition Assessment for WTPs and PS, City of Albany, CA: Condition Assessment Lead and Technical Reviewer
- WWTP Master Plan Condition Assessment for WWTP and PS, Corvallis, OR: Condition Assessment Lead
- PS Condition Assessment, Los Angeles County Sanitation Districts, CA: Technical Advisor and QA/QC Reviewer
- Collection System Master Plan PS Condition Assessment, South Lake Tahoe, CA: Pump Station Condition Assessment Lead
- Pump Station Condition Assessment, City of Carlsbad, CA: Senior Technical Reviewer
- WTP and Well Condition Assessment, City of Oceanside CA: Condition Assessment Lead and Project Manager



**Anne Girtz, PE**

**Planning Approach: Planning and Implementation; Recommendations - Remaining Useful Life, R&R Planning**

Anne has more than ten years of experience in planning, design, asset management, and condition assessment of municipal utilities. She is an expert in InfoAsset modeling software and uses it as a tool for helping clients identify and manage risk in collection systems, storm sewer systems, and water distribution systems. Anne is currently serving as deputy project manager and task lead for the sanitary sewer collection system condition assessment programs for both the seaport and airport at the Port of Oakland. She holds certification in the NASSCO Pipeline Assessment Certification Program.

**SIMILAR PROJECT EXPERIENCE**

- Wastewater and Drainage Sump Station Facilities Station Condition Assessment, City of Sacramento, CA: Risk Assessment Engineer
- Water System Master Plan and Strategic Asset Management Plan, City of Dixon, CA: Asset Management Lead
- Ben E. Nutter Terminal Sewer Rehabilitation, Port of Oakland, Oakland, CA: Deputy Project Manager/Pipeline Condition Assessment Lead



**J.P. Davis, PE, CCM, QSP**    **Planning Approach: Planning and Implementation**

J.P. brings extensive construction management experience on water and wastewater facilities, with direct knowledge of the City of Folsom’s WTP from serving as Construction Manager for the Actiflo and filtration upgrades. His familiarity with the plant’s systems, past design decisions, and operational constraints provides valuable context for evaluating current conditions and identifying practical improvement strategies. J.P. specializes in constructability, field problem-solving, and translating operational challenges into implementable solutions. For this project, he will support field assessments and review recommendations to confirm they reflect how the facility functions in practice and can be delivered with minimal operational disruption.

**SIMILAR PROJECT EXPERIENCE**

- Water Treatment Plant Pretreatment System Improvements, City of Folsom, CA: Construction Manager
- Water Treatment Plant Filter and Actiflo Expansion (Phase 4B), City of Folsom, CA: Resident Engineer and Lead Inspector
- Zone 2 and 3 Cimarron Pump Station Improvements, City of Folsom, CA: Resident Engineer and Lead Inspector
- Headworks, Dryden Box, and Influent Flume Improvements, City of Modesto, CA: Construction Manager
- Shasta Park Water Facility, City of Sacramento, CA: Project Manager / Construction Manager



**Andy Smith, PE**    **Condition Assessment: Water Treatment Plant and Water Booster Pump Stations Civil/Site & Mechanical; Recommendations - Capital Improvements and Cost Estimating**

Andy brings two decades of experience in treatment facility planning, condition assessment, process mechanical design, and implementation support. He has led evaluations of pretreatment processes, filtration systems, chemical storage and feed facilities, pumping systems, and residuals handling infrastructure for municipal agencies across the region. Andy specializes in developing practical, defensible recommendations that balance operational needs, system reliability, and long-term capital planning. His work includes condition assessments for complex, aging treatment plants as well as designs for greenfield surface water treatment facilities.

**SIMILAR PROJECT EXPERIENCE**

- WTP Condition Assessments and Master Plan, City of Fairfield, CA: Task Manager and Treatment Facilities Condition Assessment Lead
- Louis Stralla WTP Condition Assessment, St. Helena, CA: Project Manager
- River Park Pump Station Condition Assessment, Napa Sanitation District, Napa, CA: Project Manager
- North Bay Regional Water Treatment Plant Expansion Program Management and Planning, Cities of Fairfield and Vacaville, CA: Program Planning Lead and Senior Treatment Engineer



**Ryan Morgan, PE**

**Condition Assessment: Water Treatment Plant and Water Booster Pump Stations Civil/Site & Mechanical; Recommendations - Capital Improvements and Cost Estimating**

Ryan has 20 years of experience in engineering design, project management, and construction support for municipal water and wastewater infrastructure. He has led projects across all phases of planning, design, bidding, and construction for pump stations, treatment facilities, and linear infrastructure. Ryan brings experience from both the public and private sectors and is an effective team leader, guiding multidisciplinary teams to deliver complex capital improvement projects efficiently and reliably.

**SIMILAR PROJECT EXPERIENCE**

- Rockhoff Pump Station Project, Rincon del Diablo MWD, Escondido, CA: Project Manager
- Miramar Pump Station Rehabilitation Project, San Diego County Water Authority, San Diego, CA: Project Engineer
- Coggan Pump Station Improvement Project, Vallecitos Water District, San Marcos, CA: Owner’s Representative/ Project Manager
- Meadowlark WRF Chlorine Contact Tank Expansion Project, Vallecitos Water District, San Marcos, CA: Owner’s Representative / Project Manager



**Tara Mertz**

**Condition Assessment: Electrical, Instrumentation, and Controls & SCADA System**

Tara is an Information Technology (IT) and Operational Technology (OT) professional with over 20 years’ experience in capital improvement project planning and IT/OT systems improvements implementation. Since joining West Yost four years ago, Tara has completed several SCADA/OT condition assessments and performed dozens of cybersecurity risk assessments.

**SIMILAR PROJECT EXPERIENCE**

- Louis Stralla WTP Condition Assessment, City of St Helena, CA: Electrical, Instrumentation, and Controls Condition Assessment Lead
- AWIA WTP RRA-ERP 5-year update, City of Folsom, CA: Cybersecurity and Operational Technology Lead
- Water Reclamation Facility SCADA Improvements, City of Lone, CA: SCADA Technical Lead



**Greg Williamson**

**Condition Assessment: Electrical, Instrumentation, and Controls & SCADA System**

Greg is an electrical Engineer with over a decade of experience in power distribution, control panel design, and automation systems across multiple industries. He specializes in power distribution design, UL 508A control panel design, P&ID development, PLC/HMI programming, and SCADA integration.

**SIMILAR PROJECT EXPERIENCE**

- RWRF Improvement Project, Medford, OR: Electrical Engineer
- Summit Water Treatment Plant Water Quality Upgrade Project, San Gabriel Valley Water Company, Rialto, CA: Electrical Engineer
- H-Street Pump Station Upgrade Project, Davis, CA: Engineer of Record, Electrical



**Christian Neher, EIT**

**Condition Assessment: Electrical, Instrumentation, and Controls & SCADA System**

Christian is an OT Technical Specialist with experience in PLC/HMI programming, electrical and instrumentation condition assessments, system startup support, SCADA master planning, and supports I&C design projects. He works closely with clients to troubleshoot issues, improve system performance, and implement practical upgrades across water and wastewater facilities.

**SIMILAR PROJECT EXPERIENCE**

- SCADA Asset Inventory Update, City of Davis, CA: Electrical and SCADA Asset Assessment Engineer
- H-Street Pump Station Upgrade Project, City of Davis, CA: SCADA and Controls Engineer/Construction Phase Support
- Northwest Water Reclamation Facility Design Project, Tucson, AZ: Electrical and Controls Design Support
- Hidden Valley Lake CSD Implementation Plan Development, CA: Deputy Project Manager and SCADA Implementation Planning Lead
- Water Reclamation Facility SCADA Improvements, City of Lone, CA: SCADA Project Engineer

**SUBCONSULTANTS**



**Ronald Migdal**  
TJC and Associates, Inc.

**Condition Assessment: Structural and Seismic**



Ronald specializes in structural and seismic evaluation of water and wastewater infrastructure. He provides code-based structural reviews, seismic vulnerability screening, and retrofit recommendations for treatment facilities and pump stations, with a focus on safety, constructability, and long-term system reliability.

**SIMILAR PROJECT EXPERIENCE**

- Upper Llagas Creek Flood Protection Project; Valley Water, Morgan Hill, CA: QA/QC and Calculations
- Lift Station Condition Assessment Project; Valley Sanitary District, Indio, CA: Structural Evaluation



**Noy Phannavong, PE**  
V&A Consulting Engineers

**Condition Assessment: Corrosion and Coatings**



Noy is a corrosion and protective coatings specialist with extensive experience assessing metallic and concrete assets at treatment plants and pump stations. He identifies deterioration mechanisms, evaluates coating performance, and develops practical rehabilitation strategies that extend asset life and reduce long-term maintenance risk.

**SIMILAR PROJECT EXPERIENCE**

- Wastewater and Drainage Sump Station Facilities Condition Assessments, City of Sacramento, CA: Conditions Assessment
- On-Call Condition Assessment and Engineering, Sacramento Regional County Sanitation District, CA: Conditions Assessment

## REPRESENTATIVE PROJECTS

West Yost's recent work includes a portfolio of condition assessments for water treatment plants and pumping facilities that directly aligns with the City's requirements. Our team exceeds this threshold through a combination of dedicated treatment plant assessments and integrated evaluations that included both treatment and pumping assets. The following representative projects demonstrate our multidisciplinary assessment capabilities, familiarity with facilities similar in size and complexity to Folsom's system, and ability to deliver practical, risk-based recommendations that support long-term capital planning and operational reliability.

### CONDITIONS ASSESSMENTS – WATER TREATMENT PLANTS



#### WATER TREATMENT PLANT CONDITION ASSESSMENT, CITY OF ST. HELENA, CA

West Yost completed a comprehensive condition and performance assessment of the Louis Stralla Water Treatment Plant, the City's sole surface water treatment facility. The evaluation focused on understanding existing system condition, identifying process constraints, and developing recommendations to support near-term operational reliability and long-term capital planning.

#### REPRESENTATIVE SCOPE

- Developed an asset inventory from available documentation
- Conducted multidisciplinary field evaluations across all treatment processes and equipment
- Assessed condition, performance, and remaining useful life for major process components
- Identified operational constraints and recommended process and equipment improvements
- Prepared capital planning recommendations for near- and long-term facility needs

#### PROJECT VALUE AND STRATEGIC IMPACT

The assessment provided the City with clear, defensible information to prioritize system upgrades, support operational decision-making, and plan for future reinvestment in the City's only surface water treatment facility.



#### WATERMAN AND NORTH BAY REGIONAL WATER TREATMENT PLANT CONDITION ASSESSMENTS, CITY OF FAIRFIELD, CA

West Yost conducted comprehensive condition assessments for both of the City of Fairfield's critical water treatment facilities, the Waterman Water Treatment Plant and the North Bay Regional Water Treatment Plant (NBRWTP). These strategic infrastructure evaluations provided the City with essential data to support long-term asset management, capital planning, and operational optimization decisions for facilities serving approximately 220,000 people in Fairfield and Vacaville. As part of the City's Water Master Plan

development, our team performed detailed condition assessments of both treatment facilities, which collectively treat 70 MGD of surface water from Lake Berryessa and the North Bay Aqueduct.

## REPRESENTATIVE SCOPE

- Coordinated multidisciplinary onsite assessments of structural, mechanical, electrical, and process systems
- Evaluated treatment performance using historical raw and finished water quality data
- Assessed hydraulic capacity and operational constraints for current and future flows
- Documented condition and remaining useful life for critical equipment and facilities
- Developed prioritized improvements and planning-level costs

## PROJECT VALUE AND STRATEGIC IMPACT

These condition assessments provided the City of Fairfield with actionable intelligence to optimize treatment plant operations, prioritize capital investments based on asset condition and risk assessment, and ensure continued regulatory compliance and service reliability. The assessments established a comprehensive foundation for the City's ongoing asset management program and strategic capital improvement planning, ensuring these critical water treatment facilities continue to provide reliable, high-quality water service to the communities they serve.



## WASTEWATER TREATMENT PLANT CONDITION ASSESSMENT AND UPGRADE STRATEGY, CITY OF DAVIS, CA

West Yost has provided comprehensive planning, design, and condition assessment services for the City of Davis Water Pollution Control Plant (WPCP) since the 1990s, establishing a deep understanding of the facility's operations, challenges, and strategic improvement needs. This extensive relationship positions West Yost to deliver thorough condition assessments that support the City's long-term asset management and capital planning objectives.

## REPRESENTATIVE SCOPE

- Evaluated treatment capacity and process performance using a calibrated BioWin model
- Assessed key operational issues, including solids handling, sampling reliability, and digestion performance
- Reviewed condition and performance of the upgraded biological treatment and tertiary processes
- Identified process optimization and capital improvement needs
- Supported strategic planning for future recycled water and discharge reduction initiatives

## CONDITION ASSESSMENT DELIVERABLES AND STRATEGIC IMPACT

The comprehensive condition assessment provides the City with actionable operational recommendations to address identified issues, strategic facility performance optimization guidance, and data-driven foundation for future capital improvement planning. West Yost's systematic approach ensures continued regulatory compliance while supporting the City's long-term sustainability and operational efficiency objectives.

This condition assessment leverages West Yost's unparalleled knowledge of the Davis WPCP, combining decades of design and operational experience with advanced modeling capabilities to deliver strategic insights that support both immediate operational improvements and long-term asset management planning.

## CONDITIONS ASSESSMENTS – BOOSTER PUMP STATIONS



### WASTEWATER AND DRAINAGE SUMP STATION CONDITION ASSESSMENTS, CITY OF SACRAMENTO, CA

West Yost performed comprehensive condition assessments at ten critical booster pump stations for the City of Sacramento, establishing a strategic foundation for the City's asset management approach and long-term capital improvement planning. **This pilot program served as a model to allow City staff to conduct condition assessments on the remaining 150+ pump stations.**

#### REPRESENTATIVE SCOPE

- Performed civil, structural, mechanical, electrical, and I&C field evaluations
- Conducted corrosion and non-destructive testing to support remaining life estimates
- Applied seismic screening at priority facilities
- Developed standardized condition scoring and integrated results into the City's CMMS
- Identified and prioritized rehabilitation and replacement needs

#### PROJECT VALUE AND STRATEGIC IMPACT

This condition assessment served as a successful pilot program, providing the City with the methodology, tools, and framework necessary to conduct condition assessments on the remaining booster pump stations using internal City staff resources, ensuring sustainable asset management practices for the future. The comprehensive condition assessment approach established a replicable model that enabled the City to maintain consistent evaluation standards across their entire booster pump station network while building internal capacity for ongoing asset condition monitoring and management.



### LIFT STATION ASSET MANAGEMENT AND CONDITION ASSESSMENT PROGRAM, CITY OF CARLSBAD, CA

West Yost provided comprehensive asset management services to the City of Carlsbad for their 11 wastewater lift stations, developing a strategic framework that enables the City to better track, manage, and plan for renewal of their critical pumping infrastructure. This program established a replicable condition assessment methodology that supports long-term asset management and capital improvement planning.

The City of Carlsbad owns and operates 11 wastewater lift stations that receive and deliver sanitary sewage to the Encina Wastewater Authority for treatment and disposal. As part of its asset management initiative of utility infrastructure, the City engaged West Yost to perform comprehensive condition assessments and develop business processes to identify improvements to their lift stations.

#### REPRESENTATIVE SCOPE

- Completed multidisciplinary visual assessments of all lift station assets
- Collected asset data using a digital inspection platform

- Developed a tailored asset registry and business processes for ongoing maintenance and data management
- Applied a condition- and risk-based approach to identify rehabilitation needs
- Provided guidance for future assessments conducted by City staff

### PROJECT VALUE AND STRATEGIC IMPACT

This condition assessment program established a sustainable framework that allows the City of Carlsbad to better track, manage, and create a renewal plan for their lift station assets. The program’s success demonstrates West Yost’s ability to develop comprehensive asset management solutions that provide immediate value while building long-term organizational capacity for ongoing infrastructure stewardship.

The program serves as a model for municipal utilities seeking to implement systematic condition assessment approaches that support strategic asset management and capital improvement planning for critical pumping infrastructure.



### MARE ISLAND LIFT STATION INFRASTRUCTURE ASSESSMENT, CITY OF VALLEJO AND VALLEJO FLOOD & WASTEWATER DISTRICT, CA

West Yost is conducting a comprehensive condition assessment of Mare Island’s 16 lift stations as part of the larger Mare Island Infrastructure Assessment (MIIA) Project, supporting the strategic redevelopment of this historic naval facility. This critical evaluation provides the City of Vallejo, Vallejo Flood and Wastewater District, and Mare Island Company (developer) with essential data to support coordinated infrastructure planning and long-term capital improvement strategies.

**Condition Assessment Overview** The Mare Island Infrastructure Assessment represents one of the most comprehensive multi-utility infrastructure evaluations undertaken to support coordinated redevelopment planning. West Yost is assessing all infrastructure systems on Mare Island, including water, sewer, stormwater, dry utilities, and roads, to confirm the island’s future development potential is not constrained by infrastructure limitations.

### REPRESENTATIVE SCOPE

- Conducted multidisciplinary onsite assessments of 16 lift stations
- Performed visual inspection of manholes and coordinated CCTV of key sewer segments
- Integrated findings with hydraulic modeling to evaluate current and future capacity needs
- Assessed vulnerabilities related to sea level rise and site constraints
- Developed prioritized capital improvements aligned with redevelopment scenarios

### PROJECT VALUE AND LONG-TERM VISION

This condition assessment supports the successful growth and redevelopment of Mare Island by ensuring functional wastewater collection and conveyance systems. The assessment results will foster growth by alleviating infrastructure limitations and allowing the full potential of Mare Island to be achieved as one of the most important economic generators for the City of Vallejo and Solano County.

The project demonstrates West Yost’s capability to deliver comprehensive infrastructure assessments that support strategic redevelopment planning while confirming long-term operational reliability and regulatory compliance for critical pumping infrastructure.



A  
RESUMES



Appendix A includes resumes for our project team members.

TEAM MEMBER	ROLE	FIRM
<b>Project Management</b>		
Dianna Jensen, PE	Project Manager, Asset Management Program Support, Condition Assessment & Recommendations	West Yost
Rachel Schonwit, EIT	Deputy Project Manager, Planning, Implementation; Recommendations - Remaining Useful Life, R&R Planning	West Yost
Kelye McKinney, PE	Principal-in-Charge	West Yost
Tim Banyai, PE	QA/QC Reviewer, Planning and Approach - Planning and Implementation	West Yost
<b>Planning and Implementation</b>		
Anne Girtz, PE	Planning Approach: Planning and Implementation, Recommendations - Remaining Useful Life, R&R Planning	West Yost
J.P. Davis, PE, CCM, QSP	Planning Approach: Planning and Implementation	West Yost
<b>Civil/Site &amp; Mechanical</b>		
Andy Smith, PE	Condition Assessment: Water Treatment Plant and Water Booster Pump Stations Civil/Site & Mechanical; Recommendations - Capital Improvements and Cost Estimating	West Yost
Ryan Morgan, PE	Condition Assessment: Water Treatment Plant and Water Booster Pump Stations Civil/Site & Mechanical; Recommendations - Capital Improvements and Cost Estimating	West Yost
Austin Oerding	Pipeline Assessment	West Yost
Steve Polillo	Inspection	West Yost
<b>Electrical, I&amp;C, and SCADA System</b>		
Tara Mertz	Condition Assessment: Electrical, Instrumentation, and Controls & SCADA System	West Yost
Greg Williamson, PE	Condition Assessment: Electrical, Instrumentation, and Controls & SCADA System	West Yost
Christian Neher, EIT	Condition Assessment: Electrical, Instrumentation, and Controls & SCADA System	West Yost
<b>Structural &amp; Seismic</b>		
Ronald Migdal	Condition Assessment: Structural and Seismic	TJC & Associates
Daisy Yu	Condition Assessment: Structural and Seismic	TJC & Associates
<b>Corrosion &amp; Coatings</b>		
Noy Phannavong, PE	Condition Assessment: Corrosion and Coatings	V&A Consulting Engineers
Manuel Najar, PE	Condition Assessment: Corrosion and Coatings	V&A Consulting Engineers



**Dianna Jensen**  
**PROJECT MANAGER, ASSET MANAGEMENT**  
**PROGRAM SUPPORT, CONDITION ASSESSMENT**  
**& RECOMMENDATIONS**

**Staff Title:** Business Sector Leader - Program Procurement Management

**Office Location:** Davis, CA

**Years of Experience:** 32

**Years with West Yost:** 8

**Professional Registrations**

- Professional Engineer, California, No. C056636

**Education**

- MS, Civil Engineering, University of California at Davis, CA
- BS, Civil Engineering, University of California at Davis, CA

**Certifications**

- Incident Command System 100, 300, and 400
- FEMA Incident Management Systems Certifications 700 & 800
- Additional EOC Trainings G611, G611M, G775
- Cal OES Safety Assessment Program, ID#90105

**Professional Affiliations**

- American Society of Civil Engineers
- American Public Works Association
- American Water Works Association
- League of California Cities, LCC

Dianna brings decades of experience in both the public and private sectors, specializing in public works and water resources. She is a proven leader with a track record of progressive responsibility, including 17 years with the City of Davis, culminating in the role of Director of Public Works Engineering and Transportation / City Engineer. Prior to her work at the City of Davis, Dianna spent 8 years with West Yost, rejoining the firm as of 2025. Dianna is skilled at building strong cross-departmental relationships, improving operational efficiency, and leading high-profile initiatives involving diverse stakeholders. She is also experienced in managing complex public projects such as water resource planning, climate action initiatives, and sustainability programs. Dianna is committed to advancing sustainable infrastructure and fostering collaborative solutions to meet community needs.

**EXPERIENCE**

**Davis Woodland Water Supply Project (DWWSP), Woodland-Davis Clean Water Agency, CA:** Primary staff liaison for a Water Advisory Committee tasked with evaluating the proposed new surface water project and related water rate increases for the city. This was a challenging group of 10 local experts in Water and Policy who were able to reach consensus on moving forward with the water project and establishing new rates. This experience honed Dianna’s skills as a mediator and drew upon her extensive engineering experience to guide the discussions. Dianna was the lead on the Prop 218 process once the rates were developed. Once the City was committed to the project, Dianna served on the technical leadership team that met with the City of Woodland and West Yost monthly to work together and develop the Request for Proposal for a design-build team. Dianna’s involvement included determining water supply requirements for the City to appropriately size the plant. This cutting- edge project involved a \$278 million design-build-operate (DBO) program to provide a sustainable, regional conjunctive use solution to the communities of Davis and Woodland and UC Davis. The DWWSP included construction of a new intake on the Sacramento River, over 14 miles of transmission pipelines, a new 30 mgd water treatment plant, and local transmission facilities to effectively distribute the water to the customers. The first program phases included project alternative evaluations, project delivery alternative evaluations, preliminary design, project budgeting, scheduling, grant and State loan funding, procurement document development, and contract negotiations. Phase 2, project delivery, encompassed the final design and construction of the planned facilities using the DBO delivery approach.

**Davis Water Pollution Control Plant, City of Davis, CA:** City Engineer during wastewater reclamation facilities planning and operations evaluation for the City’s Water Pollution Control Plant (WPCP). Five potential reclamation alternatives were evaluated, including reuse of wastewater on agricultural properties and an enhancement wetland project. Ancillary studies have included large-scale percolation testing and a flooding analysis of the Yolo Bypass. West Yost led the subsequent strategic planning work and preliminary design. Dianna was involved in decisions around the design of headworks, primary treatment, site civil, biosolids handling, and space planning for operations, laboratory, and maintenance buildings.

**SCADA Master Plan, City of Davis, CA:** City Engineer. The City of Davis SCADA Master Plan scope of work included documenting the SCADA Vision, Goals and Objectives, conducting a Baseline Assessment and Gap Analysis, developing a detailed Project Portfolio and SCADA Systems Standards, and high-level system architecture and network design. The project portfolio included conceptual level cost estimates for upgrades to key facilities for input into the City's Capital Improvements Plan and budget. The Master Plan process helped the City define SCADA system support roles and responsibilities, in coordination with the City IT department.

**H Street Pump Station Watershed Drainage Study, City of Davis, CA:** City Engineer. Dianna worked with West Yost in this study to determine if the FEMA floodplain south of Covell Boulevard could be removed through a Letter of Map Revision (LOMR) or Conditional Letter of Map Revision (CLOMR). West Yost developed an XP-SWMM two-dimensional surface flow model linked to a one-dimensional model of the trunk storm drain system to quickly evaluate the adequacy of the existing pump station to pump the peak flows that reach the pump station. The H Street PS Watershed was subdivided into about 119 sub watersheds for the hydrologic analysis. For the hydraulic analysis, about 140 segments of trunk storm drain were included in the model. The model also included the H Street Pump Station and the downstream channel along the railroad to the Covell Drain. The LiDAR topographic mapping was used to define the two-dimensional ground surface in XP-SWMM model. The storm drain system was defined with record drawings and through field measurements taken by City and West Yost staff. The model was calibrated with the February 4, 2017, storm event using the flood photographs and the recorded wet well water level and pump operation data at the H Street Pump Station. The 100-year floodplain was delineated. Five alternatives were developed and evaluated to further reduce the existing flooding and prevent flooding of houses during the 100-year event. Based on the calibrated model results, a LOMR application was submitted and approved by FEMA.

**East Area Tank, City of Davis, CA:** This project was designed and completed for the City of Davis while Dianna was the Water Division Manager for the City. This project involved working with West Yost as the design engineer for the site civil and pump station building, and DK Tanks for the 4-million-gallon concrete tank. Dianna was involved in the design meetings and was part of the decision team for determining site location, type and size of tank, and was also involved through construction.

**Climate Action and Adaptation Plan, City of Davis, CA:** City Engineer. Dianna was asked by the City Manager to lead the city's Climate Action and Adaptation Plan (CAAP) as there was only one staff member in Sustainability. The staff member acted as the Project Manager, and Dianna was the Project Director. This ended up being a 3-year effort and included multiple public meetings, meeting with a Technical Advisory Group from local experts, including several from UC Davis, and working with the project consultant and Natural Resources Commission to ultimately finalize the plan. This entire effort took around 3 years and the CAAP was adopted by the Council in April of 2023.

**Well Head Treatment for Hexavalent Chromium, California Water Service, Multiple Districts:** As the Project Director for a design build operate company, Dianna worked with the clients to perform well site assessments for locating the well head treatment equipment, facilitated the manufacturing of the treatment systems at a plant in Portland, procured a drayage company to pick up and deliver the cargo containers that the systems were built in, controlled the delivery of the units at the site, and worked with the company's operation staff to install the resin, complete the interior plumbing, and do systems startup.

## **ADDITIONAL GENERAL EXPERIENCE**

Experience includes master planning for storm drainage, hydrologic and hydraulic modeling using HEC-1 and HEC-RAS, storm water drainage design, wastewater EIR reports, wastewater inflow and infiltration studies, drinking water well design, construction inspection of monitoring and production wells; well and aquifer testing to determine aquifer characteristics; and water quality and geologic data review to evaluate groundwater basin conditions.

## **TRAINING IN THE EMERGENCY OPERATIONS CENTER**

Dianna has also been trained in the Emergency Operations Center protocols and have participated in several table-top exercises, one of which she acted as the Incident Commander.



## Rachel Schonwit

**DEPUTY PROJECT MANAGER, PLANNING, IMPLEMENTATION; RECOMMENDATIONS, REMAINING USEFUL LIFE, R&R PLANNING**

**Staff Title:** Asset Management  
Technical Specialist III

**Office Location:** Davis, CA

**Years of Experience:** 7

**Years with West Yost:** 2

### Professional Registrations and Certifications

- Certified Engineer in Training

### Education

- BS, Chemical Engineering, University of California, Davis

Rachel Schonwit has specialized experience in Enterprise Asset Management (EAM) implementation projects, seamlessly executing projects aligned with client objectives and goals. Her asset management experience includes condition assessments, risk assessments, renewal prioritization, and utility performance and metric benchmarking. She has a breadth of experience across multiple industry sectors including asset management, risk and resiliency planning, and water system master planning.

## EXPERIENCE

### ASSET MANAGEMENT

**Enterprise Asset Management Software Implementation, City of Healdsburg, CA:** Project Manager for Computerized Maintenance Management System (CMMS) software implementation for City of Healdsburg’s Public Works and Utilities Departments. Tasks included developing business process maps, developing a change management plan, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to City-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

**Enterprise Asset Management Software Implementation, City of Livermore, CA:** Project Manager for the NEXGEN Asset Management implementation for the City’s Maintenance division, focusing specifically on streets, facilities, and landscaping groups. Tasks included developing business process maps, defining asset hierarchies, and configuring the CMMS to City-specific workflows including the preventive maintenance program.

**2024 Water Master Plan, City of Lincoln, CA:** Staff Engineer for the preparation of a 2024 Water Master Plan (WMP) for the City of Lincoln. Tasks include technical support in data analysis, system modeling, and infrastructure evaluation to help develop efficient and sustainable water supply strategies.

**Enterprise Asset Management Implementation, Sacramento County, CA:** Project Manager for Enterprise Asset Management/CMMS implementation for Sacramento County Department of Water Resources (DWR). Tasks included developing business process maps, developing levels of service, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to DWR-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

**Enterprise Asset Management Software Implementation, Moulton Niguel Water District, CA:** Project Manager for Enterprise Asset Management (EAM) software implementation for Moulton Niguel Water District (MNWD). Tasks included developing

business process maps, identifying critical organizational asset management goals, developing a change management plan, defining asset hierarchies, configuring the asset management software to MNWD-specific workflows, developing scenarios for testing the software, and leading software training for all staff.

**Enterprise Asset Management Software Implementation, Elsinore Valley Municipal Water District, CA:** Project Manager for Enterprise Asset Management (EAM) software implementation for Elsinore Valley Municipal Water District (EVMWD). Tasks included developing business process maps, developing a change management plan, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to EVMWD-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

**Enterprise Asset Management Software Implementation, City of Berkeley, CA:** Project Manager for Enterprise Asset Management (EAM) software implementation for City of Berkeley's Public Works and Parks Recreation & Waterfront Departments. Tasks included developing business process maps, developing a change management plan, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to City-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

**Enterprise Asset Management Software Implementation, City of Gainesville, GA:** Project Manager for Enterprise Asset Management (EAM) software implementation for City of Gainesville Department of Water Resources (COGDWR). Tasks included developing business process maps, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to COGDWR-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff. The implementation also included incorporating COGDWR's backflow management program into the software.

**Enterprise Asset Management Software Implementation, City of Mobile, AL:** Project Manager for Enterprise Asset Management (EAM) software implementation for City of Mobile's Public Works Department. Tasks included developing business process maps, developing a change management plan, identifying critical organizational asset management goals, defining asset hierarchies, configuring the asset management software to City-specific workflows, developing scenarios for testing the software, and leading training for operations and maintenance staff.

## WATER SYSTEM MASTER PLANS

**Master Plan Update, North Marin Water District, CA:** Staff Engineer for the development of a Water Supply Master Plan for North Marin Water District (NMWD). The objective of this Master Plan Update is to provide an innovative and sustainable plan that addresses drought and climate resiliency for NMWD through assessing existing water infrastructure and planned growth. Rachel helped lead a workshop with NMWD's operations and engineering staff to discuss the framework for asset management to identify NMWD's most critical asset management needs and helped conduct the risk assessment task, incorporating condition assessment results into NMWD-specific risk factors to assess both component and facility risk. Risk results were used to prioritize rehabilitation projects.

