

Prepared for
CITY OF VISALIA



PROPOSAL

Professional Services to Design

Digester 9 at Visalia's Water Reclamation Facility

RFP No. 24-25-07

JULY 2025





1401 Fulton Street, Suite 802
Fresno, California 93721
559-436-6616

carollo.com

July 31, 2025

City of Visalia
Purchasing Division
707 W. Acequia Avenue
Visalia, CA 93291

Subject: Proposal –Design Services for Visalia’s Water Reclamation Facility Digester 9
RFP No. 24-25-07

Dear Selection Committee:

Over the last two years, the City of Visalia has worked with Carollo Engineers to evaluate the Water Reclamation Facility (WRF), identify deficiencies, and implement necessary improvements. Carollo is familiar with your plant and its needs, having successfully delivered the Master Plan, Facility Plan, and Solids Handling Improvements design. The Digester 9 project will add much-needed capacity to the digestion facilities and set you up for long-term flexibility in your solids handling operations. Carollo is qualified to deliver this critical project given our familiarity with the WRF and our extensive experience designing and implementing digestion facilities. We understand the big picture and offer you:

- **A familiar, proven team to provide continuity between your current and future projects.** We have delivered the design and are currently working with you on the bidding and construction of the Solids Handling Improvements project. Much of our team from that project, including Reace, John, and several of our discipline lead engineers and subconsultants, will continue to work on this project. We will leverage our familiarity with the site and the City’s processes to provide a seamless transition to begin working quickly and efficiently on this project.
- **Industry experts with direct experience in digestion technologies and ancillary facilities.** In addition to our team that is familiar to you, we have added experts to serve in key roles. This project is more than just the addition of a new digester; it requires a holistic approach to deliver digestion facilities that will provide much-needed flexibility to your existing solids handling system. This includes modifying the digester feed and sludge transfer pumping strategy, integrating sludge heating and boiler capacity into the existing system, navigating permitting requirements, and developing a construction sequence that minimizes disruptions to current operations. Our team members have worked on dozens of projects developing cost-effective, high-performing digestion solutions, and we will work diligently to design and deliver a project that will serve the City’s needs within the constraints of your existing facilities.

Carollo has reviewed the Scope of Work in the RFP and is experienced with and capable of performing all tasks as described. We look forward to the opportunity to work with you; our team is ready to get started on this important project. If you have any questions, please reach out to John at 559-490-4372 | jwitter@carollo.com or Reace at 559-696-4961 | rfisher@carollo.com.

Sincerely,

CAROLLO ENGINEERS, INC.


John Witter, PE
Project Manager


Reace Fisher, PE
Principal-in-Charge

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A. General Information

General Information

Firm Identification and Contact

Carollo Engineers, Inc.
1401 Fulton Street, Suite 802
Fresno, CA 93721
Phone: 559-436-6616
Fax: N/A
Email: jwitter@carollo.com

Account Representative

John Witter, Project Manager
Phone: D 559-490-4372 / M 217-414-9051

Type of Organization

Carollo is an S-corporation. Carollo is not a small, disadvantaged, or minority-owned business.

Federal Tax ID Number

86-0899222

City of Visalia Business Tax Certificate Number

BL003631

Carollo's Owners/Officers

Carollo is a privately held, employee-owned corporation with 134 of our employees serving as firm principals/owners. Carollo does not disclose the names and/or ownership percentages of our stakeholders—not even internally.

Personnel of the Proposer's Firm

Carollo's team members are described in Section C. Staff Qualifications and Related Experience. Our team members are committed to this project and will not be replaced without prior written approval from the City.

John Witter is the primary contact for this proposal and will serve as project manager.

Surety Information

Carollo maintains insurance to protect both our client and our firm against the types of claims that may be alleged to result from our services on this project.

CAROLLO CARRIES THE FOLLOWING INSURANCE

Coverage	Limits	Carrier
General Liability	\$2,000,000 per occurrence \$4,000,000 aggregate	Zurich American Insurance Company
Workers' Compensation	Statutory	Zurich American Insurance Company
Employers Liability	\$1,000,000	Zurich American Insurance Company
Automobile	\$2,000,000 combined single limit	Zurich American Insurance Company
Professional Liability	In excess of \$5,000,000 each claim	Allied World Surplus Lines Insurance Company
Umbrella	In excess of \$5,000,000 per occurrence	American Guarantee & Liability Insurance Company

References and Referrals

Carollo prides itself on the long-term relationships that we have developed with our clients. As requested in the Request for Proposals (RFP), we have provided client references and relevant project experience summaries in section C. Staff Qualifications and Related Experience. These references can attest to Carollo's technical capabilities, management skills, work quality, and commitment to client service. Our past performance is the best indicator of the level of service we will provide to your Digester 9 design project, and we encourage you to contact our references.

Forms

Our completed forms are shown on the following pages.



Forms

NON-COLLUSION AFFIDAVIT

TO: THE CITY OF VISALIA

The undersigned, in submitting a proposal for performing the following work by contract, being duly sworn, deposes and says:

That he/she has not, either directly or indirectly, entered into any agreement, participate in any collusion, or otherwise taken any action in restraint of free competition in connection with such contract.

Work to be Done:

RFP No. 24-25-07 Design Digester 9 at Visalia's Water Reclamation Facility

Proposer's Name: Carollo Engineers, Inc.

Signature of Proposer: 

Title: Associate Vice President

Business Address: 1401 Fulton Street, Suite 802, Fresno, CA 93721

Place of Residence: 1401 Fulton Street, Suite 802, Fresno, CA 93721

State of California

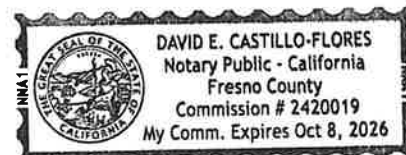
County of Fresno

On this 10th day of July 2025, before me, David E. Castillo-Flores, a Notary Public, personally appeared Reece Philip Fisher, who proved to me on the basis of satisfactory evidence to be the person(s) whose name(s) is/are subscribed to the within instrument and acknowledged to me that he/she/they executed the same in his/her/their authorized capacity(ies), and that by his/her/their signature(s) on the instrument the person(s), or the entity upon behalf of which the person(s) acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct

WITNESS my hand and official seal.

Signature  (Seal)



WORKERS' COMPENSATION INSURANCE CERTIFICATE

STATE OF CALIFORNIA)
) ss
CITY OF VISALIA)

I am aware of the provisions of Section 3700 of the Labor Code which requires every employer to be insured against liability for workers' compensation or to undertake self-insurance in accordance with the provisions of that code, and I will comply with such provisions before commencing the performance of the work under this contract.

Company: Carollo Engineers, Inc.

Business Address: 1401 Fulton Street, Suite 802, Fresno, CA 93721

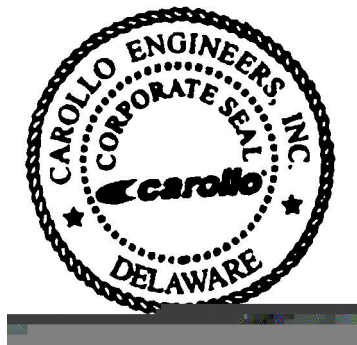
Signature: _____

Name of Signing Official: Reace Fisher

Title of Signing Official: Associate Vice President

Date: July 14, 2025

Company Seal (if any):



EQUAL EMPLOYMENT OPPORTUNITY COMPLIANCE CERTIFICATE

Equal Opportunity Clause

Unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Executive Orders 28925, 11114 or Section 204 of Executive Order 11246 of September 24, 1965, during the performance of each contract with the City of Visalia, the contractor agrees as follows:

1. The vendor will not discriminate against any employee or applicant for employment because of race, color, religion, gender, national origin or political affiliation. The contractor will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, gender, national origin or political affiliation. Such action shall include, but not be limited to, the following: employment upgrading, demotion or transfer, recruitment or recruitment advertising, layoff or termination, rates of pay or other forms of compensation, and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the contracting officer setting forth the provisions of this nondiscrimination clause.
2. The vendor will, in all solicitations or advertisements for employees, placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to race, color, religion, gender, national origin or political affiliation.
3. The vendor will send to each labor union or representative of workers with which he has a collective bargaining agreement or other contract or understanding, a notice to be provided by the agency contracting officer, advising the labor union or the workers' representative of the contractors' commitments under Section 202 of Executive order 11246 of September 24, 1965, and shall post copies of the notice in conspicuous places available to employees and applicants for employment.
4. The vendor will comply with all provisions of Executive Order 11246 of September 24, 1965, and the rules, regulations and relevancy orders of the Secretary of Labor.
Vendor will furnish all information and reports required by Executive Order 11246 of September 24, 1965, and by the rules, regulations and relevant orders of the Secretary of Labor, or pursuant thereto, and will permit access to his books, records and accounts by the contracting agency and the Secretary of Labor for purposes of investigation to ascertain compliance with such rules, regulations and orders.
5. In the event of the vendor's non-compliance with the non-discrimination clauses of this subcontract or with any of such rules, regulations or orders, this subcontract may be canceled, terminated or suspended, in whole, or in part and the vendor may be declared ineligible for further government contracts in accordance with the procedures authorized in accordance with Executive Order 11246 of September 24, 1965, and such other sanctions may be imposed and remedies invoked as provided in Executive Order 11246 of September 24, 1965, or by rule, regulation or order of the Secretary of Labor, or otherwise provided by law.
6. The vendor will include the provisions of Paragraphs (1) through (7) in every subcontract or purchase order unless exempted by rules, regulations or orders of the Secretary of Labor issued pursuant to Section 204 of Executive Order 11246 of September 24, 1965, so that such provisions will be binding upon each Subcontractor or vendor. The contractor will take such action with respect to any subcontract or purchase order as the contracting agency may direct as a means of enforcing such provisions including sanctions for non-compliance. Provided, however, that in the event the contractor becomes involved in, or is threatened with litigation with a subcontractor or vendor as a result of such direction by the contracting agency, the contractor may request the United States to enter into such litigation to protect the interest of the United States.

Certification on Non-Segregated Facilities

The contractor hereby certifies that it does not or will not maintain segregated facilities not permit its employees to work at locations where facilities are segregated on the basis of race, color, religion, gender, national origin or political affiliation.

Carollo Engineers, Inc.
Name of Firm

Authorized Signature

July 14, 2025
Date

The following disclosure and statement apply to the Bidder/Proposer/Contractor/Consultant/ Vendor/Supplier or Company:

1. submitting a bid or proposal in response to a solicitation by City of Visalia; or
2. as Awardee of a contract/purchase order which is subject to approval by the Visalia City Council.

OWNERSHIP DISCLOSURE

Carollo Engineers, Inc.

Name of Bidder/Proposer/Contractor/Consultant/Vendor/Supplier or Company

1401 Fulton Street, Suite 802, Fresno, CA 93721

Address

List the names of all principals, partners, and/or trustees. For corporations, provide names of officers, directors and all stockholders owning more than 10% equity interest in corporation:

N/A

CALIFORNIA LEVINE ACT STATEMENT

California Government Code Section 84308, also know as the "Levine Act," can prohibit members of the Visalia City Council from participating in any action related to a contract if he or she receives any political contributions totaling more than \$250 within the previous twelve (12) months, and for twelve (12) months following the date a final decision concerning the contract has been made, from the person or company awarded the contract. The Levine Act also requires disclosure of such contribution(s) by a party to be awarded a specific contract.

The following website contains a list of current Visalia City Council Members, https://www.visalia.city/government/city_council/default.asp. You are responsible for reviewing the names of Visalia City Council Members prior to making the following disclosure:

1. Have you or your company, or any agent on behalf of you or your company, made any political contributions of more than \$250 to a Visalia City Council Member in the twelve (12) months preceding the date of the submission of your proposals or the anticipated date of any City Council action related to this contract?
YES: _____ NO: X. If yes, please identify the City Council Member(s) and date(s) of contribution in the space below:

Council Member(s) Name

Date of Contribution(s)

Answering YES, does not preclude the City of Visalia from awarding a contract to your firm or from taking any subsequent action related to the contract. It does, however, preclude the identified Visalia City Council Member(s) from participating in any actions related to this contract.

NOTICE: The disclosure duty under state law continues for twelve (12) months after the award. If the above information regarding contributions changes during this time after the award, then the awardee is required to update this disclosure form.

Carollo Engineers, Inc.

Print or Type Name of Bidder/Proposer/Contractor/Consultant/Supplier/Vendor/Company

Reace Fisher

Signature of Company Authorized Individual

Print or Type Name of Authorized Individual

AMERICANS WITH DISABILITIES ACT COMPLIANCE CERTIFICATE

By submission of a bid, the BIDDER certifies it will comply with the Americans with Disabilities Act, 42 U.S.C., 12101 et. seq., and will maintain compliance throughout the life of this Contract. By commencing performance of the Contract work, the selected BIDDER certifies to the Americans with Disabilities Act compliance.

Company: Carollo Engineers, Inc.

Business Address: 1401 Fulton Street, Suite 802, Fresno, CA 93721

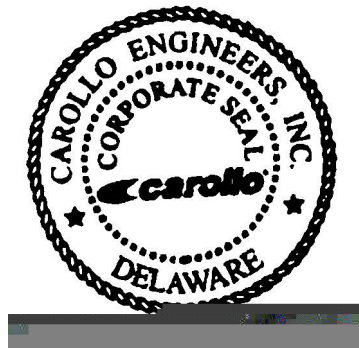
Signature: _____

Name of Signing Official: Reace Fisher

Title of Signing Official: Associate Vice President

Date: July 14, 2025

Company Seal (if any):



STATE OF CALIFORNIA
DRUG-FREE WORKPLACE CERTIFICATION
 STD.21 (REV.12-93)

CERTIFICATION

I, the official named below, hereby swear that I am duly authorized legally to bind the contractor or grant recipient to the certification described below. I am fully aware that this certification, executed on the date below, is made under penalty of perjury under the laws of the State of California.

CONTRACTOR/BIDDER FIRM NAME Carollo Engineers, Inc.	FEDERAL ID NUMBER 86-0899222
BY (Authorized Signature)	DATE EXECUTED July 14, 2025
PRINTED NAME Reace Fisher	TELEPHONE NUMBER (Include Area Code) (559) 696-4961
TITLE Associate Vice President	
CONTRACTOR/BIDDER FIRM'S MAILING ADDRESS 1401 Fulton Street, Suite 802, Fresno, CA 93721	

The contractor or grant recipient named above hereby certifies compliance with Government Code Section 8355 in matters relating to providing a drug-free workplace. The above named contractor or grant recipient will:

1. Publish a statement notifying employees that unlawful manufacture, distribution, dispensation, possession, or use of a controlled substance is prohibited and specifying actions to be taken against employees for violations, as required by Government Code Section 8355(a).
2. Establish a Drug-Free Awareness Program as required by Government Code Section 8355(b), to inform employees about all of the following:
 - (a) The dangers of drug abuse in the workplace,
 - (b) The person's or organization's policy of maintaining a drug-free workplace,
 - (c) Any available counseling, rehabilitation and employee assistance programs, and
 - (d) Penalties that may be imposed upon employees for drug abuse violations.
3. Provide as required by Government Code Section 8355©, that every employee who works on the proposed contract or grant:
 - (a) Will receive a copy of the company's drug-free workplace policy statement, and
 - (b) Will agree to abide by the terms of the company's statement as a condition of employment on the contract or grant.
4. At the election of the contractor or grantee, from and after the "Date Executed" and until September 2028 (NOT TO EXCEED 36 MONTHS), the state will regard this certificate as valid for all contracts or grants entered into between the contractor or grantee and this state agency without requiring the contractor or grantee to provide a new and individual certificate for each contract or grant. If the contractor or grantee elects to fill in the blank date, then the terms and conditions of this certificate shall have the same force, meaning effect and enforceability as if a certificate were separately, specifically, and individually provided for each contract or grant between the contractor or grantee and this state agency.

IRAN CONTRACTING ACT CERTIFICATION
(Public Contract Code Section 2200 et seq.)

As required by California Public Contract Code Section 2204, the Contractor certifies subject to penalty for perjury that the option checked below relating to the Contractor's status in regard to the Iran Contracting Act of 2010 (Public Contract Code Section 2200 et seq.) is true and correct:

- ☒ The Contractor is not:
- (1) Identified on the current list of persons and entities engaged in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203; or
 - (2) A financial institution that extends, for 45 days or more, credit in the amount of \$20,000,000 or more to any other person or entity identified on the current list of persons and entities engaging in investment activities in Iran prepared by the California Department of General Services in accordance with subdivision (b) of Public Contract Code Section 2203, if that person or entity uses or will use the credit to provide goods or services in the energy sector in Iran.
- ☐ The City has exempted the Contractor from the requirements of the Iran Contracting Act of 2010 after making a public finding that, absent the exemption, the City will be unable to obtain the goods and/or services to be provided pursuant to the Contract.
- ☐ The amount of the Contract payable to the Contractor for the Project does not exceed \$1,000,00 over the life of the contract (up to 5 years).

Signature: _____ Printed Name: Reace Fisher

Title: Associate Vice President Agency Name: Carollo Engineers, Inc.

Date: July 14, 2025

Note: In accordance with Public Contract Code Section 2205, false certification of this form shall be reported to the California Attorney General and may result in civil penalties equal to the greater of \$250,000 or twice the Contract amount, termination of the Contract and/or eligibility to bid on contracts for three years.



B. Proposed Program Approach

Proposed Program Approach

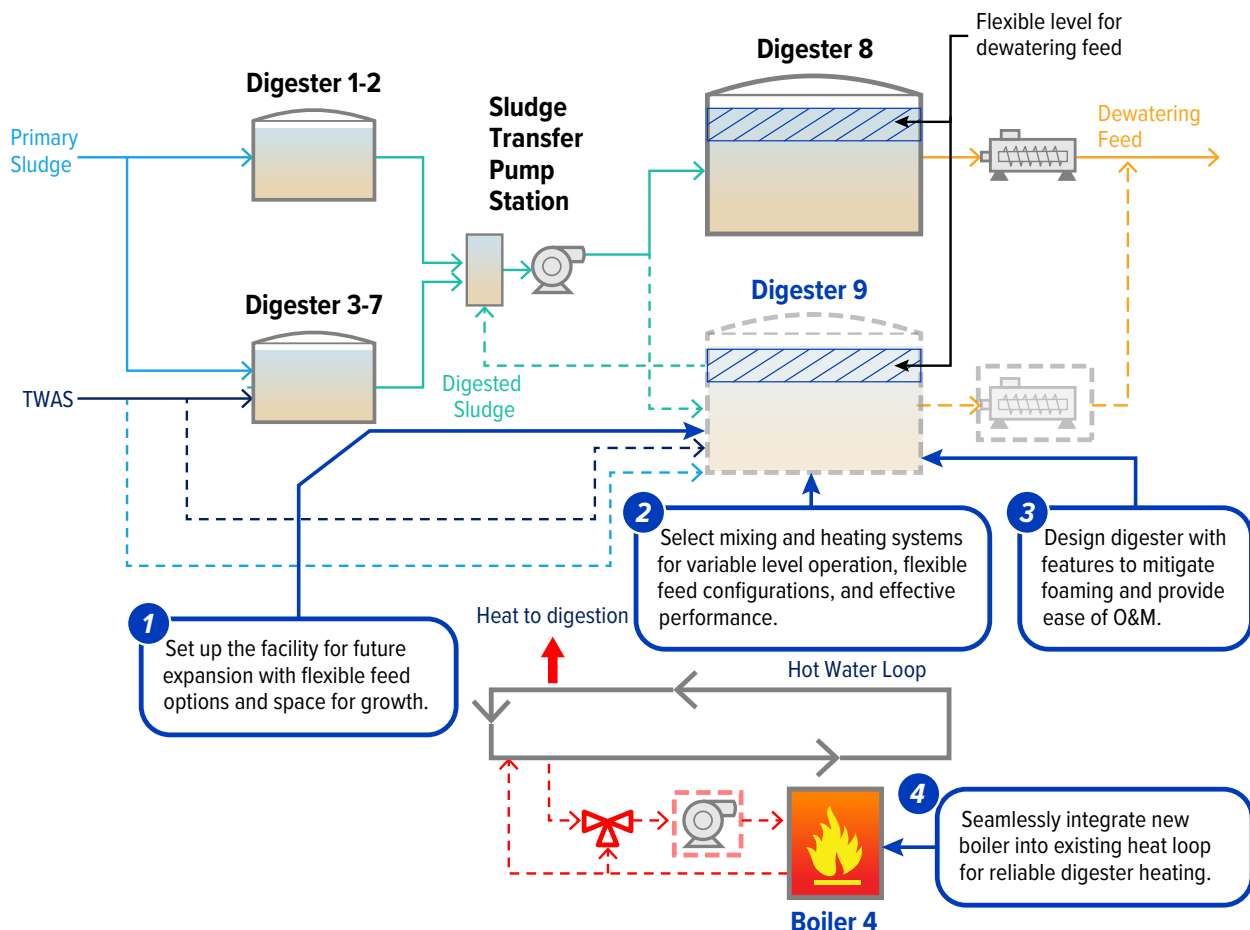
The WRF is limited in its ability to reliably digest the solids load at the plant and lacks flexibility to perform the necessary cleaning and maintenance of existing digesters. Carollo's team will design a facility that provides much-needed capacity and flexibility to serve the WRF into the future.