**Long-Range Utilities Implementation Strategy, Presidio Trust, San Francisco, CA:** Staff Engineer for the evaluation of the water system and wastewater collection system utilities at the Presidio of San Francisco as part of the Presidio Trust's Long-Range Utilities Implementation Strategy. The evaluations included asset inventory and condition assessment, capacity modeling, risk and resiliency planning, system optimization and evaluation of supply options.

**Sustainable Water Supply Master Plan, City of Santa Clara, CA:** Staff Engineer for the development of a Water Supply Master Plan for the City of Santa Clara. The objective of this Water Supply Master Plan is to provide an innovative and sustainable plan that addresses drought and climate resiliency for the City through assessing existing water infrastructure and planned growth. Rachel helped lead a workshop with the City's operations, engineering, and finance staff to discuss the framework for asset management to identify the City's most critical asset management needs and helped conduct the risk assessment task, incorporating condition assessment results into City-specific risk factors to assess both component and facility risk. Risk results were used to prioritize rehabilitation projects.



**Kelye McKinney, PE**  
**PRINCIPAL-IN-CHARGE**

**Staff Title:** Engineering Manager I

**Office Location:** Davis, CA

**Years of Experience:** 35

**Years with West Yost:** 7

**Professional Registrations**

- Professional Civil Engineer, California No. 49414

**Education**

- BS, Civil Engineering, University of Nevada, Reno

**Professional Affiliations**

- Groundwater Resources Association

Kelye McKinney is a civil engineer with a focus in the environmental engineering and utilities industry. She is an experienced manager who specializes in program and project management, leading strategic multi-stakeholder initiatives, master planning, asset management and operation and resource planning. She serves as Principal-in Charge on numerous projects with various West Yost clients. She previously worked for the City of Roseville in the Environmental Utilities Department, where she was most recently the Assistant Director of Technical Services. In her capacity, she led the technical services team for the water, wastewater, recycle water, and solid waste utilities including master planning, capital plan implementation, asset management, utility safety, and land development activities from entitlement through acceptance.

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## EXPERIENCE

**24th Street and K Street Combined Sewer System Storage Project, City of Sacramento, CA:** Principal-in-Charge for the design of approximately 2,900 feet of 120-inch-diameter pipe in midtown Sacramento on 24th Street between N Street and H Street. The project is part of the City’s Long Term Control Plan for reducing flooding of its combined sewer system (CSS). The project was designed to capture high flows using an underground weir structure and store up to approximately 1.6 million gallons of water until the CSS flows have receded enough to allow the system to empty. The project included the development of a preliminary design report, constructability reviews, CEQA services, utility locating/potholing, and public outreach.

**Groundwater Support Services, City of Lincoln, CA:** Principal-in-Charge for technical and advisory support for groundwater projects including the regional water bank, groundwater supply planning, evaluation of groundwater recharge opportunities, and assistance with stakeholder communications.

**Phase 1 and 2 - Developer Standards Updates, Citrus Heights Water District, CA:** Principal-in-Charge for update to the Citrus Heights Water District’s improvement standards, submittal requirements, drafting standards, procedures, and policies as they pertain to proposed developments and improvements within its service area.

**Third Party Review & Modeling Services, Sacramento County Water Agency, CA:** Principal-in-Charge for on-call services to perform review of drainage studies for compliance with the Sacramento County Drainage Study Requirements, the Sacramento County Hydrology Manual, Volume 2, FEMA floodplain standards, Sacramento Region Stormwater Quality Design Manual, and the County of Sacramento Improvement Standards. West Yost is also reviewing hydrologic and hydraulic models prepared by others for support of drainage studies and preparation of improvement plans.

**Natomas Area Water Supply Study, Sacramento County Water Agency, CA:** Principal-in-Charge for the Natomas Basin Water Supply Study. This project included the review of surface water supplies, and surface water rights/contracts and associated places of use for three urbanization areas of interest. West Yost also is investigating existing and future water supply facilities that might be available to serve the three urbanization areas including water diversion, treatment and distribution infrastructure owned or operated by the Sacramento County Water Agency and by other water agencies.

**Title 22 Update, City of Ione, CA:** Principal-in-Charge to update the City's Title 22 Engineering Report as required by the California State Water Resources Control Board for the Castle Oaks Recycled Water Facility (COWRF). This work included completing a disinfection system tracer study.

**Wastewater and Drainage Sump Station Facilities Conditions Assessments, City of Sacramento, CA:** Principal-In-Charge (PIC). Kelye served as the PIC for the assessment of ten City of Sacramento wastewater and stormwater sump stations. The project developed condition assessment criteria in collaboration with City staff used to evaluate structural, mechanical and electrical pumping station and outfall pipeline infrastructure. Condition assessment data was uploaded into the City's Computer Maintenance Management Systems, Maintenance Connection. As PIC, Kelye verified the project team had the necessary resources to deliver a successful project to the City on time and on budget.

**2018 America's Water Infrastructure Act Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP) Compliance Project, City of Lincoln, CA:** Principal-in-Charge. West Yost is assisting the City with their all-hazards America's Water Infrastructure Act (AWIA) 2018-compliant RRA and ERP. A thorough gap analysis follows reviewing and organization of previously completed related resources. RRAs/ERPs are conducted according to the American Water Works Association (AWWA) standards and represent cross-sector best practices. Each RRA considers natural, built, cyber, and personnel assets and any relevant threats and hazards. Risk and resilience management strategies are developed to address the highest risks and reduce vulnerabilities. Next, an ERP is developed. This is built on existing emergency preparedness plans and refined to align with AWIA and state requirements and industry best practices. Finally, self-certification documentation is prepared for submittal to the Environmental Protection Agency.

**Septic to Sewer Evaluation Program, Sacramento Area Sewer District, Sacramento, CA:** Principal-In-Charge for the SacSewer District's Septic to Sewer Evaluation Program. Program included a Feasibility Report that addressed technical feasibility along with public outreach, public acceptance, and potential for funding for five small, disadvantaged communities to convert from septic to sewer systems. Work also included multiple public outreach meetings, preparation of outreach materials, funding opportunities research and coordination, grant applications, technical reports for use in the Small Community Wastewater Grant applications, and coordination of four income surveys to establish eligibility for grants.

**Water System Rehabilitation Project #2, City of Folsom, CA:** Principle-In-Charge. This \$1.4 million project covered the construction of numerous valves and connections to help improve the reliability and redundancy of the water system in the City and performing related required work. There are 12 different locations which are in the public right of way and/ or on private property. Key elements of the project included coordination with the City for pressure testing, disinfection, and tie in of new pipe to the existing water system, public outreach, advanced notification to residents and commercial locations about water outages, and coordination with local hospital to ensure minimal water outages while the piping was being installed.

**NASb Groundwater Degradation Study, Sacramento Groundwater Authority, CA:** Principal-in-Charge. West Yost is conducting a study aligned with Component 3 of DWR Grant Agreement No. 4600015622. This desktop study focuses on evaluating the extent and potential future migration of Tetrachloroethylene (PCE) contamination in lower western Placer and northeastern Sacramento counties. Key objectives include identifying municipal wells at risk, assessing the need for wellhead treatment, determining suitable locations for new and aquifer storage and recovery (ASR) wells, and evaluating the impact of conjunctive use on PCE migration. The study involves reviewing existing reports, developing integrated conceptual models of PCE fate and transport, and forecasting contaminant behavior using particle tracking and capture zone analysis. Stakeholder engagement is central to the process, with meetings scheduled at both the initiation and conclusion of the study to gather input and share results.



## Timothy Banyai, PE

QA/QC REVIEWER, PLANNING AND APPROACH,  
PLANNING AND IMPLEMENTATION

**Staff Title:** Engineering Manager I

**Office Location:** Concord, CA

**Years of Experience:** 32

**Years with West Yost:** 7

### Professional Registrations

- Professional Civil Engineer, California No. 60715,
- Kansas No. 14119 (inactive)

### Education

- MS, Environmental Engineering, North Dakota State University
- BS, Civil Engineering, North Dakota State University

### Professional Affiliations

- California Water Environment Association
- Tau Beta Pi Engineering Honor Society
- Water Environment Federation

Timothy Banyai is a registered civil engineer with experience managing and designing water and wastewater treatment plants and pumping stations. Tim has served as project manager, lead project engineer, technical advisor and quality control reviewer. As a manager, Tim maintains direct client contact, provides project team leadership, and coordinates among disciplines to ensure successful project completion. His direct project experience includes design and preparation of drawings and specifications, assisting clients in bidding-phase services, and performing construction-phase duties. Tim has a strong record of developing cost-effective and innovative designs for water and wastewater treatment plant projects and is known for managing multi-disciplinary teams for water and sewer infrastructure improvement projects. He also has direct experience as an operator and laboratory technician for a wastewater treatment plant where he conducted laboratory analysis, helped develop and implement a facilities plan study for nitrogen control, performed pilot studies, and developed bench-scale models. Tim's experience as a treatment plant operator provides insights he incorporates into the design for successful construction-phase sequencing, testing and start-up, and operations and maintenance. Tim also has experiencing preparing State Revolving Fund (SRF) applications and managing SRF-funded projects.

## EXPERIENCE

**Collection System Master Plan, South Tahoe Public Utility District, CA:** Tim served as the project engineer in charge of evaluating 22 of the District's 42 lift stations located throughout the South Lake Tahoe area. These facilities are important elements of the collection system, as any overflows could cause significant environmental damage to sensitive Lake Tahoe. A generator facility and two valve stations were also evaluated. Because of the large number and wide variety of lift stations at the District, the lift stations were placed into one of five categories to help manage the implementation of recommendations. A six-step process was used for the lift station assessment, which included: 1) developing a lift station inventory, 2) reviewing maintenance histories, 3) selecting lift stations for inspection, 4) developing condition assessment procedures, 5) conducting a field condition assessment that included interviewing operations and maintenance staff, and 6) rating each lift station's condition. The assessment included a mechanical, structural and electrical condition evaluation. Following the field evaluation and rating of the lift stations, recommendations for improvements were developed and prioritized to meet the District's level of service and capital improvements budget requirements.

**Cawston Lift Station Condition Assessment and Alternatives Analysis, Eastern Municipal Water District, Perris, CA:** Tim led a multi-disciplinary comprehensive condition assessment of the Cawston Lift Station. The purpose of the condition assessment was to identify improvements needed to bring the lift station back into service and identify constraints to

upgrading the lift station. A condition assessment work plan was developed to outline the parameters of the assessment and the responsibilities of the District during the assessment. Following the condition assessment, three alternatives were developed to upgrade the lift station including rehabbing the existing lift station, constructing a new lift station onsite, or constructing a new lift station at another site. A major element of the project was assessing and identifying the limited maintenance access to the existing pumps and determining methods to improve pump access if the existing pump station is re-used.

**Lift Station and Condition Assessment, City of Santa Barbara, CA:** Tim served as the Project Engineer-in-Charge of evaluating seven lift stations for the City of Santa Barbara. The City owns and operates seven lift stations throughout its wastewater collection system. A five-step process was used for the assessment—developing a lift station inventory, 2) reviewing maintenance histories 3) developing condition assessment procedures, 4) conducting field condition assessments, which included interviewing operations and maintenance staff, and 5) rating each lift station’s condition. The assessment included a mechanical, structural, and electrical condition evaluation. Following the field evaluation and rating of the lift stations, recommendations for improvements were developed and prioritized to meet the District’s level of service and capital improvements budget requirements. The recommendations were placed into one of three categories: 1) urgent – implement recommendation as soon as practical (generally within two years), 2) high priority – implement within two to five years, and 3) low priority – implement as needed.

**Water Treatment Plant Facility Plan and Wastewater Treatment Plant Major Upgrades, City of Oceanside, CA:** Condition Assessment Lead and Project Manager. Tim led the multi-discipline condition assessment of the Weese Direct Filtration Water Treatment Plant and the Mission Basin Groundwater Purification Plant that uses reverse osmosis to treat brackish groundwater. The Weese Plant is a 25 mgd facility and the Mission Basin Plant is a 6.4 mgd facility. The primary objectives of the project were to use asset management principles to make risk-based informed decision to develop a prioritize capital improvement plan for the next 20 years. In addition to the capital improvement plan, the City looked to reduce O&M, increase reliability, plan for future regulatory requirements and increase automation, optimize performance and lower energy costs. A detailed work plan was developed to conduct the field work that identified assets to be assessed, scoring criteria, methods to conduct the assessments and responsibilities of all parties. Following the detailed condition assessment field work, a comprehensive risk-based assessment was completed to rank and prioritize capital projects into four-time windows: immediate, 2 to 5 years, 5 to 10 years and 10 to 20 years. The team worked closely with the City staff in workshops to prioritize the projects. The City’s San Luis Rey Water Reclamation Plant (SLRWRF) wastewater treatment plant was evaluated. The SLRWRF has a capacity of 13.5 mgd and treats a majority of the City’s wastewater. West Yost completed a Preliminary Design Report (PDR) that included a high-level condition assessment Detailed evaluations and condition assessments were developed for the headworks facilities, flow and load equalization facilities, primary and secondary facilities and solids treatment. Each of the detailed analyses included a condition assessment and development of life cycle costs with a focus on reducing energy use and chemical costs. Following the PDR, West Yost assisted the City in developing a phased approach to implementing the improvements to best use the money available. The first phase includes the following major items – headworks improvements with two new screens, new conveyor and washer compactors, new grit removal using the Headcell technology, odor control improvements and consolidation of the primary and secondary electrical facilities into a common electrical building. The estimated construction cost for Phase 1 items is approximately \$24M.

**Wastewater and Drainage Sump Stations Facilities Station Condition Assessment, Sacramento, CA:** Project Engineer for Pump Station Design. The City of Sacramento completed an effort to refine their asset management approach via strategic planning. As part of this project, West Yost completed a multidisciplinary condition assessment of five wastewater and five drainage sump stations. The condition assessment evaluated the existing assets at the sump stations via a scoring method that fed into a facility risk assessment. The scoring used in the condition assessment and facility risk assessment was then incorporated into a strategy for long-term planning for budgeting, rehabilitation and repair, and replacing assets to comply with regulations and maintain public health and safety.



## Anne Girtz, PE

### PLANNING APPROACH: PLANNING AND IMPLEMENTATION, RECOMMENDATIONS, REMAINING USEFUL LIFE, R&R PLANNING

**Staff Title:** Senior Engineer II

**Office Location:** Irvine, CA

**Years of Experience:** 14

**Years with West Yost:** 6

#### Professional Registrations

- Professional Civil Engineer, California No. 91396
- Professional Engineer, British Columbia, Canada, No. 152246 (Inactive)

#### Education

- MS, Environmental Engineering and Sustainable Infrastructure, KTH Royal Institute of Technology, Stockholm, Sweden
- BS, Civil Engineering, University of North Dakota, Grand Forks

#### Certifications

- MMCD Certified Contract Administrator, British Columbia, Canada
- National Association of Sewer Service Companies (NASSCO), Certification No. U-1020-70400281
  - Pipeline Assessment Certification Program (PACP)

#### Professional Affiliations

- American Society of Civil Engineers
- National Association of Sewer Service Companies Infrastructure Condition Assessment Committee
- Orange County Water Association

Anne Girtz is a project manager and asset management specialist with extensive experience in infrastructure planning and management of municipal utilities. She has led asset management initiatives for public agencies across the water, wastewater, and stormwater sectors, focusing on condition and risk assessments, asset registry development, renewal prioritization, and capital improvement planning. Anne works closely with clients to develop customized tools or methodologies to support data-driven decision making, allowing clients to meet established goals and performance metrics. Known for balancing technical expertise with strong leadership, Anne excels at managing cross-functional teams, facilitating stakeholder engagement, and delivering high-quality, actionable results through strategic project execution.

## EXPERIENCE

**Sanitary Sewer Emergency Planning Services, Los Angeles County Sanitation Districts, CA:** Project Manager for a study to evaluate emergency diversion and storage options in the case of a catastrophic failure of a forcemain impacted by active land slide. Study included flow development, hydraulic model, and site evaluations to assess the feasibility of several diversion and storage options intended to minimize downstream flow. Options included a diversion from LACSD sewers to local sewers, diversion at a pumping plant through installation of a new forcemain, and a tank storage and trucking scenario.

**Asset Management Program Support, Ontario Municipal Utilities Company, City of Ontario, CA:** Asset Management Support, as part of the West Yost team, worked closely with OMUC to enhance their asset management capabilities. In Phase 1, supported the development of workshop materials, delivered educational sessions for OMUC staff, and participated in a detailed gap analysis of existing asset management practices. This work resulted in a comprehensive Asset Management Implementation Plan (AMIP) that outlined prioritized actions, planning-level cost estimates, and a phased implementation schedule. In Phase 2, Anne will lead the condition assessment task, leveraging industry best practices to evaluate the condition of OMUC’s critical assets, including reservoirs, lift stations, and water pipelines. Anne will also lead the risk tasks, which includes development of a risk-based asset management framework, incorporating Likelihood of Failure (LoF) and Consequence of Failure (CoF) criteria to support data-driven decision-making and prioritization of maintenance activities. This work will further enable OMUC to optimize their asset management practices and maintain reliable, efficient operations.

**Collection System Condition Assessment and Rehabilitation, Graton Community Services District, Graton, CA:** Project Manager and Lead Engineer for a comprehensive condition assessment of the sanitary sewer collection system. Anne coordinated inspection of pipelines (CCTV), manholes, and lift stations and developed a condition

assessment memo summarizing condition and associated rehabilitation or replacement recommendations. The second phase of the project included development of a preliminary design report, assessment of an existing ductile iron watermain pipeline (inspection coordinated with V&A), and CEQA documentation for construction of the recommendations. This project is grant funded through a Clean Water State Revolving Fund Grant.

**Sewer Pumping Plant Condition Assessments, Los Angeles County Sanitation Districts, Los Angeles County, CA:** Led comprehensive condition assessments for four sewer pumping plants as part of LACSD's ongoing asset management and capital improvement planning program. Responsibilities included conducting detailed site inspections with operations and engineering staff, completing standardized LACSD assessment forms, and integrating structural, architectural, and geotechnical evaluations into final recommendations. Managed preparation of technical memoranda summarizing plant condition, identifying deficiencies, prioritizing rehabilitation needs, and developing improvement recommendations consistent with LACSD's design guidelines. Developed Class 5 cost estimates to support long-term capital planning.

**Mare Island Infrastructure Assessment, City of Vallejo, CA:** Project Manager for an assessment of all infrastructure systems on Mare Island (including water, sewer, stormwater, dry utilities, and roads) to support future redevelopment on the island. The client team includes the City of Vallejo, Vallejo Flood and Wastewater District, and Mare Island Company (developer). As project manager, Anne has coordinated all internal and external teams, coordinated field work with various client groups and subconsultants, and led all client team meeting and workshops. Sewer and stormwater system tasks include the condition assessment of Mare Island's 16 lift stations; visual inspection of 75 manholes; CCTV inspection of 15,000 linear feet of sewer pipeline; development of hydraulic models for the island to assess existing and build-out infrastructure needs; and evaluation of sea level rise impacts and associated solutions. Water system tasks include conducting a condition and seismic assessment of the Mare Island water tank; broadband electromagnetic (BEM) crown testing of select metallic watermains to assess corrosion and condition; development of a hydraulic model; and a desktop condition assessment based on age, material, and other existing information. The team provided workshops at interim deliverable points for each utility, a summary of results and recommendations in a final report, and presentations at public and agency meetings.

**Risk Assessment and Asset Management Services, Los Angeles County Sanitation Districts, CA:** Project Manager and Lead Engineer for a risk assessment of the Districts' gravity sewer mains. Developed customized likelihood and consequence of failure factors and risk framework to estimate a risk score for each pipeline. Led development of a Power BI dashboard to present risk assessment results. A second phase of work was contracted in February 2023 which included development of risk assessment models for force mains and manholes, capital improvement project prioritization, useful life projections, and failure prediction using AI/ML.

**Replacement Planning Model, Phase 2, Irvine Ranch Water District, Irvine, CA:** Project Engineer for a Replacement Planning Model to project 50-year and 100-year water and sewer replacement funding requirements. This strategic model combines replacements and rehabilitations of all assets at assumed frequencies, called "continuous refurbishment". Anne developed the inventory and detailed replacement and refurbishment costs for all horizontal and vertical assets. Estimates were site- and asset-specific and were developed using recent IRWD bid tabs, West Yost cost databases, and thorough consultation with IRWD staff. The deliverables included a detailed report and estimated costs for replacement and rehabilitation of all potable water, recycled water, and sewer facilities.

**Sanitary Sewer Lift Station and Pipeline Rehabilitation at Oakland International Airport, Port of Oakland, Oakland, CA:** Project Manager and condition assessment lead of the Port's entire sanitary sewer system. Anne led coordination with the CCTV cleaning contractor and the Port, prepared safety and field work plans, and led assessment of CCTV results to assign prioritized rehabilitation actions. The analysis and results were compiled in an Excel spreadsheet which the Port could use for reporting and records purposes. Since 2022, Anne has served as Project Manager for all tasks including pipeline design, pump station condition assessment and design, and webmapping.



**J.P. Davis, PE, CCM, QSP**  
**PLANNING APPROACH: PLANNING AND IMPLEMENTATION**

**Staff Title:** Construction Management  
 Business Sector Lead /  
 Construction Manager IV

**Office Location:** Sacramento, CA

**Years of Experience:** 27

**Years with West Yost:** 11

**Professional Registrations**

- Professional Civil Engineer, California No. C66826
- Certified Construction Manager, Construction Management Certification Institute, ID No. 4505
- Qualified SWPPP Practitioner, Certificate No. 25223
- 10-Hour Cal OSHA Construction Safety Certification, January 2021

**Education**

- BS, Civil Engineering, University of California, Irvine

**Certifications**

- Confined Space Competent Person & Confined Space Entry and Non-Entry Rescue, June 2021
- First Aid and CPR/AED, American Heart Association, Certified December 2023
- Fall Protection, November 2021
- US Army Corps of Engineers Construction Quality Management for Contractors #784

**Professional Affiliations**

- American Public Works Association
- Construction Management Association of America
- American Society of Civil Engineers

J.P. has experience in civil engineering, construction management, and construction inspection for commercial, industrial, and capital improvement projects. His focus is on water/wastewater infrastructure projects, including pretreatment and filtration structures, pump stations, reservoirs, large diameter underground piping, and hydropneumatic surge tanks. His experience as a construction manager, resident engineer, and inspector includes constructability review, management of construction documentation, management of staff and subconsultants, contract and change order negotiations, budget and schedule review tracking and analysis, schedule of values and progress payment review, chairing of progress meetings and lead inspection, and project tracking, including written and photographic documentation of daily construction activities. In addition to being a Certified Construction Manager (CCM), J.P. is a California licensed Professional Engineer and a Qualified SWPPP Practitioner (QSP).

**EXPERIENCE**

**Bickford Ranch Water Tank No. 1 and Pump Station No. 1, Placer County Water Agency (PCWA):** Construction Manager. West Yost provided construction management and inspection services on behalf of PCWA for this developer driven, \$9 million project that includes water distribution, storage, and pumping equipment and facilities to serve the new Bickford Ranch housing development in unincorporated Placer County, California. The project consists of a new pumping station with four 200 hp and two 25 hp jockey vertical turbine pumps with VFDs, controls, valves and all other related mechanical and electrical components, site piping including pump suction and discharge, site water, irrigation and drainage, an approximately 1,650 sq. ft. pump station structure, backup generator, 10,000 gallon hydropneumatic tank and air compressors, a 1.4-MG welded steel water storage tank, approximately 4,500 feet of new 18 inch ductile iron distribution pipeline, approximately 1,800 feet of new 60 inch welded steel transmission pipeline, and associated side work including grading, paving, landscaping, retaining walls, equipment pads structural foundations, and retention pond.

**CM for Water Treatment Plant Pretreatment System Improvements Project, City of Folsom, CA:** Construction Manager. This \$2.1 million project consisted of modifications to the existing Actiflo and Basin 5 pretreatment systems to increase the City’s treatment and distribution capacity. These upgrades allowed the City to meet the increased demand for the FPA development south of Hwy 50, as well as provide redundancy. General upgrades included the addition of tie downs over the lamellar settling tubes at Actiflo Trains 1 and 2 which will re rate each train from 20-MGD to 25-MGD, modifications to the raw water inlet piping into Sedimentation Basin 5, installation of a slide gate to prevent settled water from entering the basin from Actiflo when the City performs its annual cleaning, modifications to existing baffle and weir walls within Basin 5 to accommodate change in hydraulics due to increase in flow, and installation of 32 plate settlers which will increase the pretreatment capacity in Basin 5 from 15-MGD to 25-MGD. The project was completed in 500 calendar days.

**Water Treatment Plant Drinking Water Improvement/ Disinfection Facilities Upgrade Project – Phase 4A, City of Folsom, CA:**

Resident Engineer and Inspector during construction of this \$10 million project, including a 1.2-MG DYK prestressed reinforced concrete chlorine contact tank (CCT) with interior baffle walls, a cast in place CCT vault housing the inlet/outlet valves, and installation of large diameter 48 inch and 66 inch diameter finished water (FW) cement lined and coated welded steel piping between the new filter structure, CCT, and existing FW reservoirs. Mass excavation, backfill, and compaction operations for construction of the new filter structure and new pretreatment facilities was performed, along with installation of underground process piping, site drainage piping, chemical piping, underground electrical, instrumentation and controls, and SCADA system upgrades. J.P. also spearheaded the disinfection operations of the tank and FW piping, which were performed in accordance with AWWA standards with several chlorine injection locations, and multiple bac T sample points were designated to create thorough disinfection of the system.

**Water Treatment Plant Facilities Improvement Project – Phase 4B, City of Folsom, CA:** Resident Engineer and Inspector during construction of this \$14 million project including construction of six new dual media gravity filters and modifications to the four existing gravity filters, new weir structure with level controllers and modifications to the existing weir structure, construction of two Kruger pretreatment facilities (Actiflo), installation of submersible and vertical turbine pumps, and placement of large diameter 48 inch to 66 inch underground piping. Also included in the project was the installation of a sodium hypochlorite generator, positive displacement blower and piping, construction of a new effluent water meter vault, site drainage, site access road grading and asphalt paving, chemical and process piping, installation of underground electrical, instrumentation and controls, and new SCADA system. Key project challenges included integrating the new facilities into the existing SCADA system and commissioning the new filters and Actiflo pretreatment structure to meet water quality requirements, all while maintaining daily water treatment operations. J.P. worked closely with the plant operations staff and the contractor to coordinate system outage requests to tie in the new facilities to the existing system and provided oversight during trial-and-error batching of polymer at the Actiflo to achieve required turbidity levels.

**Water System Rehabilitation Project #2, City of Folsom, CA:** Construction Manager. This \$1.4 million project covered the construction of numerous valves and connections to help improve the reliability and redundancy of the water system in the City and performing related required work. There are 12 different locations which are in the public right of way and/or on private property. Key elements of the project included coordination with the City for pressure testing, disinfection, and tie in of new pipe to the existing water system, public outreach, advanced notification to residents and commercial locations about water outages, and coordination with local hospital to ensure minimal water outages while the piping was being installed.

**Zones 4 and 5 Pump Station (PS) and Zone 6 PS/Zone 5 Tank, City of Folsom, CA:** Lead Inspector for these two projects with a combined value of \$10 million, constructed for supplying potable water to the new Folsom Plan Area (FPA) development south of Hwy 50. The Zones 4 and 5 PS project included construction of a new booster pump station with three 125 hp 1280-GPM vertical turbine pumps (VTP) and infrastructure for build out to the future Zone 4 Tank. The Zones 4 and 5 PS delivers water from the City's existing water system to a new 2.5 MG steel tank (Zone 5 Tank) and gets further distributed to the City's Zone 6 region with two 3,000-GPM fire flow and three 400-GPM VTP pumps to service the ongoing FPA developments.

**Water Treatment Plant Drinking Water Improvement/ Disinfection Facilities Upgrade Project – Phase 4A, City of Folsom, CA:**

Resident Engineer and Inspector during construction of this \$10 million project, including a 1.2-MG DYK prestressed reinforced concrete chlorine contact tank (CCT) with interior baffle walls, a cast in place CCT vault housing the inlet/outlet valves, and installation of large diameter 48 inch and 66 inch diameter finished water (FW) cement lined and coated welded steel piping between the new filter structure, CCT, and existing FW reservoirs. Mass excavation, backfill, and compaction operations for construction of the new filter structure and new pretreatment facilities was performed, along with installation of underground process piping, site drainage piping, chemical piping, underground electrical, instrumentation and controls, and SCADA system upgrades. Project challenges included diligent oversight of QA/QC operations during reinforcement and concrete placement at the CCT as well as disinfection of the facility before placement into service. Concrete for the CCT was placed in the summer so the concrete temperature, batch shelf life, truck revolutions, slump, air entrainment, etc. were heavily scrutinized prior to placement to verify the water retaining structure was built in accordance with the specifications. J.P. also spearheaded the disinfection operations of the tank and FW piping, which were performed in accordance with AWWA standards with several chlorine injection locations, and multiple bac T sample points were designated to create thorough disinfection of the system.



**Andy Smith, PE**  
**CONDITION ASSESSMENT, WATER TREATMENT  
 PLANT AND WATER BOOSTER PUMP STATIONS  
 CIVIL/SITE & MECHANICAL,  
 RECOMMENDATIONS - CAPITAL  
 IMPROVEMENTS AND COST ESTIMATING**

**Staff Title:** Principal Engineer II

**Office Location:** Sacramento, CA

**Years of Experience:** 20

**Years with West Yost:** 17

**Professional Registrations**

- Professional Civil Engineer, California No. 74673

**Education**

- BS, Civil Engineering, University of California, Davis

**Professional Affiliations**

- California Water Environment Association
- Central Valley Clean Water Association
- American Water Works Association

Andy Smith has performed a wide variety of planning and design work for numerous water and wastewater treatment facilities for agencies in California and Oregon. His treatment facility experience includes condition assessments, master planning and predesign, detailed design and cost estimating, and engineering services during construction. His treatment expertise includes pretreatment, filtration, primary and secondary disinfection, chemical storage and metering, pumping stations, residuals handling, and dewatering. He has worked on treatment facilities with capacities ranging from <1 mgd to 60 mgd.

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**EXPERIENCE**

**WTP Condition Assessments and Master Plan, City of Fairfield, CA:** Task Manager for WTP condition assessments, performance evaluations, and expansion analyses for both of Fairfield’s existing drinking water treatment facilities. Fairfield’s WTPs treat a combined 70 MGD of surface water from Lake Berryessa and the North Bay Aqueduct, and provide water to approximately 220,000 people in Fairfield and Vacaville. Treatment processes include ozonation, conventional and high rate flocculation and sedimentation, granular media filtration, and free chlorine disinfection. Andy’s responsibilities included coordinating and conducting multidisciplinary onsite condition assessments, statistical evaluations of historical raw and treated water quality data, hydraulic evaluations, development and evaluation future expansion scenarios to increase overall treatment capacity to 120 MGD, and development of prioritized recommendations and capital cost estimates to support potential water rate increases.

**St. Helena Louis Stralla WTP Condition Assessment, St. Helena, CA:** Project Manager. West Yost evaluated condition- and performance-related improvements for the City’s sole surface water treatment facility, originally constructed in 1980. Objectives for near-term investment included increased monitoring and control capabilities to increase operational efficiency. West Yost produced set of tiered capital improvement recommendations capturing immediate-, near- and long-term improvements intended to balance risks and capital expenditures.

**River Park Pump Station Condition Assessment, Napa Sanitation District, Napa, CA:** Project Manager for a condition assessment of one of NapaSan’s oldest operating wastewater lift stations. West Yost prepared a detailed report cataloging the facility’s existing condition, capacity, and operational resilience profile, and identified near- and long-term improvements for asset investment and renewal. Condition assessments included detailed visual observations and non-destructive testing of structural and

mechanical equipment. Challenges associated with the ~1 mgd pump station included a highly compact footprint, limited influent flow data for the purpose of substantiating pumping equipment redundancy, and limited geotechnical data for assessing risks from liquefaction during seismic activity.

**RiverArc Regional Water Supply Project, Placer County Water Agency, Auburn, CA:** Deputy Project Manager for Phase 1 of a new regional surface water supply project intended to increase water supply reliability in Sacramento and Placer Counties while providing environmental benefits to the Lower American River watershed. Phase 1 project facilities will include a raw water pump station on the Sacramento River west of the Sacramento International Airport, a greenfield 60-mgd surface water treatment in northern Sacramento County, and raw and treated water transmission mains. Total Phase 1 capital costs are estimated at \$250-\$350 million. Andy's responsibilities include technical direction of preliminary engineering efforts supporting development of project CEQA and NEPA documents, development of conceptual surface water treatment process design criteria, and client-facing communication and coordination.

**Filter Improvements and Chlorine Conversion Project, City of Pittsburg, CA:** Principal Designer for chemical system modifications at a 32-mgd drinking water treatment facility transitioning from gaseous chlorine to liquid sodium hypochlorite. Improvements include a new bulk chemical storage facility featuring 20,000 gallons of 12.5% sodium hypochlorite and 3,200 gallons of 15% hydrochloric acid; new peristaltic metering pumps for sodium hypochlorite; modifications to an existing chlorine dioxide generation system currently utilizing gaseous chlorine and liquid sodium chlorite; and new chemical injection vaults and dispersion systems throughout the WTP. In conjunction with a new granular media filter facility, the construction cost is over \$40 million, with construction slated to wrap up in 2027.

**North Bay Regional Water Treatment Plant Expansion Program Management and Planning, Cities of Fairfield and Vacaville, CA:** Andy is leading the treatment planning and conceptual design elements of the Cities' joint effort to expand the NBRWTP and diversify Vacaville's long-term water supply portfolio. He is overseeing raw and treated water quality sampling, facility performance assessments, and challenge testing of pretreatment and filtration systems. Additionally, Andy is guiding development of treatment goals, cost estimates, and facility layout alternatives to support long-term capacity and regulatory objectives. His work supports the Cities' evaluation of future surface water supply and treatment strategies and is closely tied to Vacaville's Cr6 compliance efforts.

**Basin 85 Sanitary Sewer Master Plan, City of Sacramento, CA:** Staff Engineer for developing a Sewer Master Plan for the City of Sacramento's (City) Basin 85 that includes modeling and condition assessments. Fieldwork includes flow monitoring and CCTV inspections consistent with the City's CARA program. Land-use information was compiled and used to project multiple land planning horizons, and a hydraulic model was developed and used to assess growth impacts, as well as potential benefits of several flow diversion options. The project includes calibration of the hydraulic model for both dry and wet weather flow conditions and assessment of rehabilitation and replacement options for the trunk sewer siphon crossing Arcade Creek and the Sump 85 Pump Station. The analyses will be compiled into a master plan report that will include a Capital Improvement Plan (CIP) consistent with the City's Infrastructure Replacement and Management Program (IRAMP). The CIP will include project ranking, timing of improvements, a summary of an annual capital improvement budget, and a data summary sheet for each project. Specific responsibilities include development of creek crossing and diversion alternatives and their associated cost estimates.

**Moraga Pump Station System Corrosion Study, Central Contra Costa Sanitary District, CA:** Project Engineer for the inspection and condition assessment of approximately one-third of the District's Moraga Pump Station System, which consists of 13,700 feet of force main and 19,000 feet of 27- to 48-inch unlined reinforced concrete sewers. Condition of the sewer segments was recorded using Closed Circuit Television, while grab sampling was performed in manholes to determine dissolved sulfide, pH, temperature, conductivity, and dissolved oxygen concentrations in the wastewater. Assigned each sewer reach a condition rating and rehabilitation priority.



**Ryan Morgan, PE**  
**CONDITION ASSESSMENT: WATER TREATMENT PLANT AND WATER BOOSTER PUMP STATIONS CIVIL/SITE & MECHANICAL, RECOMMENDATIONS - CAPITAL IMPROVEMENTS AND COST ESTIMATING**

**Staff Title:** Principal Engineer II

**Office Location:** San Diego, CA

**Years of Experience:** 20

**Years with West Yost:** <1

**Professional Registrations**

- Registered Professional Civil Engineer - California Certification No. C81536 - Arizona Certification No. 48530 (currently inactive)

**Education**

- BS, Civil Engineering, Northern Arizona University

**Certifications**

- Construction General Permit Qualified SWPPP Practitioner & Qualified SWPPP Developer, Certification No. 27881
- NASSCO Pipeline/Manhole/Lateral Assessment Certification Programs, Assessment Certification No. U-1011-13642

**Professional Affiliations**

- California Water Environment Association - San Diego Section Member
- American Society of Civil Engineers (ASCE) Pipelines and Environmental
- WaterReuse California (volunteer)

**Awards**

- APWA Project of the Year (2017): Grit Processing Improvements Project at the Point Loma Wastewater Treatment Plant, City of San Diego, CA
- APWA Project of the Year (2007): Lake Pleasant Water Transmission Main, City of Phoenix, Arizona
- ACEC Arizona Honor Award (2007): Lake Pleasant Water Transmission Main

Ryan is a professional Civil Engineer in California with 20 years’ experience in engineering design, project management, construction support, and supervisory experience. A new teammate to West Yost as of July 2025, Ryan brings experience from both private and public sectors of municipal infrastructure improvements. This includes all phases of planning, design, bid, and construction for water/wastewater capital improvement projects. Ryan’s design engineering experience includes a broad range of linear infrastructure, pump station, and treatment expansions and process improvement projects. He is an expert team leader, comfortable executing tactical initiatives and guiding project teams of managers, engineers, technicians, designers, inspectors, and support personnel.

**EXPERIENCE**

**WATER & CONVEYANCE**

**Manchester Ave Pipeline Replacement Project, Olivenhain Municipal Water District, Encinitas, CA:** Project Manager responsible for the preliminary and final design of the potable water pipeline replacement project for approximately 2,500-feet of obsolete 12-inch diameter steel water main. The project included technical analysis and preliminary design recommendations for the replacement work staged around multiple valves with sever leakage rates. One inline occlude valve was designed to isolate the northern portion of the distribution system from the southern half. Design efforts were effectively used to reduce the planned number of shutdowns and sequence the work in three primary phases. Managed the design production and submittal delivery to Olivenhain Municipal Water District. The project was subject to Coastal Development permitting and is currently pending 100% (final) submittal.

**Rockhoff Pump Station Project, Rincon del Diablo MWD, Escondido, CA:** Project Manager responsible for preliminary through final design of the potable water booster pump station improvements and approximately 2,500 linear feet of 12-inch diameter welded steel pipe and PVC pipeline improvements to a tie-in connection at the existing Vista Irrigation District flume meter vault. The booster pump station was sized to provide two duty points to two separate pressure zones during seasonal fluctuations. The pump station supplements Water Authority flow losses during regular maintenance periods. The project included the complete demolition, bypass pumping, temporary piping, sequence of work (restrictions), Electrical, Instrumentation and Controls and complete pump station replacement design including standby generator.

**Miramar Pump Station Rehabilitation Project, San Diego County Water Authority, San Diego, CA:** Project Engineer coordinating design for upgrade of an 80 cfs capacity potable water pump station delivering water from the Miramar Water Treatment Plant to member agencies. The pump station is equipped with two vertical turbine pumps (400 and 800 hp) and one 1,000 hp horizontal split case pump. The scope of work includes comprehensive condition assessment and hydraulic & surge analysis. This \$5 million upgrade project includes replacement of pumps, seismic reinforcement, forced air ventilation, replacement of all existing 2.3 kV electrical equipment with 4.16 kV system, addition of automatic pump controls, SCADA integration, noise control and site improvements including new perimeter fencing.

**North Broadway 12" and 8" Pipelines Project, Rincon del Diablo Municipal Water District, Escondido, CA:** Project Manager throughout final design, bid and construction phases the new 12-inch/8-inch diameter, 5,800 LF North Broadway Pipeline Extension which begins at the southern interconnection at the North Broadway and Jack Rabbit Acres intersection, continues northbound to North Avenue and Laurashawn Lane and ultimately interconnects with an existing Valley Center Municipal Water District (VCWMD) pipeline. The new interconnection with the Valley Center Municipal Water District is located at the intersection of Laurashawn Lane and Tamara. Continuing northbound, a new 8-inch diameter 1,300 LF pipeline was designed in Laurashawn Lane between Tamara Drive and the existing VCWMD interconnection. Drive. This project improved Rincon del Diablo MWD's capacity including fire flow demands and dramatically improved reliability of service.

## PROJECT MANAGEMENT

**Capital Improvement Project Manager, Water Utilities Department, City of Oceanside, CA:** While working for Hoch Consulting, provided project manager duties for various wastewater design projects for the Water Utilities Department in the City of Oceanside, CA. Responsibilities while Project Manager include background data collections, scope development, design consultant/architect coordination, project controls (budgets), scheduling, meetings, vendor coordination, and internal plan review and communications with Water Utilities, Building, and Planning Department staff. Initiate staff reports and apply for Council approvals for design and construction project advertisements and awards. The following projects managed are diverse and range from design and construction of sewer lift station rehabs, collections flow relief and building (Civil) projects:

- Harbor Lift Station No. 3 Rehabilitation Project
- Pilgrim Creek Lift Station Rehabilitation Project
- Roja Lift Station Rehabilitation Project
- Forcemain and Channel Repair at North Valley Lift Station Project
- Mission Inverted Syphon Relief Project
- San Luis Rey Maintenance Building Project
- Green Oceanside Kitchen Project
- Jones Road Tenant Improvements Project

## WATER DISTRIBUTION/TRANSMISSION IMPROVEMENTS

**Rock Springs Valve Replacement Project, Vallecitos Water District, San Marcos, CA:** Provided Owner/Engineer project management for The District's Rock Springs Valve Replacement consisting of an existing non-operational three 10-inch, two 12-inch and one 14-inch diameter gate valve cluster on a critical transmission main within the system. This valve cluster is critical for isolation in the area, recent breaks had forced a large out-of-service footprint. Provided planning, design, and bid phase services for the project which is expected to be in construction in 2026.

**Coronado Hills Pressure Reducing Station Project, Vallecitos Water District, San Marcos, CA:** Provided Owner/Engineer project management for The District's Coronado Hills Pressure Reducing Station Project, addressing chronic main breaks in a mountainous service area with extreme pressure variations (90–350 psi). Oversaw design and construction efforts to install new pressure-reducing stations, protecting 32,653 LF of water mains composed primarily of CMLC and ACP pipe. Led a multidisciplinary team to develop and implement solutions and alternatives analysis aimed at mitigating infrastructure damage, reducing insurance claims, and enhancing system reliability for a neighborhood with 24 documented main breaks over 16 years. Oversaw preliminary design and budget analysis efforts and developed technical memo to be used in future final design services RFP.

**Wulff Pressure Reducing Valve Project, Vallecitos Water District, San Marcos, CA:** Provided Owner/Engineer project support for The District's Lawrence Welk Court Water Line Relocation project. Managed water infrastructure improvements including a pressure reducing station to support the County Manor Estate residential development, comprising 39 new homes across three pressure zones (1610, 1500, and 1235 HGL). Oversaw planning and coordination with the developer to replace existing 12-inch water mains in multiple streets and construct a new 12-inch main connecting the High Point and Wulff Zones. Directed efforts to enhance system redundancy, reliability, and capacity, ensuring long-term service performance for new domestic customers. Managed the project team, the District self-performed project management, construction management, and inspection services during construction.

**High Point Pump Station (Development Services) Project, Vallecitos Water District, San Marcos, CA:** Provided Owner/Engineer project support for The District's High Point Pump Station project including design review services during submittal phases of final design for this Development Services project. Improvements were multidisciplinary and included a complete refurbishment of the District's existing facility to support the new housing project.



## Austin Oerding PIPELINE ASSESSMENT

**Staff Title:** Engineer II

**Office Location:** Sacramento, CA

**Years of Experience:** 4

**Years with West Yost:** 4

### Education

- BS, Civil Engineering, California State University, Sacramento

Austin Oerding has experience spanning utility master planning, hydraulic modeling, and asset management for municipal water and wastewater systems. He develops condition assessment and risk evaluation frameworks that help agencies understand system needs and prioritize long-term investments. Austin works with clients to confirm modeling assumptions, streamline data organization, and build practical tools that strengthen planning and support compliance. His analytical skills and collaborative style result in clear, dependable solutions that improve utility performance and infrastructure reliability.

## EXPERIENCE

**Louis Stralla WTP Condition Assessment, St. Helena, CA:** Staff Engineer. Supported the assessment of treatment plant assets by developing condition and risk criteria, evaluating asset performance and assigning risk scores used to prioritize improvements and guide long-term capital planning.

**Pump Station Asset Management Plan Update, City of Fairfield, CA:** Staff Engineer for preparing and executing a comprehensive condition assessment model focused on the City’s 16 pump stations. Analyzed condition data to assess the likelihood and consequence of failure to produce an overall level of risk and visually summarized.

**Water Master Plan and 30-Year CIP, City of Napa, CA:** Staff Engineer. Risk assessment. This update to the Water Master Plan includes the development of an asset management plan and risk assessment. As the staff engineer on the project Austin was involved with producing customized likelihood and consequence of failure factors and risk framework for the City’s Storage tanks, Pump stations, and Pressure Regulating Stations. This framework was used in a desktop analysis to produce a risk model to provide estimates of risk at the asset and facility level.

**Mare Island Infrastructure Assessment, City of Vallejo, CA:** Staff Engineer. Digitized the sewer infrastructure on the island using record drawings. Validated mapping with field inspections. Performed MACP inspections/assessment on sewer maintenance holes, and PACP assessment on sanitary sewer pipelines. Provided rehabilitation and recommendations based on results

**Sewer System Repair and Rehabilitation Project, Graton Community Services District, CA:** Staff Engineer assisted with collection system condition assessment based on field inspections. Performed MACP inspections/assessment on sewer maintenance holes, and PACP assessment on sanitary sewer pipelines. Provided rehabilitation and recommendations based on results.

**Water Utility Master Plan, City of Fairfield, CA:** Staff Engineer. Risk assessment. This update to the Water Master Plan includes condition assessment of Water Treatment Plants, Water storage Reservoirs, and Water Distribution System. As the staff engineer on the project Austin was involved with compiling City data to create a registry of City assets and assisted with producing customized likelihood and consequence of failure factors and risk framework. This framework was used in a desktop analysis to produce a risk model to provide estimates of risk at the asset and facility level.

**Lift Station and Pipeline Rehabilitation, Port of Oakland, CA:** Staff Engineer for the sanitary sewer design services, including an evaluation of the sanitary sewer collection system. Responsible for preparing maps and figures outlining rehabilitation and maintenance recommendations and developing survey plan documents for in field verification of system structures.

**Lift Station Asset Registry and Condition Assessment Program, City of Carlsbad, CA:** Staff Engineer. West Yost prepared asset management and condition assessment plans for the City's 11 lift stations. Asset registry standards were developed to support existing SCADA tagging systems and populated using as built drawings provided by the City in conjunction with inspections conducted in the field. Business processes were developed to standardize procedures for asset creation, modification, and removal to easily manage assets.

**Glen Avon Trunk Sewer Evaluation Study, Jurupa Community Services District, CA:** Staff Engineer. Supported the evaluation of the existing trunk sewer by identifying condition deficiencies and contributing to the assessment of feasible pipeline alignment alternatives. Developed life-cycle cost considerations based on pipeline condition and renewal needs.

**2024 Water Master Plan, City of Lincoln, CA:** Staff Engineer for the preparation of a 2024 Water Master Plan (WMP) for the City of Lincoln. Tasks include technical support in data analysis, system modeling, and infrastructure evaluation to help develop efficient and sustainable water supply strategies.

**Improvement Plan Submittal Review, City of Rancho Cordova, CA:** Staff Engineer responsible for the review of Improvement Plan submittals for consistency between City Standards and prepared drainage study specific to the development.

**Hydraulic Model Recalibration, City of Redwood City, CA:** Staff Engineer for the calibration of the City's existing recycled water hydraulic model. Developed projected future demand including the City's development projects, compared pipes used in the hydraulic model to the pipes shown in GIS shapefiles and updated the model accordingly, and created GIS report figures to present the results from the model.

**Sewer Evaluation and Capacity Assessment, City of Davis, CA:** Staff Engineer responsible for updating the existing dynamic model of the wastewater collection system and providing an analysis of capacity for the proposed El Macero development project. The proposed demands were added into the model and was then used to analyze system capacity, identify deficiencies, and recommend improvement projects for both pipes and lift stations in the system.

**Water Master Plan Update Hydraulic Model Update, City of Milpitas, CA:** Staff Engineer responsible for reviewing the City's Collection System Hydraulic Model in InfoWorks ICM and developing a Modeler's Notebook to document the facilities and the manner in which they were modeled. The Modeler's Notebook provided the City with a living reference for use by the City's modeling staff and outside parties, including development notes, supplemental database information, and different model scenarios.

**Sanitary Sewer Management Plan Audit and Update, Vallejo Sanitation and Flood Control District (VSFCD), CA:** Staff Engineer. Audited the District's existing Sanitary Sewer Management Plan (SSMP) for compliance with the Statewide Waste Discharge Requirements (WDRs). Updated the SSMP to fill compliance gaps and assisted with a virtual training with District Engineering and Operations staff on SSMP elements and effectiveness.



**Steve Polillo**  
**INSPECTION**

**Staff Title:** Resident Inspector II

**Office Location:** Sacramento, CA

**Years of Experience:** 21

**Years with West Yost:** 2

**Education**

- Water Treatment Plant Operations course, California University of Sacramento
- Water Distribution System Operation and Maintenance course, California University of Sacramento

**Certifications**

- OSHA 30 Hour General Industry Safety and Health
- Traffic Control & Flagging Training
- Confined Space Entry Training
- Competent Person Excavation through Safety Center Inc.
- OCT Water Distribution Operators Grade I-III, 2006
- Class II Distribution Operator certification – 2005-current
- OCT Water Sources/ Disinfection Certification 2011
- Certified Occupational Safety Specialist COSS
- Certified in First AID, CPR, and AED

Steve recently joined West Yost as a Construction Inspector (CI) following more than 10 years as a utility worker and safety lead with a water and wastewater service provider in Sacramento. He has expert knowledge, proven skills, and the ability to perform a wide variety of work in the public works/construction field. He is an effective communicator, technically proficient, works well with external customers, and is a team player who is dependable and hard-working.

Steve has completed multiple courses offered through the International Accreditors for Continuing Education and Training (IACET) accredited OCT Water Quality Academy including Pumps & Motors for Water Operators, Water Supply Principals, Water Distribution System Construction, and Introduction to Title 22 EPA regulations. He has completed courses on the proper use and maintenance of fire hydrants, valves, service line products and drilling/tapping machines, and a course for cross connection control specialist and backflow assembly testing and repairs. He also worked for seven years as a pipe fitter for a pipeline GC.

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**EXPERIENCE**

**J.M. Pike Park Stormwater to Sanitary Sewer Cross Connection Removal and Water Main, City of Modesto, CA:** Construction Inspector. The project includes removal of nine stormwater to sanitary sewer cross connections, installation of approximately 10,566 linear feet of new storm drain systems, and construction of stormwater pre-treatment facilities to alleviate increased PWWF experienced primarily by the Emerald sewer trunk. The new storm drain system will carry the stormwater runoff to an underground percolation facility at a City of Modesto public park, J.M. Pike Park. To minimize disruption to the public and unnecessary replacement of asphalt paving, the project also includes replacement of existing, deteriorating, and undersized water mains in the same general areas where the new storm drain system will be installed. The new potable water line piping will consist of approximately 17,213 LF of 8-inch and 5,675 LF of 12-inch water mains, and associated appurtenances and 300 domestic water services. The majority of the existing water mains are installed in the alleys and will be relocated to the streets for ease of access as part of the City’s maintenance program.

**River Trunk Realignment – Shackleford Pump Station, City of Modesto, CA:** Construction Inspector. West Yost is providing construction management and inspection for the \$10 million construction of a 7 MGD sewage pump station, new pressure and gravity pipelines up to 36 inch diameter, and associated structures located in the City of Modesto and unincorporated Stanislaus County, CA. New facilities will include a sewage pump station with three submersible screw centrifugal pumps located in a belowground cast in place concrete structure; associated pump station valves and flow meter located in a cast in

place belowground concrete structure; a pump station electrical building, outdoor generator, and monorail crane; force main pipelines that operate under pressure, including ductile iron and polyvinyl chloride pipe materials, installed on a pump station site and through Dryden Park Golf Course; and sanitary sewer pipelines that flow by gravity installed on pump station site, within public right of way and Golf Course. It will also include asphalt pavement replacement within public right of way and Golf Course; reinforced concrete junction structures and manholes along the new sanitary sewer pipeline alignments; a paved pump station site with retaining wall and fencing; a grinder pump station located on the Golf Course; and sod restoration for all disturbed area on the Golf Course.

**River Trunk Realignment – Gravity System, Modesto, CA:** Construction Inspector. West Yost is overseeing a \$22 million construction project that includes trenching, conduit and pipe placement; backfill and compaction for approximately two miles of large diameter piping. This includes construction of concrete junction structures and requires a large public outreach effort and coordination with multiple stakeholders. West Yost is providing pre, during, and post construction management services. The NTP date of March 2022 and completion date of October 2023. The project consists of installation of approximately 1.7 miles of new 42-inch to 60-inch diameter Fiberglass Reinforced Polymer Mortar Pipe (FRPMP) sanitary sewer pipeline, small diameter sewer collection pipelines, and smaller diameter potable water distribution pipelines, and construction of associated reinforced concrete junction structure and appurtenances at depths over 30 feet below existing ground surface. Other components of the project include replacement of slide gates and installation of a biogas filter at the City's existing cannery segregation junction structure. Key challenges to be addressed for successful completion of this project include extensive public outreach and traffic control as approximately ¾ of the alignment is routed along residential streets, deep excavation monitoring requiring engineered shoring and strict safety protocol adherence, vibration monitoring services due to proximity of the work to residences, permit tracking, and coordination with multiple stakeholders such as the Modesto Irrigation District (MID) and various private utility companies that will be impacted by the project.

**Owner's Representative Services, Well 80, Sacramento Suburban Water District, CA:** Resident Inspector. West Yost is providing Construction Management and Inspection services as part of its Owners Representative's role beginning with the first of up to four new monitoring wells and four new groundwater wells and associated pumping and treatment facilities. The projects are being constructed under a progressive design build project delivery process. As the Owner's Representative West Yost is representing the district in the contracting and management of the progressive design build team.

**Bickford Ranch Water Tank No. 1 and Pump Station No. 1, Placer County Water Agency (PCWA):** Resident Inspector. Providing inspection services on behalf of PCWA for this developer driven, \$9 million project that includes water distribution, storage, and pumping equipment and facilities to serve the new Bickford Ranch housing development in Unincorporated Placer County, California. The project consists of a new pumping station with four 200 hp and two 25 hp jockey vertical turbine pumps with VFDs, controls, valves and all other related mechanical and electrical components, site piping including pump suction and discharge, site water, irrigation and drainage, an approximately 1,650 sq. ft. pump station structure, backup generator, 10,000 gallon hydropneumatic tank and air compressors, a 1.4 MG welded steel water storage tank, approximately 4,500 feet of new 18 inch ductile iron distribution pipeline, approximately 1,800 feet of new 60 inch welded steel transmission pipeline, a new 24 foot wide paved access road to Pump Station No. 1 including a new concrete box culvert for crossing the Caperton Canal, and associated side work including grading, paving, landscaping, retaining walls, equipment pads structural foundations, and retention pond.



**Tara M. Mertz**  
**CONDITION ASSESSMENT: ELECTRICAL,  
 INSTRUMENTATION, AND CONTROLS  
 & SCADA SYSTEM**

**Staff Title:** Principal Technical Specialist I

**Office Location:** Sacramento, CA

**Years of Experience:** 23

**Years with West Yost:** 3

**Education**

- BA, Communications, San Diego State University
- SANS MGT414: SANS Training Program for CISSP Certification
- Department of Homeland Security, 201 – Intermediate Cybersecurity for Industrial Control Systems
- Department of Homeland Security, 301 – ICS Cybersecurity
- VMWare vSphere v7.x Install, Configure, Manage
- Cisco Security CSFPA and CSVPN
- Homeland Security/FEMA Certificates: IS100, IS120, IS130, IS200, IS553, IS700, and K146
- AWWA Utility Risk and Resilience Certificate Program

**Certifications**

- CompTIA Security+ SY0-701, 2024
- MCPS: Microsoft Certified Professional, 2018

**Professional Affiliations**

- Control Systems Cybersecurity Association International CS2AI

**Professional Qualifications**

- Databases: MS SQL, Oracle, MySQL, PostgreSQL
- Network: HPE, Cisco, Ubiquiti
- Operating Systems: Windows, Linux, Mac
- Open-Source Tools: Metasploit, Wireshark
- Web Servers: IIS, Apache
- Wireless Technology: Nokia, GE MDS, SAF Tehnika, Phoenix Contact

Tara Mertz is a Principal Technical Specialist who provides technical advisory services in cybersecurity and resilience of operational technology systems. She is an experienced master planner and conducts risk assessments with a focus on cybersecurity, network architecture, and governance. Tara joined West Yost in January 2022 and brings to the team 23 years of public sector IT/OT leadership experience.

Her experience includes program management, project management of cross-functional teams, technical owner’s advisory services, cybersecurity risk assessment, network design, and implementation planning. She is technically proficient and effectively communicates strategic planning vision to stakeholders.

Through her long-term involvement as a member of the Municipal Information Systems Association of California (MISAC) and the northern California Critical Infrastructure Security working group, Tara has cultivated respect from her water and wastewater peers and developed long-lasting relationships.

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**EXPERIENCE**

**St. Helena Louis Stralla WTP Condition Assessment, St. Helena, CA:** Cybersecurity Lead. West Yost evaluated condition- and performance-related improvements for the City’s sole surface water treatment facility, originally constructed in 1980. Objectives for near-term investment included increased monitoring and control capabilities to increase operational efficiency. West Yost produced set of tiered capital improvement recommendations capturing immediate-, near- and long-term improvements intended to balance risks and capital expenditures.

**COWRF SCADA Improvements, City of Lone, CA:** Cybersecurity Lead. West Yost was contracted to perform an assessment of field instrumentation and SCADA hardware and software for the City’s tertiary treatment plant to determine improvements required to meet Title 22 requirements. Tara conducted site visits to the plant and identified cybersecurity improvements.

**America’s Water Infrastructure Act (AWIA) Risk and Resilience Assessment (RRA) and Emergency Response Plan (ERP) Compliance, City of Folsom, CA:** Cybersecurity Lead analyst for the City of Folsom’s all-hazards RRA and ERP. West Yost completed a thorough risk analysis using an all-hazards approach which includes evaluation of natural, built, cyber, and personal assets and all threats and hazards. After collecting, reviewing, and organizing data, the RRA was completed in accordance with AWWA standards and best management practices. The RRA results were used to identify recommendations for risk and resilience management strategies.

**SCADA Hardware Virtualization, Waterman Water Treatment Plant, City of Fairfield, CA:** Project Manager and Technical Lead. As Phase 2, developed an implementation plan and designed high level network architecture cybersecurity improvements including virtualization of the core SCADA systems. The project work included upgrades and migration of SCADA Software HMI and Historians as well as implementation of a new industrial alarm system. The project also addressed the support of the new SCADA systems through Roles and Responsibilities workshops and extensive coordination with the City of Fairfield IT department for development of disaster recovery methods and guidelines plus maintenance of the new virtual systems.

**SCADA Technology Upgrades Project Phase 1, Fairfield-Suisun Sewer District, Fairfield, CA:** Technical Lead. West Yost OTCR provided services for the network design and initial comprehensive cybersecurity assessment of the District's core SCADA systems including servers, workstations, network equipment, and software. Tara documented the current condition of the network communications equipment including routers, switches, and firewalls and provided recommendations for secure network convergence between the SCADA and untrusted networks as well as improvements to enhance resiliency through distributed architecture of the core SCADA servers.

**SCADA Cybersecurity Baseline Assessment, Las Gallinas Valley Sanitary District, San Rafael, CA:** Project Manager and Technical Lead. West Yost OTCR provided services to Las Gallinas Valley Sanitary District to provide a comprehensive SCADA network assessment aimed at identifying, documenting, and outlining any cybersecurity deficiencies or areas which may benefit from alternative improvements. Tara was responsible for providing overall project management, coordinating site visits for evaluation of systems and data collection, and development of a prioritized list of projects based on recommendations for foundational cybersecurity safeguards

**SCADA Master Plan and Implementation, City of Tempe, AZ:** Procurement Coordination and Program Initiatives Support. Tara is the acting liaison between the City's IT department and the Water Utility department to support program initiatives. West Yost provides high-level technical review of City strategic directives and prescriptive guidance based on NIST CSF framework and the Arizona Department of Environmental Quality (ADEQ). West Yost previously provided SCADA system implementation, configuration, and training services that stemmed from upgrades to the SCADA network, hardware and software; updated Citect HMI screens and configurations as well as PLC programming to accommodate hardware and software upgrades; tested communications across the system for consistency and reliability. The current phase is the implementation of a portfolio of projects that require in-depth technical understanding of cyber-hygiene, network architecture, and incorporate required controls required in the cyber-Risk and Resilience Assessment (RRA).

**AWIA Cybersecurity Improvements, East Orange County Water District, Orange, CA:** Subject Matter Expert. Tara is responsible for the overall execution and coordination of all aspects of the project including reviewing vendor submittals related to hardware and software, development of policies and procedures, and assistance with managing the District's ongoing SCADA governance initiative. West Yost previously conducted the District's AWIA cybersecurity assessment using the AWWA Cybersecurity Tool and Guidance. The cybersecurity assessment identified the need for the District to conduct a SCADA Master Plan with a strategic approach to system-wide SCADA technology and support improvements. West Yost developed the District's SCADA Master Plan. The SCADA Master Plan identified key cybersecurity improvements, including policies and procedures, access control and physical security improvements, and execution of an ongoing SCADA governance initiative. Through this project, West Yost will assist the District with implementation of the required cybersecurity improvements.