Project Overview

The City's goal for this project is clear: build a ninth digester and ancillary facilities to give you the capacity and redundancy you need to reliably digest solids and perform cleaning and maintenance on your existing facilities. This project offers the City not only the opportunity to add a new digester, but to also set up your digestion facility for further expansion and improvements in the future.

The schematic below illustrates some of our initial technical ideas about specific elements of the new digester design. These ideas, which focus on providing redundancy, flexibility, ease of O&M, and facilitating future expansion, are further described in the subsequent discussions.

Carollo's team offers a blend of plant familiarity and process expertise to effectively and efficiently design the right project for the City.



1

Set up the facility for future expansion with flexible feed options and space for growth

A layout designed for future demands

The average annual influent flow to your facility is expected to almost double in the next 20 years. That’s why it’s critical for this design to consider digestion requirements beyond Digester 9 and to include thoughtful layout of the facility to allow for future growth. We will first confirm your flows and loads, redundancy and reliability criteria, future improvement plans, and issues that impact O&M and performance. As part of this process, we will also confirm the recommendations from Carollo’s 2024 Master Plan to allocate space for Digester 10 and a dedicated sludge storage/dewatering feed tank in the future that would allow all digesters to operate in parallel at their maximum side water depth. Based on your feedback, we will develop a site plan that best uses the open area to the west of Digester 8. This could include leaving space for a future Digester 11, as shown in the figure to the right, that could replace the capacity of some of your existing aging digesters if that is determined to be beneficial in the future.

In addition to laying out the site for future expansion, it’s also important to provide flexibility in digester feeding and withdrawal. Currently, Digesters 1-2 digest primary sludge while Digesters 3-7 digest primary sludge and TWAS. The partially digested sludge from Digesters 1-7 is then pumped to Digester 8 for final digestion and transfer to the dewatering system. However, this setup doesn’t provide flexibility to be able to take Digester 8 offline. As shown in the process schematic on the previous page, we recommend adding piping to directly feed primary sludge and TWAS to Digester 9 and piping to route digested sludge from Digester 9 to the Sludge Transfer Pump Station. This provides flexibility for either Digester 8 or 9 to operate as a sludge storage digester, providing redundancy to be able to take either digester offline for maintenance. Our team is already familiar with your yard piping and will identify the preferred routing and tie-in locations for digester feed and sludge transfer piping and our digestion experts will develop a construction sequence that minimizes disruptions to plant operations.

- 1

Digester 9 Equipment Area
- A

Standpipe and sludge transfer pumps.
See discussion on subsequent pages.
- B

Digester heating and mixing systems.
See discussion on subsequent pages.
- 2

Sludge Transfer Pump Station
- 3

Boiler 3
- 4

Boilers 1 and 2
- 5

Electrical and Boiler Building
- 6

Biogas Flare
- 7

Microturbine Facility
- 8

Gas Purification Facility
- 9

Dewatering Facilities
- 10

Administration Building



2

Select mixing and heating systems for variable level operation and effective performance

Mixing

Proper mixing is key to digester health and performance. Carollo has extensive experience evaluating mixing technologies and will work with you to select the right technology for Digester 9.

Digester 1-8 currently use Vaughan's Rotamix system with chopper pumps, floor mounted mixing nozzles, and one wall mounted nozzle for foam mitigation similar to the system that Carollo recently designed for the City of Burlingame. There are several possible enhancements that we could consider for Digester 9 if desired:

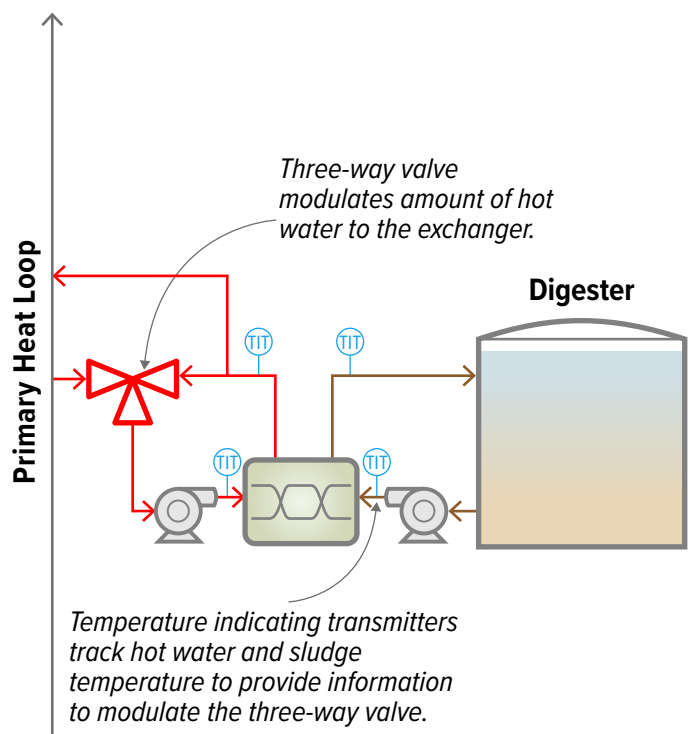
- **Pump with VFD:** We worked with Oro Loma Sanitary District to add VFDs to two of their mixing pumps to allow them to optimize the mixing rate, reduce foaming potential, and save energy cost. Mixing rate control is especially critical for a variable level digester. Typically, pump mixing systems are designed to turnover the digester every 3-4 hours. Without a VFD, the turnover rate will increase as the level in the tank decreases which can cause foaming and unnecessary energy expense. A VFD allows you to dial in the pump speed and maintain the target turnover even as the volume in the tank varies.
- **Engineered piping and nozzle system:** Rather than specifying a vendor-packaged pump mixing system like Rotamix, Carollo can also design a pump mixing system like we recently did for variable level digesters at Inland Empire Utilities Agency RP-1. The design would include a chopper pump (with or without a VFD) and strategically placed nozzles. A key advantage of the engineered system is that each leg of the system can be isolated with valves, providing flexibility for mixing. Also, Carollo's design maintains lower velocities at the nozzles than vendor-designed systems, reducing the chances of foaming events.

If interested, other technologies such as Ovivo's low energy LM mixers or Anaergia's high solids impeller mixers, both of which Carollo designed for the City of South San Francisco, can also be evaluated to determine which is optimal for you.

Heating

The heating requirements for Digester 9 will vary depending on whether it is fed primary sludge and TWAS directly or if it is fed partially digested sludge from Digester 1-7 that has already been heated to mesophilic temperatures. If direct feeding of Digester 9 is desired, we will consider both conditions when sizing the heat exchanger and associated recirculation systems to provide flexibility for either operation.

The existing digesters use spiral heat exchangers. We will also evaluate tubular heat exchangers, which are less susceptible to clogging. For either technology we will design a secondary heat loop with instrumentation to automatically maintain a setpoint digester temperature while also limiting the hot water temperature and the change in sludge temperature across the exchanger to help mitigate sludge baking onto the heat exchanger and vivianite formation.



We will design a secondary heat loop system sized for flexible digester feed and with provisions to mitigate sludge baking onto the heat exchanger and vivianite formation.

3

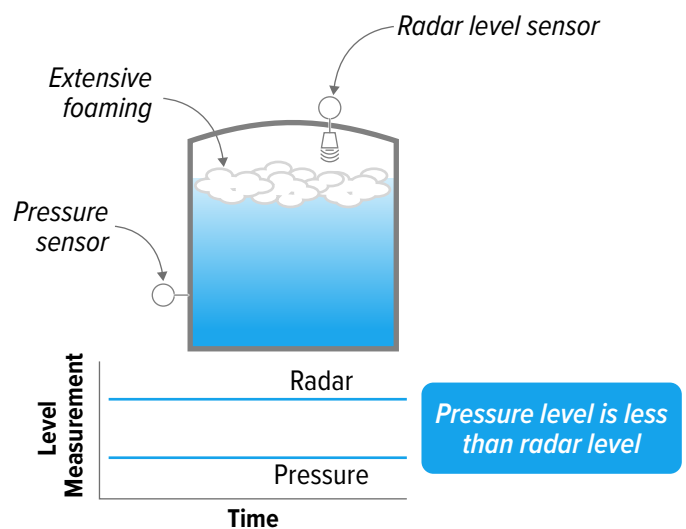
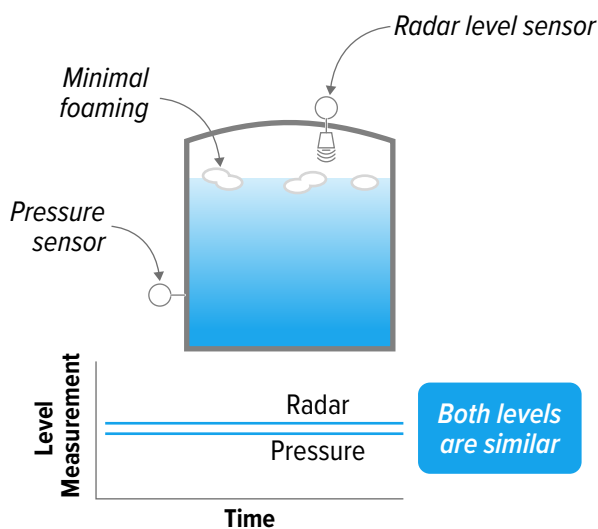
Design digester with features to mitigate foaming and provide ease of O&M

Provide large access manways and sampling ports

Simple features such as isolation provisions, gas piping purge ports, sampling ports, and optimally placed and sized access manways on the top and side walls of the digesters can go a long way in the operation and maintenance of a digester. We will work with you to understand the features of your existing digesters that you like and discuss areas for improvements with the goal of providing a system that can be easily operated and maintained.

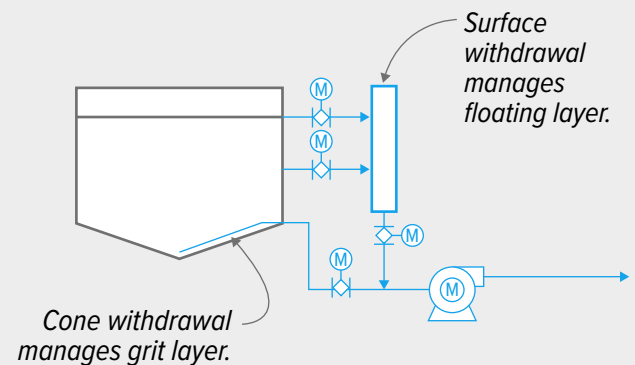
Install redundant level measurement to detect foaming early

Our design will incorporate two types of level instrumentation, a pressure sensor and a radar level sensor, used in conjunction to detect foaming events so that they can be addressed quickly. The pressure sensor, which is mounted low on the side of the tank, measures the pressure exerted by the water column while the radar sensor, which is mounted on the top of the tank, measures the surface level. As shown in the diagram below, the two instruments will provide a similar measurement when there is minimal foaming. However, when foaming occurs, the pressure instrument will have a lower reading because the foam is less dense than the sludge. An alarm can be provided to notify operations staff when the two readings differ, allowing for process intervention.



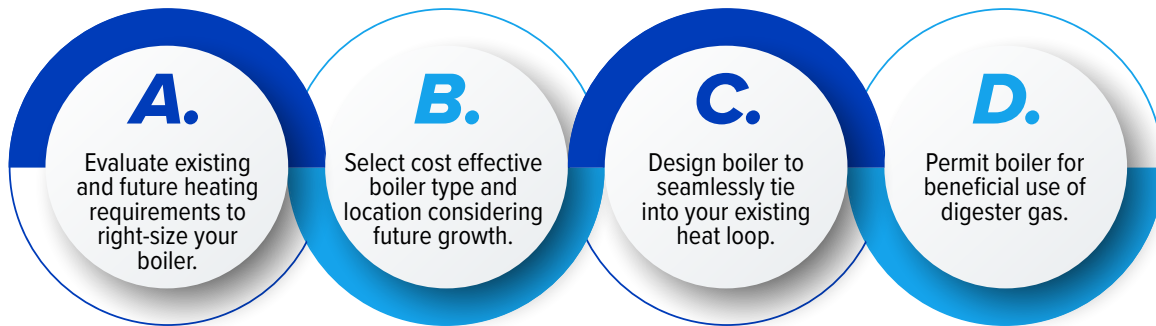
Sludge withdrawal

Our digester design will include features to maximize the usable digester volume such as a standpipe and cone withdrawal. The standpipe, which would be designed with multiple connection points to accommodate the variable level, allows for filaments, foam, and scum to be frequently removed from the surface of the digester. The cone withdrawal allows for grit that would typically accumulate at the bottom of the cone to also be frequently removed. We will include flexibility and access to be able to waste sludge to the newly designed digester cleaning pond. Motorized valves on the standpipe and the piping to the dewatering feed pumps will allow for bottom and surface withdrawal to occur at preprogrammed intervals.



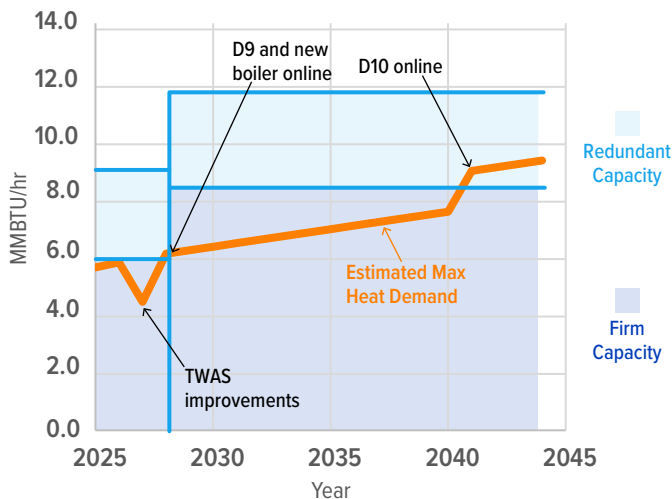
4

Seamlessly integrate new boiler into existing heat loop for reliable digester heating



A. Right-size boiler

Boiler 3 is over 25 years old and has significant corrosion and piping defects. Additionally, Digester 9 will increase the sludge heating requirements. Therefore, a new boiler is needed to maintain sufficient firm capacity for your facility. The first step to expanding your digester heating capacity is to select the right size boiler. We will accomplish this by comparing projected heat demands with the capacity of existing Boilers 1-3 as we have in the figure below. We will also work with you to understand your boiler redundancy requirements for both max month and average conditions as well as consider options for replacing the capacity of aging Boiler 3.



We will estimate your current and future digester heat demands to right size your new boiler to provide the capacity and redundancy for reliable digester heating.

B. Select boiler type and location

We will consider firebox, Scotch Marine fire-tube, and flexible watertube boilers and select the one that best meets your requirements for cost, footprint, and O&M preferences.

Our goal is to set up your new boiler facility such that it can be easily expanded as your plant influent continues to grow. For example, the capacity evaluation in Step A may indicate that the new facility should be designed with space to accommodate future installation of a second new boiler to address redundancy requirements and possible decommissioning of aging Boiler 3. As a potential cost saving option, we can also consider designing an outdoor boiler facility protected by a canopy as we recently did for IEUA RP-1.

C. Integrate into your heat loop

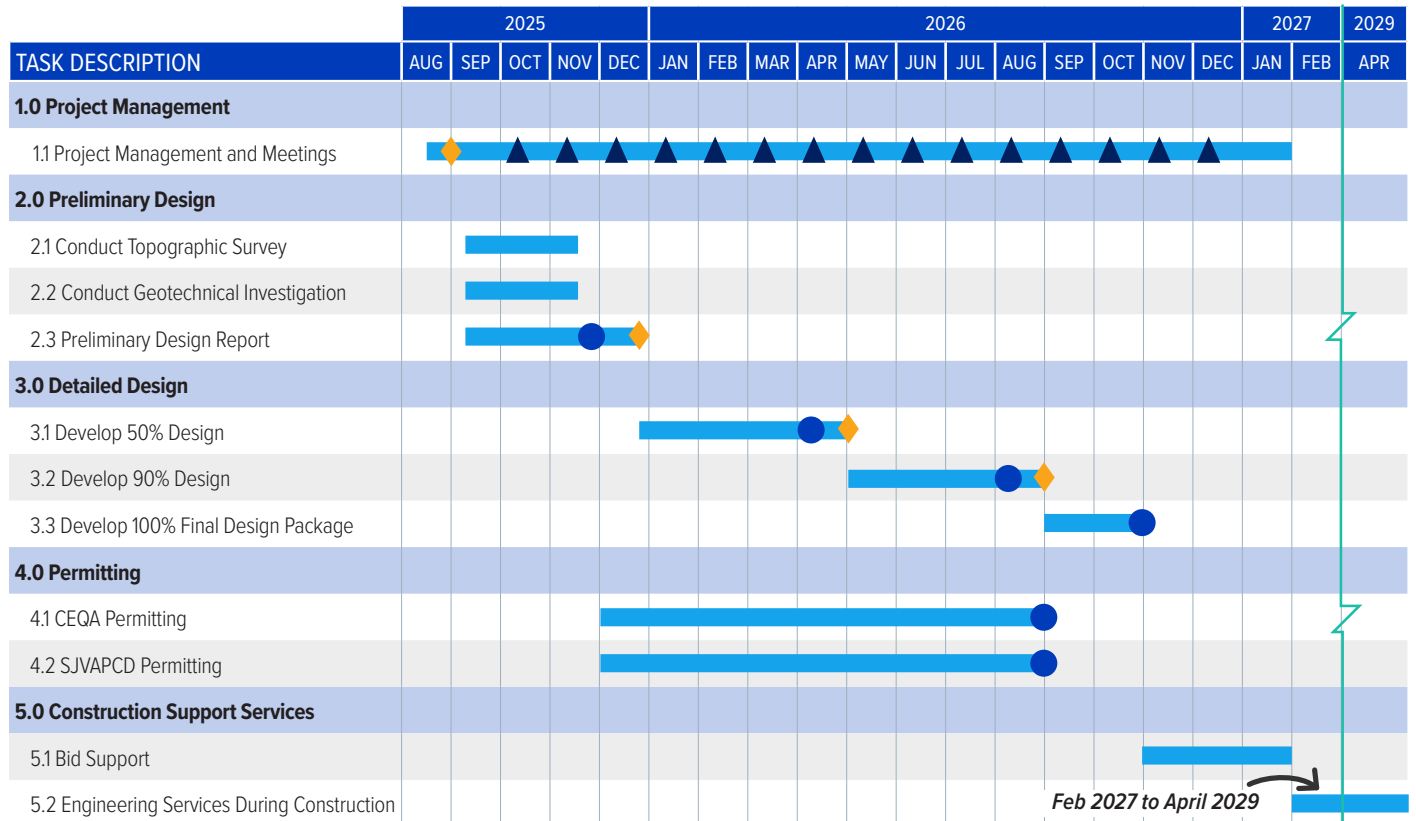
The new boiler will not only serve the new digester but will integrate into the heat loop serving your entire digestion facility. First, we will confirm that the existing primary heat loop pumps have sufficient capacity to meet the heating demands of the entire system. Then, we will design a secondary heat loop, similar to the secondary loops that you have for Boilers 1–3. Our team includes Darrell Buhman who has extensive experience expanding heating systems. We will work with you to develop a construction sequence that limits downtime of the existing heat loop, so that your existing digester heating systems stay up and running.

D. Permit for digester gas

Currently you have limitations on operating your existing boilers with digester gas, in part because of permitting restrictions. That's why we've included air permitting expert, Courtney Mizutani, to navigate the SJVAPCD to obtain the Authority to Construct for the digester, and receive approval for flexible operation of a new boiler. Designing and permitting the new boiler for both natural gas and digester gas will save energy costs, reduce emissions, and provide operational flexibility.

Schedule

The schedule below was developed based on our current understanding of the level of effort required to deliver this project. Our team is ready to begin working on this project immediately and will work with you to meet your schedule requirements.



LEGEND

■ Task ◆ Workshop ▲ Progress Meeting ● Deliverable

Exceptions

Carollo has reviewed the RFP and the draft agreement and requests the following changes which were effectuated in the April 26, 2024 agreement with the City of Visalia for the Near Term Solids Handling Improvement Project.

Exceptions:

■ XII, A:

- » In the 4th line: Strike “or consequential damages.”
- » In the 4th line, replace “errors or omissions” with “recklessness or willful misconduct.”

■ XII, B:

- » In the 2nd line, strike “or consequential damages.”
- » Add to end of sentence: “In no event shall the cost to defend charged to Consultant exceed Consultant’s proportionate percentage of fault.”

Requested Additions:

■ XI, add new section D:

- » **“D. CITY-Provided Information and Services:** The CITY shall furnish the CONSULTANT available studies, Reports and other data under the control of the CITY and pertinent to the CONSULTANT’s services; obtain or authorize the CONSULTANT to obtain or provide additional reports and data as required; furnish to the CONSULTANT services of others required for the performance of the CONSULTANT’s services hereunder upon request by CONSULTANT and agreement by the CITY, and the CONSULTANT shall be entitled to use and rely upon all such information and services provided by the CITY or others in performing the CONSULTANT’s services under this Agreement.”

■ XII, add new sections after “C”:

- » **“D. Notwithstanding any other provision of this Agreement, and to the fullest extent permitted by law, neither the CITY nor the CONSULTANT, their respective officers, directors, partners, employees, contractors or subconsultants shall be liable to the other or shall make any claim for any remote or speculative breach of contract damages that the breaching party could not have reasonably foreseen when entering into this Agreement. To the extent this Agreement is considered a “Construction Contract” as defined by California Civil Code section 2783, CONSULTANT’s duty to indemnify CITY under this or any other provision of the Agreement shall not apply when to do so would be prohibited by California Civil Code section 2782.**

- » **E. The CONSULTANT shall not be responsible for warranties, guarantees, fitness for a particular purpose, breach of fiduciary duty, loss of anticipated profits or for economic, incidental or consequential damages to the CITY or any third party arising out of breach of contract, termination, or for any other reason whatsoever. Additionally, the CONSULTANT shall not be responsible for acts and decisions of third parties, including governmental agencies, other than the CONSULTANT’s subconsultants, that impact project completion and/or success.”**

■ Section XIV, add new sections A-C:

- » **“A. Standard of Care:** The CONSULTANT shall perform the services required hereunder in accordance with the prevailing standard of care by exercising the skill and ability ordinarily required of consultants performing the same or similar services, under the same or similar circumstances, in the State of California.
- » **B. Estimates and Projections:** The CONSULTANT has no control over the cost of labor, materials, equipment or services furnished by others, over the incoming water and/or wastewater quality and/or quantity, or over the way the CITY’s plant and/or associated processes are operated and/or maintained. Data projections and estimates are based on the CONSULTANT’s opinion based on experience and judgment. The CONSULTANT cannot and does not guarantee that actual costs and/or quantities realized will not vary from the data projections and estimates prepared by the CONSULTANT and the CONSULTANT will not be liable to and/or indemnify the CITY and/or any third party related to any inconsistencies between the CONSULTANT’s data projections and estimates and actual costs and/or quantities realized by the CITY and/or any third party in the future.
- » **C. Third Parties:** The services to be performed by the CONSULTANT are intended solely for the benefit of the CITY. No person or entity not a signatory to this Agreement shall be entitled to rely on the CONSULTANT’s performance of its services hereunder, and no right to assert a claim against the CONSULTANT by assignment of indemnity rights or otherwise shall accrue to a third party as a result of this Agreement or the performance of the CONSULTANT’s service hereunder.”

Scope of Work

1.0 – PROJECT MANAGEMENT

1.1 – Project Management and Meetings

Carollo will provide project administration and management necessary to perform the planning, execution, monitoring, and reporting of the project elements.

Carollo will lead monthly meetings with City staff and key project team members to provide updates on progress and address any issues or concerns.

Carollo will lead a kickoff meeting with the City and the project team to review the scope and schedule. The project team will present and seek feedback on key design elements.

Deliverables:

- Monthly invoices and associated progress letter reports, including budget and schedule updates.
- Kickoff and monthly meeting agendas and minutes.

Assumptions:

- The design phase of the project has a duration of 14 months.
- The kickoff meeting will include travel for three key expert team members to attend in person and other key project team members will attend remotely as necessary.
- Monthly progress meetings will be held remotely and will be attended by the Project Manager, Project Engineer, and other key team members, as necessary.

2.0 – PRELIMINARY DESIGN

2.1 – Conduct Topographic Survey

Carollo will contract with a subconsultant to provide surveying professional services. Surveying subconsultant will develop a topographic map of the proposed project site to serve as a base map for the design and to determine elevations of the existing surface and critical infrastructure. Ground control surveys will be performed, and temporary benchmarks will be established at the project site. Mapping will be performed based on a specified horizontal and vertical datum. Carollo Senior Professionals will review the surveying deliverable for accuracy and incorporation into future design deliverables.

2.2 – Conduct Geotechnical Investigation

Carollo will contract with a subconsultant to provide professional geotechnical services. Geotechnical consultant will perform borings onsite within the proposed project area and develop a draft and final report to determine site conditions and recommendations for the site grading and subgrade requirements. Senior Professionals will review the draft geotechnical report and provide feedback for incorporation into a final geotechnical report.

2.3 – Preliminary Design Report

Carollo will develop a Preliminary Design Report (PDR) to serve as the basis for developing the detailed design of the digester and ancillary facilities. The historical data analysis and future projections completed as part of the 2024 Master Plan will be used as the basis for sizing digestion facilities. The Digester 9 tank will be similar in size and configuration as Digester 8. The PDR will include the following elements:

- Evaluation and recommendation of equipment.
 - » Digester 9 mixing system.
 - » Digester 9 sludge heating system.
 - » Boiler 4 type, capacity, and integration with existing hot water loop.
 - » Digester 9 digested sludge transfer pumps.
 - » Digester 9 ferric chloride feed system.
 - » Digester 9 features, including cover type, gas equipment, manway access, and coating system.
- Recommend digester feed and dewatering feed strategy for new Digester 9 and integration with Digester 8.
- Identify tie in locations for key utilities including primary sludge, thickened waste activated sludge, digested sludge, hot water return and supply, digester gas, ferric chloride, and electrical power.
- Confirm MCC/boiler building type and approximate layout.
- Identify key project components and develop the proposed layout.
- 30% construction cost estimate.

In addition, the PDR will include the following 30% drawings:

- Design criteria and equipment sizing.
- Process flow diagram.
- Overall site layout.

- Preliminary equipment and building layouts.
- Civil site plan and preliminary yard piping plans for major utilities.
- Electrical one line diagram.
- Process and instrumentation diagrams.

Construction cost estimates will be prepared based on quantity takeoffs, estimating guides, equipment manufacturers' quotes, and construction cost estimates of similar facilities. Contingencies for general estimating, general conditions, contractor overhead and profit, escalation to the midpoint of construction, and annual cost escalation will be included in the construction cost estimate. The 30% cost estimate is anticipated to be a Class 4 estimate as defined by the Association for the Advancement of Cost Engineering International, which has an expected accuracy of between -30% and +50%.

Deliverables:

- Draft and Final Preliminary Design Report (pdf).
- Comment response log.
- 30% construction cost estimate.

Assumptions:

- Digester 9 will be similar in size and configuration to the existing Digester 8, but will include piping modifications to be directly fed primary sludge and thickened waste activated sludge.
- Digester 8 facilities, including feed and transfer piping, sludge heating, and sludge mixing, will not need to be modified.
- Primary sludge and thickened waste activated sludge pumping systems will not need to be modified.
- The existing ferric chloride storage and feed pump system will not need to be modified.
- The existing hot water piping will not need to be rehabilitated.

3.0 – DETAILED DESIGN

3.1 – Develop 50% Design

Carollo will provide a 50 percent design submittal, which will include the following information:

- Design criteria.
- Process flow diagram.
- Site plan.
- Paving and grading and yard piping plans.

- Structural plans and sections for the digester, control building, and major equipment pads.
- Mechanical plans and sections for major equipment.
- Electrical one-line diagram and electrical equipment elevations.
- Electrical site plans.
- Process and instrumentation diagrams.
- Draft specifications for major mechanical equipment and equipment control descriptions.

Carollo will perform an internal quality control check of the 50% design deliverable in parallel with the City's review of the submittal.

Carollo will prepare a construction cost estimate based on the 50% design drawings. Construction cost estimates will be prepared based on quantity takeoffs, estimating guides, equipment manufacturers' quotes, and construction cost estimates of similar facilities. Contingencies for general estimating, general conditions, contractor overhead and profit, escalation to the midpoint of construction, and annual cost escalation will be included in the construction cost estimate. The 50% cost estimate is anticipated to be a Class 3 estimate as defined by the Association for the Advancement of Cost Engineering International, which has an expected accuracy between -20% and +30%.

Carollo will prepare for and lead a 50% design review workshop to present progress on the design and discuss any feedback from the City. The workshop will include travel for three team members to attend in person and other key project team members will attend remotely as necessary.

In addition, Carollo will provide a response to all City review comments and shall provide the City with any potential construction cost increase estimates and gain City approval of additional costs prior to performing design modifications on that comment.

Deliverables:

- 50% design drawings (three hard copies at half-size, 11x17).
- 50% design specifications (one hard copy).
- 50% construction cost estimate.
- 50% design review workshop agenda and minutes.
- Comment response log.

Assumptions:

- The City will review 50% deliverable and provide any feedback to be incorporated within three weeks of submittal.

- The project will follow CSI MF95 format utilizing Divisions 01 through 17.
- The project will follow Carollo's CAD standards.

3.2 – Develop 90% Design

Carollo shall provide a 90% design submittal, which shall be a complete set of contract documents. Additionally, the 90% deliverable shall have incorporated applicable internal and City review comments from the 50% design review. The 90% deliverable shall include all draft specifications required for the project. The City's front-end specifications will be reviewed by Carollo's risk management team to suggest changes to mitigate risk during bidding and construction. The front-end specifications will be supplemented as necessary with Carollo's specifications to provide a complete bidding package. The project team will update the front-end specifications with project specific information.

Carollo will perform an internal quality control check of the 90% design deliverable in parallel with the City's review of the submittal.

Carollo will prepare a construction cost estimate based on the 90% design drawings. Construction cost estimates shall be prepared based on quantity takeoffs, estimating guides, equipment manufacturers' quotes, and construction cost estimates of similar facilities. Contingencies for general estimating, general conditions, contractor overhead and profit, escalation to midpoint of construction, and annual cost escalation shall be included in the construction cost estimates. The 90% cost estimate is anticipated to be a Class 2 estimate as defined by the Association for the Advancement of Cost Engineering International, which has an expected accuracy between -15% and +20%.

Carollo will prepare for and lead a 90% design review workshop to present progress on the design and discuss any feedback from the City. The workshop will include travel for three team members to attend in person and other key project team members will attend remotely as necessary.

In addition, Carollo will provide a response to all City review comments and shall provide the City with any potential construction cost increase estimates and gain City approval of additional costs prior to performing design modifications on that comment.

Deliverables:

- 90% design drawings (three hard copies at half-size, 11x17).
- 90% design specifications (three hard copies).

- 90% construction cost estimate.
- 90% design review workshop agenda and minutes.
- Comment response log.

Assumptions:

- The City will review 90% deliverable and provide any feedback to be incorporated within three weeks of submittal.
- The project will not need to be approved by the City's Building Safety Division.
- The City will provide its front-end specifications to be incorporated into the deliverable one month prior to the project team submitting the 90% deliverable.

3.3 – Develop 100% Final Design Package

Carollo shall provide 100% design drawings and specifications suitable for bidding. The bid set deliverable shall have incorporated applicable internal and City review comments from the 90% design review.

Carollo will perform an internal quality control check of the 100% design deliverable prior to submitting to the City. The 100% design deliverable will be stamped and digitally signed by professional engineers registered in the state of California.

If no major project elements are added after the 90% design deliverable, the 90% construction cost estimate will serve as the engineer's estimate for the basis of bidding. It will be discussed at the 90% design review workshop if there are review comments that warrant a change in the design and update to the construction cost estimate.

Deliverables:

- 100% design drawings (pdf).
- 100% design specifications (pdf).

4.0 – PERMITTING

Carollo will assist the City in obtaining the necessary permit approvals from regulatory agencies to construct the digester and ancillary facilities. Carollo will respond to comments and make necessary revisions to design documents as required by the regulatory agencies. The anticipated permitting requirements include CEQA and San Joaquin Valley Air Pollution Control District approvals.

4.1 – CEQA Permitting

The construction of a new digester and ancillary facilities is a project that is anticipated to trigger compliance with the California Environmental

Quality Act (CEQA). It is anticipated that the project will apply for a Categorical Exemption. Carollo will hire a subconsultant to develop and submit the necessary applications.

Deliverables:

- Draft and Final Categorical Exemption application (pdf).

Assumptions:

- The City will pay for any filing or processing fees required for approval.

4.2 – SJVAPCD Permitting

The San Joaquin Air Pollution Control District (SJVAPCD) will need to issue an Authority to Construct for the digester improvements. Additionally, the new boiler will require completion of a supplemental form, Boilers, Steam Generators, Dryers, and Process Heaters. The boiler will be permitted to run on natural gas or digester gas to provide flexibility in future operations. Carollo will hire a subconsultant to develop and submit the necessary applications. The Authority to Construct will have to be finalized during construction, because it requires input from the contractor to provide the make, model, and serial number for the specific unit that is to be installed at the site. Carollo and the subconsultant will develop a schedule with milestones to progress the permitting process, so as to not be on the critical path for substantial completion of the construction project.

Deliverables:

- Draft and Final Authority to Construct application and supplemental boiler form (pdf).

Assumptions:

- The City will pay for any filing or processing fees required for approval.
- The new boiler will be less than 5.0 MMBTU/hr.
- The new digester can tie in to the current digester gas pipeline network without any additional permitting requirements of the existing gas handling equipment.
- The new boiler can tie in to the current hot water loop without any additional permitting requirements of the existing boilers.

5.0 – CONSTRUCTION SUPPORT SERVICES

5.1 – Bid Support

The Consultant will attend one pre-bid meeting for the prospective bidders on the City's behalf.

During the bid period, Consultant will respond to questions from prospective bidders and provide written response. Verbal or written questions requiring clarification of the contract documents will be resolved by issuing addenda.

Deliverables:

- Response to bidder questions and updated drawings and specifications, as necessary.
- Conformed drawings incorporating changes by addenda following bidding (three hard copies of half-size (11x17) drawings and specifications).

Assumptions:

- The scope of work covers support for a single bid period.
- The Consultant will respond to 60 bidders' questions and update 20 drawings and 10 specifications.
- The City will complete the following tasks:
 - » Manage printing, advertising, and sale of contract documents during the bid period.
 - » Issue bid packages to prospective bidders and maintain bid tabs.
 - » Answer procedural questions from prospective bidders.
 - » Compile and distribute addenda to prospective bidders.
 - » Open and tabulate bids.
 - » Issue Notice of Award and Notice to Proceed to successful bidders.

5.2 – Engineering Services During Construction

Consultant's scope of work to provide engineering services during construction (ESDCs) includes the following activities:

- Project management.
- Preparation of conformed drawings.
- Attending bi-weekly construction progress meetings including site visits and observation by design engineers to support construction work (25 online and 25 in-person).
- Response to requests for information (RFIs) (up to 200).
- Provision of design clarifications as needed (up to 10).
- Submittal review (up to 400).
- Assistance in review of change orders (up to 10).
- Start-up and training assistance.
- Update Operations and Maintenance manual for the new process.
- Preparation of record drawings.

Deliverables:

- Monthly invoices and associated progress letter reports.
- RFI responses.
- Design clarifications, as needed.
- Submittal and resubmittal review responses.
- Change order request review comments.
- O&M manual (three bound hard copies).
- Record drawings (one hard copy, full size 22x34).

Assumptions:

- ESDC will last for the duration of construction, which will be 24-months.
- The City will contract with another firm to provide construction management of the project.



C. Staff Qualifications and Related Experience

Staff Qualifications and Related Experience

Staff Qualifications and Experience

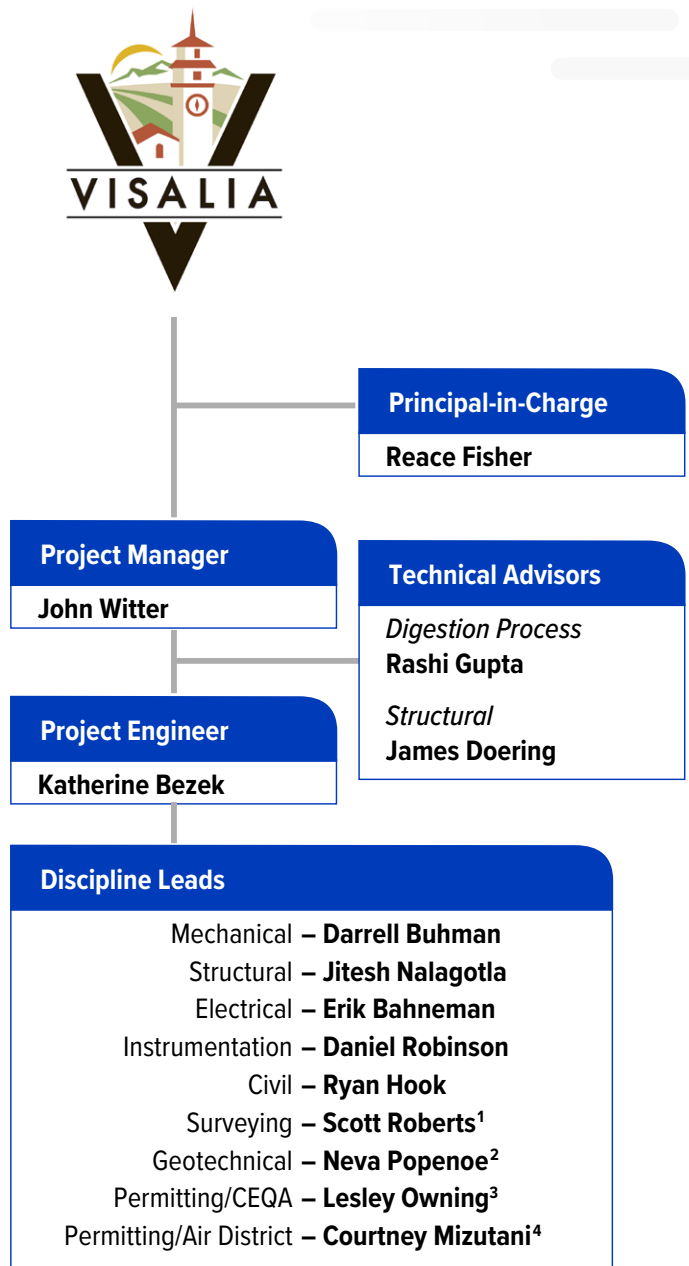
The Right Team for Visalia

We believe that project staffing is a critical factor in project success. The Carollo team, shown in the organization chart below, brings the right mix of plant knowledge and technical expertise needed to deliver the City a successful design project for Digester 9 and ancillary facilities.