**Greg Williamson, PE**  
**CONDITION ASSESSMENT: ELECTRICAL,**  
**INSTRUMENTATION, AND**  
**CONTROLS & SCADA SYSTEM**

**Staff Title:** OTCR Sr. Tech Spec I

**Office Location:** Davis, CA

**Years of Experience:** 12

**Years with West Yost:** 1

**Education**

- MS, Electrical Engineering, CSU Chico
- BS, Mechanical Engineering, CSU Chico

**Certifications**

- California Registered Professional Electrical Engineer (E23330), 2020
- UL 508A Qualified Panel Shop Representative (Former)

Electrical Engineer with over a decade of experience in power distribution, control panel design, and automation systems across multiple industries. Specializes in power distribution design, UL 508A control panel design, P&ID development, PLC/HMI programming, and SCADA integration. Highly experienced in arc-flash analysis, short-circuit studies, and protective device coordination, ensuring safe, compliant, and reliable systems. Skilled in managing complete project lifecycles—from concept and detailed design through testing, commissioning, and preparation of permit documentation and technical specifications.

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## EXPERIENCE

**Davis H-Street Pump Station Upgrade Project:** Engineer of Record, Oversaw the electrical design for a complete site rehabilitation project. A new building was developed to house electrical power distribution equipment, featuring dual-fed utility service and standby generators coordinated through microgrid switchgear for improved reliability and resilience. Designed and customized the instrumentation and control systems in alignment with client standards and operational preferences. The site was integrated with a remote SCADA master system to enable real-time monitoring of critical process data. The project included a new pumping station with two 250-HP and four 500-HP vertical turbine pumps, each equipped with VFDs, control systems, valves, and all associated mechanical and electrical components.

**Howler Water Treatment Plant Intertie to IRWD Zone 5 Pipeline Project:** Engineer of Record — Directed the electrical and instrumentation design for intertie pipeline flowmeter and pressure reducing valve (PRV) vaults as part of a system upgrade project. Responsibilities included the development of new metering and control panels, coordination with Southern California Edison (SCE) for power service consolidation and metering requirements, and the design of site grounding systems, conduit and wiring layouts, and instrumentation networks. Developed detailed P&ID drawings to support PLC-based automation and remote SCADA monitoring. Collaborated with civil, and mechanical to ensure constructability, system integration, and minimal impact on the existing community.

**Medford RWRP Improvement Project:** Electrical Engineer, Designed electrical power and instrumentation systems for a wastewater treatment plant upgrade at an existing facility. Revised and optimized the electrical distribution system, assisted in coordinating with the local utility to consolidate and modernize existing services. Developed the electrical design for new process areas while minimizing operational impacts to existing facilities.

**Summit Water Treatment Plant Water Quality Upgrade Project:** Electrical Engineer, Designed comprehensive electrical power and instrumentation systems for a drinking water treatment plant upgrade within an active facility. Responsibilities included revising and optimizing the electrical distribution system to improve reliability, efficiency, and maintainability. Developed detailed electrical drawings, P&IDs, and control schematics for new process areas, integrating new equipment and automation systems with existing infrastructure. Coordinated with utility providers, civil, mechanical, to ensure seamless system integration and constructability. Emphasized code compliance, safety, and minimal disruption to ongoing operations throughout design and implementation.

**City of Rancho Cordova Pump Station Upgrade Project:** Electrical Engineer, Provided construction-phase engineering support on behalf of the City of Rancho Cordova, reviewing and coordinating with contractors to ensure compliance with project specifications and standards. Responsibilities included review and approval of electrical submittals, responding to contractor RFIs.



**Christian Neher, EIT**  
**CONDITION ASSESSMENT: ELECTRICAL, INSTRUMENTATION, AND CONTROLS & SCADA SYSTEM**

**Staff Title:** Technical Specialist III

**Office Location:** Davis, CA

**Years of Experience:** 5

**Years with West Yost:** 5

**Professional Registrations**

- Electrical Engineer-in-Training, California No. 174019

**Education**

- MS, Electrical and Computer Engineering, University of California, Davis
- BS, Biochemistry and Molecular Biology, University of California, Davis

**Certifications**

- CompTIA Network +

**Professional Qualifications**

- PLC Programming Software: RSLogix 5, RSLogix 500, Studio 5000, ControlExpert
- SCADA Software: Ignition by Inductive Automation

Christian Neher is a Technical Specialist III with the Operations Technology, Cybersecurity, and Resilience (OTCR) group at West Yost Associates. Since joining West Yost in 2020, he has contributed PLC programming, HMI configuration, network configuration, construction management, engineering services during construction and on-site commissioning/startup for multiple projects. He has also developed scenarios for Day Without SCADA tabletop exercises to evaluate and improve client cybersecurity posture and emergency preparedness and performed staffing assessments to determine client maintenance resource requirements and capacity.

Christian is currently contributing to multiple SCADA Master Plan development projects, and conducts condition assessments for client electrical, instrumentation, and control system assets to develop detailed recommendations for improvements. Christian is focused on coordinating closely with clients to develop and deliver implementation plans to address their most pressing needs while remaining within their financial means.

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**EXPERIENCE**

**Wastewater Treatment Plant Improvements, City of Davis, CA:** Project Engineer. West Yost performed upgrades to two PLC panels at the City of Davis’s wastewater treatment plant. Christian completed PLC programming and HMI configuration for new controllers to replace obsolete equipment while integrating seamlessly with existing plant SCADA. Christian also conducted inspection during construction and engineering services to review contractor submittals and administer any client requested design changes. This project also included updating the firmware versions for all plant PLCs while maintaining function and communication between process areas and plant SCADA.

**Pump Station SCADA Configuration & Startup, City of Rancho Cordova, CA:** Programming Task Manager, Project Engineer, & Startup Coordinator. Christian led coordination of PLC programming, HMI and OIT configuration, and facilitated technical workshops with City operations staff to validate control strategies and interface requirements. He also conducted electrical submittal reviews, performed construction-phase inspections, prepared site observation reports, and coordinated closely with contractors and City personnel facilitate system startup.

**East and West Area Booster Pump Station SCADA Support, City of Davis, CA:** Programming Lead. West Yost assisted the City of Davis with an immediate programming need to develop a response to sudden changes in flow from their primary water source. Christian developed the control strategy for the new functionality in coordination with City staff, implemented and tested program and HMI modifications in a lab environment, and verified system performance through on-site functional testing. He also updated the control strategy documentation and provided operator training to support smooth adoption of the new process.

**SCADA Asset Inventory Update, City of Davis, CA:** Project Engineer. West Yost assisted the City of Davis in improving preventive maintenance task planning by developing a comprehensive inventory of SCADA & instrumentation assets across 30 remote water, wastewater, and stormwater sites. Christian supported coordination with City operations, CMMS, and SCADA staff and participated in on-site data collection of instrument details and existing maintenance practices. He then assisted junior staff in reviewing manufacturer documentation to validate preventive maintenance steps. Finally, he assisted in the review of the final asset dataset for client delivery.

**Northwest Wells & Treatment Facility, City of Tucson, AZ:** Deputy Design Lead & Project Engineer. West Yost is currently subcontracted to Carollo Engineers to complete an I&C & SCADA Design of a new well and advanced oxidation process and granular activated carbon treatment system for the City of Tucson. For this project Christian conducted site visits and coordinated with multidisciplinary teams to resolve preliminary design questions, which he then used to prepare the I&C and SCADA sections of the Preliminary Design Report. He also developed initial P&ID markups and provided backchecks and revisions following drafting. He was also responsible for addressing QC comments to finalize the PDR and P&IDs for client delivery. This project is ongoing and progressing into detailed design.

**H-Street Pump Station Upgrade Design, City of Davis, CA:** Deputy I&C Design Lead. The City of Davis is preparing to update a key storm drainage station, which will require extensive structural, mechanical, electrical, and instrumentation upgrades. For this design project, Christian served as the primary I&C Design Lead and developed initial P&ID markups based on client requirements. He then performed backchecks and revisions following internal review. This project is ongoing and currently in the preliminary design phase.

**Electrical and SCADA Staffing Assessment, City of Davis, CA:** Deputy Project Manager and Project Engineer. The project involved multiple interviews with City administrative, electrical, and SCADA maintenance staff to determine key challenges faced by maintenance staff. Work order data was collected and evaluated to identify gaps in required maintenance activities, and surveys with peer utilities were conducted to develop a benchmark to compare against. Following this effort, Christian developed recommendations for improvements to staffing resources, asset management practices, and organizational structure.

**SCADA Implementation Plan, Hidden Valley Lake, CA:** Deputy Project Manager and Project Engineer. Following the development of a SCADA Master Plan by a separate engineering firm, West Yost was contracted to develop an implementation plan to outline specific improvement projects to be carried out. Christian conducted site visits and workshops to supplement the existing baseline assessment and used these findings to develop detailed recommendations for improvements to the District's water and wastewater SCADA system. These projects were organized into a plan with a detailed schedule and budget for implementation over 5 years. Christian then assisted the District in identifying grant opportunities to fund these improvement projects.

**Title 22 Report Update, City of Lone, CA:** Project Engineer. West Yost was contracted to perform an assessment of field instrumentation and SCADA hardware and software for the City's tertiary treatment plant to determine improvements required to meet Title 22 requirements. Christian conducted site visits to the plant and identified multiple short term instrumentation improvements to bring the plant back into compliance. This effort also led to the development of a long-term SCADA upgrade plan to modernize obsolete SCADA hardware and software, while also implementing multiple operational improvements.

**A Day Without SCADA Tabletop Exercise, Iron Mountain, CA:** Project Engineer. West Yost performed a tabletop exercise with Iron Mountain Treatment Plant operational staff to determine their cybersecurity posture and emergency preparedness. Following a cybersecurity baseline assessment, Christian used the findings to develop a plausible incident scenario to guide participants through increasing degrees of cyber incidents. Findings from this workshop were used to develop recommendations for improvements to the client's emergency preparedness plan.

**SCADA Master Plan, City of Millbrae, CA:** Project Engineer. Christian conducted site visits to client sites to develop a baseline assessment of the clients SCADA hardware and software, network architecture, and instrumentation. This assessment was used to develop recommendations for improvements, which were then used to develop an implementation plan including a detailed schedule and budget.



**Ronald J. Migdal, S.E.**  
**Structural Engineer**

**Experience**

Ronald Migdal is a structural engineer with more than 20 years of design and management experience. His work has included large-scale residential and educational building projects, including a 135,000 sq. ft. community college library. He has also completed structural evaluations and designs for storm water conveyance structures, pump stations, and wastewater treatment plant expansions. His specific experience includes the following:

**Education**

MS, Civil Engineering;  
 University of Illinois,  
 Urbana; 1990

BS, Civil Engineering;  
 University of Illinois,  
 Urbana; 1989

**Professional Registrations**

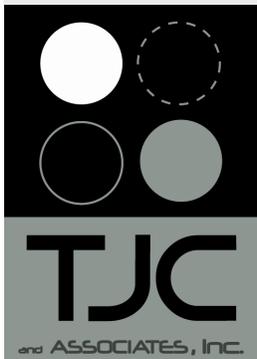
Structural: CA 4439  
 Civil: CA 54389

**Professional Memberships**

Structural Engineers  
 Association of  
 Northern California  
 San Francisco  
 Planning and Urban  
 Research Association

**Office Address**

1111 Broadway  
 Suite 300  
 Oakland, CA 94607



- **Upper Llagas Creek Flood Protection Project; Valley Water, Morgan Hill, CA; Project Engineer.** This project included the design of wing walls, box culverts, 72-inch-diameter tunnel sections, bifurcation structures, culvert access structures, inlet weirs, outlet structures, bridges, and head walls to protect nearby businesses and residences from flooding from Upper Llagas Creek. Mr. Migdal performed the QA/QC of design engineering drawings and calculations for these new structures. This included calculation modifications to meet code and NRCS requirements. He also provided bid support and related engineering services.
- **Lift Station Condition Assessment Project; Valley Sanitary District, Indio, CA; Project Engineer.** This project involved structural evaluations for multiple lift stations across VSD's service area as part of the District's lift station upgrade program. Mr. Migdal completed structural condition and seismic risk assessments following Tier 1 and Tier 2 screening per ASCE/SEI 41. He also reviewed construction documents, identified structural vulnerabilities, and developed remediation and upgrade recommendations.
- **Randall-Bold WTP Communications Room Improvements, Contra Costa Water District, Oakley, CA; Project Manager.** Design and rehabilitation services to mitigate temperature fluctuations and ventilation and dust issues related to a failing HVAC system. Structural design details included improved insulation for door and room penetrations as well as providing data to help size the new HVAC system.
- **Santa Anita Booster Pump Station Upgrades, Pasadena Water and Power, Pasadena, CA; Project Manager.** Comprehensive evaluation of structural elements for a pump station built in 1930. Evaluation included physical observations and documentation of existing conditions and structural repair and rehabilitation recommendations. The evaluation was part of a technical memo to PWP listing recommendations and conceptual design data.
- **Eagle Rock Pump Station Upgrades Conceptual Design, Pasadena Water and Power, Pasadena, CA; Project Manager.** Comprehensive evaluation of structural elements for a 100-year-old pump station, which included a visual inspection of the station and documentation of observations needed to determine whether the pump station should be replaced or upgraded and expanded.
- **Facility Planning Services First Aqueduct Bifurcation Structures; San Diego County Water Authority, CA; Structural Engineer.** Provided structural evaluation focusing on 11 structures on the First Aqueduct containing 6-foot-diameter tunnel sections with associated bifurcation structures. Provided evaluations for representative structures, including computer modeling with RISA-3D, to identify structural improvements required to ensure that all bifurcations will meet the applied loading requirements of the California Building Code. Developed recommendations and conceptual plans for modifying each of the structures to withstand the anticipated loads.



**Daisy M. Yu, S.E., LEED AP**  
**Vice President**

**Experience**

Daisy Yu has extensive experience in seismic evaluation and retrofit design and in the design of large, multistory, steel-framed structures. Her design experience also includes water and wastewater treatment facilities such as reinforced concrete reservoirs, reinforced masonry pump stations, and chemical storage facilities. As a LEED accredited professional, she is recognized as having a background and understanding of the principles that go into designing structures with a minimal impact on the environment, and that promote energy efficiency and a healthy environment for their occupants. Ms. Yu is not only an experienced structural engineer, but also a proven project manager. Her specific experience includes the following:

**Education**

MS, Structural Engineering;  
 University of CA, Berkeley; 1999

BS, Civil Engineering;  
 University of CA, Berkeley; 1994

**Professional Registrations**

Structural: CA 4872  
 Civil: CA 57044

**LEED Accredited Professional**

**Professional Memberships**

Structural Engineers Association of Northern California

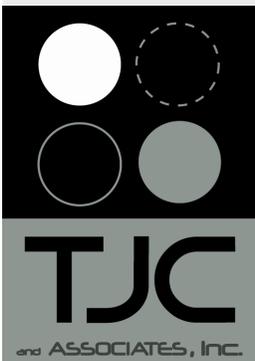
American Concrete Institute

American Institute of Steel Construction

**Office Address**

1111 Broadway  
 Suite 300  
 Oakland, CA 94607

- **WTP Filter Improvements and Hypochlorite Conversion, City of Pittsburg, CA; Project Manager.** Design of structural components to replace the treatment plant's aging filtration system and conversion of the disinfection system to sodium hypochlorite. This included structural design for the new hypochlorite facility and other new systems as well as seismic evaluations and upgrades to existing structures.
- **21 kV System Rehabilitation Project; Monterey One Water; Marina, CA; Structural Engineer of Record.** Prepared Preliminary Design Report to document and summarize the required functionality, design criteria, and execution approach for replacing the existing 21 kV distribution system at the Regional Treatment Plant. Final design for the project included structural design for a 14-ft retaining wall around the new distribution switchyard and a seismically-rated, 3-tier cable tray bridge from the new switchyard to existing distribution points located across a plant roadway. System includes PG&E main utility service and metering; 21 kV switchgear, protective devices, and feeders; 21 kV-480 V substation transformers; and 480 V secondary conductors (cable or bus duct).
- **Navajo Booster Station Upgrade; Golden State Water Company, Morongo Valley, CA; Project Manager/Project Engineer.** Structural design of a new booster station including a 21 by 38 feet CMU building with wood roof and prefabricated wood trusses. The building houses three booster pumps as well as an electrical room for new electrical equipment. TJCAA is providing ESDC.
- **Rinconada WTP Reliability Improvement Project; Valley Water, Los Gatos, CA; Project Engineer.** Provided structural design for a new ozone generation building, LOX facility, flocculation/sedimentation basins, filters, washwater recovery facility, chlorine contact basin, and an elevated concrete platform to support electrical equipment. The structures are part of this major project to improve reliability at the Rinconada WTP, which is the main WTP serving the western service area for the District. Providing ESDC.
- **Curtner Road Booster Station Upgrade; Alameda County Water District, Fremont, CA; Structural Engineer of Record.** Structural design as part of a project to improve performance and reliability of a booster pump station built in 1972 and modified in 1985. The existing structure is approximately 12 by 12 feet and approximately 37 feet deep. Providing structural design to raise the top of the booster station by 2 feet to accommodate new vertical pumps, as well as design of an addition to the first floor to house new electrical equipment. To improve access to the pump station, TJCAA is designing new concrete stairs and intermediate concrete floors to replace an existing interior spiral staircase. Design challenges include fitting in a set of new stairs while maintaining access to the new vertical pumps in a very tight space, as well as providing a means to remove and replace equipment parts through a series of removable grating sections that are integrated into the floor designs. TJCAA provided ESDC.





## Noy Phannavong, PE

Role: Condition Assessment Practice Lead |  
Sr. Project Manager

### Education

B.S., Civil Engineering,  
University of California-Davis, 2007

### Registration

Civil Engineer, CA (79592)

### Joined V&A

2007

### Total Years of Experience

18 years

### Training and Certifications

- American Society of Civil Engineers (ASCE) - Member
- National Association of Sewer Service Companies (NASSCO) Assessment Certification for Pipeline (PACP), Manhole (MACP) and Lateral (LACP) # U-0720-70309839
- NASSCO ITCP - Manhole Rehab # MR-713-0046
- Association of Materials Protection and Performance (AMPP) (formerly NACE) - Member
- Confined Space Entry/Rescue Certified
- First Aid/CPR/AED

## Professional Summary

Noy is a Senior Project Manager in the Oakland office with more than 18 years of experience in corrosion condition assessments and pipeline assessment projects in the water and wastewater treatment industry. He manages and performs condition assessment projects as small as the evaluation of a pipe up to the assessment of multiple structures in water or wastewater treatment plants. Noy has performed plant-wide corrosion assessments and confined space entries into structures of varying sizes, such as pump station wet wells or large treatment plant structures. Noy has experience managing, preparing, and delivering preliminary investigation studies, contract documents, and delivering engineering services during construction. He has experience managing subcontractors, subconsultants, and forensic labs for his projects. He is a registered California civil engineer and holds certifications for the NASSCO Pipeline and Manhole Assessment Program.

## Relevant Experience

### City of Sacramento Wastewater and Drainage Sump Station Facilities Condition Assessments. Sacramento, CA

Performed a condition assessment of ten (10) of the City of Sacramento Department of Utilities' (DOU) sump stations. The condition assessment methods consisted of visual evaluations and complementary testing that helped quantify the condition of an asset based on the asset's material of construction. The results of the condition assessment will be used by the DOU to appropriately develop short-term and long-term capital improvement plans (CIP) for the sump stations. Performed a structural and corrosion condition assessment of four (4) drainage sump station facilities (Sump 96, 99, 142, and 157) and five (5) wastewater sump station facilities (Sump 32, 45, 48, 87, and 145). The existing lining on several of the discharge pipes was at the end of its service life and needed to be repaired. The piping, fittings, and valves at the wastewater sump stations were moderate to severely corroded. Provided a report with a prioritized list of repairs to DOU.

### Sacramento Regional County Sanitation District On-Call Condition Assessment and Engineering. Sacramento, CA

Performed a condition assessment of the Influent Junction Structure (IJS) that was constructed in 1976. The unlined concrete portions of the structure were reported to have experienced severe concrete deterioration due to exposure to hydrogen sulfide gas.

The assessment was completed via confined space entry into safely accessible portions of the IJS. This allowed for visual investigation and non-destructive testing methods to be conducted, characterizing the extent of concrete corrosion in the structure. Concrete cores were obtained from two locations and tested for carbonation, pH, chlorides, and compressive strength to evaluate their quality and durability. A condition assessment report summarizing the findings and

conclusions with graphical and tabular representations of the results was prepared. Recommendations for rehabilitation to extend the remaining useful life of the structure were presented to the District.

#### **City of Cupertino Storm Drain Outfall Condition Assessment. Cupertino, CA**

The V&A project team performed condition assessment engineering services for the City's Storm Drain Outfall Assessment Project. Information obtained from the condition assessment will allow the City to prioritize necessary improvements for the outfall pipes and structures. There are approximately 17,051 feet of outfall pipes across the 174 segments that were assessed. The diameter of the outfall pipes ranges from 6 inches to 72 inches, with more than two-thirds of the pipes falling in the 12-inch to 36-inch diameter range. There are 39 segments totaling approximately 3,892 feet that have unknown sizes. The sizes and other attributes (pipe material, rim-to-invert, etc.) of these pipes were documented as part of this project. The objective of the project was to assess the segments of storm drain pipes from the creeks/channels up to the nearest upstream catch basin or storm drain structure. Additionally, the project visually documented the condition and attributes of the outfall structures and upstream storm structures associated with the outfall pipes.

#### **Vallecitos Water District (VWD) Ductile Iron Pipe Condition Assessment Program. San Marcos, CA**

V&A assisted in planning and implementing a phased, multi-year assessment program for VWD's ductile iron pipe system. V&A's scope of work includes performing a desktop risk-based evaluation of the ductile iron pipelines within the system, performing an evaluation of condition assessment technologies for assessment, coordinating pilot testing on a selected small area of ductile iron pipelines, and developing a ductile iron pipe assessment program implementation plan with a guide for annual assessments.

#### **City of Roseville Barton Road Water Treatment Plant. Roseville, CA**

Performed a visual and quantitative assessment of a total of 23 assets at the City's WTP as part of the development of an asset management plan for prioritizing capital improvement projects for the City's water system for the next 20 years. A total of 23 concrete and metal structures were assessed with non-destructive and destructive methods. A leaking 24-inch diameter ball valve, one 100-foot diameter clarifier, two sedimentation basins, one above-ground cement mortar-coated treated water pipeline, lime storage system, three media filters, one 200-foot-long

filter water channel, and one concrete clear well were assessed. A large chemical storage drainage sump with corroded pipes and chemically damaged concrete was assessed. Two fluoride tanks constructed of HDPE, one sodium hypochlorite tank constructed of fiberglass reinforced plastic, and two caustic tanks constructed of fiberglass reinforced plastic were experiencing leaks at drain nozzle flanges. The assessments revealed that non-corrosion-resistant fasteners and damaged gaskets were causing the leaks. V&A provided a prioritized list of repairs, estimated remaining service life, and recommendations for repairs.

#### **Sacramento Regional County Sanitation District (SRCSD) Sludge Tank #2, N29 Force Main, & N12 Bypass Line Condition Assessment. Elk Grove, CA**

V&A performed a condition assessment of the mixed sludge tank #2, N29/N25 force main, and saddle connections of the N12 bypass vaults, all of which are located at the Sacramento Regional Wastewater Treatment Plant. The purpose of the assessment was to determine the condition of the metallic and concrete components of these structures so that recommendations rehabilitation could be made accordingly. V&A conducted a confined space entry into sludge tank #2 wherein entrants performed visual assessments, ultrasonic testing, dry film thickness testing, concrete sounding, surface pH measurements, and surface penetrating radar scans. The assessment of the N29/N25 force main and the N12 bypass vaults followed the same approach as the sludge tank assessment; however, dry film thickness testing was not used. In addition, closed-circuit television and GoPro analysis was employed to better understand the condition of the N29 force main. V&A delivered reports which detailed the assessment approaches, findings, and recommendations for rehabilitation.

#### **El Dorado Irrigation District Water Treatment Plant Assessments. El Dorado Hills, CA**

Performed a visual assessment of a total of 20 assets at three of the District's water treatment plants as part of the development of an asset management plan for prioritizing capital improvement projects for the District's water system for the next 20 years. A total of 20 concrete and metal structures were assessed with non-destructive and destructive methods at the El Dorado Hills WTP, Reservoir 1 WTP, and Reservoir A WTP. The structures included piping inside galleries, piping inside vaults, above-grade steel tanks, and valve actuators within the filters.



## Manuel Najar, PE, CIP3, C3

**Role:** Coatings Management Practice Lead | Sr. Project Manager

### Education

B.S., Chemical Engineering,  
University of California-Berkeley, 2002

### Registration

Chemical Engineer, CA (CH6184)

### Joined V&A

2002

### Total Years of Experience

23 years

### Training, Certifications and Memberships

- Association of Materials Protection and Performance (AMPP) (formerly NACE) Coating Inspector Level 3 - CIP3 # 20385
- Association of Materials Protection and Performance (AMPP) (formerly SSPC) Supervisor/Competent Person Training for Deleading of Industrial Structures - C3
- AMPP Specifying and Managing Protective Coatings - C2
- AMPP Fundamentals of Protective Coatings - C1
- Confined Space Entry/Rescue Certified
- First Aid/CPR/AED

### Publications

- "Determining When to Coat Concrete", JPCL December 2020 Volume 37 Number 12

## Professional Summary

Manuel is a Senior Project Manager in the Oakland office with more than 23 years of experience in corrosion condition assessments and protective coatings management projects in the water and wastewater treatment industry. He manages and performs condition assessment projects as small as the evaluation of a pipe up to the assessment of an entire water or wastewater treatment plant. Manuel has performed plant-wide coating systems assessments and confined space entries into structures of varying sizes, such as 1 MG tanks or large treatment plant structures. Manuel has experience managing, preparing, and delivering corrosion investigation studies, contract documents, and delivering engineering services during construction. He has experience managing subcontractors, subconsultants, and forensic labs for his projects. He is a registered California chemical engineer and an AMPP Level 3 Coatings Inspector.

## Relevant Experience

### Sacramento Regional County Sanitation District On-Call Condition Assessment and Engineering. Sacramento, CA

Performed a condition assessment of the Influent Junction Structure (IJS) that was constructed in 1976. The unlined concrete portions of the structure were reported to have experienced severe concrete deterioration due to exposure to hydrogen sulfide gas.

The assessment was completed via confined space entry into safely accessible portions of the IJS. This allowed for visual investigation and non-destructive testing methods to be conducted, characterizing the extent of concrete corrosion in the structure. Concrete cores were obtained from two locations and tested for carbonation, pH, chlorides, and compressive strength to evaluate their quality and durability. A condition assessment report was prepared, summarizing the findings and conclusions with graphical and tabular representations of the results. Recommendations for rehabilitation to extend the remaining useful life of the structure were presented to the District.

### City of Sunnyvale Water Pollution Control Plant (WPCP) Yard Piping Condition Assessment. Sunnyvale, CA

Performed condition assessments on yard piping at the Water Pollution Control Plant (WPCP). The WPCP was originally constructed in 1955 with several buried and exposed metallic and concrete pipes that comprise the digested sludge, digester gas, secondary effluent, plant water, tertiary water, and service air systems. The diameter of the pipes ranges from 6 inches to 60 inches with a total length of approximately 4,800 feet. The purpose of the assessment was to establish baseline conditions on the yard piping, develop a framework for risk-based prioritization of rehabilitation, repair, and replacement decisions, and perform condition assessments to fill data gaps, evaluate pipe conditions, and update the risk-based prioritization from prior assessments.

WE SUPPORT OUR COMMUNITIES

WE ARE WATER FOCUSED

WE TAKE PRIDE IN WHAT WE DO

WE STRIVE TO BECOME OUR BEST

WE DO WHAT'S RIGHT

WE BELIEVE IN QUALITY

WE LISTEN

WE SOLVE CHALLENGING PROBLEMS

WE SEE THE BIGGER PICTURE

WE TAKE OWNERSHIP

WE COLLABORATE

WE HAVE FUN

**WE ARE WEST YOST**





**CITY OF FOLSOM | COST PROPOSAL**  
**CONDITION ASSESSMENT FOR THE WATER TREATMENT PLANT AND  
BOOSTER PUMP STATION FACILITIES**

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JANUARY 7, 2026  
REVISED: FEBRUARY 17, 2026

WEST YOST & ASSOCIATES



# TRANSMITTAL LETTER

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January 7, 2026

**REVISED:** February 17, 2026

Bryson Pearson  
Water Treatment Plant Manager  
City of Folsom – Utilities Department  
50 Natoma Street  
Folsom, CA 95630

**WEST YOST**  
100 Howe Ave, Ste. 110S  
Sacramento, CA 95825  
916.306.2250 phone  
530.756.5991 fax  
westyost.com

## **RE: Response to Request for Proposals for the City of Folsom Condition Assessment for the Water Treatment Plant and Booster Pump Station Facilities**

Dear Bryson:

West Yost is pleased to submit our cost proposal for the City of Folsom's (City) Condition Assessment of the City of Folsom's Water Treatment Plant and Booster Pump Station facilities. Our proposed fee reflects a clear understanding of the project scope, operational priorities, and the level of technical rigor required to deliver a defensible, risk-based condition assessment. The cost proposal aligns directly with our technical approach, including a comprehensive Level 1 assessment of all assets and targeted use of specialized resources where they add measurable value.

The RFP assumes a baseline of 900 total project hours. Our base Scope of Services is consistent with this assumption. West Yost will perform the Scope of Services as described in our proposal, provided under separate cover, on a time-and-materials basis at the hourly billing rates as shown in the attached cost proposal table and billing rate schedule with a **not to exceed amount of \$275,443**.

The proposal includes 320 additional hours associated with Optional Tasks 4.1, 4.3, and 4.4, which we believe meaningfully enhance the City's ability to translate condition findings into actionable, long-term planning decisions. These tasks are identified separately, as required by the RFP and briefly described as follows:

- Optional Task 4.1, Criticality Assessment, converts condition data into risk by accounting for operational consequence, supporting defensible prioritization. (\$16,312)
- Optional Task 4.2, Performance Data Analysis, links asset condition to historical water quality and operational performance. (\$32,780) The costs in the attached table are shown as "strike-out" as the City has elected to not pursue this optional service.
- Optional Task 4.3, Level 2 Field Assessment, resolves key uncertainties identified during Level 1 inspections through targeted investigation. (\$58,755)
- Optional Task 4.4, Long-Term Project Cost Estimate and Schedule, supports integration of recommendations into multi-year capital planning and CIP development. (\$23,360)

These optional tasks directly support the City's goals for transparency, defensibility, and long-term asset management and justify the modest increase in total hours when selected. The City has elected to move forward with Optional Tasks 4.1, 4.3, and 4.4. **The total project cost is now a not to exceed amount of \$373,870.**

We appreciate the opportunity to submit our cost proposal and look forward to continuing our partnership with the City of Folsom. Please contact us with any questions regarding this submittal.