Our project manager, **John Witter**, is based in our Fresno office and brings nine years of wastewater treatment experience. He will be the main point of contact and will be responsible for the performance of our team, client coordination, and overall project success. Project engineer **Katherine Bezek** will work closely with John, leveraging her solids handling design experience to lead the day-to-day activities to confirm the City receives high-quality deliverables that meet scope and schedule. Principal-in-charge **Reace Fisher** brings more than 16 years of experience working on wastewater treatment and infrastructure projects throughout the valley. In addition, Reace has hands-on experience working with your team. John and Reace are familiar with the City, having worked on your Water Reclamation Facility Solids Handling Improvements design project.

To enhance our team, we have included the following subconsultants: Westwood Professional Services (surveying), BSK Associates (geotechnical), HELIX Environmental Planning, Inc. (permitting/CEQA), and Mizutani Environmental (permitting/air district).

Our team's experience is highlighted on the following pages. They are committed to this project and will not be substituted without prior written approval from the City. Resumes that include education, credentials, and related experience are provided in the Appendix.



SUBCONSULTANT:

1. Westwood Professional Services
2. BSK Associates
3. HELIX Environmental Planning, Inc.
4. Mizutani Environmental

Proposed Key Team Members



John Witter, PE

PROJECT MANAGER

John has nine years of experience in wastewater treatment planning, design, and engineering services during construction. He has experience coordinating teams of discipline design engineers and CAD staff on a variety of wastewater treatment plant improvement projects, including the Visalia Solids Handling Improvements, King City WWTP Upgrade, and City of Fresno Sidestream Treatment projects. He has also played key roles in biosolids master planning, analyzing digestion processes and developing implementation plans for year-round biosolids management. This work has included biosolids master plans for the City of Fresno, Sacramento Area Sewer District, and Ironhouse Sanitary District. John is familiar with your facilities and procedures, having worked on your Water Reclamation Facility UV Spot Check Bioassay and UV Operations Plan, and most recently serving as project engineer and assistant project manager for the City's Water Reclamation Facility Solids Handling Improvements Design project.



Katherine Bezek, PE

PROJECT ENGINEER

Katherine has nine years of experience with a focus on solids system evaluation and design. She has led digester capacity evaluations, digester layout alternatives studies, digester mixing alternatives analyses, and designs of new and rehabilitated tanks, and will work alongside your staff to efficiently design a system that meets your expectations. Katherine's recent digester experience includes projects for Inland Empire Utilities Agency, Oro Loma Sanitary District, Union Sanitary District, and the City of Burlingame. As project engineer, Katherine will support John, and manage the internal day-to-day activities of Carollo's design team and subconsultants.



Reace Fisher, PE

PRINCIPAL-IN-CHARGE

Reace has more than 16 years of experience working with wastewater treatment facilities throughout the Central Valley. He specializes in condition assessment for aging facilities and integration of new improvement projects to help support ongoing treatment facility success. He is familiar with the City's facilities, practices, and team, having served as the project manager for your Water Reclamation Facility Master Plan Update and Solids Handling Improvements design project. As principal-in-charge, Reace will oversee all project aspects, maintaining clear communication lines between the design team and City staff to continue our successful relationship.

Proposed Key Team Members



Rashi Gupta, PE

TECHNICAL ADVISOR – DIGESTION PROCESS

Rashi has 23 years of experience and is Carollo's National Solids Treatment Practice Lead. She is a national expert in all things related to solids—from sludge thickening and dewatering to digestion and biosolids management—and is very knowledgeable about the latest industry trends and solutions. Rashi will lead optimization efforts, guide technical analyses, lead peer reviews, and participate in key meetings to produce a thorough and efficient design. Rashi's recent digester experience includes projects for South San Francisco, Burlingame, and Union Sanitary District.



James Doering, PE, SE

TECHNICAL ADVISOR – STRUCTURAL

James serves as Carollo's Chief Structural Engineer and has 31 years of structural design experience, including structural analysis and design, seismic retrofit, rehabilitation, review, and assessment for a variety of structures, such as wastewater and water treatment facilities, pump stations, reservoirs, tanks, clarifiers, large pipe supports, retaining walls, and operations and maintenance facilities. He served a key role as the lead designer to successfully deliver the City of Tulare J Street, Alpine, and Cartmill water storage tanks. In addition, he has worked on numerous projects involving wastewater digesters, including those for San Luis Obispo Los Osos Water Reclamation Facility, the cities of Santa Maria and Santa Barbara, and the Eastern Municipal Water District.

Discipline Leads



Darrell Buhman, PE

MECHANICAL

Darrell has 21 years of experience managing projects and implementing plant process heating systems, standby generators, cogeneration and digester gas conditioning systems, and RNG projects for wastewater treatment facilities. He has recently completed work on multiple digester heating system projects, including projects for Metro Water Recovery in Colorado, County of Hawaii Hilo, the City of Oxnard, and Oro Loma Sanitary District.



Jitesh Nalagotla, PE

STRUCTURAL

Jitesh has 27 years of experience in structural design of water, wastewater, industrial, and commercial projects. He oversees the structural design and evaluation of water and wastewater treatment infrastructure. Jitesh has extensive experience in seismic design of large new structures, as well as seismic evaluation and retrofit of existing structures. He was the lead structural engineer for the recent Solids Handling Improvements Design project.

Discipline Leads



Erik Bahneman, PE

ELECTRICAL

❖ Erik has 17 years of experience in the design of electrical, instrumentation, and control systems for water and wastewater projects, including switchgear, motor controls, instrumentation, and SCADA systems. He has coordinated electrical work with civil, structural, and mechanical work during both the design and construction phases on several multi-discipline projects. Recent digester work includes projects for the cities of Burlingame and South San Francisco. In the past five years, he has been involved in digester-related projects worth over \$50 million in construction costs. Erik was the lead electrical engineer for the recent Solids Handling Improvements Design project.



Daniel Robinson, PE

INSTRUMENTATION

❖ Daniel brings 25 years of I&C experience in the water/wastewater industry, including 480VAC electrical distribution systems, variable frequency drives, reduced voltage soft starters, full-voltage motor control design, PLC and control panel design, and process instrumentation. His recent digester work includes the solids improvements for Clean Water Services in Oregon. Daniel was the lead instrumentation engineer for the recent Solids Handling Improvements Design project.



Ryan Hook, PE

CIVIL

❖ Ryan has 23 years of civil engineering experience. He has served as construction manager, lead inspector, design engineer, project engineer, and civil engineer. Ryan's expertise includes planning, analysis, design, and construction of wastewater treatment facilities, wastewater pump stations and pipelines, as well as preparation and review of plans and specifications. Ryan was the lead civil engineer for the recent Solids Handling Improvements Design project.

Subconsultants



Scott Roberts, PLS

Westwood Professional Services

SURVEYING

❖ Scott has more than 15 years of land surveying experience, including direct work with the Carollo team and surveying support for digester and sewer facility projects across Central California. Scott has a strong background in public infrastructure projects and is highly proficient in AutoCAD Civil 3D, Trimble GNSS & Robotic Total Stations, Trimble Business Center, Trimble RealWorks, and Terrestrial LiDAR. His responsibilities span project management, topographic and boundary surveys, utility locating, construction staking, elevation certification, laser scanning, legal descriptions, and GIS mapping.

Subconsultants



Neva Popenoe

BSK Associates

GEOTECHNICAL

❖ Neva has over 20 years of geotechnical engineering and materials testing experience. She manages geotechnical investigations, including developing the scope and budget, field classification of soils, sampling, design, and report preparation and review. Her design experience includes retaining walls, sound walls, roadway embankments, recycled water and surface water facilities, and pavement structural sections. She also performs field inspection and testing, data analysis, laboratory testing, and construction special inspections.



Lesley Owing

HELIX Environmental Planning, Inc.

PERMITTING/CEQA

❖ Lesley is a principal planner with 13 years of experience in providing CEQA compliance. Lesley is skilled at developing CEQA compliance approaches that streamline the environmental review process for complex projects involving numerous agencies. She has prepared CEQA documentation for a wide range of project types including water/wastewater; institutional facilities; land development, transportation; parks and recreation; and renewable energy.



Courtney Mizutani, PE

Mizutani Environmental

PERMITTING/AIR DISTRICT

❖ Courtney has over 35 years of experience specializing in air permitting for municipal water reclamation facilities. Courtney has successfully permitted scores of new sources, as well as followed evolving air regulations at the local and state level as they relate to municipal facilities. She takes a collaborative approach to working with facility staff and the regulators, seeking to streamline the permit process wherever possible.

Subconsultants Help Meet all Project Requirements

Westwood

Professional Services

Established in 1972, Westwood is a full service, multi-discipline professional engineering firm. They have developed land surveying expertise, conducting thousands of surveys each year. Westwood has supported over 60 projects in Tulare County, including work directly for the City of Visalia. For the City, they have successfully contributed to key projects such as Oak Street Improvements, Bridging Horizons Inclusive Park, and Riverway Sports Park.

BSK Associates

Founded in 1966, BSK Associates offers geotechnical and environmental consulting, construction observation, materials testing, special inspections, and analytical laboratory services. They have offices and laboratories throughout California; their Fresno, Bakersfield, Livermore, and Rancho Cordova offices feature Caltrans and AASHTO accredited soils and materials laboratories.

HELIX Environmental Planning, Inc.

Since 1991, HELIX has been helping clients comply with federal, state, and local environmental laws and regulations; investigate natural and cultural resources; and design and construct sustainable projects. In-house services include CEQA and NEPA compliance; regulatory permitting; biological studies, cultural resource studies, landscape architecture, and air quality/greenhouse gas and noise studies.

Mizutani Environmental

Mizutani Environmental has been providing air permitting services to municipal clients across California since 1995. They work to support municipal clients in all areas related to air regulatory compliance and in all stages of project development. They have a proven track record for successfully permitting new projects, and resolving air regulatory concerns.

Related Experience

Firm Background and History

Carollo is a national, full-service environmental engineering firm that has exclusively served the water and wastewater industries for more than 92 years. We remain responsive to the needs of our clients as the industry leader in the planning, permitting, design, construction, and operations of facilities and infrastructure that reliably convey and treat water across the U.S.

Carollo's reputation is based upon client service and a continual commitment to quality. We currently maintain 50+ offices in North America with staff numbers exceeding 1,600 employees, including more than 850 registered engineers. We recruit nationwide and hire technical staff who have extensive background and training specific to this field.

Digester Experience

Carollo has extensive experience with evaluation and design of anaerobic digestion facilities and ancillary systems. Our digester evaluations have included space planning and capacity sizing analysis to optimize layout within existing and new treatment facilities.

Over the years, we have remained abreast of the latest innovations, including technologies, heating systems, piping configurations, and automation to help clients improve digestion and to comply with current regulations and design standards. The table below lists Carollo's relevant project experience that share similar scope elements as your design project for Digester 9 at the City's Water Reclamation Facility. See the following pages for additional details on the bolded projects.

REPRESENTATIVE DIGESTER EXPERIENCE

Client – Project	Alternatives Analysis	Digester Feed and Pumping	Digester Mixing	Digester Heating/Boiler Design	Digester Design/Rehabilitation
City of Burlingame, CA / Digester Improvements Project	■	■	■	■	■
Inland Empire Utilities Agency, CA / RP-1 Solids Thickening Project	■	■	■	■	■
City of South San Francisco / Digester Improvements Project	■	■	■	■	■
City of Visalia, CA / Digester 6, Digesters 1-4 Mixing Modifications	■	■	■	■	■
City of Fresno, CA / Organics Upgrades I, II, III and Digester Gas Storage and Cover Rehabilitation	■	■	■	■	■
Dublin San Ramon Services District, CA / Anaerobic Digester No. 4 and FOG Receiving Facility	■	■	■	■	■
Union Sanitary District, CA / Digester Nos. 2 and 3 Rehabilitations; Digester 8 Feasibility Study	■	■	■	■	■
City of Reno, NV / TMWRF Expansion Project	■	■	■	■	■
Eastern Municipal Water District, CA / Moreno Valley APAD Expansion	■	■	■	■	■
Eastern Municipal Water District, CA / Perris Valley RWRF Plant 3 Facilities Expansion	■	■	■	■	■
Eastern Municipal Water District, CA / San Jacinto Valley RWRF Plant 2 Facilities Expansion	■	■	■	■	■
Eastern Municipal Water District, CA / Temecula Valley RWRF 12-, 16-, 18-mgd Expansions	■	■	■	■	■

CAROLLO DIGESTERS BY THE NUMBERS

175+

Digester evaluations or studies in the past 10 years

155+

Digester rehabilitations in the past 10 years

65+

Municipal clients in the past 10 years

30'–125'

Digester diameters size range



Digester Improvements Project

Burlingame, California

The project included evaluating the condition of existing assets and rehabilitating and expanding the digestion system. Evaluation phase included flow and load projections, digester sizing, cover and mixing type investigation, and layout planning in a constrained site.

Carollo then designed the rehabilitation of two digesters, including cover retrofit, concrete and coating repairs, and mixing and heating system improvements. The design also included a new digester with a concrete cover, pump mixing system with surface foam suppression control, and new heat exchangers, sludge recirculation and transfer pumps, and heating loop housed in a new digester control building.

Carollo is currently assisting the City with securing funding through an SRF loan, and the project is anticipated to bid in Q4 of 2025.

Relevance to Visalia:

- Provisions in design to allow new digester to be fed directly or as the second digester in series.
- Digesters designed with pump mixing systems with foam suppression.

DESCRIPTION

Evaluation/condition assessment, design, funding assistance

PLANT CAPACITY

4.4 mgd

NAME OF OWNER

City of Burlingame, CA

OWNER'S CONTACT

Mahesh Yedluri, Senior Civil Engineer

650-558-7230

myedluri@burlingame.org

FIRM'S INVOLVEMENT

Prime

Services: condition assessment, design, funding assistance

PROPOSED COST VS. ACTUAL COST

Engineer's Estimate: \$23M

Low Bid: TBD

STATUS OF COMPLETION

95% Design: 2023

Final Design and Bid: 2025 (anticipated)



RP-1 Liquid and Solids Capacity Recovery/ Solids Thickening

Ontario, California

Carollo designed a solids system expansion to increase capacity from 40 to 60 mgd. Carollo evaluated thickening improvements, six digester mixing technologies to provide the most cost-effective mixing that meets O&M needs, and heat exchanger types to provide the required capacity and address concerns about vivianite buildup. Carollo also investigated digester heating system capacity and performed an alternatives analysis on three types of boilers and three site location options to determine a long-term plan for digester heating needs.

The project included three new acid-phase digesters, heating system retrofits to an existing methane digester, a new boiler, and a new thickening facility with options to co-thicken or separately thicken primary and secondary sludges in nine new rotary drum thickeners.

The project also included detailed construction sequencing and tie-ins to enable smooth process integration into the existing digester gas, digester feed, and digested sludge transfer systems. Decisions regarding the sequencing, system controls, and technologies were made in close collaboration with the Agency's staff to see that O&M concerns were met and that all of the plant's treatment processes would be uninterrupted during construction. Carollo is now providing construction services for the project.

Relevance to Visalia:

- Design of new digesters and rehabilitation of existing digester.
- Digester heating system and boiler design, with integration into existing heat loop.
- Digester mixing and heat exchanger evaluations and designs.
- Incorporation of O&M staff input into sequencing, design, and technology selections.

DESCRIPTION

Designed solids system expansion, detailed construction sequencing, construction services

PLANT CAPACITY

60 mgd

NAME OF OWNER

Inland Empire Utilities Agency, CA

OWNER'S CONTACT

James Spears, Principal Engineer

909-993-1851

jspears@ieua.org

FIRM'S INVOLVEMENT

Prime

Services: design, construction services

PROPOSED COST VS. ACTUAL COST

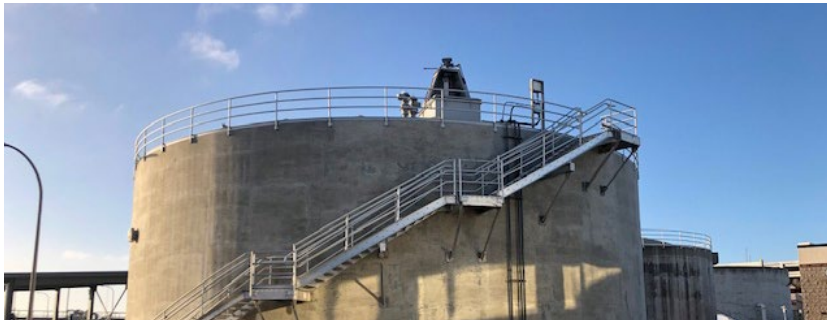
Engineer's Estimate: \$161M

Low Bid: \$148M

STATUS OF COMPLETION

Design Completed: 2024

Construction: Ongoing



Water Quality Control Plant Wet Weather and Digester Improvements

South San Francisco, California

Carollo's digestion work on this project began with a structural condition assessment and preliminary design, and an evaluation of digester mixing, roof, and heating system options. The assessment showed that replacement of two existing digesters with new digesters was necessary while a third existing digester could be rehabilitated to meet seismic requirements.

The evaluation included capital and life-cycle cost analyses, non-economic parameters important to the City, reference checks, and site visits. Our subsequent cost-based evaluations led the City to change their original design intent.

The final project included replacement of two existing digesters with one new high solids digester with Anaergia's submersible mixers, and rehabilitation of a third existing digester to meet seismic requirements and improve system reliability. An Ovivo LM mixer was provided for the retrofitted digester. The digester heating system modifications included replacement of an existing, corroded boiler and retrofits to heating system piping and valves to create a true primary/secondary heat loop configuration and improve heating system control.

Relevance to Visalia:

- Digester process evaluation, preliminary design, final design, and services during construction.
- Digester mixing technology evaluation.
- Expansion of existing digester heat loop including new boiler, hot water loop piping, and sludge heat exchangers.

DESCRIPTION

Condition assessment, preliminary and final design, digester evaluation

PLANT CAPACITY

13 mgd

NAME OF OWNER

City of South San Francisco, CA

OWNER'S CONTACT

Brian Schumacker, Plant Superintendent

650-877-8555

brian.schumacker@ssf.net

FIRM'S INVOLVEMENT

Prime

Services: condition assessment, evaluation, expansion

PROPOSED COST VS. ACTUAL COST

Engineer's Estimate: \$45M

Low Bid: \$49M

STATUS OF COMPLETION

Completed 2023



D. Proposed Fee Structure

Proposed Fee Structure



Carollo's proposed fee structure is provided in a separate, sealed envelope, as requested in the RFP.

The background of the slide is a blue-tinted photograph of an industrial facility. In the foreground, a paved road with white dashed lines curves from the bottom left towards the right. To the left of the road is a grassy area. In the background, several large, cylindrical industrial storage tanks are visible, some with ladders and walkways. A white truck is parked on the left side of the road. The sky is overcast.

E. Conflict of Interest

Conflict of Interest



Carollo is familiar with applicable conflict of interest laws and requirements. Neither our firm nor any of its employees involved on this project are aware of any conflict of interest that would preclude working on this project. Carollo, at all times, conducts its professional and business activities in a manner to prohibit conflict of interest on the part of the firm and its employees. We foresee no circumstances in which a conflict could arise.



Appendix



Addendum Acknowledgment



City of Visalia Purchasing Division
707 W. Acequia Avenue
Visalia, CA 93291 (559)713-4334
purchasing@visalia.city

CITY OF VISALIA, CA
REQUEST FOR PROPOSALS
RFP-24-25-07

PROFESSIONAL SERVICES TO DESIGN DIGESTER 9

ADDENDUM NO. 1

Issued: July 10, 2025

Submittals Due: **Thursday, July 31, 2025, at 3:00pm**

Addendum No. 1 is being issued to extend the deadline for submitting proposals in response to this RFP and provide responses to questions that have been received. This addendum must be signed and submitted with bid.

ITEM 1: EXTENSION OF DEADLINE FOR SUBMITTING PROPOSALS

The deadline for submitting proposals in response to this Request for Proposals has been extended. Proposals are due no later than:

Thursday, July 31, 2025 at 3:00pm

ITEM 2: QUESTIONS/RESPONSES

Q. 1 Is there any flexibility on the design schedule? It will be very difficult to have all work completed by 6/1/26.

Response: The design completion date shall be changed to November 1, 2026.

Q. 2 In the RFP there is a document referenced and we would like to know if the city can provide that document, this document is the "TM 4 of Carollo's Facility Plan"

Response: Please see Attachment 1 of this Addendum.

Q.3 Can the deadline be extended for two weeks?

Response: See above

Q.4 Can the Digester 8 civil drawings be available for review:?

Response: Please see Attachment 2a, 2b, and 2c of this Addendum

ITEM 3: PROPOSER CONFERENCE ATTENDANCE SHEETS

The sign-in sheets from the two mandatory proposer conferences have been included with this Addendum as Attachment 3

Attachments:

Attachment 1 - TM4 Plans
Attachment 2a - Digester 8 Plans
Attachment 2b - Digester 8 Yard Piping 1
Attachment 2c - Digester 8 Yard Piping 2
Attachment 3 - Mandatory Proposer Conference Sign-In Sheets

END OF ADDENDUM NO. 1

/s/ Purchasing Division
(559) 713-4334

RESPONDENT to sign and submit with PROPOSAL

Firm: Carollo Engineers, Inc. Date: July 11, 2025

By: _____
Bidder's Signature



Resumes



EDUCATION

MS Environmental Engineering, University of Illinois, 2015

BS Civil Engineering, University of Illinois, 2014

LICENSES

Civil Engineer, California

PROFESSIONAL AFFILIATIONS

California Water Environment Association, Central San Joaquin Section, Student and Young Professionals Chair

John R. Witter, PE

John Witter has nine years of experience and is a professional engineer who specializes in wastewater treatment plant planning, design, and engineering services during construction. His experience ranges from detailed analyses developing robust process solutions to managing design teams delivering detailed drawings and specifications for a variety of wastewater treatment and solids handling processes.

RELEVANT EXPERIENCE

> **Project engineer for the City of Visalia, California, Water Reclamation Facility Solids Handling Improvements Design.** The project included completing predesign and final design to address solids handling capacity issues and improve performance, while providing better access for long-term maintenance. This project will result in increased capacity and performance of solids handling processes, including improved thickening performance resulting in increased digester capacity, increased dewatering capacity, increased sludge drying capacity, and improved maintenance flexibility for thickening conveyance and digestion.

> **Project manager for the City of Fresno, California, North Fresno Water Reclamation Facility (NFWRF) Expansion Feasibility Study.** The NFWRF treats wastewater from a residential development to recycled water quality standards and discharges off-spec effluent and waste sludge to the Regional Wastewater Reclamation Facility. John oversaw a team of engineers to analyze historical data, perform a condition assessment, and evaluate alternative treatment technologies to identify treatment plant upgrades to expand capacity to satisfy growth within the service area.

> **Project engineer for Sacramento Area Sewer District (SacSewer), formerly Regional San, California, Biosolids Management Plan.** The project included solids flows and loads analysis, alternatives screening, and financial and non-financial evaluation

for digestion, dewatering, and biosolids recycling alternatives.

> **Project engineer for the Ironhouse Sanitary District, California, Biosolids Master Plan.** The project included evaluating solids projections, regulatory review, land application vulnerability analysis, and biosolids technology and management alternatives analysis.

> **Design manager for the City of King City, California, Wastewater Treatment Plant Upgrade Project.** The project consists of designing an upgrade from the 1.3-mgd pond treatment plant to a 1.7-mgd treatment facility that includes a new headworks, grit removal, oxidation ditches, secondary clarifiers, return activated sludge/waste activated sludge pump station, solids dewatering, and equalization basin. The land disposal system was updated to provide new spray fields and percolation ponds. A new access road to the site was also required to allow 365 days/year access. Carollo assisted with funding applications, permitting, and design services.

> **Staff engineer for the City of Fresno, California, RWRf Biosolids Master Plan.** The City has historically produced Class B biosolids through mesophilic anaerobic digestion and hauled biosolids offsite to composting facilities or land-application sites. The City was interested in evaluating various solids handling processes and biosolids end-use alternatives. John analyzed historical data to project solids flows and loads then determined the capacity and performance of current and future solids handling processes. John evaluated

John R. Witter, PE

biosolids alternatives and presented process overview, capital and O&M costs, non-financial and sensitivity analysis, and an implementation plan for the recommended alternative to project stakeholders.

> **Staff engineer for the City of Visalia, California, Water Reclamation Facility UV Spot-Check Bioassay project.** Set up the dosing and injection testing system on an 18-mgd capacity UV system. Took samples at various testing conditions for laboratory analysis to determine matching UV system performance with field conditions.

> **Staff engineer for the City of Visalia, California, UV Operations Plan.** Responsible for developing Title 22 reports and Notice of Intent under the General Order for the use of disinfected tertiary recycled water. Developed the UV Operations Plan, which included system overview, operational configurations, dosing control strategy, and alarm set points that were used as the basis to test the system for compliance.

> **Project engineer for the City of Fresno RWRF Waste Gas Flare Design project.** The City combusts digester gas through an enclosed waste gas flare as an emissions control measure. The San Joaquin Valley Air Pollution Control District adopted stricter nitrous oxide (NO_x) emissions for waste gas flares, necessitating upgrades for the RWRF. John was responsible for establishing design criteria to size new infrastructure, coordinate with flare vendors to ensure installed technology met new regulations, and managed the design disciplines to implement a coordinated design. John worked with the City Planning and Development Department to receive the necessary approvals and permits to progress the project into construction. He provided bidding and

construction support, responding to addenda, and reviewing and coordinating responses for RFIs and submittals. He attends recurring construction progress meetings to ensure construction moves forward as smoothly as possible in a timely manner.

> **Design manager for the City of Fresno, California, Regional Wastewater Reclamation Facility Deammonification Sidestream Treatment Design.** Developed a pilot work plan and provided oversight and coordination between the City and Veolia for the successful operation of a five month long ANITA™ Mox pilot. Led the coordination of project team members for the design of a 1.6 mgd ANITA™ Mox sidestream treatment facility. Conducted detailed design of filtrate and wash water piping modifications, sidestream equalization basins, deammonification reactors, chemical feed facility, and support building. Evaluated struvite precipitation potential and incorporated struvite mitigation design features. Led value engineering efforts to reduce the estimated construction costs by over 30%. Coordinated with City and Veolia staff to develop sole source justification and pre-procurement documents for the ANITA™ Mox package.

> **Operator for the City of Delano, California, Paradise Colony Fixed-Bed (FXB) Biological Nitrate Treatment Pilot Project.** Responsible for mobilization and demobilization, daily operations and maintenance, and equipment and process troubleshooting, sampling, and data analysis. The project tested the lower bound of operational limits of the FXB system with intermittent, on-demand operation.



EDUCATION

BS Civil Engineering,
California State
University, Fresno, 2009

LICENSES

Civil Engineer, California

CERTIFICATION

Certificate, Pipeline
Assessment Certification
Program, NASSCO,
California, 2016

PROFESSIONAL AFFILIATIONS

California Water
Environment Association,
Central San Joaquin
Section (Officer)

Reace P. Fisher, PE

Reace Fisher has over 16 years of experience in wastewater design, pump station design, wastewater collection system design, wastewater treatment facilities planning, recycled water master planning, and infrastructure master planning.

RELEVANT EXPERIENCE

> **Project manager for the City of Visalia, California, Water Reclamation Facility Solids Handling Improvements Design.** The project included completing predesign and final design to address solids handling capacity issues and improve performance, while providing better access for long-term maintenance. This project will result in increased capacity and performance of solids handling processes, including improved thickening performance resulting in increased digester capacity, increased dewatering capacity, increased sludge drying capacity, and improved maintenance flexibility for thickening conveyance and digestion.

> **Engineer for the Sacramento Regional County Sanitation District, California, EchoWater Project Nitrifying Sidestream Treatment Project.** The project involved design of a 4.26-mgd nitrifying sequencing batch reactor facility to treat supernatant from anaerobically digested sludge. The ammonia-laden effluent is used to provide odor control for large interceptors that feed the facility.

> **Project manager for the City of Visalia, California, WRF Facility Plan and Master Plan Update.** The project included completing a facility plan to address near-term facility improvements required to maintain capacity and condition of the plant. In addition, process modeling was performed to plan for future capital improvement projects necessary to maintain growth in the City and allow for additional industrial users. This project resulted in the discovery of critical solids handling

improvements that were causing problems in the solids process.

> **Project engineer for the City of Modesto, California, West Trunk Rehabilitation.** Carollo evaluated the best rehabilitation method for the City's 54- to 60-inch West, 45-inch Lakewood, 30-inch Santa Rosa, and 18-inch Emerald trunk sewers, as well as the 60-inch pressure Sutter outfall. All sewers dealt with corrosion associated with a hydrogen sulfide attack. The project involves design of the selected rehabilitation alternative for each sewer. Project components include hydraulic modeling to determine capacity impacts of cured-in-place pipe (CIPP) vs sliplining, CIPP lining of 15,730 feet of 18- to 60-inch trunk sewers, close coordination with EJ Gallo to prevent operational issues on Santa Rosa Avenue, and development of unique bypass pumping plans for in-plant rehabilitation and rehab of pressure facilities.

> **Project engineer for Digester Condition Assessment at the City of Fresno, California, Fresno-Clovis Regional Wastewater Reclamation Facility.** The project included planning, design, and construction for two of Fresno's older digesters. Along with structural support, digesters were inspected externally and internally for structural repairs and operational improvements. Responsible for preparation of rehab design drawings and specifications, project management.

> **Project engineer for design of a dump station for collection system cleaning trucks at the City of Fresno, California, Fresno-Clovis Regional**

Reace P. Fisher, PE

Wastewater Reclamation Facility.

Performed analysis on the existing site and a problematic area that was deleted in a pipeline project within the wastewater treatment facility. Developed a unique, improved design that solves the problems of time consumption for operators and harmful debris entering the treatment system.

> Project engineer for design of reclamation wells at the City of Fresno, California, Fresno-Clovis Regional Wastewater Reclamation Facility.

Worked with a consultant to perform analysis on existing core samples, and developed an improved well design to eliminate infiltration to the groundwater table. Worked with the contractor and well specialist to confirm proper well construction.

> Project engineer for design of catwalk structures at the City of Fresno, California, Fresno-Clovis Regional Wastewater Reclamation Facility. The project involved design of multiple catwalk structures to resolve a safety hazard around the power generation facility. Performed a preliminary analysis, investigated possible retrofit areas, provided design of safety platforms to solve existing problems, and assisted with structural calculations to adapt the existing structure.

> Project engineer for the 600-hp raw sewage pump at the City of Fresno, California, Fresno-Clovis Regional Wastewater Reclamation Facility.

Responsible for project management and technical services for interpretation of plans and specifications for technical plant support, planning and coordination between the contractor and wastewater staff, and analysis of pump data from factory and site testing.

> Project engineer for Digester Condition Assessment at the City of

Porterville, California. The project included planning, inspections, design, and construction for two of Porterville's four digesters. Along with structural support, digesters were inspected externally and internally for structural repairs and operational improvements. Both digesters had failed due to overloaded gas system and issues with the flare. This resulted in the floating dome of the digesters to fail. Digesters were blasted, cleaned, and rehabilitated with an updated design for the dome and gas capture system. Responsible for preparation of rehab design drawings and specifications, project management.

> Pump station design lead for the City of Paso Robles, California, Recycled Water Distribution System Design. The project involved preliminary design confirmation, final design, and bidding services. The system included approximately 49,000 feet of pipeline ranging in diameter from 6 inches to 24 inches, 1-MG storage tank, and pump station.

> Engineer for the Sacramento Regional County Sanitation District, California, EchoWater Project Flow Equalization Project (FEQ). The \$130 million FEQ will provide an additional 110 MG of storage capacity for the facility. Additional features include roller-compacted concrete lined basins, spillways and interconnections structures, 84-inch-diameter final effluent distribution pipeline, underdrain pump station, and basin wash-down system. The wash-down system consists of manual and automated water cannons for efficient wash-down of the over 60 acres of basin area. The pump station includes four vertical turbine pumps with a capacity of 8,000 gpm.



EDUCATION

MS Environmental Engineering, University of California, Berkeley, 2016

BS Chemical Engineering, Massachusetts Institute of Technology, 2012

LICENSES

Civil Engineer, California

PROFESSIONAL AFFILIATIONS

California Water Environment Association

Water Environment Federation

- Member, Residuals and Biosolids Committee

- Member, Solids Separation Subcommittee

Katherine J. Bezek, PE

Katherine Bezek, a design engineer with Carollo Engineers, has nine9 years of experience in wastewater treatment projects across the entire implementation cycle - master planning, design, and engineering services during construction. Her primary area of focus is in biosolids management including evaluation and design of solids thickening and digestion facilities and their related support systems. Her experience includes:

RELEVANT EXPERIENCE

> **Solids area design lead for the Inland Empire Utilities Agency (IEUA), California, RP-1 Liquids and Solids Capacity Recovery/Solids Thickening Project.** The project included the preliminary and final designs to recover solids handling capacity to 61 mgd from the current 42 mgd with three new acid-phase digesters, a new thickening facility with 9 RDTs, and rehabilitation and/or expansion of various existing unit processes including DAFTs, the boiler facility, and methane phase-digesters. Preliminary design responsibilities included leading the evaluation of replacing existing digester mixing systems, alternatives analysis for new digester mixing and heating systems, and projection of digester heating requirements and boiler capacity. Final design responsibilities included leading the design of a new thickening facility, new acid phase digesters, and existing DAFT rehabilitation.

> **Project engineer for Union Sanitary District's (USD), California, Primary Digester No. 8 Feasibility Study.** This project evaluated the feasibility of constructing a new Primary Digester No. 8 in the area currently occupied by Primary Digesters No. 1 through 3 or in the area adjacent to Primary Digester No. 7. For each location alternative, conceptual layout of the new digester and planning level process flow diagrams, existing facilities requiring relocation, construction sequencing

steps, construction cost, and implementation schedule were provided to help to District evaluate their advantages and considerations. Responsibilities include process data analysis, development of sequencing plans and schedules, and alternatives analysis.

> **Project engineer for the City of Burlingame, California, Digester Equipment Building and Digester No. 2 Project Preliminary Design.** The project includes design of a new digester with pump mixing, a new digester with pump mixing, and a new digester equipment building to house new sludge recirculation and heating systems and a new electrical room. Responsibilities included leading the preliminary design phase including equipment sizing, site and building layout, and cost estimating.

> **Project engineer for the Ora Loma Sanitary District Digester Rehabilitation Project.** This ongoing project began with an alternatives evaluation which resulted in a two-phase design project. The first phase, which is currently in design, includes a new thickening facility to improve sludge thickness and, thus, digester capacity and a new dual membrane gas storage system mounted at grade. The second phase will include a new digester and a redundant gas storage system. Responsibilities have included process data evaluation and projections, alternatives analysis, cost estimating, and design of new thickening and gas storage facilities.

Katherine J. Bezek, PE

- > **Project engineer for the Union Sanitary District, California, WAS Thickener Replacement Project at the Alvarado Wastewater Treatment Plant in Union City, California.** The project includes evaluation of thickening technologies, and preliminary and final design for a retrofitted thickening facility with new polymer, thickened sludge conveyance, HVAC, electrical and other ancillary systems. Responsibilities include alternatives analysis and facilitation of technology selection, equipment sizing, building layout, and cost estimating.
- > **Project engineer for the City of Manteca, California, Sludge Thickener & Dewatering Unit No. 3 Preliminary Design.** This project includes the design of a new RDT co-thickening facility for PS and WAS, conversion of existing DAFT tanks to sludge blending tanks, and addition of a third dewatering centrifuge to an existing facility. Responsibilities included leading the preliminary design phase including process data evaluation and projections, thickening technology alternatives analysis, site and building layout, and cost estimating.
- > **Design engineer for the City of Fargo, North Dakota, Final Design Improvements Project Phase IIB.** The project involved final design of solids treatment upgrades including a new primary digester, a new thickening facility, updates to the existing digester facility, conversion of digester gas flaring to recovery using compressed natural gas, and conversion of an existing tank to a centrate equalization tank. Responsibilities included leading the design of the new solids thickening facility with three thickening centrifuges and their ancillary systems.
- > **Design engineer for Treasure Island Wastewater Treatment Plant and Recycled Water Facility Project for the San Francisco Public Utilities Commission (SFPUC), California.** Responsibilities included the conceptual design of new solids storage, thickening, and truck loading facilities for this greenfield plant. The conceptual design documents have been used by a design/build team for delivery for the final constructed facility.
- > **Staff engineer for the Union Sanitary District, California, Alvarado Wastewater Treatment Plant Solids System/Capacity Assessment.** The plant's influent flows have been steadily decreasing while influent TSS and BOD mass loading rates have been increasing. This project involved an assessment of existing capacity and ways to increase solids treatment capacity, optimize solids processes, achieve energy neutrality, and produce Class A biosolids. An evaluation of potential regulatory changes was also included. Responsibilities included development of a framework to assess the feasibility of energy neutral plant operations, hydraulic modeling for alternatives assessments, and cost estimating.
- > **Design engineer for the Primary Digester No. 3 Rehabilitation Project for the Union Sanitary District, Union City, California.** The project included the evaluation and proceeding recommendations for rehabilitation and repair of an existing digester. Responsibilities included assisting with drawing and specification development and engineering services during construction.



EDUCATION

MS Environmental and Water Resources Engineering, University of Texas, Austin, 2001

BS Civil and Environmental Engineering, University of California, Davis, 1999

LICENSES

Civil Engineer, California

Professional Engineer, Kentucky

PROFESSIONAL AFFILIATIONS

California Water Environment Association (CWEA)

Santa Ana River Basin Section of CWEA (SARBS):

Past-President, Board of Directors

Southern California Alliance of Publicly Owned Treatment Works

Water Environment Federation

Incoming Vice-Chair, Residuals and Biosolids Committee

Past Chair, Solids Separation Sub-Committee

Member, Bioenergy Sub-Committee

Rashi Gupta, PE

Rashi Gupta, a vice president and project manager with Carollo Engineers, has 23 years of experience in delivering sustainable solutions for biosolids management and wastewater treatment throughout her career. Rashi is Carollo's Wastewater Practice Director, which allows her to remain current on leading wastewater technologies including changes within the biosolids management field.

Her responsibilities as project manager and process specialist on solids-related projects across the country have taken her from the initial planning phase through design to start-up after construction. She also leads applied research projects for solids processes to assess the best ways to integrate innovation into facilities. From this experience, Rashi has become a national expert in all things related to solids – from thickening and dewatering to digestion and subsequent practices to beneficially use biogas and biosolids.

RELEVANT EXPERIENCE

> **Process specialist for the City of Burlingame, California, Digester Equipment Building and Digester No. 2 Predesign Project.** This project included evaluation of replacing two existing digesters with a new digester and a new sludge storage tank. Sizing of the new digester and sludge storage tank was based on a review of the plant's past 5 years of process data to estimate effective volume needed to a design capacity of 4 mgd. Various site layouts were then developed to fit the new digesters and an associated digester equipment building around another digester and gravity thickener. The preliminary design includes a new 55-ft diameter digester, rehabilitation of an existing pump mixing systems for both digesters, and a new digester equipment building to house new sludge recirculation and heating systems and a new electrical room. Rashi is leading the design effort.

> **Project engineer for the Improvements to Anaerobic Digesters Nos. 1-3, Omnivore Cost Evaluation study, and final design at the City of South San Francisco, California, Water Quality Control Plant.** The original project included the replacement of two existing digesters with new digesters

and rehabilitation of a third existing digester to meet seismic requirements and improve system reliability. The preliminary design phase of this project included an evaluation of digester mixing technologies, digester roof, and heating system options as well as finalization of the required rehabilitation necessary for the single digester being upgraded. Rashi conducted the evaluation and developed the subsequent report for the City. The final project includes design for the replacement of two existing digesters with one new high solids ("Omnivore") digester and rehabilitation of a third existing digester to meet seismic requirements and improve system reliability. Replacement of existing mixing system with a linear motion mixer was provided for the retrofitted digester. Modifications to the digester heating and sludge transfer systems are also included as part of overall system improvements. She is responsible for the final design of the Omnivore and conventional digestion system at the plant.