Sincerely,

**West Yost**



**Dianna Jensen, PE**  
Project Manager  
(916) 307-6440

[djensen@westyost.com](mailto:djensen@westyost.com)



**Kelye McKinney, PE**  
Principal-In-Charge and Authorized Representative  
(916) 846-4687

[kmckinney@westyost.com](mailto:kmckinney@westyost.com)

## COST PROPOSAL TABLE

West Yost Associates PROJECT: City of Folsom Condition Assessments	P \$392 Kelye	EM/SM/GM I \$370 Dianna	PE/PS/PG II \$355 Andy	PE/PS/PG II \$355 Ryan	SE/SS/SG II \$312 Anne	TS III \$261 Rachel	ESG II \$221 Austin	PTS I \$353 Tara	STS I \$320 Greg	TS III \$261 Christian	CM IV \$318 JP	RI_G2 \$247 Steve	ADM IV \$176 DT	EM/SM/GM I \$370 Tim	Labor		V&A Hours	V&A Cost	TJC Hours	TJC Cost	Costs		
															Hours	Fee					Sub. w/ markup 10%	Other Direct	Total Costs
<b>Task 1 Preliminary Phase</b>																							
1.1 Review of Existing Utility Documents and Site Investigation		4	2	2		20	4		2	2	4			2	42	\$ 12,178			16	\$ 4,276	\$ 4,703		\$ 16,881
1.2 Prepare Assessment Plan and Schedule		8	2			32							8	2	52	\$ 14,170	10	\$ 3,024	32	\$ 8,552	\$ 12,733		\$ 26,903
<b>Subtotal, Task 1 (hours)</b>	<b>0</b>	<b>12</b>	<b>4</b>	<b>2</b>	<b>0</b>	<b>52</b>	<b>4</b>	<b>0</b>	<b>2</b>	<b>2</b>	<b>4</b>	<b>0</b>	<b>8</b>	<b>4</b>	<b>94</b>								
<b>Subtotal, Task 1 (\$)</b>		<b>\$ 4,440</b>	<b>\$ 1,420</b>	<b>\$ 710</b>		<b>\$ 13,572</b>	<b>\$ 884</b>		<b>\$ 640</b>	<b>\$ 522</b>	<b>\$ 1,272</b>		<b>\$ 1,408</b>	<b>\$ 1,480</b>		<b>\$ 26,348</b>					<b>\$ 17,436</b>		<b>\$ 43,784</b>
<b>Task 2 Condition Assessment and Final Report</b>																							
2.1 Asset Inventory List					4	12									16	\$ 4,380							\$ 4,380
2.2 Inspection and Testing			24	24			24		24	24		8			128	\$ 38,264	46	\$ 16,569	40	\$ 10,689	\$ 29,984	\$ 2,500	\$ 70,748
2.3 Assess the Condition Based on the Inspection and Testing			16	20	8	12		4	8	8					76	\$ 24,468							\$ 24,468
2.4 Cost Estimate and Schedule		8	20	20	8	8		2	8	8					82	\$ 27,098							\$ 27,098
2.5 Prepare Draft Condition Assessment Report		8			16	40							8		72	\$ 19,800	82	\$ 20,314	58	\$ 15,500	\$ 39,395		\$ 59,195
2.6 Prepare Final Condition Assessment Report		2			4	8							4		18	\$ 4,780							\$ 4,780
<b>Subtotal, Task 2 (hours)</b>	<b>0</b>	<b>18</b>	<b>60</b>	<b>64</b>	<b>40</b>	<b>80</b>	<b>24</b>	<b>6</b>	<b>40</b>	<b>40</b>	<b>0</b>	<b>8</b>	<b>12</b>	<b>0</b>	<b>392</b>								
<b>Subtotal, Task 2 (\$)</b>		<b>\$ 6,660</b>	<b>\$ 21,300</b>	<b>\$ 22,720</b>	<b>\$ 12,480</b>	<b>\$ 20,880</b>	<b>\$ 5,304</b>	<b>\$ 2,118</b>	<b>\$ 12,800</b>	<b>\$ 10,440</b>		<b>\$ 1,976</b>	<b>\$ 2,112</b>			<b>\$ 118,790</b>					<b>\$ 69,379</b>	<b>\$ 2,500</b>	<b>\$ 190,669</b>
<b>Task 3 Project Management</b>																							
3.1 Project Management	8	32				16									56	\$ 19,152	22	\$ 3,780	24	\$ 6,414	\$ 11,213		\$ 30,365
3.2 Quality Control / Quality Assurance	12													16	28	\$ 10,624							\$ 10,624
<b>Subtotal, Task 3 (hours)</b>	<b>20</b>	<b>32</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>0</b>	<b>16</b>	<b>84</b>								
<b>Subtotal, Task 3 (\$)</b>	<b>\$ 7,840</b>	<b>\$ 11,840</b>				<b>\$ 4,176</b>								<b>\$ 5,920</b>		<b>\$ 29,776</b>					<b>\$ 11,213</b>		<b>\$ 40,989</b>
<b>TOTAL (hours)</b>	<b>20</b>	<b>62</b>	<b>64</b>	<b>66</b>	<b>40</b>	<b>148</b>	<b>28</b>	<b>6</b>	<b>42</b>	<b>42</b>	<b>4</b>	<b>8</b>	<b>20</b>	<b>20</b>	<b>570</b>		<b>160</b>		<b>170</b>				
<b>TOTAL (\$)</b>	<b>\$ 7,840</b>	<b>\$ 22,940</b>	<b>\$ 22,720</b>	<b>\$ 23,430</b>	<b>\$ 12,480</b>	<b>\$ 38,628</b>	<b>\$ 6,188</b>	<b>\$ 2,118</b>	<b>\$ 13,440</b>	<b>\$ 10,962</b>	<b>\$ 1,272</b>	<b>\$ 1,976</b>	<b>\$ 3,520</b>	<b>\$ 7,400</b>		<b>\$ 174,914</b>		<b>\$ 43,687</b>		<b>\$ 45,430</b>	<b>\$ 98,029</b>	<b>\$ 2,500</b>	<b>\$ 275,443</b>

## OPTIONAL TASK: COST PROPOSAL TABLE

West Yost Associates PROJECT: City of Folsom Condition Assessment Optional Tasks	P \$392 Kelye	EM/SM/GM I \$370 Dianna	PE/PS/PG II \$355 Andy	PE/PS/PG II \$355 Ryan	SE/SS/SG II \$312 Anne	TS III \$261 Rachel	PE/PS/PG II \$355 Chris	SE/SS/SG II \$312 Tara	STS I \$320 Greg	TS III \$261 Christian	ESG II \$221 Niloofer	ADM IV \$176 DT	EM/SM/GM I \$370 Tim	Labor		V&A Hours	V&A Cost	TJC Hours	TJC Cost	Costs			
														Hours	Fee					Sub. w/ markup 10%	Other Direct	Total Costs	
<b>Task 4 Other Services (Optional)</b>																							
4.1 Criticality Assessment	2	4			16	32						4		58	\$ 16,312								\$ 16,312
4.2 Performance Data Analysis		4	40			4	16	24				8	4	100	\$ 32,780								\$ 32,780
4.3 Level 2 Field Assessment																							
4.3.1 Filter Level 2 Assessment		1	51								126	4	10	192	\$ 50,725	10	\$ 3,024	10	\$ 4,276	\$ 8,030		\$ 58,755	
4.4 Long-Term Project Cost Estimate & Schedule		4	20	20	4	4			8	8			2	70	\$ 23,360								\$ 23,360
<b>Subtotal, Task 4 (hours)</b>	<b>2</b>	<b>9</b>	<b>71</b>	<b>20</b>	<b>20</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>126</b>	<b>8</b>	<b>12</b>	<b>320</b>									
<b>Subtotal, Task 4 (\$)</b>	<b>\$ 784</b>	<b>\$ 3,330</b>	<b>\$ 25,205</b>	<b>\$ 7,100</b>	<b>\$ 6,240</b>	<b>\$ 9,396</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 2,560</b>	<b>\$ 2,088</b>	<b>\$ 27,846</b>	<b>\$ 1,408</b>	<b>\$ 4,440</b>		<b>\$ 90,397</b>		<b>\$ 3,024</b>		<b>\$ 4,276</b>	<b>\$ 8,030</b>		<b>\$ 98,427</b>	
<b>TOTAL (hours)</b>	<b>2</b>	<b>9</b>	<b>71</b>	<b>20</b>	<b>20</b>	<b>36</b>	<b>0</b>	<b>0</b>	<b>8</b>	<b>8</b>	<b>126</b>	<b>8</b>	<b>12</b>	<b>320</b>		<b>10</b>		<b>10</b>					
<b>TOTAL (\$)</b>	<b>\$ 784</b>	<b>\$ 3,330</b>	<b>\$ 25,205</b>	<b>\$ 7,100</b>	<b>\$ 6,240</b>	<b>\$ 9,396</b>	<b>\$ 0</b>	<b>\$ 0</b>	<b>\$ 2,560</b>	<b>\$ 2,088</b>	<b>\$ 27,846</b>	<b>\$ 1,408</b>	<b>\$ 4,440</b>		<b>\$ 90,397</b>		<b>\$ 3,024</b>		<b>\$ 4,276</b>	<b>\$ 8,030</b>		<b>\$ 98,427</b>	

The total not-to-exceed cost for this scope of work, including the Base Cost and Optional Tasks 4.1, 4.3, and 4.4, is \$373,870.

# 2026 Billing Rate Schedule

(Effective January 1, 2026, through December 31, 2026)\*



POSITIONS	LABOR CHARGES (DOLLARS PER HOUR)
<b>ENGINEERING</b>	
Principal/Vice President	\$392
Engineer/Scientist/Geologist Manager I / II	\$370 / \$387
Principal Engineer/Scientist/Geologist I / II	\$333 / \$355
Senior Engineer/Scientist/Geologist I / II	\$297 / \$312
Associate Engineer/Scientist/Geologist I / II	\$246 / \$265
Engineer/Scientist/Geologist I / II / III	\$191 / \$221 / \$231
Engineering Aide	\$117
Field Monitoring Services	\$145
Administrative I / II / III / IV	\$107 / \$133 / \$160 / \$176
<b>ENGINEERING TECHNOLOGY</b>	
Engineering Tech Manager I / II	\$384 / \$387
Principal Tech Specialist I / II	\$353 / \$365
Senior Tech Specialist I / II	\$320 / \$334
Senior GIS Analyst	\$292
GIS Analyst	\$277
Technical Specialist I / II / III / IV	\$206 / \$231 / \$261 / \$291
Technical Analyst I / II	\$148 / \$176
Technical Analyst Intern	\$119
Cross-Connection Control Specialist I / II / III / IV	\$154 / \$167 / \$188 / \$208
CAD Manager	\$233
CAD Designer I / II	\$181 / \$204
<b>CONSTRUCTION MANAGEMENT</b>	
Senior Construction Manager	\$373
Construction Manager I / II / III / IV	\$222 / \$237 / \$251 / \$318
Resident Inspector (Prevailing Wage Groups 4 / 3 / 2 / 1)	\$200 / \$222 / \$247 / \$256
Apprentice Inspector	\$181
CM Administrative I / II	\$96 / \$130
Field Services	\$256

- Hourly rates include charges for technology and communication, such as general and CAD computer software, telephone calls, routine in-house copies/prints, postage, miscellaneous supplies, and other incidental project expenses.
- Outside services, such as vendor reproductions, prints, and shipping; major West Yost reproduction efforts; as well as engineering supplies, etc., will be billed at the actual cost plus 15%.
- The Federal Mileage Rate will be used for mileage charges and will be based on the Federal Mileage Rate applicable to when the mileage costs were incurred. Travel other than mileage will be billed at cost.
- Subconsultants will be billed at actual cost plus 10%.
- Expert witness services, research, technical review, analysis, preparation, and meetings will be billed at 150% of standard hourly rates. Expert witness testimony and depositions will be billed at 200% of standard hourly rates.
- A finance charge of 1.5% per month (an annual rate of 18%) on the unpaid balance will be added to invoice amounts if not paid within 45 days from the date of the invoice.

\* This schedule is updated annually

# 2026 Billing Rate Schedule

(Effective January 1, 2026, through December 31, 2026)\*



## Equipment Charges

EQUIPMENT	BILLING RATES
2" Purge Pump & Control Box	\$300 / day
Aquacalc / Pygmy or AA Flow Meter	\$28 / day
Emergency SCADA System	\$35 / day
Field Vehicles (Groundwater)	\$200 / day
Gas Detector	\$80 / day
Generator	\$60 / day
Hydrant Pressure Gauge	\$10 / day
Hydrant Pressure Recorder, Impulse (Transient)	\$55 / day
Hydrant Pressure Recorder, Standard	\$40 / day
Low Flow Pump Back Pack	\$135 / day
Low Flow Pump Controller	\$200 / day
Powers Water Level Meter	\$32 / day
Precision Water Level Meter 300ft	\$30 / day
Precision Water Level Meter 500ft	\$40 / day
Precision Water Level Meter 700ft	\$45 / day
QED Sample Pro Bladder Pump	\$65 / day
Skydio 2+ Drone (2 hour minimum)	\$100 / hour
Storage Tank	\$20 / day
Sump Pump	\$24 / day
Transducer Communications Cable	\$10 / day
Transducer Components (per installation)	\$23 / day
Trimble GPS – Geo 7x	\$220 / day
Tube Length Counter	\$22 / day
Turbidity Meter	\$30 / day
Turbidity Meter (2100Q Portable)	\$35 / day
Vehicle (Construction Management)	\$18.75 / hour
Water Flow Probe Meter	\$20 / day
Water Quality Meter	\$50 / day
Water Quality Multimeter	\$185 / day
Well Sounder	\$30 / day

\* This schedule is updated annually

WE SUPPORT OUR COMMUNITIES

WE ARE WATER FOCUSED

WE TAKE PRIDE IN WHAT WE DO

WE STRIVE TO BECOME OUR BEST

WE DO WHAT'S RIGHT

WE BELIEVE IN QUALITY

WE LISTEN

WE SOLVE CHALLENGING PROBLEMS

WE SEE THE BIGGER PICTURE

WE TAKE OWNERSHIP

WE COLLABORATE

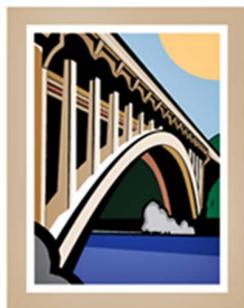
WE HAVE FUN

**WE ARE WEST YOST**



## Attachment 3

**PROPOSAL**  
January 7, 2026



CITY OF  
**FOLSOM**  
DISTINCTIVE BY NATURE

## Condition Assessment for the Water Treatment Plant & Water Booster Pump Station Facilities



NCS ENGINEERING, PC  
8880 Cal Center Drive, Suite 400, Sacramento, CA 95826



Submitted via online upload [bpearson@folsom.ca.us](mailto:bpearson@folsom.ca.us)

January 7, 2026

**City of Folsom**

Bryson Pearson - Water Treatment Plant Manager  
City of Folsom - Utilities Department  
50 Natoma Street, Folsom, CA 95630

Re: Request for Proposals for Condition Assessment for the Water Treatment Plant and Water Booster Pump Station Facilities

Dear Bryson:

When I first learned of this RFP, I immediately thought of several local subject matter experts I know who could support me in performing a condition assessment of the water plant and booster pump stations that provide the most meaningful results and outcome to the city I call home. I am therefore pleased, on behalf of NCS Engineering (NCS) and Sutro Consultants (Sutro), to submit this proposal to the City of Folsom (City). I believe this team provides the best value to the City for the following reasons:

**Our People:** In addition to my 34+ years of experience designing new or improvements to existing water treatment plants, I am supported by professionals with significant condition assessment experience:

- Adam Butler, P.E. (Sutro) has extensive experience developing condition assessments and enhanced asset management through data-driven solutions, technology, and collaboration. Among his accomplishments, he completed a Master Plan and Condition Assessments for the Stockton East Water District WTP, where condition scoring and risk-based prioritization were structured for integration into mobile field tools and CMMS-oriented workflows.
- Matthew Mahoney (Sutro) has over 45 years of experience overseeing mechanical maintenance, condition assessments, and asset management at Central Contra Costa Sanitary District main treatment facility.
- Aaron Armenta, P.E. (NCS) has electrical and substation condition assessment experience.
- Daryl Heigher, P.E. (D&A) has performed numerous design and structural assessment projects for the City.
- Robert Edgerton (Helix) has performed extensive environmental reviews for the City.

**Our Experience:** Our team's qualifying experience includes numerous condition assessment projects relevant to the City's needs. Sutro Consultants is a utility-focused asset management and condition assessment firm with experience translating field observations, O&M context, and available records into consistent condition and risk ratings, remaining service life opinions, and practical repair/replace/CIP recommendations. This experience will allow us to hit the ground running on Day 1.

**Our ideas:** The optional Value-Added Enhancement task we present in our proposal provides more robust data for high consequence/critical equipment, particularly for booster pump stations, and reduces uncertainty inherent in one-time field snapshots. Such optimization will translate into long-term cost savings for the City.

Please call (916) 812-2166 or email me at [rkohne@ncseng.com](mailto:rkohne@ncseng.com) if you have any questions or need any additional information.

Sincerely,  
NCS ENGINEERING, PC

A handwritten signature in blue ink that reads "Roger Kohne".

Roger Kohne, P.E., Vice President

## Title Page



**PROPOSAL:**

City of Folsom - Condition Assessment for the Water Treatment Plant & Water Booster Pump Station Facilities

**Submitted By:**

NCS Engineering, PC  
8880 Cal Center Drive, Sacramento, CA 95826

**Contact:**

Roger Kohne  
(916) 812-2166

**Date:**

1/7/2026



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## 1) PROJECT UNDERSTANDING

Like many cities and utilities across the country, Folsom is faced with having to do more with less. While more and more people move to this wonderful community to enjoy its many benefits and features, its aging infrastructure is pushed to deliver the highest drinking water quality under this growing strain. Fortunately, the City employs professionals who are dedicated to delivering an equally high level of service to its residents and customers. The City has done an exemplary job of maintaining its infrastructure with its available level of funding.

The City of Folsom’s Water Treatment Plant (WTP) and Booster Pump Station (BPS) facilities represent critical infrastructure with diverse asset types, varying ages, and complex operational requirements. The City recognizes it must perform a comprehensive condition assessment of these facilities and develop an implementation and spending plan that it can ultimately take before City Council. While the water system is funded largely through its Enterprise/Water Operating Fund (vs General fund), the City wants to continue to demonstrate that it is a good steward of the public’s money by prioritizing its infrastructure needs and spending.

Successfully completing a comprehensive condition assessment requires not only technical expertise across multiple disciplines, but also an understanding of operational constraints, data variability, and the need to translate engineering findings into actionable capital planning decisions. The findings and cost estimates from the condition assessment will likely be incorporated into the update of the City’s overall Water Master Plan, currently scheduled to begin later in 2026.

The City’s water plant has a long history, with much of the current treatment facilities having been constructed in the 1990s and 2000s. The City’s various BPSs have a similar history, with most of facilities having been originally construction in the early 2000s. The Zone 5 South BPS and Zone 6 South BPS were constructed more recently to serve the Folsom Plan Area/South of 50 development. Other recent upgrades to the older pump stations were presented in the RFP and are summarized below:

BPS Facility	Year	Work
Zone 4	2019/2020	Rebuilt pumps and motors
	2021	Replaced generator with larger capacity to operate all three booster pumps
Zone 5 North	2016 - 2018	Rebuilt all pumps
Zone 6 North	2021 - 2022	Rebuilt both 25 hp pumps
Zone 6 South	2021	Rebuilt pump No. 2
La Collina Del Lago	2020 - 2021	Replaced both 7 hp pumps

This information will be useful in developing a condition assessment plan that accounts for the range in age and service life of all critical infrastructure so that we can focus the assessment on those systems and equipment whose condition is of greatest interest and concern.



The table below summarizes key project challenges identified from our review of the RFP and illustrates how each challenge is addressed through specific tasks, deliverables, and outcomes that support the City’s objectives.

Project Challenge / Task	Corresponding Approach	Key Deliverables	Value to the City
<b>Aging and diverse infrastructure across WTP and BPS facilities</b>	<ul style="list-style-type: none"> <li>Develop standardized asset inventory and condition rating framework</li> <li>Apply consistent evaluation criteria across all asset classes and facilities</li> </ul>	<ul style="list-style-type: none"> <li>Comprehensive asset inventory list</li> <li>Condition ratings and remaining serviceable life estimates</li> </ul>	<ul style="list-style-type: none"> <li>Enables consistent, defensible comparison of assets</li> <li>Supports risk-based prioritization across facilities</li> </ul>
<b>Operational constraints and limited shutdown windows</b>	<ul style="list-style-type: none"> <li>Coordinate site visits and inspections with Operations staff</li> <li>Sequence assessments to minimize disruption to treatment and pumping operations</li> </ul>	<ul style="list-style-type: none"> <li>Assessment plan and inspection schedule</li> <li>Documented inspection assumptions and limitations</li> </ul>	<ul style="list-style-type: none"> <li>Protects system reliability during assessment</li> <li>Reduces operational risk and unplanned outages</li> </ul>
<b>Multi-disciplinary scope (civil, structural, mechanical, electrical, process)</b>	<ul style="list-style-type: none"> <li>Deploy integrated, multi-discipline assessment teams</li> <li>Coordinate findings across disciplines to identify interactions and dependencies</li> </ul>	<ul style="list-style-type: none"> <li>Consolidated condition assessment findings</li> <li>Cross-discipline observations summarized by asset</li> </ul>	<ul style="list-style-type: none"> <li>Avoids silo-ed recommendations</li> <li>Improves quality and practicality of improvement alternatives</li> </ul>
<b>Potential variability in the quality and completeness of existing documentation</b>	<ul style="list-style-type: none"> <li>Review and validate available drawings, O&amp;M manuals, and performance data</li> <li>Identify data gaps and document assumptions used in evaluations</li> </ul>	<ul style="list-style-type: none"> <li>Document review summary</li> <li>Data gap and assumption log</li> </ul>	<ul style="list-style-type: none"> <li>Improves transparency and defensibility of findings</li> <li>Creates clearer baseline for future projects</li> </ul>
<b>Need to translate technical findings into actionable capital planning</b>	<ul style="list-style-type: none"> <li>Apply asset management and risk-based prioritization principles</li> <li>Categorize recommendations (repair, replace in kind, CIP)</li> </ul>	<ul style="list-style-type: none"> <li>Prioritized list of recommended improvements</li> <li>Risk-based ranking of assets and projects</li> </ul>	<ul style="list-style-type: none"> <li>Supports informed capital planning decisions</li> <li>Aligns technical findings with budget and CIP needs</li> </ul>
<b>Cost estimating across varying improvement types and time horizons</b>	<ul style="list-style-type: none"> <li>Develop opinions of probable cost for maintenance and capital alternatives</li> <li>Adjust costs based on recommended timing and phasing</li> </ul>	<ul style="list-style-type: none"> <li>Cost estimates by asset and improvement type</li> <li>Phasing plan and schedule</li> </ul>	<ul style="list-style-type: none"> <li>Improves budget forecasting accuracy</li> <li>Enables phased vestment planning</li> </ul>
<b>Regulatory, safety, and reliability considerations</b>	<ul style="list-style-type: none"> <li>Evaluate assets for compliance with current codes and safety standards</li> <li>Identify deficiencies affecting safety or regulatory compliance</li> </ul>	<ul style="list-style-type: none"> <li>Compliance and safety observations</li> <li>Recommendations tied to standards and best practices</li> </ul>	<ul style="list-style-type: none"> <li>Reduces future compliance risk</li> <li>Supports proactive safety and reliability improvements</li> </ul>
<b>Balancing near-term needs with long-term system resilience</b>	<ul style="list-style-type: none"> <li>Incorporate environmental exposure and operational efficiency considerations</li> <li>Evaluate long-term performance and resilience impacts</li> </ul>	<ul style="list-style-type: none"> <li>Resilience-informed recommendations</li> <li>Long-term improvement considerations</li> <li>Optional sensor enhancement for pump efficiency evaluation</li> </ul>	<ul style="list-style-type: none"> <li>Helps future-proof investments</li> <li>Aligns improvements with long-term system performance goals</li> </ul>



## 2) PROJECT APPROACH

### How the Team Will Deliver Value

The City's goals require more than a list of observed deficiencies. They require a consistent, defensible way to translate field observations and performance data into (1) condition and remaining serviceable life, (2) risk-informed priorities, and (3) implementable recommendations with realistic cost and phasing. The Team's approach is built around three principles:

- ✓ Consistency across facilities and disciplines so the City can compare needs across the WTP and all BPS sites without conflicting rating scales or assumptions.
- ✓ Decision-ready outputs that connect observed condition and performance to the right action type (repair, replace in kind, or CIP) and to a practical timeframe.
- ✓ Traceability so every major recommendation can be tied back to documented evidence, assumptions, and engineering judgment.

### Methodology That Produces Comparable, Actionable Results

Rather than treating each facility and asset type as a separate mini-study, the Team will apply a common structure that makes results comparable and easy to implement.

- ✓ Standardized rating logic: A single condition rating and remaining life estimation approach will be applied consistently across the WTP and BPS assets, with confidence levels noted where information is limited.
- ✓ Risk-informed prioritization: Priorities will reflect both observed condition and practical consequences (service disruption, safety, regulatory, maintainability, and criticality). This keeps the output from becoming a simple list of worst-looking assets and instead highlights what matters most to operations and continuity.
- ✓ Practical recommendations: The Team will translate findings into the City's decision categories (repair, replace in kind, CIP) and shape each recommendation so it is implementable (clear scope intent, dependencies, and logical bundling opportunities).

### Why This Approach Meets the City's Objectives

The City wants a condition assessment that supports planning and budgeting decisions, not just documentation. The Team's approach is designed to directly produce what the City needs:

- ✓ Better remaining serviceable life estimates: Life estimates will be grounded in observed condition, operating context, and known failure modes.
- ✓ Clear prioritization: The City will receive a ranked set of needs that reflect impact and urgency, supporting capital planning and near-term maintenance decisions.
- ✓ A bridge from assessment to implementation: Recommendations will be structured so the City can move cleanly into maintenance work planning and CIP development, with cost and schedule implications organized in a way that supports funding conversations.

### Condition Assessment Standards and Methodology

The Team will apply a consistent, standards-informed methodology that translates field observations and performance testing into repeatable condition ratings, Remaining Serviceable Life estimates, and risk-informed priorities. The framework will be established during Task 1 and then applied consistently across Task 2 deliverables so results are comparable across the WTP and all BPS facilities.

Our risk and prioritization structure will align with ANSI/AWWA J100 to support a standardized and defensible approach to consequence categories, risk scoring, and communication of results. Guidance from AWWA Manual M77 will be used to inform Likelihood of Failure concepts and rating logic, and the approach will be adapted to the City's facility and equipment asset classes. Electrical safety and reliability considerations will be evaluated using the following standards and publications:

- IEEE Standard 493 (Gold Book)
- NFPA 70 (National Electrical Code)
- NFPA 70B
- NFPA 70E



Additionally, manufacturer information will be used as references for equipment life expectations, reliability considerations, and maintenance-based condition indicators.

In practice, these standards will be used to: 1) define condition criteria and rating thresholds by asset type, 2) document safety and compliance observations consistently, and 3) support clear repair, replace in kind, or CIP recommendations with traceable justification. The Team will calibrate scoring assumptions to the City's asset inventory, operating context, and risk tolerance during Task 1, then carry those calibrated criteria through inspection/testing (Task 2b), evaluation and alternatives (Task 2c), and the resulting cost and phasing recommendations (Task 2d).

Example of Condition Assessment Ranking and Criteria

Assessment Ranking	Assessment Criteria
1	<b>Excellent condition, new or like new.</b> No known defects.
2	<b>Good condition.</b> Minor defects only. (e.g., minor coating damage).
3	<b>Fair condition.</b> Moderate deterioration. (e.g., pitting <30% wall thickness).
4	<b>Poor condition.</b> Significant deterioration. (e.g., pitting >50%, prior history of breaks).
5	<b>Very Poor.</b> Failure imminent or asset is physically failed.

Value-Added Enhancement Strategy

As we will describe in our Scope of Services section, a value-added optional task of temporary sensor-based monitoring is positioned as a targeted way to strengthen confidence for the highest-criticality assets by correlating snapshot observations with real operating behavior over time. The approach is intentionally designed to minimize disruption and maximize value by integrating sensor planning and installation with the primary field effort, rather than creating a separate project.

This value-added strategy will provide even more benefit to the pump performance evaluation, which will be used to answer the questions that matter for action selection and timing: whether deficiencies are primarily operational (controls, operating point, system losses), mechanical (pump condition), or programmatic (replace vs rehabilitate), and whether improvements are best addressed as maintenance actions or capital projects. This allows the pump performance work to directly inform the repair/replace/CIP categorization and cost-phasing recommendations.

Management and Coordination Approach

The Team will run the project with clear roles, predictable touchpoints, and disciplined integration across technical disciplines.

- ✓ Single point of coordination: NCS, as Prime, will lead overall project management, schedule tracking, City coordination, and consolidated deliverable assembly to keep execution streamlined and responsive.
- ✓ Integrated technical delivery: Sutro will lead the condition assessment framework (ratings structure, field capture consistency, and prioritization approach) and lead mechanical assessments and synthesis into implementable recommendations. The Team’s discipline leads will own technical evaluations and cost inputs for their respective asset types, coordinated through a shared set of assumptions and documentation standards.
- ✓ City engagement designed to reduce rework: The Team will align early on access constraints, operational sensitivities, and how the City wants recommendations organized. That alignment prevents late-stage reshuffling of priorities and improves confidence in the final phasing plan.

Quality Control and Deliverable Confidence

The Team will maintain credibility and usability of the final outputs through simple, repeatable QA/QC steps:

- ✓ Internal consistency checks to confirm that ratings, remaining life assumptions, and recommendation categories align across disciplines and facilities.
- ✓ Traceability checks to confirm that major recommendations are supported by documented observations, calculations where applicable, and stated assumptions.
- ✓ Draft review workshop with City staff to validate priorities, incorporate operational context, and minimize surprises before finalization.



Long Duration Pump Bearing Vibration Meter



## 3) SCOPE OF SERVICES

The Team will perform condition assessment services for the City of Folsom's WTP and nine BPS facilities in accordance with the Request for Proposals and as presented in this section. The Team's work will support the City's objectives to evaluate condition and Remaining Serviceable Life, develop improvement alternatives categorized as repair / replace in kind / Capital Improvement Program project, and provide supporting cost and phasing information suitable for City decision-making.

*(Optional and Value-Added Enhancement tasks outside of the specified 900-hour baseline are identified in Section 3.2)*

### 3.1 Baseline Condition Assessment

This section describes tasks and activities that we believe can be performed within the City's 900-hour assumption as requested in the RFP.

#### Task 1) Preliminary Phase

##### *Task 1a - Review of Existing Utility Documents & Site Investigation*

The Team will:

1. Coordinate document collection and review with City staff, including available drawings, operations and maintenance manuals/records, and equipment specification data relevant to the listed assets and facilities.
2. Conduct initial site visits to the WTP and each BPS with City staff to observe condition of infrastructure and equipment included in the RFP scope and to confirm inspection sequencing priorities.
3. Interview operations and maintenance staff during site visits to capture operational context, maintenance history, and known failure modes that inform Remaining Serviceable Life estimates and practical alternative development.
4. Provide a file share location for City document uploads and Team access, consistent with the RFP requirement.

Lead / Support Roles:

- Site investigation planning and sequencing (Lead: NCS; Support: Sutro + discipline leads)
- Document review coordination and framework inputs (Lead: Sutro; Support: NCS + discipline leads)

##### *Task 1b - Prepare Assessment Plan & Schedule*

The Team will:

1. Prepare a draft Assessment Plan and schedule that defines inspection methods, planned testing, required City support, and how work will be sequenced to respect operational constraints (including partial WTP process shutdown windows).
2. Develop a standardized rating system and criteria using established asset/facility management principles to enable consistent evaluation and prioritization of needed improvements across facilities and asset types.
3. Define how risk will be captured and discussed for each asset/facility, including how risks will be addressed for assets not inspected (e.g., documented assumptions/limitations and risk notes).
4. Meet with City staff to review the draft plan, incorporate comments, and submit a final plan.
5. Determine whether California Environmental Quality Act considerations are likely to apply to recommended improvements and document this screening approach.

Lead / Support Roles:

- Schedule development, shutdown coordination, and tracking (Lead: NCS; Support: Sutro + discipline leads)
- City coordination meetings and plan finalization (Lead: NCS; Support: Sutro)
- Assessment Framework / rating system (Lead: Sutro; Support: NCS + discipline leads)

#### Task 2) Condition Assessment & Final Report

##### *Task 2a - Asset Inventory List*

The Team will:

1. Prepare an asset inventory list for the WTP and all nine BPS facilities in coordination with City staff to serve as the backbone for condition documentation, prioritization, and recommended improvements.

Lead / Support Roles:

- Inventory structure aligned to framework (Lead: Sutro; Support: NCS + discipline leads)
- Inventory compilation and version control (Lead: NCS; Support: Sutro)



### *Task 2b - Inspection & Testing*

The Team will:

1. Conduct inspections and testing in accordance with the approved Assessment Plan and schedule.
2. Perform mechanical inspections (above-ground) of pumps, motors, pump assemblies, valves, piping, appurtenant conveyance systems, supports, and related equipment, documenting condition indicators and maintainability constraints.
3. Perform electrical inspections of power distribution, controls, motors and motor starting equipment included in the RFP scope. Document observed safety, code compliance and operational risks. Exclusions (if any) will follow the RFP stated limits (e.g., building lighting/outlets not associated with process systems).
4. Perform structural inspections
5. Collect pump field data (flow, suction pressure, discharge pressure, and power) to determine operating capacity where required by the RFP.
6. Document coatings/corrosion conditions (above-ground) and perform the requested environmental exposure assessment (sun exposure, rain events, wildfire exposure/risk).

Lead / Support Roles:

- Mechanical, electrical, and structural inspections execution and documentation (Lead: Sutro; Support: NCS + discipline leads)
- Test planning, facility coordination, and safety/logistics (Lead: NCS; Support: Sutro)

### *Task 2c - Condition Evaluation, Remaining Serviceable Life, & Alternatives*

The Team will:

1. Analyze results of inspection/testing and conduct engineering evaluations; prioritize and organize recommendations for each asset including Remaining Serviceable Life.
2. Develop alternatives that consider repairing, replacing in kind, or incorporating into the City's Capital Improvement Program, as required.
3. Evaluate compliance and operational considerations relevant to the condition assessment (codes, safety, operational efficiency/capacity as applicable).
4. Apply risk-based prioritization using the standardized rating system established in Task 1.
5. Complete required desktop analyses: environmental constraints analysis for improvements and desktop geotechnical analysis for soil/foundation-driven alternatives where applicable.

Lead / Support Roles:

- Condition framework application, Remaining Serviceable Life methodology, and prioritization outputs (Lead: Sutro; Support: discipline leads)
- Discipline-specific evaluations and recommendations (Lead: respective discipline leads; Support: Sutro integrates into common framework)
- Compilation and consistency control (Lead: NCS; Support: Sutro)

### *Task 2d - Cost Estimate & Phasing*

The Team will:

1. Prepare opinions of probable cost broken down by major work items and adjusted based on the recommended year for replacement/rehabilitation over a ten-year outlook.
2. Develop a phased implementation plan and schedule organized by priority.

Lead / Support Roles:

- Cost estimate inputs by asset type (Lead: respective discipline leads)
- Integrated cost + phasing deliverable assembly (Lead: NCS; Support: Sutro + discipline leads)

### *Task 2e - Draft Report & Workshop*

The Team will:

1. Prepare and submit a draft Condition Assessment Report summarizing methods, findings, Remaining Serviceable Life estimates, risk-based prioritization, recommended alternatives, and cost/phasing outputs.
2. Present findings at a City workshop, document comments, and incorporate feedback into the final report.

### *Task 2f - Final Report*

The Team will:

1. Submit the final Condition Assessment Report incorporating workshop comments in the required format and quantities.



### Task 3) Project Management

#### Task 3a - Project Management

The Team will: Provide project management across all phases including schedule tracking, budget management, coordination, invoicing support, and alignment to City objectives.

**Lead / Support Roles:**

- Project management, schedule tracking, meeting cadence, action logs (Lead: NCS; Support: Sutro + discipline leads)

#### Task 3b - Quality Assurance / Quality Control(QA/QC)

The Team will: Perform QA/QC reviews prior to each deliverable submittal to ensure accuracy, completeness, and consistency across disciplines.

**Lead / Support Roles:**

- Deliverable QA/QC workflow and control (Lead: NCS; Support: Sutro + discipline leads)
- Framework consistency checks (Lead: Sutro)

### Baseline Condition Assessment Scope Assumptions

1. We have assumed that documentation and background information that will be provided by the City as part of Task 1 will be available for a minimum of 90% of all assets.
2. Similarly, the City’s maintenance software and Asset Registry has data with work history for a minimal of 80% of all assets that can be reviewed for this project.
3. Any high-risk assets identified by City staff not in these systems can be added during field assessments using tools such as Esri’s Survey123 to efficiently record asset attributes. Lower-risk assets will be assessed using streamlined methods, while higher-risk assets get deeper testing.

Breakdown of Professional Hours for Baseline Condition Assessment

#	Sub-Task	Project Mgr. NCS	Condit. Assest.Exp. Sutro	Maint. Specialist Sutro	Assist. Mech. NCS	Electrical Eng. NCS	Struct. Eng. D&A	Envir. Planner Helix	Tot. Hrs.
<b>Baseline Scope of Work</b>									
1	Preliminary Phase								
1a	Review Existing Documents								
	Review Existing Documents		8.0	8.0	16.0	16.0	16.0		64.0
	Site Visits	4.0	4.0	4.0					12.0
1b	Prepare Assessment Plan								
	Prepare draft assessment plan	4.0	40.0	12.0					56.0
	Assessment Criteria		16.0	16.0					32.0
	CEQA compliance review							6.0	6.0
2	Condition Assessment and Final Report								
2a	Asset Inventory List		16.0		40.0				56.0
2b	Inspection and Testing								
	WTP	4.0		32.0	32.0	32.0	24.0		124.0
	69 kV Substation					4.0	4.0		8.0
	BPS (9) incl Zone 5 North sound wall structural			32.0	32.0	32.0	16.0		112.0
	South Folsom Control Valve			4.0	4.0	4.0	4.0		16.0
2c	Assess Condition								
	Analyze Results		24.0	16.0	24.0	24.0	16.0		104.0
	Prioritize findings	4.0	12.0	8.0	8.0	16.0	8.0		56.0
	Environmental Constraints							20.0	20.0
2d	Cost Estimate and Schedule	6.0		16.0	16.0	16.0	16.0		70.0
2e	Draft CA Report	4.0	16.0		16.0	8.0	4.0		48.0
2f	Final Condition Assessment	4.0	12.0		8.0	4.0	4.0		32.0
3	Project Management	60.0	24.0						84.0
	<b>Total hours:</b>	<b>90.0</b>	<b>172.0</b>	<b>148.0</b>	<b>196.0</b>	<b>156.0</b>	<b>112.0</b>	<b>26.0</b>	<b>900.0</b>



### 3.2 Optional & Value-Added Assessment Tasks

The following describes scope items we have considered to be beyond the 900 hours in the Baseline Scope as well as Value-Added Enhancement suggestions to further benefit the City is achieving its goals for the overall condition assessment.

#### Optional Tasks - Exceeding 900 Hour Baseline

Based on our Team’s experience (see Section 5 and resumes), we believe that the City’s stated baseline budget of 900 hours may not be quite sufficient to fully assess the condition or operational efficiency as stated in the RFP. Per the instructions in the RFP, we have identified the below scope items as being “optional” or “additional” to the baseline scope. We have made an estimate of the number of hours to fulfill these additional tasks; however, we would like the opportunity to revisit these estimates with the City to more fully develop the final scope for these items.

##### *a - Filter surveillance (WTP Facilities RFP Task 1a).*

Our baseline scope *includes* a review of the City’s media records and assessing this in relation to AWWA B100 standards for new media. During the pre-proposal site visit, it was stated that it is acceptable that the Condition Assessment project recommend a more detailed granular filter media evaluation, including core sampling, excavation, and media testing (effective size, uniformity coefficient).

##### *b - Operational assessment and optimization of screw press, tanks, dredging (WTP Facilities, RFP Task 1.b).*

Our baseline scope *includes* the same condition assessment procedure for the solids handling equipment as the rest of the facilities. However, during the pre-proposal site visit we were informed that there are numerous operational issues associated with the overall solids handling facilities. It is our experience that solids handling is often the “Achilles heel” at many otherwise well operated facilities. This optional task would include a more comprehensive evaluation of the entire solids handling facilities to reduce labor and improve efficiency.

##### *c - Feasibility of demolition of old raw water feed system (WTP Facilities RFP Task 1.h)*

Our baseline scope *includes* a cursory, high-level assessment of potential impacts to WTP operations. This optional task would include additional site planning and layout development to assess and visualize potential vehicle and equipment storage concepts.

##### *d. - Pump efficiency evaluation (WTP Facilities RFP Task 1.c.viii to xii; BPS Facilities RFP Task 2.a.viii to xii)*

Our baseline scope *includes* the same condition assessment procedure at all nine (9) booster pumps as the rest of the WTP facilities. Our interpretation of the City’s RFP suggests that the City seeks to perform a more comprehensive evaluation of its distribution pumping operations throughout its distribution system, similar to an evaluation that the San Juan Water District (SJWD) recently performed, in order to better understand their current conditions and ways to optimize performance and save in overall pumping costs. Based on peer agency benchmarking (including SJWD), similar evaluations have required meaningful effort from both agency staff and the consultant.

The RFP requires field data collection and system curve development for pump performance evaluation. To ensure testing is safe, efficient, and produces representative results, the Team recommends confirming in the Assessment Plan:

- Which operating points are feasible at each station (based on redundancy, demand, and control logic)
- Availability/accuracy of existing instrumentation or need for temporary metering
- Any constraints on taking pumps offline or shifting operations for test purposes

Where one-time testing may not capture variability across changing demand conditions, the optional 6-month sensor-based operational assessment can provide a complementary dataset that improves confidence in conclusions related to performance, efficiency, and Remaining Serviceable Life.

#### Breakdown of Professional Hours for Optional Condition Assessment Tasks

#	#	Sub-Task	Project Mgr. NCS	Condit. Assest.Exp. Sutro	Maint. Specialist Sutro	Assist. Mech. NCS	Electrical Eng. NCS	Struct. Eng. D&A	Envir. Planner Helix	Tot. Hrs.
<b>Optional Scope of Work</b>										
1		Filter Surveillance	20.0			80.0				100.0
2		Operational assessment and optimization of screw press, tanks, dredging	40.0			100.0				140.0
3		Evaluation of Old Raw Water Feed	12.0			24.0				36.0
4		Pump efficiency evaluation	40.0			100.0	24.0			164.0
		<b>Total hours:</b>	<b>112.0</b>			<b>304.0</b>	<b>24.0</b>			<b>440.0</b>



## Value-Added Enhancement Task - Extended Condition Assessment Using Temporary Sensors on the Most Critical Assets

**If the City elects to include both the pump efficiency evaluation and the extended sensor-based assessment, the combined dataset significantly increases the value of both efforts.** Pump testing provides calibrated snapshots of system curves, operating points, and efficiency at the time of testing. The temporary sensors then provide continuous operating data over changing demand conditions, allowing the Team to correlate tested performance with how the pumps actually run day-to-day, quantify variability, and distinguish hydraulic inefficiency from emerging mechanical or electrical condition issues. This strengthens savings estimates, improves confidence in recommended operational improvements, and supports more defensible Remaining Serviceable Life conclusions for critical rotating equipment.

This optional task would supplement the baseline “snapshot” condition assessment with **time-series monitoring** on the City’s **top 5-10 most critical assets** to improve confidence in condition and risk findings, correlate condition trends to operating context (including VFD operating indicators where available), and support a practical path toward condition-based maintenance strategies.

The figures below show an example sensor and the corresponding data that Sutro currently has installed at another California water district’s treatment plant on a critical pump.



To enhance the long-term value of the assessment and strengthen Remaining Serviceable Life conclusions for critical rotating equipment, the Team may propose an optional task to correlate visual condition assessment findings with an operational condition assessment over an extended period.

### Value-Added Task Concept

- Identify a small subset of critical pumps/motors (e.g., 2–6 assets across representative stations)
- Install temporary or semi-permanent sensors to track operational indicators such as vibration, temperature, and power (where feasible) over ~six months
- Correlate measured operational behavior (including variability by demand/season/operating point) with the Team’s visual condition ratings and pump performance testing snapshots
- Use results to refine Remaining Serviceable Life assumptions, improve confidence in repair vs. replacement recommendations, and provide a foundation for longer-term condition-based maintenance practices
- Use continuous operating indicators (power and, where available, VFD speed/operating state) to map actual operating time across the tested pump curves and identify how frequently pumps operate near or away from best efficiency points, improving confidence in optimization recommendations.

### Why it helps

This optional task provides long-term data and reduces uncertainty inherent in one-time field snapshots - particularly where operating points vary or intermittent issues occur.

Lead / Support Roles:

- Framework + correlation methodology (Lead: Sutro)
- Deployment coordination / schedule integration (Lead: NCS)
- Interpretation (Lead: mechanical/electrical discipline leads as applicable)

**Value-Added Scope Subtasks**

1. *Risk-Based Candidate Asset Selection (Desktop)*

- ✓ Beyond what's completed in Task 1, review available asset and O&M information (as necessary) to develop a preliminary shortlist of candidate assets for sensor deployment (targeting the highest consequence/critical equipment).
- ✓ Identify proposed sensor types, placement, and monitoring duration for each candidate asset.

2. *Work Plan Documentation Review and Approval*

- ✓ Document proposed sensor deployment (assets, locations, and objectives) within the Condition Assessment Work Plan for City staff review and approval prior to installation.
- ✓ Confirm asset accessibility, configuration, operating duty, and observed condition during the condition assessment site visit(s).
- ✓ Refine the final list of instrumented assets based on verified field findings.

3. *On-Site Sensor Installation*

- ✓ Coordinate sensor installation during the on-site condition assessment visit for the approved asset list to minimize additional mobilizations and avoid impacts to operations.
- ✓ Install temporary sensors and a communications gateway (protocol converter, as needed), then configure and verify end-to-end data connectivity (power, network/cellular, and data transmission to the reporting platform).
- ✓ Document sensor locations/IDs and confirm removal plan at the end of the monitoring period.

4. *Monitoring Period (Up to 6 Months) + Data Review*

- ✓ Collect time-series condition data for the instrumented assets over an agreed monitoring period (up to 6 months).
- ✓ Correlate sensor data with operational context and available operating indicators (including VFD-derived operating indicators where accessible).

5. *Findings, Recommendations, and Maintenance Enablement Concepts*

- ✓ Summarize monitoring results and implications for condition, failure modes, and remaining service life for the instrumented assets.
- ✓ If compatible with the City's maintenance software environment and policies, outline a straightforward approach to generate condition-based preventative maintenance work orders.

*Deliverables*

- ✓ Sensor Deployment Plan (include in the Condition Assessment Work Plan for City review/approval): target assets, sensor types/locations, monitoring duration, and access/safety notes.
- ✓ Installed Sensor Log: instrumented assets, sensor IDs/locations, install dates, and basic commissioning checks.
- ✓ Extended Condition Monitoring Summary Memo / Report Section: key trends, anomalies, correlation to operating context, and recommended actions for the instrumented assets.
- ✓ Optional CMMS/PM Enablement Concept (if feasible): high-level workflow for condition-triggered maintenance actions.

**Assumptions and Exclusions**

- Sensor deployment is optional, with fee shown separately from the base RFP scope, consistent with the City's instructions.
- Sensors are assumed to be temporary / non-invasive and installed to support condition assessment findings (not permanent plant upgrades).
- Any direct integration to City systems (CMMS/EAM/SCADA/network access) is subject to City IT/security policies and may be proposed as an additional sub-option if desired.

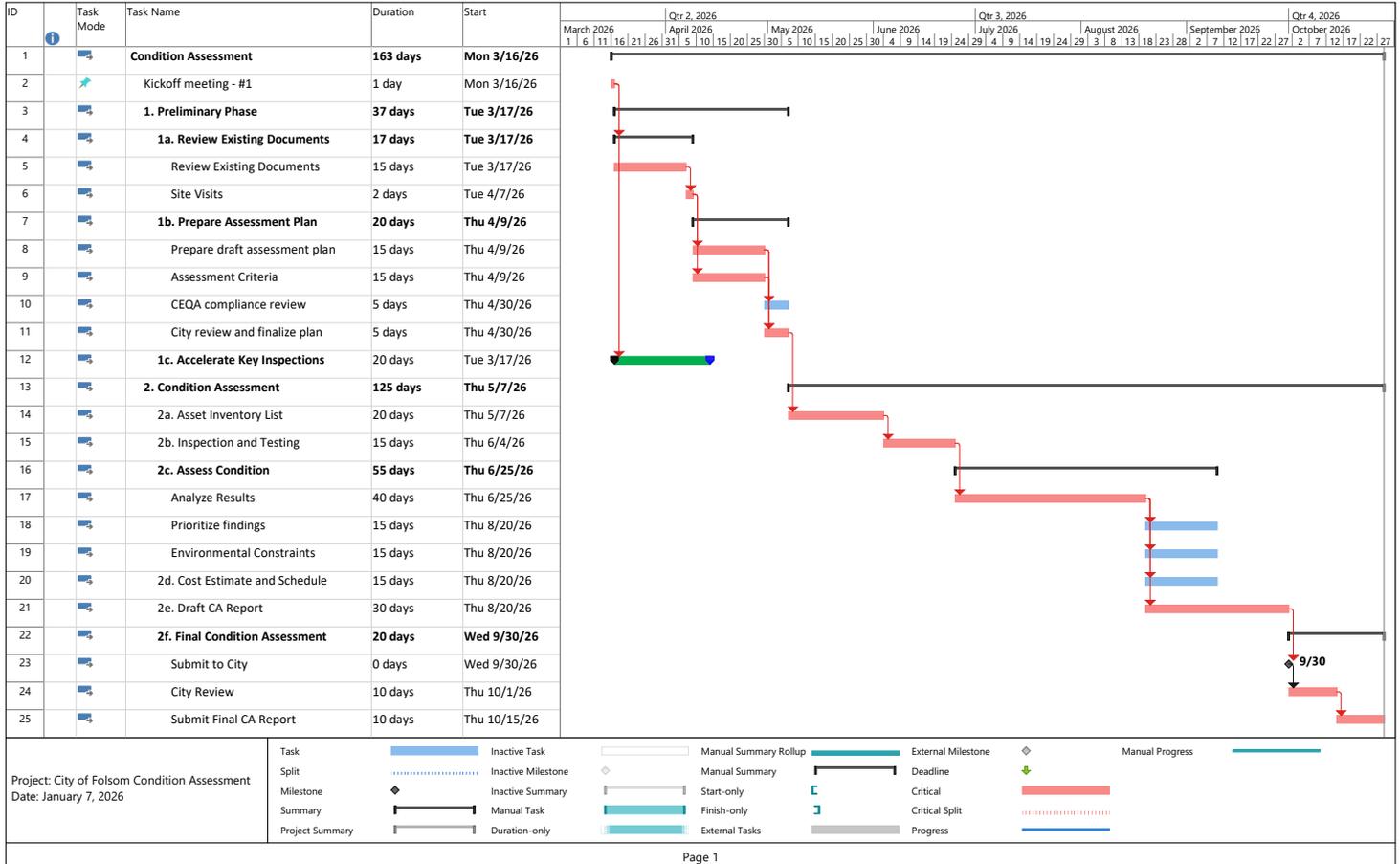
**Breakdown of Professional Hours for Value-Added Enhancement Task**

We estimate the overall level of effort for this Value-Added Scope to be around 50 additional labor hours, and a total cost, including equipment rental, to be around \$17,500.



## 4) PROJECT SCHEDULE

We have prepared the following preliminary project schedule for this project. We believe the project can be completed within the 6-9 month timeframe as stated in the RFP and Addendum No. 1.



A key consideration regarding the overall project schedule is the allowable partial process shutdowns at the WTP until April 15th of 2026. The RFP’s original schedule indicated a target contract issue date of March 11, 2026 (based on a Consultant selection date of January 19, 2026). It will be critical to prepare the Assessment Plan (Task 1b) immediately, especially with regard to facility inspections that may require partial shutdown or a reduction in overall WTP production. (see table below).

Facility	Assessment Needs	Partial Shutdown Required?
Sedimentation Basins 1-4	Dewater to inspect submerged structural and mechanical equipment	<i>(Possibly)</i>
Sedimentation Basin 5 and Actiflo Basins	Dewater to inspect submerged structural and mechanical equipment	<b>Y</b>
Chlorine Feed Room and Storage Tanks, Other Chemical Feed Systems	Inspection is generally external while systems remain operational.	<b>N</b>
Other Chemical Feed systems	Inspection is generally external while systems remain operational.	<b>N</b>
Filter Backwash Splitter Box	structural. May be able to extend filter runs and delay backwashing.	<i>(Possibly)</i>
Filter	Inspect filters one at a time while maintaining overall WTP production.  Inspect valve actuators while plant remains operational.	<b>N</b>
Solids Handling	Inspect open basins, structures, and pumps following removal of solid residuals.	<b>N</b>
Electrical Systems	Inspection is generally external while systems are live, including substation.	<b>N</b>
HVAC	Would not disrupt WTP production.	<b>N</b>
BPSs	Can generally do this without reducing pumping capacities.	<b>N</b>

Our schedule shows this as a single consolidated line item (Task 1c) that would include starting the initial Assessment Plan (Task 1b) and Inventory List (Task 2a) early.



## 5) PROJECT TEAM QUALIFICATIONS & EXPERTISE

**NCS Engineering** (NCS) and **Sutro Consultants** (Sutro) are pleased to offer the City of Folsom the best of our combined strengths to ensure the City gets a fresh set of eyes to complete this condition assessment. We have assembled a team of dedicated professionals who bring extensive and specialized experience in performing condition assessments for water infrastructure.

### Team Leadership Assignments

*(for clarity and integration):*

- ▶ Project Management, Schedule Tracking, and Budget Control (**Lead: NCS**): NCS will lead overall project management, including schedule tracking, meeting coordination, and budget controls consistent with Task 3 requirements.
- ▶ Condition Assessment Framework / Rating System (**Lead: Sutro**): The Team will use a consistent, defensible evaluation framework led by Sutro to guide condition ratings, Remaining Serviceable Life estimates, and risk-based prioritization.
- ▶ Mechanical Assessments (**Lead: Sutro**): Sutro will lead mechanical condition assessment field observations and documentation, leveraging maintenance/reliability expertise to strengthen practical recommendations.
- ▶ All Other Condition Assessment Disciplined and Cost Estimating (**Led by NCS and Domenichelli & Associates Discipline Leads**): The Team's respective discipline leads will develop cost estimate inputs for their asset types and recommended alternatives, coordinated into a single cost and phasing deliverable.

### ★About NCS Engineering

NCS is a full-service engineering firm specializing in the areas of planning and design of water and wastewater infrastructure and treatment facilities, water and wastewater hydraulic modeling, electrical instrumentation and controls, supervisory control and data acquisition (SCADA) programming, regulatory compliance, and construction support services. **Our Sacramento office is located at: 8880 Cal Center Drive, Sacramento, CA 95826** from which all work will be managed and performed. Established in 1998, NCS is proudly celebrating 27 Years!



NCS was established in Phoenix and has grown to develop offices in:

- Chinle, AZ • El Segundo, CA • Gaithersburg, MD • Houston, TX • Irvine, CA • Las Vegas, NV • Sacramento, CA •

### ★Litigation, Arbitration, & Claims

NCS is proud of the fact that in over 27 years of providing Professional Engineering and Construction Management (CM) Services, there has never been a claim filed against the company nor have we been involved in any litigation. This is attributable to our management of the costs and change orders, and ensuring the quality of work. **Further, in \$1B of construction projects completed by NCS, there has never been any claims or litigation involving any of the parties.** Few, if any, consultants can make this statement.

### ★About Sutro Consultants

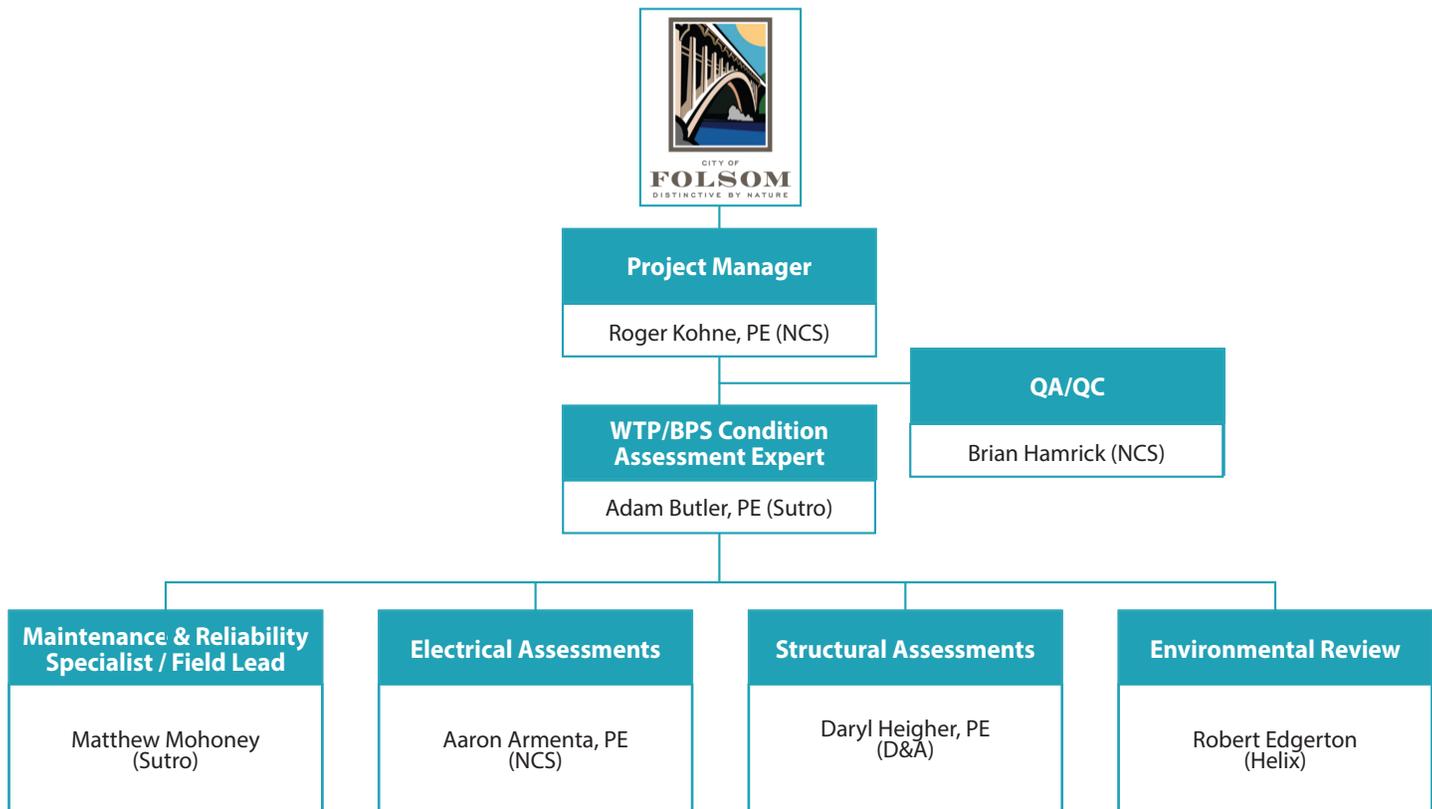
Sutro is a utility-focused asset management and condition assessment firm based in San Francisco. The Sutro team brings experience translating field observations, O&M context, and available records into consistent condition and risk ratings, remaining service life opinions, and practical repair/replace/CIP recommendations. On this project, Sutro supports the Team by leading development of the condition assessment framework and contributing mechanical condition assessments to ensure findings are prioritized, defensible, and actionable.



Sutro will provide a senior-led, highly engaged team to perform the City of Folsom's condition assessment for the WTP and nine BPS facilities. Our team blends engineering leadership and asset management-based prioritization with deep maintenance and reliability expertise to produce a condition assessment that is practical in the field and defensible for capital planning - supporting the City's objectives to evaluate condition and remaining serviceable life, develop repair/replace/CIP alternatives, and support cost and phasing decisions.

## Key Personnel & Roles

### Organizational Chart



### ★ Roger Kohne, P.E. - Project Manager



Mr. Kohne has over 34 years of professional engineering experience, nearly all of it related to water treatment, storage, and distribution. Most of his earlier project experiences involved water treatment, including new and rehabilitating or expanding existing facilities. His resume at the back of this proposal lists many of his relevant water projects - a few are highlighted below:

#### Water Treatment Facilities

#### **Modesto Irrigation District (MID) Regional WTP Phase 2 Expansion**

Mr. Kohne was Project Engineer for the expansion of MID's conventional (e.g. with sedimentation pretreatment and media filters) water plant from 30 MGD to 60 MGD. The original plant was constructed in the mid 1990s, and while the original plant had been very well maintained, many pieces of equipment were nearing the end of their serviceable life or needed to be modified to meet changing water quality and treatment conditions. Specific areas of focus for the expansion included:

- ▶ Hypochlorite facilities: replacing existing tanks, and increasing storage and pumping within a climate-controlled room.
- ▶ Solids handling: expansion and improvements to existing sludge thickening and lagoon facilities.
- ▶ Finished water pumping: expansion and improvements to the overall off-site finished water pumping to the City of Modesto.

★ Relevance: large water plant needs assessment, construction cost estimating.

#### **Nevada Irrigation District - Elizabeth George WTP Expansion**

Mr. Kohne was the Project Engineering during construction upgrade of this conventional water treatment facility from 10 MGD to 24 MGD. Specific areas of focus for the expansion included:

- ▶ Upgrades to the flocculation and sedimentation basins.
- ▶ Filters: Refurbishing of the existing filters and construction of new filters.
- ▶ Solids handling: significant improvements to the original lagoon system to reduce overall labor.