> **Project manager for the City of Oxnard, California, Evaluation of Anaerobic Digester Nos. 1 and 3 Improvements project.** This project includes evaluation of 9 types of

AWARDS

Induction into Select Society of Sanitary Sludge Shovelers (5S) by the California Water Environment Association

Spotlight Volunteer Award from the Santa Ana River Basin Section of CWEA

Rashi Gupta, PE

digester mixing alternatives, assessment of digester heating needs and required modifications, evaluation of different heat exchangers, and development of operational improvements to optimize the digestion system.

> **Subject matter expert/solids system lead for the WIFIA-funded RP-1 Liquid and Solids Capacity Recovery Project for the Inland Empire Utilities Agency in Chino, California.** Her responsibilities include oversight of the preliminary and final design of the multi-phase digestion system and new solids thickening facilities that will provide solids treatment capacity for the equivalent of 60-mgd influent flow to the plant. Preliminary design included evaluation of various digester mixing and heating systems, and final design includes incorporation of the new system elements into the plant's existing solids processing systems. Project elements include new acid-phased digesters, rotary drum thickening for separate or co-thickening of primary and waste activated sludge, rehab of dissolved air flotation thickeners for scum thickening, rehabilitation of existing digesters, new boilers and heating system modifications, and acid digester gas treatment for hydrogen sulfide removal.

> **Project engineer for the San Jacinto Regional Water Reclamation Facility Title 22 Tertiary and Plant 2 Facilities Expansion for the Eastern Municipal Water District, California.** The project expanded plant capacity to 14-mgd average annual flow through the expansion of the digestion and solids handling facilities as well as the replacement of the existing headworks, addition of a new liquid treatment train, and expansion of the tertiary treatment facilities. Her primary design responsibilities included two new 80-ft diameter digesters with Rotamix mixing

systems, chopper pump-based sludge recirculation and heating systems, heating and feed system modifications for three existing digesters, a new sludge storage tank, a boiler facility and primary heating system for the digesters, primary sludge and scum pump stations, a digested sludge transfer pump station, and a waste activated sludge thickening facility with rotary drum thickeners. As part of preliminary design, she also analyzed the modifications required for an existing sludge pasteurization system to meet Class A biosolids requirements.

Subject matter expert/solids system lead for Phases 1 and 2 of the Hilo WWTP Rehabilitation Project for County of Hawaii. Her responsibilities include preliminary and final design of the solids processes for this wholesale upgrade of the plant. Solids system project elements include new thickening, dewatering, cake storage and truck loadings systems in a new solids handling building; three new digesters and control buildings with new boilers, digester mixing and sludge heating recirculation systems, sludge transfer system, hot water pumps; sludge blending; snail removal from sludge streams; and digester gas conditioning.

> **Process engineer for Union Sanitary District's (USD) Primary Digester No. 8 Feasibility Study** which evaluated the feasibility of constructing a new Primary Digester No. 8 in multiple areas of the plant and evaluated repurposing opportunities for Primary Digesters No. 1 through 3.

> **Solids process engineer for the Anaerobic Digester No. 4 and FOG Receiving Facility Project for the Dublin San Ramon Services District in Dublin, California.**



EDUCATION

MS Civil Engineering,
University of California,
Berkeley, 1994

BS Civil Engineering,
University of California,
Irvine, 1993

LICENSES

Structural Engineer,
California, Georgia,
Oregon

Civil Engineer, California

Professional Engineer,
Utah, Colorado,
Tennessee, South Dakota

Civil/Structural Engineer,
Washington

PROFESSIONAL AFFILIATIONS

American Concrete
Institute

American Institute of
Steel Construction

James A. Doering, PE, SE

James Doering, a registered structural and civil engineer, is Carollo's structural lead engineer in Southern California. He manages structural design and evaluations for large and small projects. He has 31 years of experience in structural analysis, design, seismic retrofit, rehabilitation, review, and assessment for a variety of structures, such as wastewater and water treatment facilities, pump stations, reservoirs, tanks, clarifiers, large pipe supports, retaining walls, operations and maintenance facilities, office buildings, parking structures, post tensioned concrete structures, retail shopping centers, and warehouses.

RELEVANT EXPERIENCE

> **Lead structural engineer for the County of San Luis Obispo Los Osos Water Reclamation Facility.**

The project included a new 3-mgd wastewater treatment plant with headworks, oxidation ditch, secondary clarifiers, equalization pond, digester, solids handling, blower building, electrical building, and administrative/maintenance facilities. Challenges at the site included high seismicity and expansive soils.

> **Structural engineer for El Estero Wastewater Treatment Plant Digester Nos. 1 and 2 Rehabilitation for the City of Santa Barbara, California.**

The project included identification of cracks at the interior of the digesters requiring repairs/sealing and preparation of associated details and repair procedures. The interior concrete was also repaired and coated with a polyurethane spray-on liner.

> **Structural engineer for the Phase II Wastewater Treatment Plant Expansion for the City of Santa Maria, California.**

Facility additions included a 145-foot diameter primary clarifier, trickling filter, anaerobic digester, digester control building, sludge drying beds, and a bar screen addition to the existing headworks.

> **Structural engineer for the Planning Analysis for West Point Digestion Capacity for King County, Washington.**

The study involved a seismic resiliency

evaluation of (6) 100-ft diameter prestressed concrete digesters and (2) digester control buildings. The digesters were evaluated per ACI 350 and AWWA D110. The buildings were evaluated per ASCE 41-17, Tier 1. A thermal analysis was also conducted to evaluate performance if the digesters were converted from mesophilic to thermophilic operation. Findings and recommendations were summarized in a report.

> **Structural engineer for the Seismic Resiliency Program and AK Warren Seismic Evaluation for Los Angeles County Sanitation Districts in Carson, California.**

The scope of work included the development of a seismic evaluation program to be applied to the Districts' facilities, including 72 structures at the AK Warren WRF following ASCE 41 and ACI 350 procedures. Structures evaluated included process buildings, basins, digesters, surge towers, and solids storage facilities. The scope of work also includes the development of conceptual mitigation and risk scoring to prioritize identified mitigation projects.

> **Structural engineer for the PS15-06 Seismic Evaluation of Plant 1 and 2 Facilities for Orange County Sanitation District in Orange County, California.**

The scope of work included evaluating more than 60 structures following ASCE 41 and ACI 350 procedures. Structures included single and multi-story process

James A. Doering, PE, SE

"Without a doubt James Doering added a tremendous value to the Carollo team and was absolutely a contributing factor to the overall success of these critical projects at the EWPCF."

*- James Kearns,
Capital Projects
Manager, Encina
Wastewater
Authority, referring to
the EWPCF Influent
Junction Structure
Rehab and Ocean
Outfall-Landfall
Inspection projects*

and admin/service buildings, as well as, digesters, aeration basins, surge towers, and gas holders. Both ground shaking and the response to ground deformations due to liquefaction were evaluated to identify vulnerabilities. Conceptual structural and geotechnical mitigation strategies were then developed and prioritized to assist the District with implementation into their Master Plan.

> **Structural engineer for the Veolia Water West Operating Services/City of Palm Springs, California, Wastewater Treatment Plant Upgrade.** The project included a new 22 mgd capacity headworks with Parshall flume and influent pump station, two new 100-ft diameter primary clarifiers with FRP launders, a primary sludge pump station, an elevated sludge dewatering facility, odor control, replacement of the existing Digester No. 2 floating steel dome with a new fixed steel dome, and an electrical building.

> **Structural engineer for the Moreno Valley Regional Water Reclamation Facility Preliminary Treatment and Acid-Phase Anaerobic Digestion project for the Eastern Municipal Water District, California.** Design included headworks and influent pump station modifications, grit basin, acid-phase digester, methane-phase digester, boiler facility (concrete masonry unit (CMU) building), electrical buildings, and other process-related structures and modifications.

> **Structural engineer for the J.B. Latham Wastewater Treatment Plant Digester No. 3 Upgrades for the South Orange County Wastewater Authority, California.** The project included rebuilding of the interior concrete surface at the upper walls and bottom of

the roof slab with shotcrete and the provision of a protective liner.

> **Structural engineer for the final design of the Southeast Water Reclamation Plant Solids Handling Improvements Project for the City of Lubbock, Texas.** The project included replacement of existing belt press facilities with new rotary drum thickeners and centrifuges along with replacement of existing fiberglass-reinforced plastic (FRP) chemical storage tanks inside of an existing 21,000-square-foot Concrete Masonry Unit (CMU) building with precast concrete double-tee roof framing.

> **Structural engineer and value engineer team member for the San Jacinto Regional Water Reclamation Facility, Title 22 Tertiary Upgrade and Plant 2 Expansion for the Eastern Municipal Water District, California.** The project included primary and secondary clarifiers, aeration basins, a blower building, a waste activated sludge (WAS) thickening building with four rotary drum thickeners supported on elevated concrete piers, biofilters, chlorine contact basins, digesters, filter canopies, 10,000-square-foot operations and administration building, electrical buildings, flocculation basins, and other process-related structures.

> **Structural engineer for the City of Tulare, California, J Street and Alpine Vista Water Storage Tank Improvements.** The project involved planning, preliminary and final design, and engineering services during construction of two 2-MG concrete potable water storage tanks and two wells. The storage tanks are designed to supply the flow needed between the peak day and peak hour demand to mitigate low pressure issues.



EDUCATION

BS Mechanical Engineering, Texas A&M University, 2004

LICENSES

Professional Engineer, Colorado, Nevada, Oregon

Mechanical Engineer, California, Idaho, Massachusetts

PROFESSIONAL AFFILIATIONS

Water Environment Federation

Pacific Northwest Clean Water Association (WEF affiliate)

Darrell L. Buhman, PE

Darrell Buhman has 21 years of Mechanical engineering experience in a variety of technical and leadership roles. He has served as the lead design process mechanical engineer, technical advisor, and quality control reviewer for cogeneration and digester gas conditioning systems, plant process heating systems utilizing both combined heat and power systems and dual-fuel boilers, cooling towers, standby generators, process heat recovery, and gas handling projects including waste gas burners and gas compression. Darrell has also provided technical guidance in a variety of ways for biogas upgrading to renewable natural gas projects.

As a technical leader, Darrell has supervised and mentored junior and mid-level engineers in process mechanical energy work and provided quality control reviews and acted as technical advisor on a variety of energy design projects. As Carollo's Mechanical Division lead, Darrell sets the direction of the discipline, develops talent, and oversees standards development.

RELEVANT EXPERIENCE

> **Technical advisor for the City of Burlingame, California, WWTF Digester Improvements Project.**

This project included preliminary design of a new digester with pump mixing, a new sludge storage tank, and a new digester equipment building. Evaluation of the existing heat loop and cogen system was completed to size new heat exchangers and sludge circulation pumps. Darrell was the technical advisor and reviewer for the digester gas handling system modeling and heat loop system upgrades.

> **Technical reviewer for the City of Oxnard, California, heat reservoir upgrades technical memorandum and associated heat demand calculations.**

The project calculated current and future heat demands and then evaluated the current digester heating system's ability to meet the current and future heat demands by utilizing the existing cogeneration engines and sludge heat exchangers. Duties included coordinating with City staff, providing responses to the City's comments, and integrating the client's comments.

> **Lead mechanical engineer for the San Francisco Public Utilities Commission (SFPUC) CS-235 Southeast**

Plant biosolids digester facilities and cooling tower area.

Darrell provided design drawings, process and instrumentation drawings, and control narratives for a new three-cell cooling tower and associated water circulation system designed to provide cooling water to several new digester sludge heat exchangers at the facility. The cooling tower has a total capacity of 1,800 tons and the cooling water system was designed to circulate 2,500 gallons per minute with constant-speed centrifugal pumps in a duty/standby configuration. The cooling towers cool sludge via the heat exchangers that underwent a thermal hydrolysis process to enhance digestion.

> **Peer technical reviewer for the Central Contra Costa Sanitary District's preliminary design of a biosolids improvements project, California.**

Darrell reviewed the cogeneration, digester gas handling, and heating predesign documents.

> **Mechanical engineering technical advisor and lead mechanical engineer for the County of Hawaii's Hilo WWTP Digestion, Solids Handling, and Headworks Improvement Project, HI.**

The portion of the project that Darrell was involved in included the addition of

Darrell L. Buhman, PE

two new digesters and a digester control building. Darrell oversaw the design of the boilers, heat loop, sludge heat exchangers, digester gas conveyance, and waste gas burner systems.

> **Lead mechanical engineer and design manager for the City of Meridian, Idaho, Digester 6 Expansion Project.** Darrell was the lead mechanical engineer responsible for the design of the biogas handling system and sludge heating system for a new digester facility.

> **Lead mechanical engineer for the City of Loveland, Colorado, digester and heating system upgrades.** Darrell designed the new plant heating system using two new dual fuel boilers, concentric tube heat exchangers for sludge heating, and the waste gas burner and gas handling system for this digester addition.

> **Technical advisor and quality control reviewer for the St Joseph, MO digester gas compression design.** The design included compression of digester gas for use in the thermal dryer, as well as a review of the gas mixing system design. Darrell was the mechanical technical advisor and QC reviewer for the project.

> **Lead mechanical engineer for Metro Water Recovery's Cogeneration Equipment Replacement Project, Colorado.** This project replaced the existing digester gas-fueled turbine cogeneration facility with a new biogas upgrade system for pipeline injection and a new hot water boiler facility. The cogeneration system provided most of the plant's process and building heat, so four new high-temperature hot water boilers (300 deg F design temperature) were designed by Darrell to provide heat to the biogas upgrade skid, digesters, and building mechanical systems. Darrell also designed a heat recovery from the

biogas upgrade system via industrial water to water heat pumps, where the waste heat is used to heat the digester process.

> **Lead mechanical engineer for the Metropolitan Wastewater Management Commission (MWMC) Water Pollution Control Facility (WPCF), Oregon, Digester Complex Expansion.** Darrell designed an entirely new digester gas conveyance system and a new plant heating system as part of the addition of a fourth digester at the WPCF in Eugene. The existing plant heating system, boiler, and gas system was demolished and replaced with an updated modern layout and larger capacity systems. The new digester utilized draft tube mixers with jacket heat exchangers for sludge heating.

> **Lead mechanical engineer for the City of Gresham, Oregon, Gas Handling and Heat Loop Upgrades.** Darrell designed a new plant heating system that accommodated both the current heating demands at mesophilic digestion temperatures and future heating demands at thermophilic temperatures if the plant updates its digestion temperature in the future. Darrell was responsible for the new waste gas burner design and new digester gas handling system.

> **Mechanical engineer for the City of Medford, Oregon, Regional Water and Reclamation Facility Cogeneration and Gas Conditioning Project.** This project included the demolition of an existing 340-kW cogeneration system and replacement with a new 750 kW cogeneration system, along with a new digester gas conditioning system to pressurize the digester gas and remove hydrogen sulfide, moisture, and siloxanes.



EDUCATION

MS Civil Engineering,
University of Missouri,
Kansas City, 2012

BT Civil Engineering,
Indian Institute of
Technology, Bombay,
1998

LICENSES

Professional Engineer
(Civil), California

PROFESSIONAL AFFILIATIONS

American Society of Civil
Engineers (ASCE)

Society of Protective
Coatings

Jitesh K.R. Nalagotla, PE

Jitesh Nalagotla, a senior engineer with Carollo, has 27 years of experience in structural design of water, wastewater, industrial and commercial projects. Since joining Carollo, he has overseen the structural design and evaluation of several water and wastewater projects. Jitesh has extensive experience in seismic design of large new structures, as well as seismic evaluation and retrofit of existing structures. Jitesh's core strengths include problem solving and teamwork.

RELEVANT EXPERIENCE

> **Structural engineer for the City of Visalia, California, Water Reclamation Facility Solids Handling Improvements Design.**

The project included completing predesign and final design to address solids handling capacity issues and improve performance, while providing better access for long-term maintenance. This project will result in increased capacity and performance of solids handling processes, including improved thickening performance resulting in increased digester capacity, increased dewatering capacity, increased sludge drying capacity, and improved maintenance flexibility for thickening conveyance and digestion.

> **Structural engineer for the City of Fresno, California, Regional Water Reclamation Facility Sidestream Treatment.** The project involves piloting, designing, and providing engineering services during construction for an ANITA™ Mox system. Responsible for design of all structures, including concrete basins, monorail systems, concrete walkways and a single-story equipment building.

> **Structural engineer for the City of Santa Rosa, California, Laguna Treatment Plant Disinfection Improvements.** The project included design of a 70-mgd UV system for that will meet California Title 22 standards to classify it as the largest low-pressure, high-output UV system in the U.S. at the time of construction. Responsible for engineering services during construction support, including responses to requests

for information, shop drawing review, and preparation of design clarification documents.

> **Structural engineer for the Cities of Reno and Sparks, Nevada, Truckee Meadows Water Reclamation Facility Disinfection and Filtration Process Expansion.** The primary goal of this project is to evaluate and provide recommendations for process improvements and capacity expansion for the tertiary filters and disinfection facility. The new filtration system and UV disinfection systems must be capable of consistently producing effluent that meets the current and future effluent limitations, as well as Nevada Category A or B reuse standards under both normal and upset secondary effluent conditions. Responsible for seismic evaluation of existing structures, including filter building, chlorine contact tank, and chemical building, as well as design of all new structures.

> **Structural engineer for the City of Hayward, California, Main Switchgear (MSB) Electrical Distribution Rehabilitation.** The project involved switchgear replacement inside the existing cogeneration building, which required retrofitting to cost-effectively house the new switchgear. Responsible for design of all retrofits.

> **Structural engineer for the City of Turlock, California, Regional Water Quality Control Facility Chemical System Upgrades.** The project involved converting the disinfection system from chlorine gas to sodium hypochlorite and rehabilitating the aluminum

Jitesh K.R. Nalagotla, PE

chlorohydrate and sodium bisulfite systems. Responsible for design of all structural rehabilitation and repairs.

> **Structural engineer for the Marin Municipal Water District, California, Richmond-San Rafael Bridge Emergency Water Intertie.** Responsible for engineering services during construction support and design of all structures, including a pile foundation system for a welded steel water storage tank.

> **Structural engineer for the Truckee Donner Public Utility District, California, Water Storage Tank Rehabilitation.** The project included seismic analysis and condition assessment of 31 steel water storage tanks ranging in capacity from 0.3 MG to 1 MG, as well as design for rehabilitation and seismic retrofit of 1 tank. Responsible for seismic evaluation of all the 31 water storage tanks, repairs, and rehabilitation of two water storage tank including an elevated steel water tank.

> **Structural engineer for the Truckee Donner Public Utility District, California, Prosser Lakeview and Ski Run Tanks Rehabilitation.** The project included an evaluation of Ski Run and Prosser Lakeview tanks that identified all areas of tank repair, rehabilitation, and replacement; preparation of recommendations regarding coating, required modifications/updates, and budget level cost estimates; and preparation of a preliminary design report with proposed alternatives and bidding documents for tank rehabilitation and repairs, including coating for the options selected by the District. Responsible for repairs and rehabilitation of the water tanks.

> **Structural engineer for the City of Pleasanton PFAS Treatment and Wells Rehabilitation.** The project's overall goal

was to rehabilitate Wells 5, 6, and 8 to implement PFAS treatment and extend their useful life as reliable, locally controlled sources of water for the City. Responsible for design of all structures.

> **Structural engineer for the City of Ukiah, California, Recycled Water Project, which includes 17,510 feet of 12- and 16-inch PVC pipe, booster pump station, and storage pond.** Preliminary design included coordination with customers for demands and turnout locations, utility investigation, geotechnical investigation, and topographic survey. Responsible for design of all structures, including rehabilitation of an existing earth basin containing organic material with a reinforced concrete liner, foundation system, and embankment supported on pile foundations for a railcar pedestrian bridge.