★ Relevance: production constraints at an operational water treatment facility.



### Water Distribution Facilities

In recent years, his experience has shifted more toward other infrastructure projects, including pump stations and pipelines. Examples of such projects include:

#### **Citrus Heights Water District - Project 2030 Water Main Replacement Study**

Mr. Kohne served as Project Manager (PM) for an asset management study for the Citrus Heights Water District, which oversees approximately 250 miles of 4-inch to 42-inch water mains. The first step of the project involved a deep dive into the District's archived records, retrieving and digitizing records, some of which that were over 75 years old. This information was uploaded to software tools used to **prioritize** future water main replacement based on Consequence of Failure (COF) and Likelihood of Failure (LOF) analyses. Capital costs and funding strategies were developed and reviewed for the prioritized project list. In addition to the technical work, Roger helped develop a public outreach program and personally gave numerous technical presentations to the District Board and to a newly formed customer advisory committee.

★**Relevance:** condition assessment based on reviewing historical records, systematic prioritization of upgrades, construction cost estimating.

#### **West Valley Construction - California Water Service Water Main Replacement Program**

Between 2019-2023, he managed the pre-design and design of nearly 100 individual pipeline projects covering over 250,000 feet (approximately 50 miles) of water main replacement sized from 6-inch to 18-inch diameter. This experience included frequent site visits during the design and construction phases. Mr. Kohne also managed the design of several new larger-scale chlorination facilities.

★**Relevance:** as an employee of a construction contractor, Mr. Kohne developed extensive experience in cost estimating infrastructure projects.

#### ★ **Adam Butler, P.E. - WTP / BPS Condition Assessment Expert**



Mr. Butler is a Co-Founder leading asset management services at Sutro Consultants with 17+ years of experience leading water and wastewater capital improvement and asset management programs, including condition assessment planning, data-driven prioritization, and CIP alignment.

He will serve as the primary point of contact at Sutro and will be responsible assessment planning, integration of field findings into a consistent rating and prioritization framework; and preparation of draft/final deliverables and workshop support.

His relevant experience includes development of risk-based frameworks and condition assessment programs supporting long-term capital planning, including a WTP Master Plan and Condition Assessments effort for Stockton East Water District, where condition scoring and risk-based prioritization were structured for integration into mobile field tools and CMMS-oriented workflows.

Mr. Butler has also performed safety equipment surveys at all three of SFPUC's WWTPs and has led condition assessments at treatment facilities for the City of Santa Cruz WWTF, Las Gallinas Valley Sanitary District, and the Delta Diablo Resource Recovery Facility.

#### ★ **Matthew Mahoney, CRL, CMM - Maintenance & Reliability Specialist, Field Assessment Lead**



Mr. Mahoney is a Maintenance and Reliability Specialist with **over 45 years of experience** supporting water and wastewater treatment facilities, including hands-on mechanical maintenance, reliability programs, and leadership across treatment plants, pump stations, and remote facilities. Most of his experience has been while in charge of mechanical maintenance, condition assessment, and asset management of the primary treatment facility for Central Contra Costa Sanitary District.

Additionally, his condition assessment experience includes treatment plant and pump station assessments for Las Gallinas Valley Sanitary District, Monterey County Water Resources Agency (treatment plant, pump station, and well stations), and Wailea (Kauai) Wastewater Utility (WWTP and pump stations), where he documented mechanical condition, corrosion/exposure risks, and operational anomalies for incorporation into engineering evaluation and capital planning.

Mr. Mahoney will lead field assessment support focused on mechanical and O&M informed observations to strengthen the quality and practicality of condition ratings and recommendations, including: walk-through inspections of rotating and process equipment; identification of observable deterioration and maintainability constraints; screening-level condition observations supported by operational cues and spot vibration checks where appropriate; and documentation of environmental exposure and corrosion impacts.



★ **Aaron Armenta P.E. - *Electrical Condition Assessments***



Mr. Armenta is head of the EI&C Design group at NCS, with over ten years of engineering experience primarily in water/wastewater facilities, but additionally in industrial facilities and electrical transmission/distribution utility substation design.

- ✓ Served as EI&C Engineer on approximately 100 water and wastewater projects with NCS, and as the Electrical Engineer of Record on over 40.
- ✓ Electrical Design Engineer role on **16 utility substation** engineering projects.

Mr. Armenta recently completed an electrical condition assessment on a high-profile commercial facility that entailed the assessment of over **400 pieces of electrical distribution equipment**. The equipment ranged from 4,160 Volts to 120 Volts, and from less than 5 to over 50 years old. The project site electrical distribution system fed water and wastewater on-site facilities, in addition to general HVAC and commercial facilities loads. Medium voltage equipment included metal enclosed switchgear, dry type transformers, pad mounted transformers and unit substations. Low voltage equipment included switchboards, distribution panelboards, panelboards, dry type transformers and disconnect switches. The equipment was assessed against IEEE and NFPA standards, as well as manufacturer recommendations and observations made during physical inspection.



**Other Team Members**

**Domenichelli & Associates**



★ **Daryl Heigher - *Structural Condition Assessments***

Mr. Heigher has 30 years of experience in water infrastructure design, structural design, cost estimating, and construction inspection. He provided structural engineering as part of the City of Folsom's East Tank 1 Renovation project which included an evaluation and replacement of deteriorated tank structural members. He also performed structural evaluation and retrofit design for multiple structures at the Placer County Water Agency's (PCWA) Foothill WTP, including field investigation and assessment of deteriorated facilities, and . developed removal and replacement strategies to maintain structural integrity and prepared structural recommendations and construction details. Additionally, he evaluated multiple locations in a failing concrete wall developed repair details to restore structural capacity and prevent future spalling.

**Helix Environmental Planning**



★ **Robert Edgerton - *Environmental Desktop Evaluation***

Mr. Edgerton has provided on-call environmental services and other project-specific services for the City of Folsom for many years. He will assist the team in performing the "desktop" environmental constraints analysis as part of the initial planning and for all improvements identified during the condition assessment.

**Combined Strength: Engineering + Maintenance Reliability Perspective**

The Team's structure is intentionally designed to avoid a purely reporting exercise. Our approach blends engineering rigor and defensible prioritization with field-proven reliability and maintainability insight. This combination improves outcomes by documenting deficiencies in a way that translates cleanly into implementable repair/replace/CIP alternatives and realistic sequencing considerations, particularly for pumping and process equipment with operational constraints.

**Approach to Managing the Work & Project**

The keys to a successful Condition Assessment project happen right from the start of the project:

- ✓ Clear and frequent communication between City of Folsom staff and the NCS/Sutro team members to confirm key areas of concern.
- ✓ Evaluation methodology.
- ✓ Conduct careful planning for the field inspections.
- ✓ Confirmation of the total inventory number of assets to be included in the analysis. Should this number differ significantly from that which served as the original basis for the contract, bring this to the City's attention before the work proceeds.

### Qualifying Experience

The following table lists our team’s qualifying project experience to demonstrate compliance with the City’s RFP and subsequent Addendum No. 1 for having completed facility condition assessments for a minimum of three (3) T3 water or wasteWTPs and three (3) D3 BPSs. Descriptions of these projects can be found in the resumes, following this section, for the associated team members.

Project	Class / Capacity	Treatment Plant	BPS	Team Member
<b>CONDITION ASSESSMENT QUALIFYING EXPERIENCE</b>				
<b>Santa Cruz WWTP</b> Major Equipment and Infrastructure Study	Class IV 17 MGD	★		A. Butler
<b>Stockton East WTP</b> Assessment and Master Plan	Class T5 65 MGD	★		A. Butler
<b>Delta Diablo Resource Recovery Facility</b> Condition Assessment	Class V 19.5 MGD	★		A. Butler
<b>Las Gallinas Valley Sanitary District</b> Integrated Wastewater Master Plan and Condition Assessments	Class III 3.2 MGD (with Activated Sludge)	★	★	A. Butler M. Mahoney
<b>Monterey Co. Water Resources Agency</b> Condition Assessments	Class V 18 MGD	★	★	M. Mahoney
<b>Wailea (Kauai) Wastewater Utility</b> Condition Assessments	Class IV 8 MGD	★	★	M. Mahoney
<b>Central Contra Costa Sanitary District</b> Condition Assessments	Class V 53.8 MGD	★	★	M. Mahoney
<b>OTHER RELEVANT EXPERIENCE</b>				
Modesto Irrigation District Plant Expansion	Class T5 60 MGD	★	★	R. Kohne
Nevada Irrigation District E George WTP Expansion	Class T5 24 MGD	★		R. Kohne D. Heigher
Electrical Condition Assessment (confidential client) - 400 individual electrical pieces of equipment.	N/A			A. Armenta
PCWA Structural	N/A	★		D. Heigher



## Resumes

Personnel	Role	Company
Roger Kohne, P.E.	Project Manager	NCS
Adam Butler, P.E.	WTP / BPS Condition Assessment Expert	Sutro
Matthew Mahoney, CRL, CMM	Maintenance & Reliability Specialist, Field Assessment Lead	Sutro
Aaron Armenta P.E.	Electrical Condition Assessments	NCS
Daryl Heigher	Structural Condition Assessments	D&A
Robert Edgerton	Environmental Desktop Evaluation	Helix
Brian Hamrick	QA/QC	NCS



## Roger Kohne, P.E. - Vice-President - Water Facilities



**YEARS EXPERIENCE:** 34 Total - 2 with NCS

**EDUCATION:** UC Davis - BS Civil Engineering  
Stanford - MS Environmental Engineering

**LICENSES & CERTIFICATIONS:** Professional Licensed Engineer  
California #64092

**PROFESSIONAL ASSOCIATIONS:** American Water Works Association (AWWA)  
California Water Environment Association (CWEA)



Mr. Kohne has over 34 years of professional engineering experience, nearly all of it related to water treatment, storage, and distribution. Most of his earlier project experiences involved water treatment, including new and rehabilitating or expanding existing facilities. In recent years, Roger's experience has shifted more toward other infrastructure projects, including pump stations and pipelines.

### RELEVANT PROJECTS

#### ***California Water Service, Main Replacement Program.***

Between 2019-2023, Mr Kohne managed the pre-design (utility mapping) and design of nearly 100 individual projects covering over 250,000 feet (approximately 50 miles) of water main replacement sized from 6-inch to 18-inch diameter.

#### ***Citrus Heights Water District, Project 2030 Water Main Replacement Study - Project/Client Manager.***

Oversaw asset management study for District with approximately 70,000 customers and 250 miles of 4-inch to 42-inch water mains. Digitized and incorporated over 4000 plans and records into District's GIS system. Updated water demand forecast. Utilized Innovyze InfoMaster software to prioritize future water main replacement and develop capital costs and funding strategies. Developed public outreach program and gave numerous technical presentations to a customer advisory committee. Developing information-sharing dashboards to assist public decision making.

#### ***City of Folsom - Senior Civil Engineer.***

Managed Capital Improvement Program projects to improve water and related infrastructure in Folsom, California, including upgrades and improvements to media filters at the City's primary surface Water Treatment Plant (WTP), and numerous pipeline projects. Tasks included scope development, monitoring consultant activities and schedule, oversight of contractor and inspector activities during construction, change order negotiation, and public outreach.

#### ***Modesto Irrigation District, Modesto Regional WTP Expansion - Project Engineer.***

Designed the expansion of conventional media filtration plant from 30 to 60 MGD using membrane treatment for expanded capacity. Prepared procurement documents for \$4.1 million membrane system. The project included design of new membrane facilities, optimization of pretreatment, ozonation upgrades, high service pump station expansion, chemical feed system expansion, and solids handling upgrades. Total project construction cost approximately \$60 million.

#### ***Nevada Irrigation District, Elizabeth George WTP Expansion - Project Manager.***

Responsible for construction phase engineering and inspection services. Implemented a new construction document control tool to provide on-line, real time information to the Owner, construction contractor, and engineering teams. Improvements resulted in an increased capacity from 10 to 24 MGD. Project included upgrades to existing flocculation and sedimentation basins and installing new horizontal flocculators and sludge collection equipment, improvements to solids dewatering for increased operational flexibility, new backwash and filter-to-waste recovery basins, mechanical improvements within the existing pipe gallery, and associated electrical upgrades. Existing plant kept in operation during most of construction period. Construction cost \$15 million.

#### ***Contra Costa Water District, Randall-Bold WTP Sedimentation Basins - Project Engineer.***

Designed a new sedimentation facility rated for 54 MGD capacity at an existing WTP. The project included evaluation of replacement filter media. Total project construction cost approximately \$12 million.

#### ***California Water Service Company, NE Bakersfield WTP - Project Engineer.***

Designed a new 20 MGD WTP (buildout to 60 MGD). Project delivery method was design-build. Project included pretreatment using inclined plate sedimentation, membrane facilities, administration building with complex water quality laboratory facilities, two new pumping stations, solids dewatering facilities, and a 3 MG steel finished water reservoir. Worked closely with the design-build construction team and equipment procurement group throughout construction and startup. Total project construction cost approximately \$30 million.

#### ***Paradise Irrigation District, Process Water Recycling Project - Project Manager.***

Managed the design of new solids handling and process water recovery facilities and associated site improvements at the district's 23 MGD WTP. Gave numerous presentations to Board on project status and technical evaluations. Estimated construction cost \$11 million.

***Placer County Water Agency, Bowman WTP Hypochlorite Conversion - Project Manager.***

Managed the design of new sodium hypochlorite feed equipment and associated civil, mechanical, electrical, and instrumentation upgrades at an existing 5 MGD WTP. Estimated construction cost \$0.5 million.

***City of Milpitas, Gibraltar Reservoir and Pump Station Rehabilitation - Project Manager.***

Managed design upgrades to the City's primary reservoir and pump station. The project included refitting one 600 hp and one 400 hp diesel engine pump with electric engines, replacing two 400 hp vertical turbine pumps with new pumps better matched to system hydraulics, and design of a new control building and chemical feed building. Total construction cost approximately \$8 million.

***Umpqua Basin Water Association, WTP Improvements - Design Engineer.***

A membrane treatment facilities was part of expansion of an existing 4 MGD WTP. The project involved replacement of existing package filters with membrane filtration. Expansion to 6 MGD included modifications and improvements to the existing river intake, pretreatment basin, solids dewatering, finished water pumping station, finished water reservoir, and chemical feed systems.

***WTP Improvements, City of Ashland, OR:*** Project Engineer for the design of chemical feed systems for a 10 MGD plant. Responsible for coordination of the structural, mechanical and electrical design for new facilities.

***Water Filtration Plant Disinfection Improvements, City of Grants Pass, OR:*** Project Engineer for design of a new liquid sodium hypochlorite feed system for an 18 MGD treatment plant to replace an existing chlorine gas system. The new system was installed in the existing feed area and the preliminary evaluation included review of on-site hypochlorite generation.

***Rock Creek WTP Chemical Feed Improvements, City of Corvallis, OR:*** Project Engineer for this work where he oversaw design of a new liquid sodium hypochlorite feed system to replace an existing chlorine gas system, design of a new soda ash feed system, and construction of an extension to the existing operations building.

***Chlorine Neutralization Facility and Polymer Storage/Feed Facilities, Clackamas River Water; Clackamas, OR:*** Design Engineer for design of a chemical storage and feed system for using a liquid cationic polymer at the WTP. Provided assistance in facilities layout for a chlorine neutralization system (scrubber), superstructure, electrical, and mechanical systems.

***Lytle Creek Village Water Filtration Facilities, West Valley Water District; Rialto, CA:*** Project Engineer for preparation of a Master Plan for a new 6 MGD water treatment facility using submerged membranes, GAC contactors, and pretreatment.

***Treatment Plant Expansion Plan, Eugene Water & Electric Board; Eugene, OR:*** Project Engineer for evaluation of water treatment process at Hayden Bridge Water Filtration Plant, including current and future disinfection practices (with UV), filtration optimization and chemical feed practices.

***WTP Facility Study, Umpqua Basin Water Association; Roseburg, OR:*** Project Engineer for evaluation of a 4 MGD WTP, including treatment optimization, facilities upgrades, impact assessment of future regulatory requirements on current treatment practices, and expansion.

***Rock Creek WTP Facilities Plan, City of Corvallis, OR:*** Project Engineer for evaluation of a 5 MGD water treatment, including treatment optimization, facilities upgrades, impact assessment of future regulatory requirements, alternatives for future disinfection using UV and ozone.

***Lake Oswego WTP Study, City of Lake Oswego, OR:*** Project Engineer for an evaluation study of a WTP, including evaluation of alum sludge handling and disposal, chlorination practices, chemical feed systems, and treatment processes for a 16 MGD plant.



# Adam Butler – Condition Assessments and CIPs

17 years of experience · San Francisco, CA

Adam Butler is Co-Founder and Principal Engineer at Sutro Consultants with 17+ years of experience leading water and wastewater capital improvement and asset management programs. He specializes in data collection and assessment, O&M and capital program evaluation, and applying risk frameworks to prioritize assessments and infrastructure reinvestment. Adam supports clients in aligning CIP recommendations with sustainability, environmental, and economic goals, and frequently provides on-site support during inspections. His work integrates GIS, CMMS, and SCADA data to streamline workflows and inform planning.

## EDUCATION

BS, University of Massachusetts, Amherst

MBA, Boston University

Certification in Asset Management, IAM #6135459

Construction Safety & Health, OSHA

## CERTIFICATIONS & MEMBERSHIPS

Institute of Asset Management (IAM) IAM Bay Area Co-Chair

## REGISTRATIONS

Professional Engineer #86769, California

Professional Engineer #51153, Massachusetts

## Project Experience

### Condition-based Monitoring of Critical Pumping Equipment

**Stockton East Water District, California | Principal-in-Charge and Asset Management Lead**

Led a condition-based maintenance pilot for a critical water treatment pump by deploying IoT vibration/temperature sensors and building a Grafana asset health dashboard integrating VFD data via Modbus. Verified Tyler EAM API connectivity and configured dashboard outputs to trigger automated work orders based on operator-defined condition thresholds. The District is now evaluating expanding this approach to its top 10 most critical pumps.

### Water Treatment Plant Master Plan and Condition Assessments\*

**Stockton East Water District, California | Asset Management Lead**

Developed a custom risk-based framework to prioritize repair and replacement needs using available data and visual condition assessment score and notes captured by a multidisciplinary team of engineers. Formatted results for integration into CMMS and Esri Survey123 for mobile field validation and stakeholder input, enabling real-time asset review and decision support for CIP planning.

### Condition Assessment and WWTF CIP Priorities\*

**City of Santa Cruz, CA | Project Manager and Asset Management Lead**

Led assessment and prioritization of over 2,000 WWTF assets for a 15-year CIP. Expanded asset registry and identified critical repair, rehabilitation, and CIP needs. The results helped develop budgets and capital projects for the City's 2021 fiscal year and optimized efficiency with recommendations such as a facility-wide electric system reconfiguration and CMMS evaluation and upgrade project.

### Resource Recovery Facility Condition Assessment Project\*

**Delta Diablo Sanitation District, Antioch, CA | Assistant Project Manager/Asset Management Lead**

Led the data analysis and establishment of asset registries for multiple types of assets within the District's jurisdiction, including: gravity sewer manholes, pipelines, force mains, and WWTF pipelines. These efforts led to risk estimates for prioritized actions based on all known data, which were then calibrated based on a sample of inspection reports to adjust risk parameters. Efforts on this project also included collecting condition data on sewer manholes and pipelines on an expedited schedule to satisfy regulatory requirements, which was fed into the dynamic asset registries. Mr. Butler also led the planning and coordination of the District's first and successful inspection of its WWTF Outfall pipeline, which was presented at the 2019 CWEA Annual Conference.

\* denotes projects completed with other firms



## **Integrated Wastewater Master Plan and Condition Assessments\***

**Las Gallinas Valley Sanitary District | San Rafael, CA | Project Manager and Asset Management**

Facilitated a risk-based prioritization workshop and developed a three-phase condition assessment plan for prioritizing CIP needs across the WWTP, recycled water, and collection systems. Managed subconsultants and led coordination to align District goals and schedule.

## **Condition Assessments and Sewer Construction – Clean Water Program\***

**City of San Mateo, CA | Project Manager & Construction Manager**

Adam was the project manager for the first phase of pilot project recommendations for the City's \$900 million Clean Water Program (CWP). Work involved processing over a year's worth of sewer assessments with historic records of the collection system to prioritize sub-basins for design and construction. Final recommendations totaled \$13 million across four subbasins, which were presented to the City and their program management consultant for immediate design in the Basin 4 contract. From 2020-2021, Adam was the construction manager on the \$1.7M El Camino Real sewer rehabilitation project.

## **Condition Assessments and CIP Program Implementation\***

- Wawona Street and 15th Avenue Stormwater Collection and Detention Basins\*
- Westside Recycled Water Project at Golden Gate Park and the Oceanside Treatment Plant\*
- Southeast Plant Outfall Islais Creek Crossing Condition Assessments and ESDC\*

**San Francisco Public Utilities Commission, California | Project Manager**

Managed infrastructure assessments and over \$20M of capital project planning, design, and construction, including recycled water, stormwater, and emergency sewer infrastructure. Led asset assessments, construction risk management, and decision-making frameworks from planning through implementation.

## **MaintainX – Computerized Maintenance Management System (CMMS)\***

**Various Private & Public Organizations | Solutions and Implementation Manager**

Adam directed the solution architect data integration and implementation teams to improve clients' Operations and Maintenance (O&M) and repair processes and standards. This resulted in over 75% of customers being implemented within three weeks. MaintainX is the #1 rated mobile maintenance application to help organizations track and report O&M activities and to collaborate and communicate among staff. Adam led teams in the training, workflow mapping, custom configurations, change management, and integrations with enterprise software and IoT sensors to automate and streamline customers' business processes and performance.

## **Asset Management Program Evaluation and Software Selection\***

**LA Sanitation | Los Angeles, California | Asset Management Lead**

Adam led staff through the evaluation of existing asset management goals and objectives, tools, and workflow mapping of business processes and compared these to a desired future state that would lead to improved efficiency and collaboration. In parallel, Adam led LASAN staff through an evaluation of eight asset management software products with structured demonstrations that allowed the agency to rank and select the top two products for piloting at select facilities with a 6-month schedule. LASAN considers this project a "huge success" and plans to immediately implement the asset management roadmap and implementation plan to sustain the momentum gained with staff on this project.

## **Water System Design\***

**Lowell Regional Water Utility, MA | Project Engineer**

Mr. Butler designed the layout of approximately 5,000 linear feet of water main upgrades in AutoCAD from a 6-inch to 12-inch main. These upgrades were performed in locations with poor hydraulic flow conditions, which were the result of age and reduced inside diameters. Design work included the assessment of survey data for impacts with utilities.



# Matthew Mahoney – Maintenance & Reliability Specialist

45 years of experience · San Francisco, CA

Matt Mahoney is a Maintenance and Reliability Specialist with 45 years of experience supporting water and wastewater treatment facilities. His background spans hands-on mechanical maintenance, condition assessment, and supervisory leadership across treatment plants, pump stations, and remote facilities. Matt brings a practical operations and maintenance perspective that complements engineer-led condition assessments, helping agencies identify observable mechanical deficiencies, environmental exposure risks, and maintenance-informed considerations that support defensible asset condition ratings and capital planning decisions.

## CERTIFICATIONS

Certified Reliability Leader (CRL)  
Certified Maintenance Manager (CMM)  
CWEA Grade III Mechanical Technologist  
Confined Space Entry Certified  
Rigging, Forklift, and Aerial Platform Certified  
NCCCO Mobile Crane Operator (20-Ton)  
Rigging, Forklift, and Aerial Platform Certified

## EDUCATION

A.A., Hotel & Restaurant Management (Technical operations, facilities, and systems management foundation)  
Vibration Analysis School, Mechanical Seal School, Oil Analysis School, Schwing Pump School, Waukesha Engine School  
Doc Palmer Planner Training, Crowley Creative Maintenance Solutions Planning Seminar

## CONDITION ASSESSMENT & RELIABILITY EXPERTISE

Mechanical condition assessments of treatment plants and pump stations  
Visual and operational inspections of rotating and process equipment  
Audible, visual, and vibration-based condition observations (screening-level)  
Identification of observable mechanical deficiencies and degradation indicators  
Corrosion and environmental exposure assessments  
Safety-focused and maintenance-informed input to asset condition ratings in active facilities  
Handheld vibration monitoring (screening-level) and maintenance history interpretation  
Practical repair and rehabilitation observations to support engineering evaluations

## Project Experience

### Treatment Plant and Booster Pump Station Condition Assessments\*

**Las Gallinas Valley Sanitary District | San Rafael, CA | Sr. Mechanical Assessment Specialist**

Supported condition assessments at four District facilities, including the wastewater treatment plant and three pump stations. Participated in comprehensive walk-through inspections of mechanical equipment including centrifugal and sludge service pumps, clarifiers, digesters, screw conveyors, and microturbines.

Assessments were based on visual observation, operational cues, audible indicators, and spot vibration checks. Identified observable deficiencies such as leaking packing, corrosion concerns, and non-ideal material selections (e.g., plastic piping exposed to sunlight), and provided maintenance-focused input on potential repair considerations. Field observations informed asset condition ratings and recommendations developed in collaboration with the engineering team.

### Treatment Plant, Pump Station, and Well Station Condition Assessments\*

**Monterey County Water Resources Agency | Monterey, CA | Mechanical Condition Assessment**

Supported mechanical condition assessments of the treatment plant, pump station, and multiple well stations. Specific assets included vertical turbine pumps installed on an elevated concrete structure, mechanical equipment, structural supports, and electrical enclosures.

\* denotes projects completed with other firms  
Matt Mahoney, CRL CMM



Focused on visible condition issues presenting operational and mechanical risks, including corrosion, exposure to weather, security concerns, and potential impact risks. Assessments also included walk-through inspections of accessible mechanical equipment and identification of indicators suggesting limited preventive maintenance attention, such as dirty oil sight glasses and unmaintained surge tank components.

Matt's observations were documented and provided to the engineering team to inform overall condition ratings. His role emphasized safety-conscious inspection practices, identification of visible deterioration, and highlighting operational and maintenance risks for consideration in the broader assessment.

### **Treatment Plant and Pump Station Condition Assessments\***

#### **Wailea (Kauai) Wastewater Utility | Kauai, HI | Sr. Mechanical Condition Assessment Specialist**

Supported mechanical condition assessments at the Wailea wastewater treatment plant and three associated pump stations. The facilities are located in a coastal environment, directly across from the ocean, resulting in significant exposure to salt air and corrosive conditions.

Matt conducted walk-through inspections of mechanical equipment including pumps, motors, gearboxes, VFDs, generators, and associated mechanical systems. Field assessments focused on visible corrosion, leaks, vibration, audible anomalies, and general equipment condition. One progressive cavity pump exhibited an unusual sound during operation; although operators indicated the condition was normal and vibration readings did not indicate an immediate issue, the observation was documented for engineering review.

Significant corrosion impacts were observed across the facility, including degraded coatings, rusted mechanical equipment, deteriorated masonry, and corrosion affecting generator packages and building components. Matt's observations were documented and provided to the engineering team to inform overall condition ratings, capital planning considerations, and stakeholder communication.

### **Central Contra Costa Sanitary District\***

#### **Mechanical Shop Supervisor (2016–2024) | Planner / Scheduler (1998–2016) | Mechanical Technician (1980–1998)**

Led and supported mechanical maintenance, reliability, and condition assessment activities across a large wastewater treatment plant and remote facilities over a 45-year career. Responsibilities ranged from hands-on mechanical work to supervisory leadership, planning, and asset management support.

- Supervised preventive, predictive, and condition-based maintenance programs
- Oversaw inspections and condition evaluations of pumps, motors, gearboxes, conveyors, incinerators, and process equipment
- Developed and implemented a plant-wide lubrication program
- Served on the Asset Management Team and CMMS User Group
- Reviewed engineering plans and supported capital project planning from an O&M perspective
- Oversaw standing maintenance contracts and contractor safety compliance

## Aaron Armenta, P.E. - Associate Vice-President - EI&C Design



**YEARS EXPERIENCE:** 10 Total - 5 with NCS

**EDUCATION:** Arizona State University - Bachelor of Science  
Electrical Engineering & Electrical Power and Energy Systems



**LICENSES & CERTIFICATIONS:** Professional Licensed Engineer  
California #26043, Arizona # 74459, Nevada #035037, Maryland #66012

Mr. Armenta is an Associate Vice-President - EI&C Design at NCS, with over ten years of engineering experience primarily in water/wastewater facilities but also including experience in industrial facilities and electrical transmission/distribution utility substation design.

- ✓ He served as EI&C Engineer on approximately 100 water and wastewater projects with NCS, and as the Electrical Engineer of Record on over 40.
- ✓ Electrical Design Engineer role on 16 utility substation engineering projects.

### **RELEVANT PROJECTS**

#### ***Confidential Private Commercial Client, Los Angeles Area, CA***

Mr. Armenta completed an electrical condition assessment on a high-profile commercial facility that entailed the assessment of over 400 pieces of electrical distribution equipment. The equipment ranged from 4,160 Volts to 120 Volts, and from less than 5 to over 50 years old. The project site electrical distribution system fed water and wastewater on-site facilities, in addition to general HVAC and commercial facilities loads. Medium voltage equipment included metal enclosed switchgear, dry type transformers, pad mounted transformers and unit substations. Low voltage equipment included switchboards, distribution panelboards, panelboards, dry type transformers and disconnect switches. The equipment was assessed against IEEE and NFPA standards, as well as manufacturer recommendations and observations made during physical inspection.

#### ***Global Water Resources Experience***

Mr. Armenta has primarily held a role of EEOR in Global Water Resources, Inc. (GWR) projects since 2020. These projects have included both water and wastewater facilities, with both new facility installations and rehabilitation of existing systems. His role in projects as EEOR has included both the design of electrical systems as well as instrumentation and controls. He has participated in a total of 18 projects (completed or ongoing) as EEOR including, but not limited to, projects at the Apex Water Distribution Facility, Southwest Water Reclamation Facility, Terrazzo Water Distribution Center, Rincon X9 Water Plant, Nikola Water Distribution Center, Rancho Mirage Water Distribution Center, Buckeye Ranch Water Facility, Groves Water Distribution Center, Palo Verde Utility Campus 1 Wastewater Treatment Plant and Hassayampa Utility Company Campus 2 Wastewater Treatment Plant. In addition to his work as EEOR on GWR projects, he has acted as a third party electrical inspector for GWR since 2022. He has also provided electrical engineering design support for projects at other GWR facilities such as Amarillo Creek Well Site, Meadows Water Plant and Neely East Well Site.

#### ***Clark County Water Reclamation District - Las Vegas, NV***

Mr. Armenta served as Lead designer engineer on major power distribution system upgrades on this project. Three Colorado River Commission substations provide power to the CCWRD water reclamation plant. The 12.47kV design implemented redundant power distribution trains for the 150MGD water reclamation plant that serves Las Vegas. The design included the installation of 12.47kV metal enclosed switchgear and pad mounted switches.

#### ***Salt River Project, Sergeant 69/12KV Substation Bay Addition - Phoenix, AZ***

Mr. Armenta assisted with the distribution substation bay addition that included the install of one 69kV transformer protector, one 69/12kV power transformer, one 12kV capacitor bank and 12kV metal clad switchgear. He also installed in the new bay addition was over current and transformer differential protection. Conduit fill calculations, conduit and cable schedules, and bill of materials were prepared by Mr. Armenta. He also processed bill of material in client's work asset management and document control programs.

#### ***Salt River Project, ORME Substation 230/69KV Transformer and 69KV Circuit Breaker Replacement - Phoenix, AZ***

Mr. Armenta provided replacement of a 230/69kV power transformer and 69kV circuit breaker. His design included one line, three-line, equipment schematics and connection diagrams, general arrangement plan, sections and details, grounding plan and details, conduit plan and details, 120/240V AC panel wiring diagram, cable schedule and transformer protection schematics. He also produced and processed bill of materials in client's work asset management and document control programs.

***Fort McDowell Yavapai Nation - Arsenic Treatment System and Well Upgrades***

Mr. Armenta served as Electrical Engineer of Record (EEOR) for the project and oversaw the design of the electrical, instrumentation and controls upgrades. The project design included power distribution system modifications and upgrades to the electrical service entrance, motor starters, panelboards and standby generation. Also included was the replacement of the site control system with a new programmable logic controller cabinet, and the incorporation of the new instrumentation and controls for the arsenic treatment facility to the site control system.

***Navajo Tribal Utility Authority (NTUA) - Aneth Arsenic and Iron Treatment Facility***

Mr. Armenta served as EEOR for the project and oversaw the design of the electrical, instrumentation and controls upgrades. The project design included power distribution system modifications and upgrades to the electrical service and overall system to enhance power reliability. The power distribution system was expanded to incorporate a new arsenic and iron treatment system housed in a new dedicated building. Site controls were upgraded and modified to incorporate a vendor packaged control system for the arsenic and iron treatment skid.



## Daryl W. Heigher, P.E.

### Education

B.S., Civil Engineering, California State University, Sacramento, 1995

### Registration

Professional Civil Engineer, 2001 (California No. 62011)

### Professional Endeavors

Domenichelli & Associates 2012 to Present  
Psomas 2010 to 2012

Owen Psomas 2007-2010  
Owen Engineering 1995-2007

### Experience

Mr. Heigher has 30 years of experience in pump station design, structural design, cost estimating, construction inspection, and shop drawing review. He has served as project engineer for the design of water and wastewater treatment plants, pipelines and pump stations. His experience includes pump and equipment selection, facility layout, analysis of existing structures, and design of new structures (including reinforced concrete, steel, aluminum, fiberglass and timber).

### RELATED PROJECT EXPERIENCE

**Foothill Water Treatment Plant Building Renovations, Placer County Water Agency | Project Role: Senior Engineer** - Performed structural evaluation and retrofit design for multiple structures at the Foothill Water Treatment Plant. Efforts included field investigation and assessment of deteriorated decorative timber gable-end trusses. Developed removal and replacement strategies to maintain structural integrity and prepared structural recommendations and construction details. Coordinated detailing for both wood- and steel-framed building repairs, and addressed anchorage, roof edge stabilization, and constructability considerations.

Additionally, he evaluated multiple locations in a failing concrete wall associated with added roof and crane framing. Identified causes related to anchorage forces and missing reinforcement and developed repair details to restore structural capacity and prevent future spalling.

**East Tank 1 Renovation, City of Folsom | Project Role: Senior Engineer** - Provided structural engineering support for the rehabilitation of an existing potable water storage tank, with emphasis on evaluation and replacement of deteriorated roof rafters and supplemental bracing systems. Assisted in defining replacement limits, load path considerations, and performance criteria for rafter and cross-bracing upgrades. Coordinated rafter and bracing improvements with tank geometry, access constraints, and construction sequencing to ensure constructability and long-term structural performance. Provided structural coordination for ancillary steel elements including wrap-around access stairs, guardrails, and an interconnecting bridge between tanks. Defined design criteria and performance requirements for these elements while coordinating contractor-designed details to ensure compliance with safety and structural intent.

**Stafford Water Treatment Plant Pipe Access Bridge, North Marin Water District | Project Role: Senior Engineer** – Provided structural design of a 6 mgd rehabilitation project for the Stafford Water Treatment Plant including pipe support and access for a 100-foot span bridge crossing a local ravine to the treatment plant. Plant improvements include a new ballasted flocculation process (Actifloc) modular treatment plant, conversion of existing 50-year old gravity filters to granular activated carbon (GAC) contactors, washwater reclamation and recycle facilities, conversion of the existing solids contact clarifier to a solids thickener, a centrifuge for solids dewatering, two new treated water clearwells (235,000 and 217,000 gallons) and a new disinfection facility.

**A Outingdale Water Treatment Plant - Tank Design, El Dorado Irrigation District | Project Role: Senior Engineer.** In January of 2013, D&A was contracted to aid EID Staff in the inspection of eight of EIDs potable water tanks with the intent to visually determine the extent of the corrosion existing in each tank and recommend a prioritization order for repair of each tank. The Outingdale Water Treatment Plant Lower Tank



was in very bad shape. The steel rafters and many other structural members were delaminating due to severe corrosion. The tank design project replaces the existing, corroded tank with a new tank.

The components of this design included a retaining wall to provide a foundation on the side of a steep slope, construction sequencing to keep the existing plant running during construction, piping provisions to add a future contact tank and demolition of the existing tank.

**Moose Hall Pump Station Vault Modifications, El Dorado Irrigation District | Project Role: Senior Engineer** - D&A provided design services to replace aging sleeve valves used to reduce pressure when transferring water from Reservoir 1 Water Treatment Plant to the Moose Hall reservoir. In addition to the sleeve valves, a bypass around the valve vault and a new access hatch were designed into the project to aid operations staff in operating and servicing the station. Design included access hatch mounting frame and connection of mounting frame to concrete vault slabs.

**Reservoir A Filtration Plant - El Dorado Irrigation District, California | Project Role: Project Engineer** - Project engineer for structural design for an addition to an existing masonry building for the Reservoir A Filtration Plant to house chemical tanks, as well as renovations to the existing building to improve its usability. Developed structural plans and details for concrete foundations, slabs, and masonry and steel framing associated with hypochlorite storage rooms, treatment building modifications, and equipment anchorage. Prepared construction documents and specifications to ensure code compliance, constructability, and safe long-term operation of chemical handling facilities.

**Lake of the Pines Gravity Filters and Clearwell - Nevada Irrigation District, California | Project Role: Project Engineer** - Project engineer for detail design, construction cost estimates, and temporary construction inspection for the \$6.3 million Lake of the Pines Gravity Filters and Clearwell project, which included structural design, site layout, detail design of piping tie-ins, construction detailing to allow construction of new gravity filters, a 0.6 MG partially buried clearwell, a high service pump station on a small site within a residential community, backwash, filter-to-waste and high service pumps; filter-to-waste and backwash receiving basins; residual solids dry bed underdrains; standby power generator; chlorine gas scrubber; lime silo; and power service improvements.

**Auburn Water Treatment Plant, Placer County Water Agency, California | Project Role: Project Engineer** - Project engineer for structural design and construction engineering for an approximately \$27 million upgrade and expansion for an 8 mgd water treatment plant. The 1950's vintage water treatment plant was incapable of meeting capacity demand and water quality standards. The replacement was a key project implemented by Placer County Water Agency to provide adequate water supply to an expanding service area. The improvements included a new raw water pump station and raw water screens, treatment facility built around Actifloc treatment units, backwash pumps, high service pumps, solids thickener, centrifuge dewatering, a 600,000-gallon reinforced concrete filtered water clearwell, and foundations for a pre-engineered steel building. Design of the structural support for two buildings on site were provided as well. Daryl Heigher, through a previous employer, provided structural design.

**Corp Yard, Citrus Heights Water District | Project Role: Senior Engineer** - Provided design development and construction-ready documents for Citrus Heights Water District Corp Yard, which featured several structural designs including a material storage facility, wash station, and vector pit. Supported constructability reviews and agency coordination to ensure code-compliant, durable structural systems suitable for public works operations. Facilities required reinforced concrete foundations, slabs-on-grade, equipment pads, structural steel framing, and metal framing and roofing. Structural members were designed to resist soil pressure, surcharge from truck loading, groundwater, and seismic forces.

## EDUCATION

Master of Science,  
Environmental Sciences,  
Colorado State  
University, 1999

Bachelor of Science,  
Natural Resource  
Management, San  
Diego State University,  
1990

## CERTIFICATIONS

American Institute of  
Certified Planners,  
Certified Planner  
No. 159640

## PROFESSIONAL AFFILIATIONS

Association of  
Environmental  
Professionals

American Planning  
Association

# ROBERT EDGERTON, AICP CEP

## Principal Planner



Mr. Edgerton has over 30 years of experience as both a Project Manager and a Principal Planner aiding private companies, governmental agencies, and non-governmental organizations in the planning, entitlement, and permitting of land development and infrastructure improvement projects. He has successfully processed more than 200 CEQA environmental compliance documents including focused EIRs; program EIRs for Specific Plan projects; and Initial Studies tiering from Master Plan, General Plan, and Specific Plan program EIRs; as well as Environmental Impact Statements and Environmental Assessments pursuant to the National Environmental Policy Act (NEPA). Mr. Edgerton is an accredited member of the American Institute of Certified Planners (AICP) with an advanced Certificate in Environmental Planning (CEP) accreditation.

**City of Folsom On-Call Environmental Consulting Services.** (2015 - 2025). Project Manager for preparation of CEQA documentation and environmental compliance services on public works, transportation, and private development projects for a variety of departments at the City of Folsom. Projects have included Oak Parkway Trail Bicycle Undercrossing IS/MND, Johnny Cash Trail Art Experience IS/MND and Categorical Exclusion, Lake Natoma Waterfront Trail Environmental Compliance, Fire Station No. 39 CEQA Categorical Exemption, IS/MNDs and technical studies in support of over 15 private development projects, and South of 50 Folsom Plan Area Mitigation Monitoring and Reporting Program Review and Environmental Compliance Monitoring for 11 separate development phases.

**Oak Parkway Trail** (2015 - 2016). Project Manager for a project to construct a 14-foot-wide by 12-foot-high trail undercrossing that is part of the City of Folsom's award-winning, multi-use bike trail network. Located at Natoma Street immediately south of Folsom Prison Road, the undercrossing and approach ramps will provide connections to the existing Oak Parkway Trail and future Johnny Cash Trail (Phase II). Provided field assistance in collecting biological and spatial data, in addition to preparing the IS/MND and environmental evaluation. Work performed for the City of Folsom.

**Lake Natoma Waterfront Trail** (2015 - 2016). Project Manager for a trail enhancement project located along Lake Natoma in the City of Folsom. Supervised weekly construction support and biological monitoring for special-status species. Lead development of worker awareness training information regarding sensitive species located within the project's footprint. Work performed for the City of Folsom.

**Johnny Cash Trail Art Experience Project** (2017 - 2018). Project Manager for the preparation of environmental documentation for the installation of art sculptures at eight locations along the City's existing Class I Johnny Cash Trail. Managed the preparation of technical studies, a NEPA Categorical Exclusion due to Bureau of Reclamation involvement, and a CEQA IS/MND for the proposed project. Work performed for the City of Folsom.

**Zone 5 Water Tank (Russell Ranch) (2015).** Project Manager for environmental consulting services to the City of Folsom for the Russell Ranch Project. Prepared a memorandum presenting the applicant's compliance with the Mitigation Monitoring and Reporting Programs for both the Russell Ranch Environmental Impact Report and South of 50 Backbone Infrastructure Initial Study/Mitigated Negative Declaration. Work performed for the City of Folsom.

**Alder Reservoir Preliminary Environmental Assessment (2016).** Project Manager for a preliminary environmental assessment of Alder Reservoir located in the City of Folsom. Conducted a desktop assessment of the 11-acre site to identify known and potential environmental effects associated with the management actions being considered, as well as recommend steps to determine the severity of potential effects and potential actions that may be needed to mitigate and/or minimize those effects. Work performed for the City of Folsom.

**Folsom Zoo Sanctuary Sewer Line Rehabilitation (2017).** Project Manager for preparation of a CEQA Categorical Exemption for the replacement and rehabilitation of portions of the wastewater system through the Folsom Zoo Sanctuary property located in the City of Folsom. Oversaw preparation of a biological site assessment of the proposed alignment to assess potential impacts to protected trees, potential waters of the U.S./State, and other protected biological resources. Work performed for the City of Folsom Department of Environmental and Water Resources under an on-call contract.

**Rainbow Bridge Water Line Rehabilitation (2017).** Project Manager for preparation of a CEQA Categorical Exemption (CE) for the rehabilitation of an existing waterline secured underneath Rainbow Bridge in the City of Folsom. Best management practices were identified and employed to avoid impact to elderberry shrubs and process the project as a CE. Work performed for the City of Folsom Environment and Water Resources Department under an on-call contract.

**Oak Avenue Pump Station Peak Wet Weather Flow Relief Project (2020).** Project Manager for preparation of CEQA Categorical Exemption for the installation of approximately 1,500 lineal feet of 12-inch sewer force main parallel to the existing force main in the City of Folsom. The project also includes the installation of plug valves and replacing/relocating air release valves along the City's existing force main, and the installation of various sewer appurtenances. These improvements will help provide system redundancy, enhance the performance of the City's sewer force main and provide the City with operational flexibility during emergency conditions. Work performed as a subconsultant to Peterson Brustad with the City of Folsom as the project owner.

**Folsom Boulevard Waterline Replacement and Rehabilitation (2020 - 2021).** Project Manager for biological and cultural resource records searches and CEQA documentation in support of waterline improvements throughout the City of Folsom. Prepared a due diligence memorandum supporting a CEQA Categorical Exemption for the 11 project improvements throughout the City. Work performed as a subconsultant to Water Works Engineers with the City of Folsom as the CEQA lead agency.

**Folsom Boulevard 27-Inch Trunk Sewer Mitigation Project (2022).** Project Manager for CEQA Categorical Exemption for the construction of a parallel sewer line adjacent to the City's existing 27-inch Folsom Boulevard Trunk Sewer to provide wet weather flow capacity/redundancy. Prior to project design, managed preparation of an environmental due diligence technical memorandum to identify potential environmental opportunities and constraints to assist with the evaluation and selection of a preferred alignment. Work performed as a subconsultant to Water Works Engineers with the City of Folsom as the project owner.

## Brian Hamrick - Arizona Regional Manager



**YEARS EXPERIENCE:** 25 Total - 1 current with NCS, 8 prior

**EDUCATION:** BS Civil Engineering  
Arizona State University, 1999



**LICENSES & CERTIFICATIONS:** Professional Licensed Engineer  
Arizona #40714 (2004), Project Management Training - Amec Foster Wheeler #02132017 (2017)

**PROFESSIONAL ASSOCIATIONS:**  
AzWater or previous version since 2002; AzWater Wastewater Treatment Committee (since 2020),  
AzWater Water Treatment Committee (2017-2020)

Mr. Hamrick is the Arizona Regional Manager at NCS, and specializes in evaluating, planning, permitting, designing, and providing construction oversight for water and wastewater treatment plants, and pumping and conveyance infrastructure.

- Mr. Hamrick has served as the project or contract manager for multiple on-call contracts with local municipalities and private utilities. These include the City of Goodyear, City of Flagstaff, City of Buckeye, Town of Queen Creek, Liberty Utilities, Global Water Resources, and the Town of Prescott.
- While working for a private water and sewer utility over a 10-year period, he managed projects, permitting, and prepared master plans for 22 utilities between 100 to 20,000 connections throughout Arizona, Texas, Illinois, and Missouri. That provides him with a wide variety of project experience in nearly every aspect of the industry.
- He has designed, installed, and/or operated 20+ water treatment facilities ranging from surface water treatment plants to groundwater treatment for a variety of contaminants that include: Per- and polyfluoroalkyl substances (PFAS), nitrate, fluoride, arsenic, iron, manganese, uranium, and total dissolved solids (TDS).
- He has overseen or designed 50+ projects at wastewater treatment plants (WWTPs) or recharge facilities ranging in size from 5,000 gallons per day (gpd) to 179 million gallons per day (mgd).
- Over his career he has participated either as a project engineer or as a project manager (PM) for the permitting, design, and construction of over 30 miles of water and sewer pipelines.
- He is well versed in every project delivery method typically seen in Arizona, including; design-bid-build, CMAR, design-build, progressive design-build, engineer-procured design-build, and job order contracting. He has managed design teams for alternative delivery projects up to \$120M.

### Specialties:

- ✓ Water Treatment (groundwater)
- ✓ Wastewater Treatment (General Wastewater Treatment)
- ✓ Regulatory Compliance & Permitting (Permitting - Air, Water, and Waste)

### RELEVANT PROJECTS

#### **Liberty Utilities - Iron & Manganese Treatment for Plant 2 (Pine Bluff, AR) - PM.**

Liberty Utilities has 12 MGD of iron and manganese treatment facilities at this utility. NCS is currently running an iron and manganese pilot plant for the 4 MGD Plant 2 for Liberty Utilities. The pilot is testing MetalEase-61 media at 4 gallons per minute (gpm)/sf, 6 gpm/sf, and 8 gpm/sf hydraulic loading rates along with pH adjustment and prechlorination to determine the optimal loading rates for removal. The next phase of the project for 2026 is the design and installation of a 2 MGD plant expansion. This is the first MetalEase-61 installation in the State of Arkansas.

#### **Pueblo of Zuni, Indian Health Services Project AL23-D10 - Nanofiltration Pilot & PER Report (Zuni, NM) - Technical Advisor.**

This 2025 project provided an evaluation and a nanofiltration and reverse osmosis pilot plant to remove arsenic and total dissolved solids for groundwater well field south of Zuni Pueblo. Mr. Hamrick provided a technical review of the Preliminary Engineering Report that explored various alternatives.

#### **City of Goodyear - Site 21 Nitrate & PFAS Design - PM.**

Three 1,000+ gpm groundwater wells have nitrate and PFAS contamination. Mr. Hamrick lead the project team in 2023 to design a replacement for the reverse osmosis (RO) treatment system that has very high operating costs. An alternatives evaluation and cost estimates were developed for RO, granular activated carbon (GAC), IX, and biological nitrate treatment for nitrate removal, along with IX and GAC for PFAS removal.

#### **City of Buckeye - Tartesso Arsenic & Fluoride Treatment Design - PM.**

Mr. Hamrick led the project team in the evaluation, pilot, and conceptual design of the 3,000 gpm groundwater treatment plant. This will be the first installation in Arizona of a continuous ultra-filtration process the combines concentrated sweep floc with SiC membranes. This unit provides simultaneous removal of arsenic and fluoride at lower operation costs than RO without water loss.

***City of Buckeye - Sundance Water Reclamation Facility Conversion & Effluent Upgrades - Technical Advisor.***

The facility master plan involved a condition assessment and a comprehensive strategy for converting the existing 3.6 MGD water reclamation facility. Mr. Hamrick offered overall guidance and direction to the project team, who developed a detailed roadmap for the City of Buckeye, which is set to be implemented in 2024.

***City of Phoenix - 91st Avenue Wastewater Treatment Plant (WWTP) Master Plan - Planning Lead.***

Provided engineering services to develop a master plan for the 179 MGD 91st Avenue WWTP through the year 2050. This plan included several key components: developing flow and loading projections for the five SROG cities that send wastewater to the plant: Phoenix, Glendale, Tempe, Mesa, and Scottsdale; determining the plant's capacity for both liquid and solid waste; reviewing factors such as climate, economic conditions, regulatory requirements, and staffing levels; and recommending capital improvement and operational projects based on specific flow and loading trigger points or milestones. Additionally, considerations for direct potable reuse, food waste facilities, and cogeneration were included in the plan. Mr. Hamrick led the development of the flow and loading projections for each SROG member and provided support to the project until its completion.

***City of Mesa - Southeast Water Reclamation Plant Process Improvements - PM.***

In a collaboration with the City of Mesa, the team planned to evaluate, rehabilitate, replace, and install new treatment components at the Southeast Water Reclamation Plant. This project encompasses six capital improvement initiatives aimed at enhancing design efficiency and coordination with a CMAR. The improvements include upgrades and retrofits to several key areas, such as: primary sedimentation basins; turbo blowers and the blower building; mixed liquor return pumps; nutrient removal and process control systems; secondary clarifiers; and foul air system. In addition, the project features a comprehensive plant-wide condition assessment and a redesign of the electrical system. Mr. Hamrick led the condition assessment and alternative evaluations. He worked closely with the City on the proposed upgrades and coordinated with the design team, as well as the CMAR contractor.



8880 Cal Center Drive, Suite 400, Sacramento, CA 95826 • T: (602) 629-0206

**Fee Proposal - NCS Engineering (NCS)**

Date: 1/7/26  
 Attn: Bryson Pearson  
 Client: City of Folsom  
 Address: 50 Natoma St.  
 City, State, Zip: Folsom, CA, 95630  
 Phone: (916) 461-6191  
 Email: [bpearson@folsom.ca.us](mailto:bpearson@folsom.ca.us)

*The Client agrees that the technical methods, techniques and pricing information contained in any proposal submitted by NCS Engineering pertaining to this project or in this Agreement or any addendum thereto, are to be considered confidential and proprietary, and shall not be released or otherwise made available to any third party without the express written consent of NCS Engineering.*

Mail    Email    Courier    Hand Delivery

Project Description: FOR THE WATER TREATMENT PLANT AND WATER BOOSTER PUMP STATION FACILITIES

	Hours	Fee
<b>Total Baseline Services:</b>	900	<b>\$195,940</b>
<b>Optional Tasks:</b>		
Filter Surveillance	100	
Operational assessment and optimization of screw press, tanks, dredging	140	
Site Planning of Old Raw Water Feed	36	
Pump efficiency evaluation	164	
<b>Total Optional Services:</b>	440	<b>\$85,880</b>
<b>Total Value Added Services:</b>	50	<b>\$17,500</b>
<b>Baseline with Optional Tasks</b>	1340	<b>\$281,820</b>
<b>Baseline with Optional and Value Added Tasks</b>	1390	<b>\$299,320</b>

Name **Roger Kohne**  
 Title **Vice President**

Project Number:

Date: 07-Jan-26

Project Name: NCS FEES FOR CITY OF FOLSOM CONDITION ASSESSMENT FOR THE WATER TREATMENT PLANT AND WATER BOOSTER PUMP STATION FACILITIES - BASELINE PROPOSAL

#	Sub-Task	Project Mgr. NCS	Condit. Assest.Exp. Sutro	Maint. Specialist Sutro	Assist. Mech. NCS	Electrical Eng. NCS	Struct. Eng. D&A	Envir. Planner Helix	Tot. Hrs.
<b>Baseline Scope of Work</b>									
1	Preliminary Phase								
1a	Review Existing Documents								
	Review Existing Documents		8.0	8.0	16.0	16.0	16.0		64.0
	Site Visits	4.0	4.0	4.0					12.0
1b	Prepare Assessment Plan								
	Prepare draft assessment plan	4.0	40.0	12.0					56.0
	Assessment Criteria		16.0	16.0					32.0
	CEQA compliance review							6.0	6.0
2	Condition Assessment and Final Report								
2a	Asset Inventory List		16.0		40.0				56.0
2b	Inspection and Testing								
	WTP	4.0		32.0	32.0	32.0	24.0		124.0
	69 kV Substation					4.0	4.0		8.0
	BPS (9) incl Zone 5 North sound wall structural			32.0	32.0	32.0	16.0		112.0
	South Folsom Control Valve			4.0	4.0	4.0	4.0		16.0
2c	Assess Condition								
	Analyze Results		24.0	16.0	24.0	24.0	16.0		104.0
	Prioritize findings	4.0	12.0	8.0	8.0	16.0	8.0		56.0
	Environmental Constraints							20.0	20.0
2d	Cost Estimate and Schedule	6.0		16.0	16.0	16.0	16.0		70.0
2e	Draft CA Report	4.0	16.0		16.0	8.0	4.0		48.0
2f	Final Condition Assessment	4.0	12.0		8.0	4.0	4.0		32.0
3	Project Management	60.0	24.0						84.0
<b>Total hours:</b>									
		<b>90.0</b>	<b>172.0</b>	<b>148.0</b>	<b>196.0</b>	<b>156.0</b>	<b>112.0</b>	<b>26.0</b>	<b>900.0</b>
<b>Std Hourly Rates (Non-NCS firms incl. 10% markup)</b>									
		<b>\$240.00</b>	<b>\$240.00</b>	<b>\$200.00</b>	<b>\$175.00</b>	<b>\$200.00</b>	<b>\$220.00</b>	<b>\$320.00</b>	
<b>Total Fees:</b>		\$21,600	\$41,280	\$29,600	\$34,300	\$31,200	\$24,640	\$8,320	<b>\$190,940</b>

Total Expenses: \$5,000

Grand Total: \$195,940

Project Number:

Date: 07-Jan-26

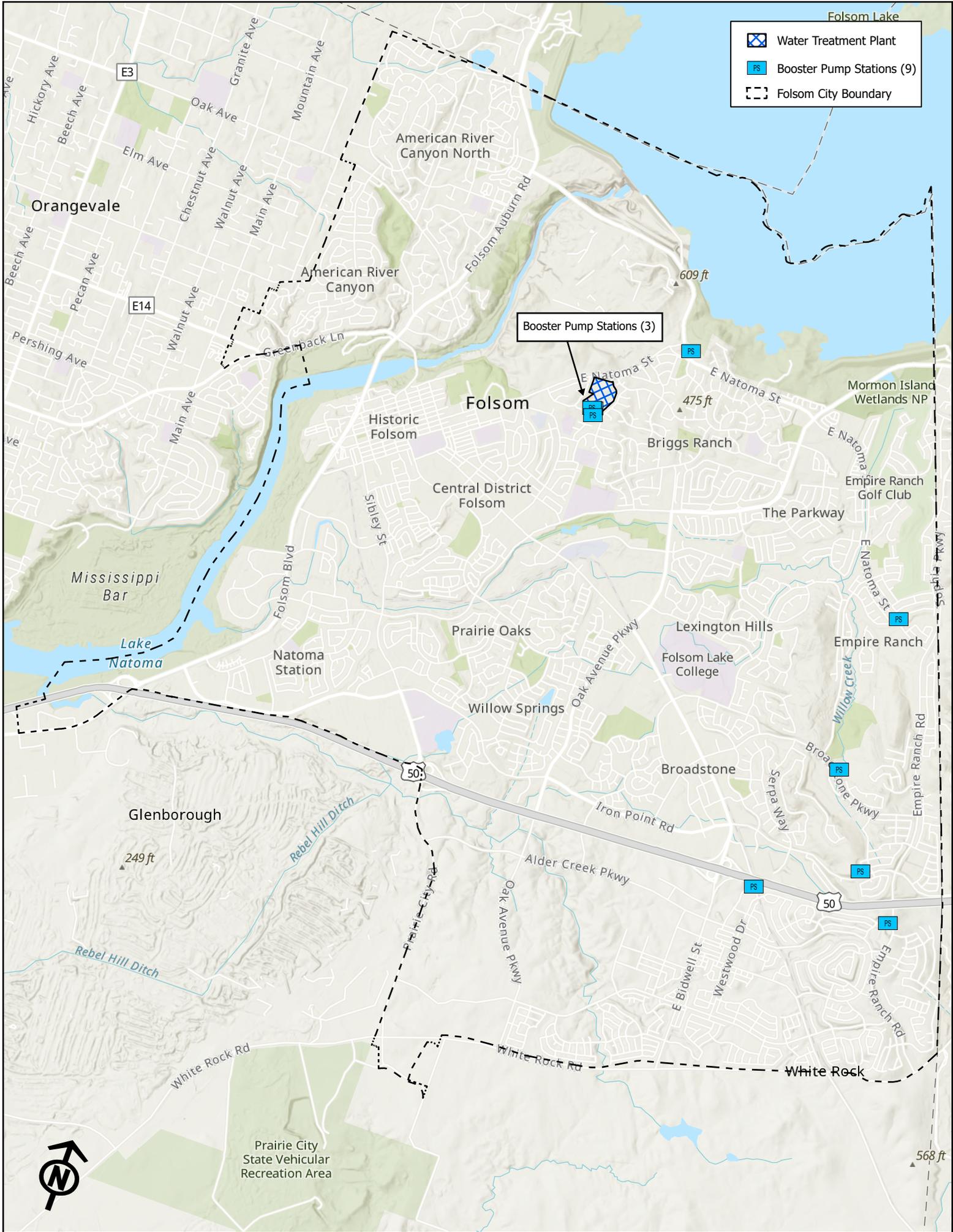
Project Name: NCS FEES FOR CITY OF FOLSOM CONDITION ASSESSMENT FOR THE WATER TREATMENT PLANT AND WATER BOOSTER PUMP STATION FACILITIES - OPTIONAL TASKS

			<b>Project Mgr.</b>	<b>Condit. Assest.Exp.</b>	<b>Maint. Specialist</b>	<b>Assist. Mech.</b>	<b>Electrical Eng.</b>	<b>Struct. Eng. D&amp;A</b>	<b>Envir. Planner Helix</b>	<b>Tot. Hrs.</b>
#	#	<b>Sub-Task</b>	<b>NCS</b>	<b>Sutro</b>	<b>Sutro</b>	<b>NCS</b>	<b>NCS</b>			
<b>Optional Scope of Work</b>										
1		Filter Surveillance	20.0			80.0				100.0
2		Operational assessment and optimization of screw press, tanks, dredging	40.0			100.0				140.0
3		Site Planning of Old Raw Water Feed	12.0			24.0				36.0
4		Pump efficiency evaluation	40.0			100.0	24.0			164.0
		<b>Total hours:</b>	<b>112.0</b>			<b>304.0</b>	<b>24.0</b>			<b>440.0</b>
		<b>Std Hourly Rates:</b>	<b>\$240.00</b>	<b>\$240.00</b>	<b>\$200.00</b>	<b>\$175.00</b>	<b>\$200.00</b>	<b>\$220.00</b>	<b>\$320.00</b>	
		<b>Total Fees:</b>	\$26,880			\$53,200	\$4,800			<b>\$84,880</b>

**Total Expenses: \$1,000**

**Grand Total: \$85,880**

## Attachment 4



-  Water Treatment Plant
-  Booster Pump Stations (9)
-  Folsom City Boundary

Booster Pump Stations (3)



Folsom Lake

American River Canyon North

Orangevale

American River Canyon

Folsom

Historic Folsom

Central District Folsom

Briggs Ranch

Mormon Island Wetlands NP

Empire Ranch Golf Club

The Parkway

Mississippi Bar

Lake Natoma

Natoma Station

Prairie Oaks

Lexington Hills

Folsom Lake College

Empire Ranch

Willow Springs

50

Broadstone

Glenborough

Rebel Hill Ditch

249 ft

Alder Creek Pkwy

Iron Point Rd

50

Rebel Hill Ditch

White Rock Rd

White Rock Rd

White Rock

Prairie City State Vehicular Recreation Area

568 ft

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to facilitate double-sided printing  
and minimize paper use.*



CITY OF  
**FOLSOM**  
DISTINCTIVE BY NATURE