> **Structural engineer for the Santa Cruz County Sanitation District, California, Rodeo Gulch Pump Station Capacity Analysis and Improvements.** The project involved a capacity evaluation of the Rodeo Gulch Pump Station, an alternatives analysis for capacity upgrades, and final design of the selected alternative. Responsible for design of all structures.

> **Structural engineer for the Alameda County Flood Control and Water Conservation District, California, Zone 7 Water Agency Chain of Lakes Centralized PFAS Treatment Facility.** The project involved design of a centralized PFAS treatment plant for three groundwater wells. The centralized treatment plant is a 7,100-gpm system that consists of granular activated carbon or ion exchange.



EDUCATION

BS Electrical and Electronic Engineering, California State University, Sacramento, 2008

LICENSES

Electrical Engineer, California

PROFESSIONAL AFFILIATIONS

Institute of Electrical and Electronic Engineers

Erik M. Bahneman, PE

Erik Bahneman has 17 years of experience in the design of electrical, instrumentation, and control systems for water and wastewater projects, including switchgear, motor controls, instrumentation, and supervisory control and data acquisition (SCADA) systems. His experience includes the coordination of electrical work with civil, structural, and mechanical work, during both the design and construction phases of a project.

RELEVANT EXPERIENCE

> **Lead electrical engineer for the City of Visalia, California, Water Reclamation Facility Solids Handling Improvements Design.**

The project included completing predesign and final design to address solids handling capacity issues and improve performance, while providing better access for long-term maintenance. This project will result in increased capacity and performance of solids handling processes, including improved thickening performance resulting in increased digester capacity, increased dewatering capacity, increased sludge drying capacity, and improved maintenance flexibility for thickening conveyance and digestion.

> **Electrical engineer for the City of Burlingame, California, Wastewater Treatment Facility and Master Plan.** Led the electrical and instrumentation evaluations for the plant's two anaerobic digesters, digested sludge storage tank, digester equipment building, and gravity thickener, and developed replacement improvements for the plant's main switchgear and various solids handling control panels.

> **Electrical engineer for the West County Wastewater, California, Carriage Hills, D'Avila, La Honda, and Tara Hills Lift Stations Upgrades.** Various improvements at each lift station included upgrades to electrical system including service modifications, new standby generators, sequencing evaluations, hazardous area evaluations, ventilation, pump and variable

frequency drive replacement, new electrical gear replacement, site security communication system, and instrumentation.

> **Electrical engineer for the Sacramento Area Sewer District, California, Sailor Bar Pump Station Rehabilitation.** The project involved replacement of a wet-pit/dry-pit wastewater pump station with a new submersible station. A configuration of two separate wet wells and four pumps was selected to increase redundancy in an environmentally sensitive location. Other challenges included liquefiable soils, high turndown ratios between average and peak flows, dual force mains, transient surge protection, location in the 100-year floodplain, and construction sequencing to limit bypass pumping requirements.

> **Lead electrical engineer for the Sacramento Regional County Sanitation District, California, EchoWater Project \$400 million Tertiary Treatment Facilities Project (TTF).** TTF will provide filtration and disinfection of secondary effluent to a level equivalent to Title 22 requirements for tertiary disinfected recycled water for unrestricted reuse. TTF includes a 330-mgd filter influent pump station, 217 mgd of granular media filters, backwash equalization and treatment, chemical feed systems, covered disinfection contact basin, three electrical substations, and a new area control center.

> **Lead electrical engineer for the West County Wastewater District,**

Erik M. Bahneman, PE

California, Electrical Replacement.

Designed the replacement and relocation of an existing 480V switchgear lineup serving the majority of the plant's motor control centers.

Developed a detailed construction sequencing plan designed to minimize the disruption to plant operations, and contributed to a plan for replacing the majority of the plant's motor control centers.

> **Electrical engineer for the City of Modesto, California, Tertiary Treatment Plant Phase II Biological Nutrient Removal engineering services during construction.** The 12.6-mgd project included a primary effluent pump station, rotary drum fine screens, three new nitrifying/denitrifying aeration basins, turbo blowers, mixed liquor fine screens, six membrane bioreactors, 80-mgd return activated sludge pump station, in-channel UV system, and effluent and utility water pump station.

> **SCADA engineer for the City of Patterson, California, Wastewater Treatment Plant.** Developed a new Inductive Automation SCADA application to replace the existing Wonderware graphics and incorporate the older facility, which had no previous networking. The pre-existing look and feel were blended with the improved features of Inductive Automation for a seamless transition to a higher quality product that displayed more information in clearer fashion.

> **Instrumentation engineer for the Placer County Sewer Maintenance District, California, Wastewater Treatment Plant Upgrade and Expansion.** Designed instrumentation upgrades for most of the plant facility, including new facilities for biological removal of nutrients and a new ultraviolet disinfection system. Authored

specifications including complete, detailed control strategies for plant processes, and wrote addendums for electrical specifications.

> **Electrical engineer for three projects completed for the City of Livermore, California, Water Reclamation Plant (WRP).** These include the Aeration Tank Modifications, Hypochlorite Mixer Relocation, and Electrical Design Guidelines that developed electrical standards for use on design projects at the WRP.

> **Electrical and instrumentation engineer for the City of Arcata, California Arcata Wastewater Treatment Plant Improvements Final Design, Phase I.** The project consisted of the final design for replacement and new treatment processes including headworks, pond improvements, wetlands improvements, pump stations, a new oxidation ditch and secondary clarifiers for nutrient removal, and a new UV disinfections step.

> **Engineer for the Clark Regional Wastewater District, Washington, Discovery Corridor Wastewater Transmission System (DCWTS) Phase I engineering services during construction.** The DCWTS was constructed to convey flows from the City of Ridgefield Wastewater Treatment Facility (WWTF) to the Clark Regional Salmon Creek WWTF. This included upgrade of three pump stations and construction of one new pump station, seven miles of parallel 14- and 20-inch-diameter force mains, and 3,400 feet of 24-inch gravity sewer pipe. The 7.2-mgd Pioneer Canyon Pump Station was designed to accommodate multi-directional pumping via future force main.



EDUCATION

BS Mechanical
Engineering Technology,
California State
University, Sacramento,
2000

LICENSES

Electrical Engineer,
California

Daniel S. Robinson, PE

Daniel Robinson has 25 years of electrical and control systems experience in the water and wastewater industry. His experience includes supervising engineering teams, training new engineers, and developing engineering standards. Along with proficiency in AutoCAD Electric, Excel, Access, and SharePoint, Mr. Robinson's engineering skills include 480VAC electrical distribution systems; variable frequency drives (VFDs), reduced voltage soft starter (RVSS), and full-voltage (FV) motor control design; programmable logic controller (PLC) and industrial control panel design; control system architecture; serial, Ethernet, and radio communication; process instrumentation requirements; water/wastewater treatment processes; project management; UL, NEC, NEMA, and NFPA 70E requirements; and relay and ladder logic.

RELEVANT PROJECTS

- > **Lead instrumentation engineer for the City of Visalia, California, Water Reclamation Facility Solids Handling Improvements Design.** The project included completing predesign and final design to address solids handling capacity issues and improve performance, while providing better access for long-term maintenance. This project will result in increased capacity and performance of solids handling processes, including improved thickening performance resulting in increased digester capacity, increased dewatering capacity, increased sludge drying capacity, and improved maintenance flexibility for thickening conveyance and digestion.
- > **Electrical and instrumentation engineer for the Rock Creek Advanced Wastewater Treatment Facility Digester Improvements Final Design for Clean Water Services, Oregon.** Design for modifications to the existing digesters at the Rock Creek AWTF.
- > **Instrumentation and controls engineer for the Sacramento Regional County Sanitation District, California, EchoWater Project Nitrifying Sidestream Treatment Project (NST).** NST uses sequencing batch reactors to treat high ammonia loads being returned to the Sacramento Regional Wastewater Treatment Plant from the solids storage basins. The high nitrate NST effluent will then be used for odor control in the influent interceptor to offset the cost of sodium hypochlorite. The project includes influent and effluent pumping, sequencing batch reactors, effluent flow equalization, lime feed for alkalinity control, aeration blowers, and associated electrical and instrumentation systems. NST must interface with several other EchoWater projects, including Site Preparation, Flow Equalization, Disinfection Chemical Storage, and Biological Nutrient Removal/Primary Effluent Pump Station.
- > **Electrical/instrumentation engineer for Clean Water Services, Oregon, Rock Creek Advanced Wastewater Treatment Facility Gravity Thickeners.** The project involved construction of four new gravity thickeners in an operating plant and included relocation of an existing major 480V ductbank, addition of sections to an existing MCC for new VFD and FV motor controls, addition of a new control panel with an Allen-Bradley ControlLogix PLC, integration into the existing plant SCADA, and instrumentation for flow, level, pressure, and temperature. The project also included modifications to existing solids processes and systems with complex sequencing of installation and startup to not interrupt treatment plant operation.

Daniel S. Robinson, PE

> **Instrumentation and controls engineer for the City of Roseville, California, Dry Creek Wastewater Treatment Plant MCC and Switchgear Replacement Design-Build project.** The project includes replacement of five motor control centers and one switchgear at the City's Dry Creek Wastewater Treatment Plant. Carollo is providing design and engineering services during construction to the lead design-builder, Auburn Constructors.

> **Instrumentation and controls engineer (I&C) for the City of Roseville, California, Pleasant Grove Wastewater Treatment Plant UV Replacement.** The project included evaluation of UV alternatives, CFD modeling, design, engineering services during construction, start up and commissioning, and regulatory support and permit modifications for Title 22 recycled water production and wet weather discharge to surface water. Responsible for assisting the lead I&C engineer with the initial phase of the I&C design, attending local meetings, and site inspection.

> **Electrical/instrumentation engineer for the Tahoe-Truckee Sanitation Agency, California, Sewer Master Plan and Condition Assessment.** The project assessed the condition of the Water Reclamation Plant with the goal of developing a capital improvement plan for the next 25 years.

> **Electrical/instrumentation engineer for design and engineering services during construction for the City of San Mateo, California, Wastewater Treatment Plant Process Control System Upgrade and Collection System SCADA Integration.** The project includes replacement of most of the PLC control panels in the plant with a modern Allen-Bradley ControlLogix PLC control

system, replacement of the existing SCADA system with a new SCADA system that includes remote view nodes located in all of the major process areas of the plant, and installation of a new fiber optic backbone communication network extending the PLC network, SCADA network, and business network throughout the entire plant. The installation of the new control system will be done in phases with complex sequencing to reduce facility downtime and ongoing City and contractor coordination.

> **Managed the City of Reno, Nevada, Reno/Stead Water Reclamation Facility Expansion.** The project consisted of a headworks, oxidation ditch, aeration basin, secondary clarifier, tertiary filters, chlorine contact basin, and effluent structure. The project included 15KV main switchgear, 5KV switchgear with ATS and power distribution, 480V power distribution with SPD and power monitors; MCCs with 18-pulse VFDs, 6-pulse VFDs, and non-reversing starters with electronic overload and smart relay controls; control panels with Modicon Quantum PLCs and Modicon HMI; MB+ fiber optic ring communications to a new Wonderware SCADA system; field instrumentation including flow, level, pressure, dissolved oxygen, oxidation reduction potential, and hazardous gas monitoring; coordination of intrinsically safe requirements; and power, control, and communication interconnection diagrams, testing, training, and final documentation.



EDUCATION

MS Civil Engineering,
California State
University, Sacramento,
2006

BS Civil Engineering,
California State
University, Sacramento,
2002

AS General Science, Yuba
Community College, 1999

LICENSES

Civil Engineer, California,
Hawaii

CERTIFICATION

Project Management
Bootcamp, PSMJ
Resources, Inc.

PROFESSIONAL AFFILIATIONS

American Public Works
Association

Ryan A. Hook, PE

Ryan Hook has 23 years of civil engineering work experience, including planning, design, and construction of wastewater treatment facilities, wastewater pump stations and pipelines, potable water pump stations and pipelines, structural design of buildings, and soil percolation testing for septic systems.

RELEVANT EXPERIENCE

> **Lead civil engineer for the City of Visalia, California, Water Reclamation Facility Solids Handling Improvements Design.** The project included completing predesign and final design to address solids handling capacity issues and improve performance, while providing better access for long-term maintenance. This project will result in increased capacity and performance of solids handling processes, including improved thickening performance resulting in increased digester capacity, increased dewatering capacity, increased sludge drying capacity, and improved maintenance flexibility for thickening conveyance and digestion.

> **Civil engineer for the City of Roseville, California, Pleasant Grove Wastewater Treatment Plant Phase I Expansion.** Design included adding new primary sedimentation basins, new oxidation ditch, new secondary clarifier, fine screens structure downstream of the secondary clarifiers to remove fruit labels, two new digesters with a digester control building, and new thickening building. Designed yard piping, paving, and grading for the new improvements.

> **Civil engineering discipline technical advisor for the Sacramento Regional County Sanitation District, California, EchoWater Project Flow Equalization Project (FEQ).** The \$130 million FEQ will provide an additional 110 MG of storage capacity for the Sacramento Regional Wastewater Treatment Plant. Additional features include roller-compacted concrete lined basins, spillways and interconnections structures, 84-inch-

diameter final effluent distribution pipeline, underdrain pump station, and basin washdown system.

> **Lead civil engineer for the Sacramento Regional County Sanitation District, California, EchoWater Project Nitrifying Sidestream Treatment Project (NST).** NST uses sequencing batch reactors to treat high ammonia loads being returned to the Sacramento Regional Wastewater Treatment Plant from the solids storage basins. The high nitrate NST effluent will then be used for odor control in the influent interceptor to offset the cost of sodium hypochlorite. The project includes influent and effluent pumping, sequencing batch reactors, effluent flow equalization, lime feed for alkalinity control, aeration blowers, and associated electrical and instrumentation systems.

> **Project manager for the West County Wastewater, California, Carriage Hills, D'Avila, La Honda, and Tara Hills Lift Station Upgrades.** Various improvements at each lift station included pump replacement, wet well concrete rehabilitation, evaluation of bypass capabilities, pump hoist systems, new standby generators, electrical system upgrades, ventilation, site security communication system, and instrumentation.

> **Project manager for the Sacramento Area Sewer District, California, Sailor Bar Pump Station Replacement.** The project involved replacement of a wet-pit/dry-pit wastewater pump station with a new submersible station. A configuration of two separate wet wells

Ryan A. Hook, PE

and four pumps (two duty, two standby) was selected to increase operational redundancy in an environmentally sensitive location. Other challenges included liquefiable soils, high turndown ratios between average and peak flows, dual force mains, transient surge protection, raising the site out of the 100-year floodplain, and construction sequencing to limit bypass pumping requirements.

> **Design engineer for the Sacramento Regional County Sanitation District, California, EchoWater Project Return Activated Sludge Pumping Project (RAS).** Assisted with development of project sequencing for the \$32 million RAS, which replaces existing return activated sludge pumps with new pumps designed to deliver the higher flow and head conditions required by the new biological nutrient removal (BNR) process. RAS will have a capacity of more than 200 mgd and includes 48 pumps located at 24 secondary sedimentation tanks. Preliminary design included an in-depth implementation plan to allow construction of improvements while minimizing the impact on the operation of the existing plant, as well as a completion schedule to allow timely commissioning of the new BNR facility.

> **Project manager for engineering services during construction of the City of Yuba City, California, Vactor Dump Station.** The City uses vactor trucks to clean out each of its 17 wastewater lift stations and the influent well at the treatment facility. A temporary dumping station was being used to allow vactor trucks to empty their waste, which was time consuming, and haulers had to actively scrape screens to decant water. The new vactor dump station allows vactor trucks to directly dump their waste onto grating that drains to a

manhole to return the screened water to the headworks. The structure and grating were designed to allow a front loader to scrape the screenings off of the grating.

> **Project engineer for the El Dorado Irrigation District, California, El Dorado Hills Wastewater Treatment Plant Phase III Expansion,** which increased the capacity of the treatment plant to 8.4 mgd. The project consisted of numerous modifications and additions to the existing treatment facility, including adding two biological nutrient removal basins and two aeration basins. Responsible for the biological nutrient removal and aeration basin designs. Assigned tasks to subordinate engineers and drafters and coordinated work with other consultants and subconsultants. During construction, answered requests for information and fielded questions at the jobsite to minimize impacts to the construction schedule and budget.

> **Design engineer and lead inspector for the City of Roseville, California, Dry Creek Wastewater Treatment Plant Chlorine Conversion to UV Disinfection.** This project replaced a chlorine gas disinfection system with ultraviolet disinfection to disinfect the final effluent prior to discharge into Dry Creek and added on-site sodium hypochlorite generation to disinfect recycled water. Performed yard piping, paving, and grading designs during the design phase of the project. Duties during construction included full-time inspection, answering requests for information, submittal review, maintaining as-built contract documents, and coordinating inspections with other inspectors and subconsultants.

Scott Roberts, PLS

Land Surveyor

Scott supports public improvement projects with professional surveying. He is skilled in AutoCAD Civil 3D, Trimble GNSS & Robotic TS, Trimble Business Center, Trimble RealWorks, and Terrestrial LiDAR. His responsibilities include project management, topographic/boundary surveying and mapping, underground utility locating, construction staking, elevation certificates, laser scanning, legal descriptions, and GIS.

PROJECT EXPERIENCE

BRIDGING HORIZONS INCLUSIVE PARK

Visalia, CA | Project Surveyor

Westwood is currently supporting the City of Visalia with the development of Bridging Horizons Inclusive Park. Funded by the Prop 68 program, this park project will improve the open space acreage to population ratio and provide local residents with additional access to both open space and recreational amenities. Bridging Horizons Inclusive Park's purpose-driven design concept ensures that no child, adult, or senior will be excluded from taking part in recreation and active living. Scott is serving as Project Surveyor for this project.

RIVERWAY SPORTS PARK PHASE VI

Visalia, CA | Project Surveyor

Westwood is delivering civil engineering, land surveying, and landscape architecture services for the design of Riverway Sports Park Phase VI. Funded by the 2018 Parks Bond Act Per Capita Grant, this project focuses on designing and constructing an off-leash dog park. Additionally, it involves converting a temporary overflow parking lot into a permanent facility. Key improvements include the design of the parking lot, exit road, landscaping, sidewalks, bike routes, and a roundabout.

DELTA DIABLO DIGESTER DRAIN BASIN REHABILITATION

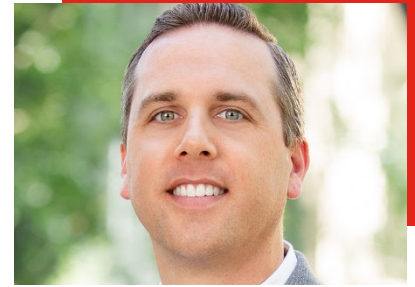
Pittsburg, CA | Project Surveyor

Scott served as Project Surveyor for this Delta Diablo Water District capital improvement project in Pittsburg, CA and was responsible for project management and quality control. The project was to develop plans for the rehabilitation of an existing digester basin that has been severely deteriorated from years of use. Westwood established survey control for surveying and construction, performed detailed topographic surveys of the basin and surrounding area, and dipped several gravity structures in the vicinity. The project involved several safety and coordination challenges as the facility has strict security and safety protocols. Westwood worked closely with facility operators so field crews could access the facility and obtain the necessary safety orientation and verify proper use of PPE.

CCID SUBSIDENCE MONITORING NETWORK

Merced and Madera Counties, CA | Technical Lead

Scott worked with a team of surveyors in the establishment and ongoing monitoring of a subsidence benchmark network for the Central California Irrigation District. The initial phases of the project involved siting, setting, and measuring a network of benchmarks along dozens of miles of irrigation canals. This data was adjusted and used to generate benchmark datasheets for each individual benchmark, including information such as the district's mile post, standardized photos, descriptions, and recovery information. Scott was the technical lead on the benchmark data collection/organization and prepared the benchmark datasheets. Scott also performed quality control checks of digital level data, and performed field surveys to capture digital level and RTK-GNSS observation data for the benchmarks both initially and during multiple subsequent monitoring cycles.



EDUCATION

BS, Geomatics Engineering, California State University - Fresno, 2011

LICENSE/ REGISTRATIONS

PLS CA No. 9235,
Remote Pilot, Small Unmanned Aircraft
System No. 4751061

YEARS OF EXPERIENCE

15

YEARS WITH FIRM

9

MEMORIAL PARK WASTEWATER TREATMENT AND INFRASTRUCTURE REPLACEMENT PROJECT

San Mateo County, CA | Project Surveyor

Westwood provided land surveying services for this wastewater treatment and infrastructure replacement project. Scott served as Project Surveyor. Services included topographic surveying and mapping. Westwood performed a topographic survey and mapping of the sanitary sewer system and wastewater treatment plant.

ORCHARD RUN WATER TREATMENT PLANT IMPROVEMENT PROJECT

Scotts Valley, CA | Project Surveyor

Scott served as Project Surveyor and provided survey support services for the Orchard Run Water Treatment Plant Improvement Project in Scotts Valley, CA. Westwood provided surveying services including topographic and boundary surveys, mapping of underground utilities, and other survey work to support the design of utility and site improvements at the plant.

PUMP STATIONS 18 AND 20

Redwood City, CA | Project Surveyor

Westwood provided land surveying services for this sanitary sewer pump station improvement project in Redwood City, CA. Scott served as Project Surveyor. Services included topographic mapping and record boundary surveys to support the design of sanitary sewer pump station improvements at Pump Station 18 and Pump Station 20.

RALSTON AVENUE SEWER IMPROVEMENT PROJECT

Belmont, CA | Project Surveyor

Westwood provided land surveying services for this sewer improvement project. Scott served as Project Surveyor. Services included performing topographic surveying and mapping for the project limits where improvement work is recommended, spanning a 10-foot corridor centered on the existing sewer alignment with shots taken each 50' for profile generation; providing street centerlines per monumentation (if existing) and record centerline adjustment; locating all surface facilities/utilities and USA marked utilities; providing the location, rim, invert, and pipe diameter of accessible storm drain inlets, storm drain manholes, and sanitary sewer manholes; and providing the location, rim, and top of nut elevations for water valves.

SEWER PUMP STATIONS 9, 42, AND 55

Turlock, CA | Project Manager

Westwood performed topographic field and office surveying to provide critical information for the design of pump station improvements at three locations in Turlock, CA. For Pump Station 9, Pump Station 42, and Pump Station 55, Westwood completed topographic surveys. Scott served as Project Manager.

SLUDGE LAYDOWN AREA

Turlock, CA | Project Manager

Westwood provided land surveying services to support the design of a paved laydown area for dried sludge in Turlock, CA. Services included topographic surveying and mapping and construction staking. Scott served as Project Manager.

SOUTH AREA GROUP TRANSMISSION PIPELINE AND SEWER PUMP STATION

Folsom, CA | Project Surveyor

Westwood provided land surveying services to support the design of a pipeline in Folsom, CA. Services included survey control, topographic surveying and mapping, utility surveys, infill topographic surveying and mapping, GIS right-of-way validation, and land description packages. Scott served as Project Surveyor.

TURLOCK REGIONAL WATER QUALITY CONTROL FACILITY

Turlock, CA | Project Manager

Westwood provided land surveying services for the design of an equalization basin overflow system at the Turlock Regional Water Quality Control Facility. Services included topographic surveying and mapping. Scott served as Project Manager.

Neva M. Popenoe, PE, GE – Fresno Branch Manager



Professional Background:

Ms. Popenoe has over 20 years of geotechnical engineering and materials testing experience within the City of Visalia and Tulare County. She has worked on a variety of projects including highways, railroad and river bridges; flexible and rigid pavements; residential, commercial, and industrial developments; schools and hospitals; pipelines; power facilities; solar installations; impoundments; landfills; and forensic studies. She is responsible for managing and conducting geotechnical investigations including developing the scope of work and budget, site reconnaissance, field classification of soils, sampling, design, and report preparation and review. She has performed geotechnical investigations for over 100 bridges in the State of California for Caltrans, local cities and counties. In addition to bridge foundations, her design experience on these projects includes retaining walls, sound walls, roadway embankments recycled water and surface water facilities, and pavement structural sections. She also performs field inspection and testing, data analysis, laboratory testing, and construction special inspections.

Relevant Experience:

Sludge Transfer Station Fresno WWTP, Fresno, CA - Assisted in providing geotechnical recommendations for shoring recommendations for proposed sludge transfer station associated with WWTP improvements.

Tertiary Treatment and Disinfection Facility, Fresno, CA - 9/2011 to 3/2012 - Conducted a geotechnical investigation for a proposed Tertiary Treatment and Disinfection Facility, which is being developed at the Fresno Wastewater Treatment Plant. Recommendations included construction considerations, bearing, settlement, lateral earth pressures, resistance to lateral loads, information for pipe design, pavement, and slope stability.

Mendota Sewer, Mendota, CA - Performed geotechnical field investigation for a 30-inch diameter gravity sewer extending approximately 2.9 miles to the Mendota wastewater treatment plant.

City of Fresno, North Avenue Trunk Replacement at BNSF and UPRR Lines, Fresno, CA – Ms. Popenoe served as geotechnical engineer-of-record and Project Manager. The replacement and realigning of the existing sewer trunk to include a 66-inch pipeline with a trenchless crossing of BNSF and UPRR railroad lines, Fresno Irrigation District (FID) Fresno Colony Canal No. 24, and Golden State Boulevard. The proposed crossing is approximately 16 feet below grade with 84-inch casing, using trenchless technology for the installation.

Wellhead Treatment – Well 22, Ceres, CA - Ms. Popenoe served as the senior engineer and project manager for the geotechnical investigation for the wellhead treatment improvement project. Design included mat foundations for GAC vessels and other equipment.



Qualifications

Registrations:

Geotechnical Engineer,
California, 3024

Civil Engineer,
California, 73818

Education:

BS, Civil Engineering,
California Polytechnic
State University,
San Luis Obispo, 2005

Experience:

BSK Associates

Fresno Branch
Manager, 2023 -
Present

Senior Engineer, 2017
to 2023

Fresno State University

Civil Engineering
Adjunct Instructor,
2019 to 2023

Kleinfelder

Project Manager,
2005 to 2017

Professional Affiliations:

ASCE Fresno Branch:
Past President

**APWA Central
California:**
Vice President

Neva M. Popenoe, PE, GE – Fresno Branch Manager

1,2,3-Trichloropropane (TCP) Comprehensive Remediation Design/Build Project, Atwater, CA – Ms. Popenoe served as the senior engineer for the geotechnical investigation for five wellhead treatment facilities. Design included mat foundations for GAC vessels and other equipment, retaining walls and ringwall foundation systems for backwash tanks. BSK served as the geotechnical engineer and construction materials testing consultant for this design-build project.

Wellhead Treatment for TCP, Turlock, Tulare and Kingsburg, CA – Ms. Popenoe served as the senior engineer for the geotechnical investigation for seven wellhead treatment facilities. Design included mat foundations for GAC vessels and other equipment, retaining walls and ringwall foundation systems for backwash tanks.

Pipeline, Soultz Mutual Water Company, Tulare County, CA – Ms. Popenoe served as the geotechnical project engineer for the design and construction of the Pipeline System. The pipeline transports water from the existing city well and connects to the existing water main at City property. The pipeline consists of an 8- to 12-inch diameter PVC and ductile-iron pipe water transmission pipeline. The pipeline required trenchless excavations at the canal and at SR 137.

City of Fresno Recycled Water Project, Fresno, CA 2017-2018 – Senior engineer for various phases of the pipeline design and construction. The project includes over 4 miles of recycled water mains throughout south Fresno, with several trenchless crossings.

City of Fresno Surface Water Project, Fresno, CA 2009-2017 – Senior engineer for various phases of the pipeline design and construction. The project includes over 4 miles of surface water transmission lines throughout Fresno, with several trenchless crossings. Design includes soil cement fill recommendations to protect the pipe at the creek crossing from potential scour.

Recharge Fresno Project, Fresno, CA – Geotechnical Engineer for the City's \$500,000,000 project, which included new water infrastructure pipelines and water system facilities that captures, treats and delivers water to the City, including surface water from the Sierra Nevada Mountains. Ms. Popenoe partnered with the designers for the geotechnical investigations for the over 40 miles of pipeline, trenchless crossings, and a new surface water treatment facility.

Comanche Tank, Bakersfield, CA - 11/2005 to 4/2007 - Conducted a geotechnical investigation for a 2.3 million-gallon prestressed concrete storage tank supported on ringwall footings. The water storage tank is about 127 feet in diameter and 26 feet in height and was partially buried.

Fargo Avenue Storage Tanks, Hanford, CA - 2/2006 to 3/2006 - Conducted a geotechnical investigation for two, one million-gallon welded steel water storage tanks and a booster pump station. The storage tanks are expected to be about 80 feet in diameter and 28 feet in height and are anticipated to be supported on a ringwall foundation system.

Water Reservoirs/Pump Stations, Turlock, CA - 1/2007 to 6/2007 - Conducted a geotechnical investigation for a 1.2-million gallon welded steel water storage tank and an approximately 2,500 square foot booster pump station.

Conduit F Pipeline, Bakersfield, CA - 11/2006 to 12/2006 - Conducted a geotechnical investigation for an approximately 3.5 mile pipeline. The pipe was expected to be an 18- to 36-inch PVC and cement-mortar coated steel.



EDUCATION

Bachelor of Science,
Environmental
Economics & Policy;
Minor-City and Regional
Planning, University of
California, Berkeley,
2013

Geographic Information
System Certified, San
Francisco State
University, 2015

PROFESSIONAL AFFILIATIONS

Association of
Environmental
Professionals

LESLEY OWNING

Principal Planner



Ms. Owing is a Principal Planner with 13 years of experience in the provision of California Environmental Quality Act (CEQA) and National Environmental Policy Act (NEPA) documentation for a variety of project types including water/wastewater; restoration; parks and recreation; transportation; infrastructure improvement; renewable energy; and residential, commercial, and mixed-use land development. Ms. Owing develops CEQA review and strategy plans early in the project planning phase and prepares project site constraints

analyses. She has managed many controversial projects by maintaining thorough administrative records for projects that are anticipated to face legal challenges, leading response to comments for projects that have generated hundreds of public comments, and providing public agency support through project appeal hearings. Ms. Owing stays abreast of recent CEQA case law and changes to the State CEQA Guidelines and requirements through on-going education and participation in professional environmental planning groups and conferences. Ms. Owing also provides environmental compliance support through overseeing the implementation of mitigation monitoring and reporting programs throughout project construction.

City of Manteca Wastewater Quality Control Facility Sidestream Treatment and Ultraviolet Rehabilitation (2025). Principal Planner for the senior technical review of a Categorical Exemption prepared for the City of Manteca Wastewater Quality Control Facility (WQCF) Sidestream Treatment and Ultraviolet Rehabilitation Project in the City of Manteca, San Joaquin County. Role included identification of the appropriate CEQA documentation necessary for implementation of the proposed project and conducting senior technical review of the draft Categorical Exemption and supporting documentation prepared in-house. The proposed project includes the construction of a new sidestream facility, ultraviolet (UV) disinfection facility, and electrical building at the City's existing WQCF and is exempt per Class 1, 3, and 32 exemptions. Work performed for Carollo Engineers with the City of Manteca as the lead agency.

City of Manteca Wastewater Quality Control Facility Sludge Thickener and Dewatering Unit No. 3 (2024). Principal Planner for the senior technical review of a Categorical Exemption prepared for the City of Manteca WQCF Sludge Thickener and Dewatering Unit No. 3 Project in the City of Manteca, San Joaquin County. Role included identification of the appropriate CEQA documentation necessary for implementation of the proposed project and conducting senior technical review of the draft Categorical Exemption and supporting documentation prepared in-house. The proposed project includes the construction of improvements to the waste activated sludge (WAS) thickening and sludge dewatering systems at the City's existing WQCF and is exempt per Class 1, 2, 3, and 32 exemptions. Work performed for Carollo Engineers with the City of Manteca as the lead agency.

City of Arvin Wastewater Treatment Facility Land Application Areas (2024). Principal Planner for the senior technical review of a Categorical Exemption prepared for the City of Arvin Wastewater Treatment Facility (WWTF) Land Application Areas Project in the City of Arvin, Kern County. Role included identification of the appropriate CEQA documentation necessary for implementation of the proposed project and conducting senior technical review of the draft Categorical Exemption and supporting documentation prepared in-house. The proposed project includes the land application discharge of wastewater from the WWTF onto two City-owned parcels and one privately-owned parcel located in close proximity to the existing WWTF. Work performed for Carollo Engineers with the City of Arvin as the lead agency.

Delta Water Treatment Plant Groundwater Recharge Basin (2024 - 2025). Project Manager for the preparation of an IS/MND tiered from the Stockton Delta Water Supply Project Program EIR and technical studies for the expansion of the Delta Water Treatment Plant's (DWTP) capacity and the construction of three groundwater recharge basins on 45 acres. The future capacity of the DWTP is anticipated to expand from 30 million gallons per day (MGD) to 60 MGD to supply the groundwater recharge basins. Work performed as a subconsultant to Nexgen with the City of Stockton Municipal Utilities Department as the lead agency.

South Kern and Old River Municipal Water Companies Consolidation (2024 - 2025). Principal Planner for senior technical review of a CEQA IS/MND for the consolidation of South Kern and Old River Mutual Water Companies (MWCs) into the City of Bakersfield Water System Project. Due to uranium contamination, the proposed project includes the abandonment of two wells and extension of the City of Bakersfield's water system to consolidate both MWCs. Role included senior technical review of the project description, administrative and public review drafts of the CEQA IS/MND as well as the supporting biological resources, cultural resources, air quality, greenhouse gas (GHG) emissions, energy, and noise evaluations prepared in-house. Work is being performed for Carollo Engineers with the City of Bakersfield as the lead agency.

Yuba City Aquifer Storage and Recovery Well System (2023 - 2025). Principal Planner/Project Manager for the preparation of a CEQA IS/MND and supporting biological resources, cultural resources, air quality/GHG emissions, and noise technical studies for the Aquifer Storage and Recovery (ASR) Well Project in the City of Yuba City. The City proposes to construct an ASR system with a new injection well and associated infrastructure at the Water Treatment Plant site to capture water when it is abundant, such as during a rainy season or spring snowmelt, and store water in an underground aquifer to allow for the recovery of that water when needed. Work performed as a subconsultant to Carollo Engineers with the City of Yuba City as the lead agency.

Angels Camp Sewer Line Collection System Improvement & Replacement (2019 - 2020). Project Manager for preparation of an IS/MND and supporting biological resources, cultural resources, air quality/GHG/odor, and noise/vibration technical studies for a sewer line replacement project. The City is replacing and upsizing approximately 6,012 linear feet of deteriorating sewer line to allow the City's wastewater treatment plant to operate at full capacity, thereby preventing wastewater spills into Angels Creek. Oversaw the preparation of an aquatic resources delineation report and 1602 Streambed Alteration Agreement from CDFW as the project will remove an existing pipe crossing and introduce a new pipe crossing over a tributary to Angels Creek. Work performed for the City of Angels Camp.

Folsom Boulevard Sewer Project (2019). Senior Environmental Planner for the preparation of a project description and Notice of Exemption form for the Folsom Boulevard Sewer Project. The project consisted of the construction and operation of a new sewer line that runs parallel and adjacent to the City of Folsom's Trunk Sewer. The project was categorically exempt from environmental review under CEQA per Sections 15301(b) – Existing Facilities and 15303(d) – New Construction or Conversion of Small Structures. Work performed as a subconsultant to Water Works Engineers with the City of Folsom as the CEQA Lead Agency.

COURTNEY NICHOLSON MIZUTANI, PE

MIZUTANI ENVIRONMENTAL

EDUCATION

M.S.
Environmental/Agricultural &
Biological Engineering
Cornell University

B.S. Chemical Engineering
University of California, Davis

MBA Marketing
St. Mary's College

REGISTRATION

Professional Engineer,
California
#C51068

PROFESSIONAL AFFILIATIONS

Water Environment
Federation

California Water
Environment Association

American Society of Civil
Engineers

EXPERIENCE

Ms. Mizutani has over 35 years of engineering experience. Her primary area of expertise is regulatory, with an emphasis on air permitting and regulatory evaluations for municipal facilities across California, including San Joaquin Valley Air Pollution Control District, in addition to experiences in numerous other California air districts. Her other regulatory experiences include projects involving US Fish and Wildlife Service (USFWS), California Department of Fish and Game (DFG), Bay Conservation and Development Commission (BCDC), Caltrans, the California Office of Emergency Services (OES), and the Federal Emergency Management Agency (FEMA).

Current Projects:

Supporting consultant to Bay Area Clean Water Agencies (BACWA) AIR Committee since 2016. Responsibilities include tracking and communicating regulatory issues; meeting regularly with BACWA AIR Committee representatives; and coordinating communication between POTWs and regulators, particularly Bay Area Air District.

Resolving a Notice of Violation for a wastewater facility with an existing unpermitted boiler. Work includes preparation of a permit application and coordinating with the facility's staff, Air District permit engineer, and Air District inspector to resolve the NOV.

Providing ongoing, as-needed air regulatory support to the Palo Alto Regional Water Quality Control Plant, Central Contra Costa Sanitary District, Dublin San Ramon Services District, and the Central Marin Sanitation Agency. Work has included regulatory and technical support for permitting, review and preparation of regulatory correspondence, assistance with regulatory compliance, and other services as requested.

Preparing BAAQMD permit applications for facilities at the Dublin San Ramon Services District including aerated grit chamber, primary clarifiers, anaerobic digester, two new flares to replace existing candlestick flare, a new FOG receiving station, and biogas treatment system. Assisting with reconciling BAAQMD permit discrepancies with currently operating sources.

Selected Past Projects:

Completed the initial Clean Air Act Title V operating permit applications for the Cities of Bakersfield, Tulare, and Visalia. Permit applications included emission estimates for all significant emission sources, review of applicable regional and federal regulations, and documentation integral to the application. Prepared renewal application for Tulare's Wastewater Treatment Plant. Subsequently, successfully assisted City of Visalia and the City of Tulare WWTP in efforts to be removed as a Title V facility for VOC emissions. Work included potential to emit calculations for priority pollutants and close coordination with SJVAPCD staff to facilitate the process.

Prepared Bay Area Air District permit applications for facilities at the Dublin San Ramon Services District including aerated grit chamber, primary clarifiers, anaerobic digester, new flare to replace existing candlestick flare, a new FOG receiving station, and biogas treatment system. Assisting with reconciling BAAQMD permit discrepancies with currently operating sources.

Obtained Bay Area Air District permit for the Wet Weather Improvements and Digester Replacement projects at the South San Francisco/San Bruno Water Quality Control Plant (WQCP). Project elements include demolition of two digesters, construction of a single replacement digester, rehabilitation of a third digester, replacement of the existing boiler with two new boilers, and construction of a new secondary clarifier.

Obtained Bay Area Air District Authority to Construct for the City of Millbrae Water Pollution Control Plant's cogeneration system. Also prepared permit application for existing odor control systems at the WPCP headworks and pump station.

Obtained Bay Area Air District Authority to Construct for installation of a new dual fuel cogeneration engine at Central Marin Sanitation Agency (CMSA). Work included Best Available Control Technology cost/benefit evaluation to meet Air District requirements.

Prepared Bay Area Air District permit applications for the Primary Treatment Facility project at the Sunnyvale Water Pollution Control Plant (WPCP). Work included new preliminary and primary treatment processes, standby generator, boiler replacement, and associated support facilities.

Obtained Bay Area Air Quality Management District Authorities to Construct for facilities at the City of Petaluma's Ellis Creek Water Recycling Facility, Central Marin Sanitary District, City of Burlingame Wastewater Treatment Facility, South San Francisco Water Quality Control Plant, Fairfield-Suisun Sewer District, Union Sanitary District, City of Antioch, City of Martinez, and Richmond Wastewater Treatment Plant.

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